

# Geräteschutzsicherungen

## Miniature Fuses



*Sie profitieren. Mit Sicherheit.  
Our Protection. Your Benefit.*

**SIBA**  
Sicherungen | Fuses

## Umfassender Schutz vor zu großen Strömen – von der SMD-Sicherung bis zur Hochspannungstechnik

Klassische zylindrische Sicherungen mit oder ohne Farbkennzeichnung nach unterschiedlichsten Normen, Kleinst-Sicherungseinsätze, SMD-Technologie, Sonderbauformen – auch der vorliegende neue Katalog zeigt wieder das ganze Spektrum des SIBA-Geräteschutzprogramms. Unsere Sicherungen schützen in vielen Bereichen vor zu hohen Strömen: Ob IT oder Telekommunikation, Haushaltsgeräte oder Industrieanwendungen.

SIBA-Sicherungs-Know-how reicht aber weit über den Geräteschutz hinaus. Seit über 70 Jahren fertigen wir Schutzeinrichtungen für Hoch- und Niederspannung. Viele Energieversorger vertrauen unseren HH-Sicherungseinsätzen, sehr schnelle Ultra-Rapid-Einsätze sorgen dafür, dass empfindliche Leistungshalbleiter nicht beschädigt werden. Und eine Reihe von Industriekunden setzen auf Motor- und Maschinenschutz durch SIBA-NH-Sicherungen.

Welcher Einsatzbereich auch immer – Sicherungen sind auf den ersten Blick „nur“ C-Produkte. Aber es sind Investments in die Sicherheit von Menschen. Und in die Sicherheit von Produkten und Maschinen. Investments, die sich auszahlen, denn jeder Abschaltvorgang einer Sicherung spart Folge-Kosten. Das funktioniert aber nur mit verlässlicher Qualität. Standbein ist hier unser eigenes Forschungs- und Entwicklungslabor, das jedes Produkt auf Herz und Nieren testet – und dafür sorgt, dass über alle Einsatzgebiete hinweg Know-how ausgetauscht wird. Die enge Verzahnung mit der eigenen Produktion

am Stammsitz Lünen garantiert, dass unsere Produktversprechen auch im Alltag eingehalten werden. Ganz gleich, ob es um eine Hochspannungssicherung in einem deutschen Umspannwerk oder eine SMD-Sicherung in einer Industrieanwendung geht. Denn sowohl vom Stammsitz aus als auch von unseren elf Auslandsgesellschaften gehen SIBA-Sicherungen in alle Welt.

Damit auch Sie die richtige Geräteschutz-Sicherung finden, haben wir unseren neuen Katalog noch übersichtlicher gestaltet. Wie bisher schon helfen Ihnen außerdem allgemeine Hinweise und ein Flussdiagramm bei der Auswahl der geeigneten Sicherung. Das ist oft alles andere als einfach, denn je nach Einsatzort und -zweck reicht auch das detaillierteste Diagramm manchmal nicht aus. Aber dafür gibt es unsere Spezialisten, die Ihnen bei der Planung helfen – und im Extremfall unsere Produkte auch individuell anpassen. Sprechen Sie uns an, fordern Sie uns – wir freuen uns auf Sie!

Michael Schröer  
Geschäftsführer

## All-round current overload protection – from the SMD fuse to high voltage technology

Classical cylindrical fuses with or without colour markings to a wide variety of standards, microfuses, SMD technology, custom design – our new catalogue shows the whole spectrum of the SIBA equipment protection range. Our fuses provide overload protection in many sectors, from IT or telecommunications to household appliances to industrial applications.

SIBA fuse know-how, however, goes far beyond miniature fuses. We have been manufacturing high and low voltage protective devices for more than 70 years. Many energy suppliers place their confidence in our HH fuses and very fast ultra-rapid fuselinks make sure that sensitive power semiconductors are not damaged. Several industrial customers rely on motor and machine protection provided by SIBA NH fuses.

No matter how they are used, at first sight fuses are “only” C products. They are, nevertheless, investments in people's safety. And in the safety of products and machinery. Investments that pay off, as every fuse shutdown saves follow-up costs. But this will only work with quality you can rely on. Here our main support is provided by our own research and development laboratory, where every product is rigorously put through its paces and where we see to it that know-

how is exchanged on all ranges of application. Close interlocking with our own production facility at our headquarters in Lünen guarantees that our promises on products are kept in everyday life. It does not matter at all whether we are talking about a high voltage fuse in a German electric power transformation substation or a SMD-fuse in a industrial application. SIBA fuses are shipped all over the world from our headquarters as well as from our eleven foreign subsidiaries. In order that you too will be able to find the right miniature fuse, our new catalogue is even more clearly laid out. As previously, our general information and flowcharts will also help you select the right fuse. In many cases this is by no means an easy task; depending on the location and the purpose of the fuse application even the most detailed diagram may not suffice. This is where our specialists come in. They will help you with your planning – and in extreme cases they will individually arrange our products to suit your purposes. Contact us, challenge us – we look forward to hearing from you!

Michael Schröer  
Managing director



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# Allgemeine Informationen / General Information

Technische Erläuterungen  
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## Produktübersicht / Product range

| G-Sicherungseinsätze<br>Fuse-Links |               |      |                           |                                      |                                            |                                                           |                          | G-Sicherungshalter<br>Fuse-Holders |                                       |                                    |                     |              |
|------------------------------------|---------------|------|---------------------------|--------------------------------------|--------------------------------------------|-----------------------------------------------------------|--------------------------|------------------------------------|---------------------------------------|------------------------------------|---------------------|--------------|
| Type                               | Seite<br>Page | RoHS | Abmessungen<br>Dimensions | Bem.<br>spannung<br>Rated<br>Voltage | Charak-<br>teristik<br>Charac-<br>teristic | Bem.-Ausschalt-<br>vermögen<br>Rated Breaking<br>Capacity | Normen<br>Standards      | für G-Sicherg.<br>for Fuse-Links   | Bem.-<br>spannung<br>Rated<br>Voltage | Bem.-<br>strom<br>Rated<br>Current | Montage<br>Mounting | Kappe<br>Cap |
| 151000                             | 18            | ◆    | 1,00 x 0,5 mm             | 32 V                                 | FF                                         | 50 A DC                                                   | UL 248-14                |                                    |                                       |                                    |                     |              |
| 152000                             | 19            | ◆    | 1,55 x 0,85 mm            | 32 V                                 | FF                                         | 50 A DC                                                   | UL 248-14<br>IEC 60127-4 |                                    |                                       |                                    |                     |              |
| 153000                             | 20            | ◆    | 2,00 x 1,25 mm            | 32 V                                 | FF                                         | 50 A DC                                                   |                          |                                    |                                       |                                    |                     |              |
| 154000                             | 21            | ◆    | 3,20 x 1,6 mm             | 63 V                                 | FF                                         | 50 A DC                                                   |                          |                                    |                                       |                                    |                     |              |
| 157000                             | 22            | ◆    | 2,6 x 6,1 mm              | 65 / 125 V                           | F                                          | 50 A AC / DC                                              | UL 248-14                |                                    |                                       |                                    |                     |              |
| 158000                             | 23            | ◆    | 2,6 x 6,1 mm              | 125 V                                | T                                          | 50 A AC / DC                                              | UL 248-14                |                                    |                                       |                                    |                     |              |
| 160000                             | 24            | ◆    | 4,5 x 8,0 mm              | 250 V                                | T                                          | 100 A AC                                                  | IEC 60127                |                                    |                                       |                                    |                     |              |
| 160500                             | 25            | ◆    | 4,5 x 8,0 mm              | 250 V                                | T                                          | 100 A AC                                                  | IEC 60127                |                                    |                                       |                                    |                     |              |
| 160016                             | 27            | ◆    | 4,5 x 16 mm               | 250 V                                | T                                          | 1500 A AC/DC                                              | IEC 60127-4/2            |                                    |                                       |                                    |                     |              |
| 160516                             | 28            | ◆    | 4,5 x 16 mm               | 250 V                                | T                                          | 1500 A AC/DC                                              | IEC 60127-4/2            |                                    |                                       |                                    |                     |              |
| 160020                             | 30            | ◆    | 5,8 x 20 mm               | 250 V                                | T                                          | 1500 A DC/AC                                              | IEC 60127-7              |                                    |                                       |                                    |                     |              |
| 161000                             | 26            | ◆    | 4,5 x 8,0 mm              | 250 V                                | F                                          | 100 A AC                                                  | IEC 60127-4              |                                    |                                       |                                    |                     |              |
| 163016                             | 29            | ◆    | 4,5 x 16 mm               | 250                                  | TT                                         | 35 A AC                                                   | IEC 60127-4              |                                    |                                       |                                    |                     |              |
| 164000                             | 31            | ◆    | 8,4 x 7,6 mm              | 250 V                                | F                                          | (35 A / 10 x I <sub>rat</sub> ) AC                        | IEC 60127-3/3            |                                    |                                       |                                    |                     |              |
| 164050                             | 31            | ◆    | 8,4 x 7,6 mm              | 250 V                                | F                                          | (35 A / 10 x I <sub>rat</sub> ) AC                        | IEC 60127-3/3            |                                    |                                       |                                    |                     |              |
| 164500                             | 32            | ◆    | 8,4 x 7,6 mm              | 250 V                                | F                                          | 50 A AC                                                   | UL 248-14                |                                    |                                       |                                    |                     |              |
| 164550                             | 32            | ◆    | 8,4 x 7,6 mm              | 250 V                                | F                                          | 50 A AC                                                   | UL 248-14                |                                    |                                       |                                    |                     |              |
| 165000                             | 33            | ◆    | 8,4 x 7,6 mm              | 250 V                                | M                                          | (35 A / 10 x I <sub>rat</sub> ) AC                        | (IEC 60127-3)            |                                    |                                       |                                    |                     |              |
| 165050                             | 33            | ◆    | 8,4 x 7,6 mm              | 250 V                                | M                                          | (35 A / 10 x I <sub>rat</sub> ) AC                        | (IEC 60127-3)            |                                    |                                       |                                    |                     |              |
| 166000                             | 34            | ◆    | 8,4 x 7,6 mm              | 250 V                                | T                                          | (35 A / 10 x I <sub>rat</sub> ) AC                        | IEC 60127-3/4            |                                    |                                       |                                    |                     |              |
| 166050                             | 34            | ◆    | 8,4 x 7,6 mm              | 250 V                                | T                                          | (35 A / 10 x I <sub>rat</sub> ) AC                        | IEC 60127-3/4            |                                    |                                       |                                    |                     |              |
| 166500                             | 35            | ◆    | 8,4 x 7,6 mm              | 250 V                                | T                                          | 50 A AC                                                   | UL 248-14                |                                    |                                       |                                    |                     |              |
| 166550                             | 35            | ◆    | 8,4 x 7,6 mm              | 250 V                                | T                                          | 50 A AC                                                   | UL 248-14                |                                    |                                       |                                    |                     |              |
| 166602                             | 78            | ◆    |                           |                                      |                                            |                                                           |                          | 8,4 x 7,6 mm                       | 250 V AC                              | 6,3 A                              | Leiterplatte        |              |
| 171100                             | 44            | ◆    | 5 x 20 mm                 | 250 V                                | F                                          | E 1000 A / D 300 A                                        | (DIN 41571-1)            |                                    |                                       |                                    |                     |              |
| 171525                             | 55            | ◆    | 5 x 25 mm                 | 250 V                                | F                                          | 50 / 80 A AC                                              |                          |                                    |                                       |                                    |                     |              |
| 171526                             | 56            | ◆    | 5 x 25 mm                 | 250 V                                | F Kennm.                                   | G 1500 A AC                                               | DIN 41576-1              |                                    |                                       |                                    |                     |              |
| 171530                             | 60            | ◆    | 5 x 30 mm                 | 500 V                                | F                                          | 50 / 80 A AC                                              |                          |                                    |                                       |                                    |                     |              |
| 172000                             | 45            | ◆    | 5 x 20 mm                 | 250 V                                | M                                          | C 80 A                                                    | DIN 41571-2              |                                    |                                       |                                    |                     |              |
| 172100                             | 45            | ◆    | 5 x 20 mm                 | 250 V                                | M                                          | E 1000 A / D 300 A                                        | DIN 41571-2              |                                    |                                       |                                    |                     |              |
| 172200                             | 46            | ◆    | 5 x 20 mm                 | 250 V                                | M                                          | 1500 A AC                                                 | (DIN 41571-2)            |                                    |                                       |                                    |                     |              |
| 172525                             | 55            | ◆    | 5 x 25 mm                 | 250 V                                | M                                          | 50 / 80 A AC                                              |                          |                                    |                                       |                                    |                     |              |
| 172526                             | 57            | ◆    | 5 x 25 mm                 | 250 V                                | M Kennm.                                   | C 80 A / E 1000 A                                         | DIN 41576-2              |                                    |                                       |                                    |                     |              |
| 172530                             | 60            | ◆    | 5 x 30 mm                 | 500 V                                | M                                          | 50 / 80 A AC                                              |                          |                                    |                                       |                                    |                     |              |
| 172900                             | 54            | ◆    | 5 x 20 mm                 | 250 V                                | M Sort.                                    | C 80 A / E 1000 A                                         | DIN 41571-2              |                                    |                                       |                                    |                     |              |
| 173100                             | 51            | ◆    | 5 x 20 mm                 | 250 V                                | T                                          | D 300 A                                                   | DIN 41571-3              |                                    |                                       |                                    |                     |              |
| 179020                             | 42            | ◆    | 5 x 20 mm                 | 250 V                                | F                                          | L (35 A / 10 x I <sub>rat</sub> ) AC                      | IEC 60127-2/2            |                                    |                                       |                                    |                     |              |
| 179021                             | 43            | ◆    | 5 x 20 mm                 | 250 V                                | F                                          | H 1500 A AC                                               | IEC 60127-2/1            |                                    |                                       |                                    |                     |              |
| 179120                             | 47            | ◆    | 5 x 20 mm                 | 250 V                                | T                                          | L (35 A / 10 x I <sub>rat</sub> ) AC                      | IEC 60127-2/3            |                                    |                                       |                                    |                     |              |
| 179150                             | 48            | ◆    | 5 x 20 mm                 | 250 V                                | T                                          | E 150 A AC                                                | IEC 60127-2/6            |                                    |                                       |                                    |                     |              |
| 179200                             | 49            | ◆    | 5 x 20 mm                 | 250 V                                | T                                          | H 1500 A AC                                               | IEC 60127-2/5            |                                    |                                       |                                    |                     |              |
| 179200SMD                          | 50            | ◆    | 5 x 20 mm                 | 250 V                                | T                                          | H 1500 A AC                                               | IEC 60127-2/5            |                                    |                                       |                                    |                     |              |
| 179500                             | 52            | ◆    | 5 x 20 mm                 | 125/250 V                            | T                                          | 35 / 100 / 10000 A AC                                     | UL 248-14                |                                    |                                       |                                    |                     |              |
| 179900                             | 54            | ◆    | 5 x 20 mm                 | 250 V                                | T Sort.                                    | L (35 A / 10 x I <sub>rat</sub> ) AC                      | IEC 60127-2/3            |                                    |                                       |                                    |                     |              |
| 179901                             | 54            | ◆    | 5 x 20 mm                 | 250 V                                | F Sort.                                    | L (35 A / 10 x I <sub>rat</sub> ) AC                      | IEC 60127-2/2            |                                    |                                       |                                    |                     |              |
| 183000                             | 71            | ◆    | 8 x 40 mm                 | 500 V                                | M-F                                        | 80 / 1500 A AC                                            | DIN 41686                |                                    |                                       |                                    |                     |              |
| 184000                             | 73            | ◆    | 8 x 50 mm                 | 1,2 kV                               | M-F                                        | 35 A AC                                                   | DIN 41570                |                                    |                                       |                                    |                     |              |
| 185000                             | 73            | ◆    | 8 x 85 mm                 | 3 kV                                 | M-F                                        | 35 A AC                                                   | DIN 41569                |                                    |                                       |                                    |                     |              |
| 186000                             | 74            | ◆    | 8 x 120 mm                | 6 kV                                 | M-F                                        | 35 A AC                                                   | DIN 41683                |                                    |                                       |                                    |                     |              |
| 187000                             | 74            | ◆    | 8 x 150 mm                | 10 kV                                | M-F                                        | 35 A AC                                                   | DIN 41684                |                                    |                                       |                                    |                     |              |
| 189000                             | 64            | ◆    | 6,3 x 32 mm               | 250 V                                | F                                          | L (35 A / 10 x I <sub>rat</sub> ) AC                      | IEC 60127-2/4            |                                    |                                       |                                    |                     |              |
| 189020                             | 65            | ◆    | 6,3 x 32 mm               | 440/500 V                            | F                                          | 50 kA AC / 20 kA DC                                       |                          |                                    |                                       |                                    |                     |              |
| 189100                             | 67            | ◆    | 6,3 x 32 mm               | 250 V                                | T                                          | (35 A / 10 x I <sub>rat</sub> ) AC                        |                          |                                    |                                       |                                    |                     |              |
| 189140                             | 68            | ◆    | 6,3 x 32 mm               | 440/500 V                            | T                                          | 10 / 1,5 A AC                                             |                          |                                    |                                       |                                    |                     |              |
| 189500                             | 69            | ◆    | 6,3 x 32 mm               | 125/250 V                            | T                                          | 35 / 100 / 10000 A AC                                     | UL 248-14                |                                    |                                       |                                    |                     |              |
| 189700                             | 54            | ◆    | 6,3 x 32 mm               | 250 V                                | T Sort.                                    | (35 A / 10 x I <sub>rat</sub> ) AC                        |                          |                                    |                                       |                                    |                     |              |
| 189701                             | 54            | ◆    | 6,3 x 32 mm               | 250 V                                | F Sort.                                    | L (35 A / 10 x I <sub>rat</sub> ) AC                      | IEC 60127-2/4            |                                    |                                       |                                    |                     |              |
| 190000                             | 53            | ◆    | 5 x 20 mm                 | 250 V                                | TT                                         | (35 A/10 x I <sub>rat</sub> ) AC                          |                          |                                    |                                       |                                    |                     |              |
| 199011                             | 79            | ◆    |                           |                                      |                                            |                                                           |                          | 5 x 20 mm                          | 250 V AC                              | 6,3 A                              | Leiterplatte        | 199012       |
| 199012                             | 79            | ◆    |                           |                                      |                                            |                                                           |                          | 5 x 20 mm                          | 250 V AC                              | 6,3 A                              | Leiterplatte        |              |
| 199013                             | 79            | ◆    |                           |                                      |                                            |                                                           |                          | 5 x 20 mm                          | 250 V AC                              | 6,3 A                              | Leiterplatte        | 199023       |
| 199014                             | 79            | ◆    |                           |                                      |                                            |                                                           |                          | 5 x 20 mm                          | 250 V AC                              | 6,3 A                              | Leiterplatte        | 199023       |
| 199015                             | 80            | ◆    |                           |                                      |                                            |                                                           |                          | 5 x 20 mm                          | 250 V AC                              | 6,3 A                              | Leiterplatte        | 199016       |
| 199015A                            | 80            | ◆    |                           |                                      |                                            |                                                           |                          | 5 x 20 mm                          | 250 V AC                              | 6,3 A                              | Leiterplatte        | 199016       |
| 199016                             | 80            | ◆    |                           |                                      |                                            |                                                           |                          | 5 x 20 mm                          | 250 V AC                              | 6,3 A                              | Leiterplatte        | (199015/A)   |
| 199018                             | 81            | ◆    |                           |                                      |                                            |                                                           |                          | 5 x 20 mm                          | 250 V AC                              | 6,3 A                              | Leiterplatte        | 199019       |
| 199018A                            | 81            | ◆    |                           |                                      |                                            |                                                           |                          | 5 x 20 mm                          | 250 V AC                              | 6,3 A                              | Leiterplatte        | 199019       |
| 199019                             | 81            | ◆    |                           |                                      |                                            |                                                           |                          | 5 x 20 mm                          | 250 V AC                              | 6,3 A                              | Leiterplatte        | 199018       |
| 199023                             | 79            | ◆    |                           |                                      |                                            |                                                           |                          | 5 x 20 mm                          | 250 V AC                              | 6,3 A                              | Leiterplatte        |              |

◆ = RoHS konform    ○ = nicht RoHS konform

| G-Sicherungseinsätze<br>Fuse-Links |               |      |                           |                                      |                                            |                                                           |                     | G-Sicherungshalter<br>Fuse-Holders |                                       |                                    |                     |              |
|------------------------------------|---------------|------|---------------------------|--------------------------------------|--------------------------------------------|-----------------------------------------------------------|---------------------|------------------------------------|---------------------------------------|------------------------------------|---------------------|--------------|
| Type                               | Seite<br>Page | RoHS | Abmessungen<br>Dimensions | Bem.<br>spannung<br>Rated<br>Voltage | Charak-<br>teristik<br>Charac-<br>teristic | Bem.-Ausschalt-<br>vermögen<br>Rated Breaking<br>Capacity | Normen<br>Standards | für G-Sicherg.<br>for Fuse-Links   | Bem.-<br>spannung<br>Rated<br>Voltage | Bem.-<br>strom<br>Rated<br>Current | Montage<br>Mounting | Kappe<br>Cap |
| 199030                             | 82            | ◆    |                           |                                      |                                            |                                                           |                     | 5 x 20 mm                          | 250 V AC                              | 6,3 A                              | Frontplatte         | Schraubk.    |
| 199035                             | 82            | ◆    |                           |                                      |                                            |                                                           |                     | 5 x 20 mm                          | 250 V AC                              | 6,3 A                              | Frontplatte         | Schraubk.    |
| 199045                             | 82            | ◆    |                           |                                      |                                            |                                                           |                     | 5 x 20 mm                          | 250 V AC                              | 6,3 A                              | Leiterplatte        | Renkk.       |
| 199050                             | 83            | ◆    |                           |                                      |                                            |                                                           |                     | 5 x 20 mm                          | 250 V AC                              | 6,3 A                              | Leiterplatte        | Renkk.       |
| 199052                             | 86            | ◆    |                           |                                      |                                            |                                                           |                     | 6,3 x 32 mm                        | 250 V AC                              | 20                                 | Frontplatte         | Schraubk.    |
| 199055                             | 83            | ◆    |                           |                                      |                                            |                                                           |                     | 5 x 20 mm                          | 250 V AC                              | 6,3 A                              | Frontplatte         | Renkk.       |
| 199060                             | 80            | ◆    |                           |                                      |                                            |                                                           |                     | 5 x 20 mm                          | 250 V AC                              | 6,3 A                              | Leiterplatte        |              |
| 199070                             | 83            | ◆    |                           |                                      |                                            |                                                           |                     | 5 x 20 mm                          | 250 V AC                              | 10 A                               | Frontplatte         | Renkk.       |
| 199073                             | 78            | ◆    |                           |                                      |                                            |                                                           |                     | 5 mm Ø                             | 500 V AC                              | 6,3 A                              | Leiterplatte        |              |
| 199080                             | 84            | ◆    |                           |                                      |                                            |                                                           |                     | 5 x 20 mm                          | 42 V AC                               | 6,3 A                              | In-line             | Renkk.       |
| 199080A                            | 84            | ◆    |                           |                                      |                                            |                                                           |                     | 5 x 20 mm                          | 42 V AC                               | 6,3 A                              | In-line             | Renkk.       |
| 199090                             | 84            | ◆    |                           |                                      |                                            |                                                           |                     | 5 x 20 mm                          | 250 V AC                              | 6,3 A+10 A                         | Frontplatte         | Renkk.       |
| 199207                             | 78            | ◆    |                           |                                      |                                            |                                                           |                     | 5 mm Ø                             | 500 V AC                              | 6,3 A                              | Leiterplatte        |              |
| 199429                             | 78            | ◆    |                           |                                      |                                            |                                                           |                     | 6,3 mm Ø                           | 500 V AC                              | 6,3 A                              | Leiterplatte        |              |
| 199487                             | 78            | ◆    |                           |                                      |                                            |                                                           |                     | 5 mm Ø                             | 500 V AC                              | 6,3 A                              | Leiterplatte        |              |
| 199511                             | 85            | ◆    |                           |                                      |                                            |                                                           |                     | 5 x 20 mm                          | 500 V AC                              | 16 A                               | Leiterplatte        |              |
| 199511                             | 85            | ◆    |                           |                                      |                                            |                                                           |                     | 6,3 x 32 mm                        | 500 V AC                              | 16 A                               | Leiterplatte        |              |
| 199530                             | 85            | ◆    |                           |                                      |                                            |                                                           |                     | 6,3 x 32 mm                        | 500 V AC                              | 20 A                               | Frontplatte         |              |
| 199531                             | 85            | ◆    |                           |                                      |                                            |                                                           |                     | 6,3 x 32 mm                        | 500 V AC                              | 20 A                               | Frontplatte         | Renkk.       |
| 199537                             | 86            | ◆    |                           |                                      |                                            |                                                           |                     | 5 x 20 mm                          | 500 V AC                              | 16 A                               | Leiterplatte        |              |
| 199537                             | 86            | ◆    |                           |                                      |                                            |                                                           |                     | 6,3 x 32 mm                        | 500 V AC                              | 16 A                               | Leiterplatte        |              |
| 199550                             | 86            | ◆    |                           |                                      |                                            |                                                           |                     | 6,3 x 32 mm                        | 500 V AC                              | 30 A                               | Leiterplatte        |              |
| 199552                             | 86            | ◆    |                           |                                      |                                            |                                                           |                     | 6,3 x 32 mm                        | 500 V AC                              | 30 A                               | Leiterplatte        | Schraubk.    |
| 199555                             | 87            | ◆    |                           |                                      |                                            |                                                           |                     | 6,3 x 32 mm                        | 500 V AC                              | 30 A                               | Frontplatte         |              |
| 199552                             | 87            | ◆    |                           |                                      |                                            |                                                           |                     | 6,3 x 32 mm                        | 500 V AC                              | 30 A                               | Frontplatte         | Schraubk.    |
| 204000                             | 89            | ◆    |                           |                                      |                                            |                                                           |                     | 5 mm Ø                             |                                       | 6,3 A                              | Leiterplatte        |              |
| 204001                             | 89            | ◆    |                           |                                      |                                            |                                                           |                     | 5 mm Ø                             |                                       | 10 A                               | Leiterplatte        |              |
| 204002                             | 89            | ◆    |                           |                                      |                                            |                                                           |                     | 5 mm Ø                             |                                       | 16 A                               | Leiterplatte        |              |
| 204100                             | 90            | ◆    |                           |                                      |                                            |                                                           |                     | 6,3 mm Ø                           |                                       | 12,5 A                             | Leiterplatte        |              |
| 204101                             | 90            | ◆    |                           |                                      |                                            |                                                           |                     | 6,3 mm Ø                           |                                       | 20 A                               | Leiterplatte        |              |
| 204151                             | 90            | ◆    |                           |                                      |                                            |                                                           |                     | 6,3 mm Ø                           |                                       | 20 A                               | Leiterplatte        |              |
| 7000140                            | 38            | ◆    | 5 x 20 mm                 | 250 V                                | FF                                         | 300 / 1,5 kA AC                                           |                     |                                    |                                       |                                    |                     |              |
| 7000740                            | 39            | ◆    | 5 x 20 mm                 | 250/400 V                            | FF                                         | 300 / 10 kA AC                                            |                     |                                    |                                       |                                    |                     |              |
| 7001205                            | 59            | ◆    | 5 x 20 mm                 | 250 V                                | M Kennm.                                   | G 1500 A                                                  | DIN 41577 T.2       |                                    |                                       |                                    |                     |              |
| 7001407                            | 59            | ◆    | 5 x 20 mm                 | 250 V                                | M Kennm.                                   | G 1500 A                                                  | DIN 41577 T.2       |                                    |                                       |                                    |                     |              |
| 7001607                            | 59            | ◆    | 5 x 25 mm                 | 250 V                                | M Kennm.                                   | C 80 A                                                    | DIN 41577 T.2       |                                    |                                       |                                    |                     |              |
| 7001707                            | 59            | ◆    | 5 x 25 mm                 | 250 V                                | M Kennm.                                   | G 1500 A                                                  | DIN 41577 T.2       |                                    |                                       |                                    |                     |              |
| 7006526                            | 70            | ◆    | 6,3 x 32 mm               | 400 V                                | gPV                                        | 30 kA DC                                                  |                     |                                    |                                       |                                    |                     |              |
| 7006584                            | 63            | ◆    | 6,3 x 32 mm               | 400 V                                | gRL                                        | 120 kA AC                                                 | IEC 60269-4         |                                    |                                       |                                    |                     |              |
| 7008913                            | 58            | ◆    | 5 x 25 mm                 | 450 V                                | F                                          | 70 kA AC                                                  |                     |                                    |                                       |                                    |                     |              |
| 7009463                            | 66            | ◆    | 6,3 x 32 mm               | 600 V                                | F                                          | 50 kA AC                                                  |                     |                                    |                                       |                                    |                     |              |
| 7012540                            | 61            | ◆    | 6,3 x 32 mm               | 500/700 V                            | FF                                         | 50 kA AC                                                  |                     |                                    |                                       |                                    |                     |              |
| 7017240                            | 62            | ◆    | 6,3 x 32 mm               | 1000 V                               | aR (FF)                                    | 30 kA AC / DC                                             |                     |                                    |                                       |                                    |                     |              |
| 7017640                            | 41            | ◆    | 5 x 20 mm                 | 1000 V                               | aR (FF)                                    | 100 kA AC / DC                                            |                     |                                    |                                       |                                    |                     |              |
| 7018040                            | 40            | ◆    | 5 x 20 mm                 | 660 V                                | aR (FF)                                    | 100 kA AC / DC                                            |                     |                                    |                                       |                                    |                     |              |
| 7018509                            | 72            | ◆    | 8 x 65 mm                 | 1500 V                               | F                                          | 30 kA AC / DC                                             |                     |                                    |                                       |                                    |                     |              |
| 7100114                            | 92            | ◆    |                           |                                      |                                            |                                                           |                     | 5 x 20 mm                          | 250 V AC                              | 16 A                               | Leiterplatte        | Renkk.       |
| 7100114                            | 92            | ◆    |                           |                                      |                                            |                                                           |                     | 6,3 x 32 mm                        | 250 V AC                              | 16 A                               | Leiterplatte        | Renkk.       |
| 7100116                            | 92            | ◆    |                           |                                      |                                            |                                                           |                     | 5 x 20 mm                          | 250 V AC                              | 16 A                               | Leiterplatte        | Renkk.       |
| 7100116                            | 92            | ◆    |                           |                                      |                                            |                                                           |                     | 6,3 x 32 mm                        | 250 V AC                              | 16 A                               | Leiterplatte        | Renkk.       |
| 7100123                            | 91            | ◆    |                           |                                      |                                            |                                                           |                     | 5 x 20 mm                          | 250 V AC                              | 20 A                               | Frontplatte         | Renkk.       |
| 7100123                            | 91            | ◆    |                           |                                      |                                            |                                                           |                     | 6,3 x 32 mm                        | 250 V AC                              | 20 A                               | Frontplatte         | Renkk.       |
| 7100124                            | 91            | ◆    |                           |                                      |                                            |                                                           |                     | 5 x 20 mm                          | 250 V AC                              | 20 A                               | Frontplatte         | Renkk.       |
| 7100124                            | 91            | ◆    |                           |                                      |                                            |                                                           |                     | 6,3 x 32 mm                        | 250 V AC                              | 20 A                               | Frontplatte         | Renkk.       |
| 7100127                            | 88            | ◆    |                           |                                      |                                            |                                                           |                     | 5 x 20 mm                          | 250 V AC                              | 16 A                               | Leiterplatte        | Renkk.       |
| 7100128                            | 88            | ◆    |                           |                                      |                                            |                                                           |                     | 5 x 20 mm                          | 250 V AC                              | 16 A                               | Leiterplatte        | Renkk.       |
| 7100129                            | 89            | ◆    |                           |                                      |                                            |                                                           |                     | 5 x 20 mm                          | 250 V AC                              | 10 A                               | Frontplatte         | Renkk.       |
| 7102901                            | 94            | ◆    |                           |                                      |                                            |                                                           |                     | 12 x 100 mm                        | 3 kV                                  |                                    |                     |              |
| 7103001                            | 94            | ◆    |                           |                                      |                                            |                                                           |                     | 12 x 150 mm                        | 6 kV                                  |                                    |                     |              |
| 7103101                            | 94            | ◆    |                           |                                      |                                            |                                                           |                     | 12 x 200 mm                        | 10 kV                                 |                                    |                     |              |
| 7103401                            | 93            | ◆    |                           |                                      |                                            |                                                           |                     | 8 x 50 mm                          | 1,2 kV AC                             |                                    | Isolierplatte       |              |
| 7103701                            | 93            | ◆    |                           |                                      |                                            |                                                           |                     | 8 x 85 mm                          | 3 kV AC                               |                                    | Isolierplatte       |              |
| 7103701                            | 93            | ◆    |                           |                                      |                                            |                                                           |                     | 10 x 85 mm                         | 3 kV                                  | 6,3 A                              |                     |              |
| 7103702                            | 94            | ◆    |                           |                                      |                                            |                                                           |                     | 10 x 85 mm                         | 3 kV                                  | 6,3 A                              |                     |              |
| 7104001                            | 93            | ◆    |                           |                                      |                                            |                                                           |                     | 8 x 120 mm                         | 6 kV AC                               |                                    | Isolierplatte       |              |
| 7104301                            | 93            | ◆    |                           |                                      |                                            |                                                           |                     | 8 x 150 mm                         | 10 kV AC                              |                                    | Isolierplatte       |              |
| 7200108                            | 92            | ◆    |                           |                                      |                                            |                                                           |                     | 5 x 20 mm                          | 250 V AC                              | 20 A                               | Frontplatte         | Renkk.       |
| 7200109                            | 92            | ◆    |                           |                                      |                                            |                                                           |                     | 6,3 x 32 mm                        | 250 V AC                              | 20 A                               | Frontplatte         | Renkk.       |
| 7500101                            | 54            | ◆    | 5 x 20 mm                 | 250 V                                | F + T Sort.                                |                                                           |                     |                                    |                                       |                                    |                     |              |

## Technische Erläuterungen / Technical Notes

### 1 Einleitung

Geräteschutzsicherungen (G-Sicherungen) sind selbsttätig arbeitende Schaltorgane und schützen elektrische Anlagen, Geräte und Baugruppen vor unzulässig hohen Strombelastungen. Die Anwendung ist vielfältig. Geräteschutzsicherungen werden in der Unterhaltungselektronik zur Absicherung von Netzteilen und Leistungsendstufen verwendet. Für industrielle Anwendungen werden G-Sicherungen häufig als Primärsicherung eingesetzt, wo sie im Fehlerfall die defekte Baugruppe von der Spannungsversorgung trennen, bevor es zu größeren Schäden kommt. Sicherungseinsätze für die direkte Leiterplattenmontage werden unter anderem für die sekundäre Stromversorgung in Geräten kleiner Leistung verwendet. Im Fehlerfall dienen sie zum Schutz von Bauteilen und Leiterbahnen, die durch zu hohe Strombelastungen zerstört werden könnten.

### 2 Ausführungen

Die klassische Geräteschutzsicherung hat eine zylindrische Bauform im Durchmesser 5 mm und eine Länge von 20 mm. Daneben findet eine Ausführung in den Abmessungen 6,3 x 32 mm weltweite Anwendung. In den Charakteristiken superflink bis superträge und bei Netzspannungen bis 1000 V können diese Sicherungen je nach Bemessung Kurzschlussströme bis zu einigen Kiloampère ausschalten.

Zur bedrahteten Montage auf Leiterplatten werden Kleinstsicherungen (KS) verwendet. Diese Sicherungen in der Bemessungsspannung 250 V sind in flinker und träger Charakteristik sowohl primärseitig zum Schutz eines Netztransformators als auch sekundärseitig zum selektiven Schutz der Baugruppen im Einsatz.

Zur Oberflächenmontage auf Leiterplatten stehen SMD-Sicherungen in Bemessungsspannungen bis 250 V zur Verfügung. Die Sicherungen werden ähnlich wie die oben beschriebenen KS-Sicherungen verwendet. Sie sind bezüglich ihres Ausschaltverhaltens auch auf die besonderen Anforderungen der Telecom-Industrie ausgerichtet.

### 1 Introduction

Miniature fuses are automatic switchgears that protect electrical plants, appliances and modules from inadmissibly high current loads.

They have various applications. Miniature fuses are used in consumer electronics for safeguarding power supplies and power output amplifiers. They are often used in industrial applications as primary fuses, where in the event of a fault they separate the defective module from the voltage supply in order to forestall any greater damage. Fuse-links for direct mounting on printed circuit boards are used among other things for the secondary current supply in low power devices. In the event of a fault they serve to protect components and PCB-traces that might be destroyed by excessive current loads.

### 2 Designs

The traditional miniature fuse is cylindrical in shape, with a diameter of 5 mm and a length of 20 mm. There is also a design used internationally which has the dimensions 6.3 x 32 mm. Depending on their rating, these fuses, whose characteristic might be very quick-acting to long time-lag, can switch off short-circuit currents of up to several kiloamperes at mains voltages of up to 1 000 V.

Sub-miniature fuses (KS) are used for through-hole assembly on printed circuit boards. Whether their characteristic is quick-acting or time-lag, these fuses with a rated voltage of 250 V are used in primary circuits for protecting mains transformers and in secondary circuits for selective protection of the modules.

SMD fuses at rated voltages of up to 250 V are available for surface mounting on printed circuit boards. Their applications are similar to those of the sub-miniature fuses (KS) described above. As regards their breaking performance, they are also designed with the special requirements of the telecom industry in mind.

### 3 Begriffe

G-Sicherungen bestehen aus dem Sicherungseinsatz und dem Sicherungshalter. Der Sicherungseinsatz enthält den Schmelzleiter und muss nach dessen Schmelzen durch einen neuen Sicherungseinsatz ersetzt werden. Der Schmelzleiter kann unter vorgegebenen Bedingungen den Bemessungsstrom dauerhaft führen. Bei Überschreitung des Bemessungsstroms, oberhalb eines durch die Normen vorgegebenen Wertes schmilzt er, und es kommt zu einer Unterbrechung des Stromkreises. Die Dauer des Schmelzvorgangs ist in den entsprechenden Normen vorgegeben. Der Sicherungseinsatz wird in einen Sicherungshalter eingesetzt. Dieser besteht aus dem Sicherungsunterteil (Sockel) und dem Sicherungseinsatzträger (Schraub- oder Renkkappe). Das Sicherungsunterteil ist fest im zu schützenden Gerät montiert und stellt die elektrische Verbindung her. Der Sicherungseinsatzträger nimmt den Sicherungseinsatz auf und ermöglicht ein einfaches Austauschen. Neben solchen 'geschlossenen' Sicherungshaltern werden häufig auch offene Sicherungshalter und Clips verwendet. Für die richtige Auswahl eines Sicherungseinsatzes sind die elektrischen Eigenschaften, wie im Folgenden erläutert, zu berücksichtigen.

#### 3.1 Bemessungsspannung (Nennspannung) $U_{\text{rat}}$

Die Bemessungsspannung eines Sicherungseinsatzes wird als Effektivwert einer sinusförmigen Wechselspannung bei 50 Hz angegeben. Nach ihr sind alle Prüfbedingungen festgelegt. Die den Kurzschlussstrom treibende Spannung  $U_b$  darf nicht größer sein als die Bemessungsspannung.

$$U_{\text{rat}} \geq U_b$$

Der Einsatz bei Gleichspannung ist unter Reduzierung der Bemessungsspannung möglich; bei Angabe des maximalen Fehlerstroms und der Zeitkonstanten des Fehlerstromkreises geben wir hierzu gern Auskunft.

#### 3.2 Bemessungsstrom $I_n$

Der Bemessungsstrom wird als Effektivwert angegeben. Der Sicherungseinsatz kann unter vorgegebenen Bedingungen mit dem Bemessungsstrom dauerhaft betrieben werden. Umgebungsbedingungen, zyklische Ströme und besondere Einbauverhältnisse können zu einer Herabstufung (derating) des Bemessungsstromes führen. Der Betriebsstrom  $I_b$  darf im Normalbetrieb nicht größer sein als der Bemessungsstrom.

$$I_n \geq I_b$$

### 3 Terminology

Miniature fuses consist of the fuse-link and the fuse-holder. The fuse-link contains the fuse-element and must, after the latter has melted, be replaced by a new fuse-link. The fuse-element can continuously carry the rated current under given conditions. When the rated current has been exceeded, the fuse-element melts above a value prescribed by the standards, and the electrical circuit is broken. The duration of the melting process is prescribed in the relevant standards.

The fuse-link is inserted into a fuse-holder. The latter consists of the fuse-base (mount) and the (screw or bayonet) fuse-carrier. The fuse-base is firmly mounted in the device to be protected and provides the electrical connection. The fuse-carrier receives the fuse-link, allowing easy replacement. Open fuse-holders and clips are often used besides such 'enclosed' fuse-holders.

The electrical characteristics must be taken into account when making the correct choice of a fuse-link, as explained in the following.

#### 3.1 Rated voltage (nominal voltage) $U_{\text{rat}}$

The rated voltage of a fuse-link is given as the r.m.s. value of a sinusoidal alternating voltage at 50 Hz. All the test conditions are laid down in accordance with it. The voltage  $U_b$  driving the short-circuit current must not be greater than the rated voltage.

$$U_{\text{rat}} \geq U_b$$

Operation at direct voltage is possible if the rated voltage is reduced; we will be glad to advise you on this matter if you provide us with the maximum fault current and the time constants of the fault-current circuit.

#### 3.2 Rated Current $I_n$

The rated current given is the r.m.s. value. Under prescribed conditions, the fuse-link can operate permanently at the rated current level. Ambient conditions, cyclic currents and special assembly conditions can lead to a derating of the rated current. The operating current  $I_b$  must not be greater than the rated current during normal operation.

$$I_n \geq I_b$$

### 3.3 Bemessungsausschaltvermögen $I_1$ bei $U_{rat}$

Das Bemessungsausschaltvermögen kennzeichnet den maximalen Strom  $I_1$ , den der Sicherungseinsatz bei Bemessungsspannung ordnungsgemäß abschalten kann. In manchen Anwendungsfällen kann es erforderlich sein, den zu erwartenden Kurzschlussstrom durch zusätzliche Impedanzen im Stromkreis zu verringern.

$$I_1 \geq I_p$$

### 3.4 Spannungsfall $\Delta U$

Der Spannungsfall wird bei Betrieb des Sicherungseinsatzes mit seinem Bemessungsstrom und bei einer Umgebungstemperatur von 23 °C ermittelt.

### 3.5 Schmelzintegral $I^2t_s$

Das Schmelzintegral errechnet sich aus der Integration des Stromquadrats über der Schmelzzeit. Der Wert gibt an, welche elektrische Belastung zum Auftrennen des Schmelzleiters führt. Der Schmelzintegralwert wird bei einem Prüfstrom von  $10 I_{rat}$  ermittelt und als typischer Wert angegeben.

### 3.6 Ausschaltintegral $I^2t_A$

Das Ausschaltintegral errechnet sich aus der Integration des Stromquadrats über der gesamten Ausschaltzeit des Sicherungseinsatzes. Der Wert ist ein Maß für die Belastung der nachgeschalteten Bauelemente während einer Ausschaltung des Sicherungseinsatzes im Kurzschlussfall.

### 3.7 Leistungsabgabe $P_v$

Die Leistungsabgabe eines Sicherungseinsatzes errechnet sich aus der Multiplikation des kleinen Prüfstroms  $I_{nf}$  mit dem bei dieser Belastung nach 1 h ermittelten Spannungsfall  $\Delta U$ .

### 3.3 Rated Breaking Capacity $I_1$ at $U_{rat}$

The rated breaking capacity characterises the maximum current  $I_1$  that the fuse-link can properly switch off at the rated voltage.

In certain applications it may be necessary to reduce the expected short-circuit current by means of additional impedances in the electrical circuit.

$$I_1 \geq I_p$$

### 3.4 Voltage Drop $\Delta U$

The voltage drop is determined with the fuse-link in operation at its rated current and at an ambient temperature of 23 °C.

### 3.5 Pre-arcing integral $I^2t_s$

The pre-arcing integral is calculated by integrating the square of the current over the pre-arcing time. The value indicates the electrical load that leads to the melting of the fuse-element. The value for the pre-arcing integral is determined at a test current of  $10 I_{rat}$  and is given as a typical value.

### 3.6 Operating integral $I^2t_A$

The operating integral is calculated by integrating the square of the current over the total operating time of the fuse-link. The value is a measure of the load on the downstream components during breaking operation of the fuse-link in the event of a short circuit.

### 3.7 Power dissipation $P_v$

The Power dissipation of a fuse-link is calculated by multiplying the conventional non-fusing current  $I_{nf}$  by the voltage drop  $\Delta U$  determined at this load after an hour.

## 4 Der Aufbau von G-Sicherungseinsätzen

### 4.1 Das Glasrohr

Ist der maximal zu erwartende Kurzschlussstrom (prospektiver Strom  $I_p$ ) nicht größer als 35 A oder max.  $10 I_{rat}$ , so wird ein G-Sicherungseinsatz mit Glasrohr ohne Füllung verwendet. Dieser Sicherungseinsatz hat den Vorteil eines relativ niedrigen Spannungsfalls.

### 4.2 Das verstärkte Glasrohr

G-Sicherungseinsätze mit verstärktem Glasrohr ohne Füllung können prospektive Ströme bis 150 A bei Bemessungsspannung ausschalten.

## 4 Structure of miniature Fuse-Links

### 4.1 The glass tube

If the maximum expected short-circuit current (prospective current  $I_p$ ) is not greater than 35 A or max.  $10 I_{rat}$ , then a miniature fuse-link with an unfilled glass tube is used. This fuse-link has the advantage of a relatively low voltage drop.

### 4.2 The reinforced glass tube

Miniature fuse-links with reinforced unfilled glass tubes can switch off prospective currents of up to 150 A at the rated voltage.

#### 4.3 Das Glasrohr mit Füllung

Durch die Kombination einer Quarzsandfüllung als Löschmittel und die Verstärkung des Glasrohrs können prospektive Ströme bis zu 1000 A bei Bemessungsspannung ausgeschaltet werden.

#### 4.4 Das Keramikrohr mit Füllung

Eine weitere Steigerung des Bemessungsausschaltvermögens bis zu einem prospektiven Strom von einigen kA wird durch die Verwendung von Keramikrohren mit Quarzsandfüllung erzielt.

#### 4.5 Die Anschlusskappen

Als Werkstoff für Anschlusskappen wird üblicherweise eine Kupferlegierung verwendet. Zur besseren elektrischen und thermischen Kontaktgabe sowie zum Korrosionsschutz werden die Kappen durch eine besondere Oberflächenbehandlung vergütet.

#### 4.3 The filled glass tube

Prospective currents of up to 1 000 A can be switched off at the rated voltage by a combination of quartz sand filling as extinguishing filler and reinforcement of the glass tube.

#### 4.4 The filled ceramic tube

A further increase in the rated breaking capacity up to a prospective current of several kA is achieved by the use of ceramic tubes filled with quartz sand.

#### 4.5 The terminal caps

A copper alloy is usually used as working material for the terminal caps. The caps are plated by means of a special surface treatment to provide better electrical and thermal contact, as well as for protection against corrosion.

### 5 Charakteristiken

Die Charakteristik ist ein Ausdruck für das Zeit/Strom-Verhalten der Sicherungseinsätze.

|     |             |                                                                                                                                                         |
|-----|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| FF  | superfink   | Kurzschlusschutz für Halbleiterbauelemente (Thyristoren, Dioden, Triacs, Transistoren, MCT usw.)                                                        |
| gRL | superfink   | Ganzbereichsschutz von Halbleitern und deren Zuleitungen                                                                                                |
| gPV |             | für Energiesysteme der Photovoltaik                                                                                                                     |
| F   | fink        | Schutz gegen hohe Überlast- und Kurzschlussströme; Sicherungen werden in Stromkreisen ohne Einschaltstromstöße oder als Netzsicherung eingesetzt.       |
| M   | mittelträge | durch niedrigen Spannungsfall besonders geeignet zum Einsatz bei kleinen Betriebsspannungen, wenn keine großen Einschaltströme zu berücksichtigen sind. |
| T   | träge       | bei hohen und nur langsam abklingenden Einschaltströmen (Transformatoren)                                                                               |
| TT  | superträge  | bei sehr hohen und länger andauernden Einschaltströmen (Motoren)                                                                                        |

### 5 Characteristics

The characteristic is an expression for the time/current performance of the fuse-links.

|     |                   |                                                                                                                                                      |
|-----|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| FF  | very quick-acting | short-circuit protection for semiconductor components (thyristors, diodes, triacs, transistors, MCT etc.)                                            |
| gRL | very quick-acting | full-range protection of semiconductors and their supply lines                                                                                       |
| gPV |                   | for energy systems of photovoltaic                                                                                                                   |
| F   | quick-acting      | protection against high overload and short-circuit currents; fuses are used in electrical circuits without inrush current pulses, or as mains fuses. |
| M   | medium time-lag   | because of low voltage drop particularly suitable at low operating voltages, if no high inrush currents have to be taken into account.               |
| T   | time-lag          | for high inrush currents that only decay slowly (transformers)                                                                                       |
| TT  | long time-lag     | for very high and long-lasting inrush currents (motors).                                                                                             |

### 6 Normen

Neben einer Vielzahl spezieller nationaler Standards kommt weltweit in erster Linie IEC 60127 zur Anwendung. Sie gliedert sich in einen allgemeinen Teil, in Teile, die die einzelnen Sicherungsausführungen beinhalten, einem Teil für Sicherungshalter, eine Festlegung zur Gütebestätigung sowie einen Anwendungsleitfaden. Das deutschsprachige Äquivalent dieser internationalen Norm ist VDE 0820.

### 6 Standards

Besides several specific national standards, the principal standard applied worldwide is IEC 60127. It is divided into one general part, parts dealing with the individual fuse designs, one part for fuse-holders, one specification for quality confirmation as well as one user's manual. The German-language equivalent of this International Standard is VDE 0820.

In den nordamerikanischen Ländern ist die Bezugsnorm für Geräteschutzsicherungen UL 248. Besondere Vorsicht ist geboten bei der Konvertierung der Bemessungsströme von IEC 60127 zu denen nach UL 248 (siehe Bild 1).

In the North American countries, the reference standard for miniature fuses is UL 248. Special care is required in converting the rated currents of IEC 60127 into those according to UL 248 (see figure 1).

## 7 Applikationen

### 7.1 Unterschiedliche Definition der Bemessungsströme in den internationalen Normen

Grundsätzlich müssen zwei unterschiedliche Bemessungen des Dauerstroms berücksichtigt werden, die eine direkte Konvertierung der Sicherungseinsätze nach IEC 60127 und UL 248-14 nicht zulassen.

a) Dauerstrombemessung nach IEC 60127

$$I_n \geq I_b$$

b) Dauerstrombemessung nach UL 248-14

$$I_n \geq I_b / 0,7$$

## 7 Applications

### 7.1 Different definitions of the Rated Currents in the International Standards

In principle, two different ratings of the continuous current must be taken into account, preventing direct conversion of the fuse-links according to IEC 60127 and UL 248-14.

a) Continuous current rating according to IEC 60127

$$I_n \geq I_b$$

b) Continuous current rating according to UL 248-14

$$I_n \geq I_b / 0,7$$

Bild 1 ermöglicht die jeweilige Übertragung der Bemessungsströme zwischen den beiden Normen.

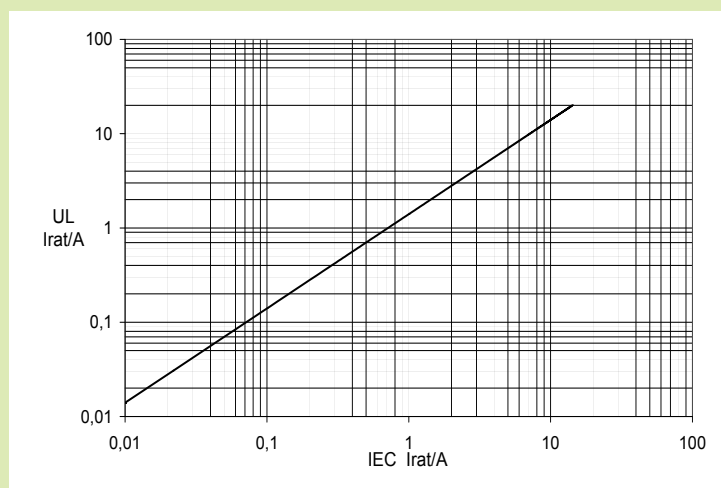


Figure 1 enables appropriate conversion of the rated currents between the two standards.

Bild / Figure 1

### 7.2 Betrieb bei Kleinspannung $U_b \ll U_{rat}$

Sicherungseinsätze können ohne weiteres mit Spannungen unterhalb ihrer Bemessungsspannung betrieben werden. Besonders bei sehr niedrigen Bemessungsströmen, muss der Spannungsfall der Sicherungseinsätze (Innenwiderstand) berücksichtigt werden.

### 7.2 Operation at extra-Low-Voltage $U_b \ll U_{rat}$

Fuse-links can operate without difficulty at voltages below their rated voltage. The voltage drop of the fuse-links (internal resistance) must be taken into consideration, particularly at very low rated currents.

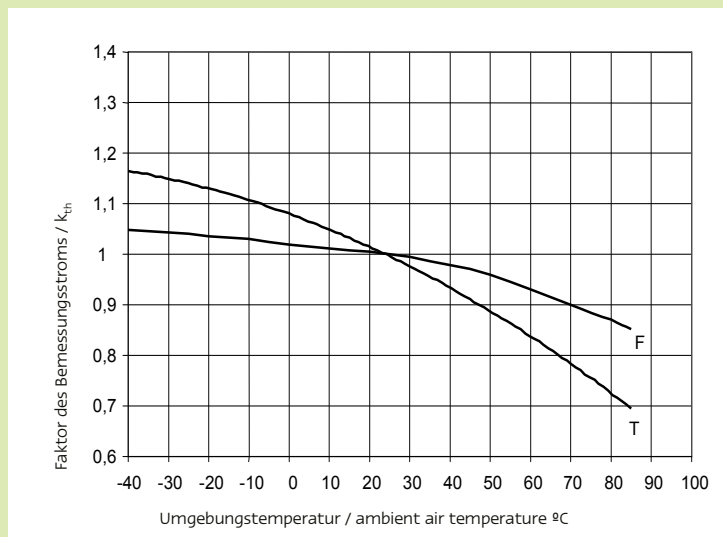
### 7.3 Betrieb bei erhöhten Umgebungstemperaturen

Sicherungseinsätze sind entsprechend den Normvorgaben für eine Temperatur von 23 °C ausgelegt. Der Einbau in einem geschlossenen Sicherungshalter sowie benachbarte Wärmequellen können den Bemessungsstrom des Sicherungseinsatzes verändern.

### 7.3 Operation at raised ambient temperatures

Fuse-links are designed for a temperature of 23 °C, as prescribed in the standards. Installation in an enclosed fuse-holder or neighbouring heat sources can change the rated current of the fuse-link.

Anhand Bild 2 kann die Verschiebung des Bemessungsstroms bei unterschiedlichen Umgebungstemperaturen ermittelt werden.



The shift in the rated current at various ambient temperatures can be determined with reference to Figure 2.

Bild / Figure 2

### 7.4 Pulsbelastungen

Treten in einem zu schützenden Stromkreis Pulsbelastungen auf, muss dies bei der Zuordnung des Sicherungseinsatzes, insbesondere seines Schmelzintegrals  $I^2t_{cs}$ , berücksichtigt werden. Auf Basis umfangreicher eigener Testreihen in Bezug auf Pulshöhe, Pulsdauer und Häufigkeit können Reduktionsfaktoren zur Verfügung gestellt werden.

### 7.4 Pulse loads

If pulse loads arise in an electrical circuit to be protected, then that must be taken into consideration when assigning a fuse-link, particularly the latter's pre-arcing integral  $I^2t_s$ . Reduction factors can be provided on the basis of extensive series of in-house tests relating to pulse amplitude, pulse duration and frequency of occurrence.

### 7.5 Schutz von Halbleiterbauelementen

Beim Schutz von Bauelementen der Leistungselektronik wird der  $I^2t$ -Wert des Sicherungseinsatzes auf das Grenzlaster-Integral des zu schützenden Bauteils abgestimmt.

### 7.5 Protection of semiconductor components

When protecting power electronics components, the  $I^2t$  value of the fuse-link is adjusted to the energy pulse (or  $I^2t$  value) of the component to be protected.

### 7.6 Leistungsaufnahme des G-Sicherungshalters

Die maximale Leistungsaufnahme des Sicherungshalters darf von der Leistungsabgabe des ausgewählten Sicherungseinsatzes nicht überschritten werden. Die Kontaktwiderstände und die Einbauverhältnisse sind hierbei zusätzlich zu berücksichtigen.

### 7.6 Power acceptance of the miniature Fuse-Holder

The maximum power acceptance of the fuse-holder must not be exceeded by the Power dissipation of the fuse-link selected. Contact resistances and assembly conditions shall additionally be taken into account here.

## 8 Sicherheit durch Qualität

Zur Sicherstellung der Qualitätsforderungen praktiziert SIBA das dokumentierte Qualitätsmanagement-System (QM-System) auf der Grundlage der internationalen Norm DIN EN ISO 9001. Das Umwelt-Management-System nach DIN EN ISO 14001 regelt die Planung, Umsetzung und Kontrolle des Umweltschutzes im Unternehmen.

## 8 Safety through Quality

In order to ensure compliance with the quality requirements, SIBA practices the documented quality management system (QM system) on the basis of the International Standard DIN EN ISO 9001. The environmental management system according to DIN EN ISO 14001 regulates the planning, implementation and supervision of environmental protection in the company.

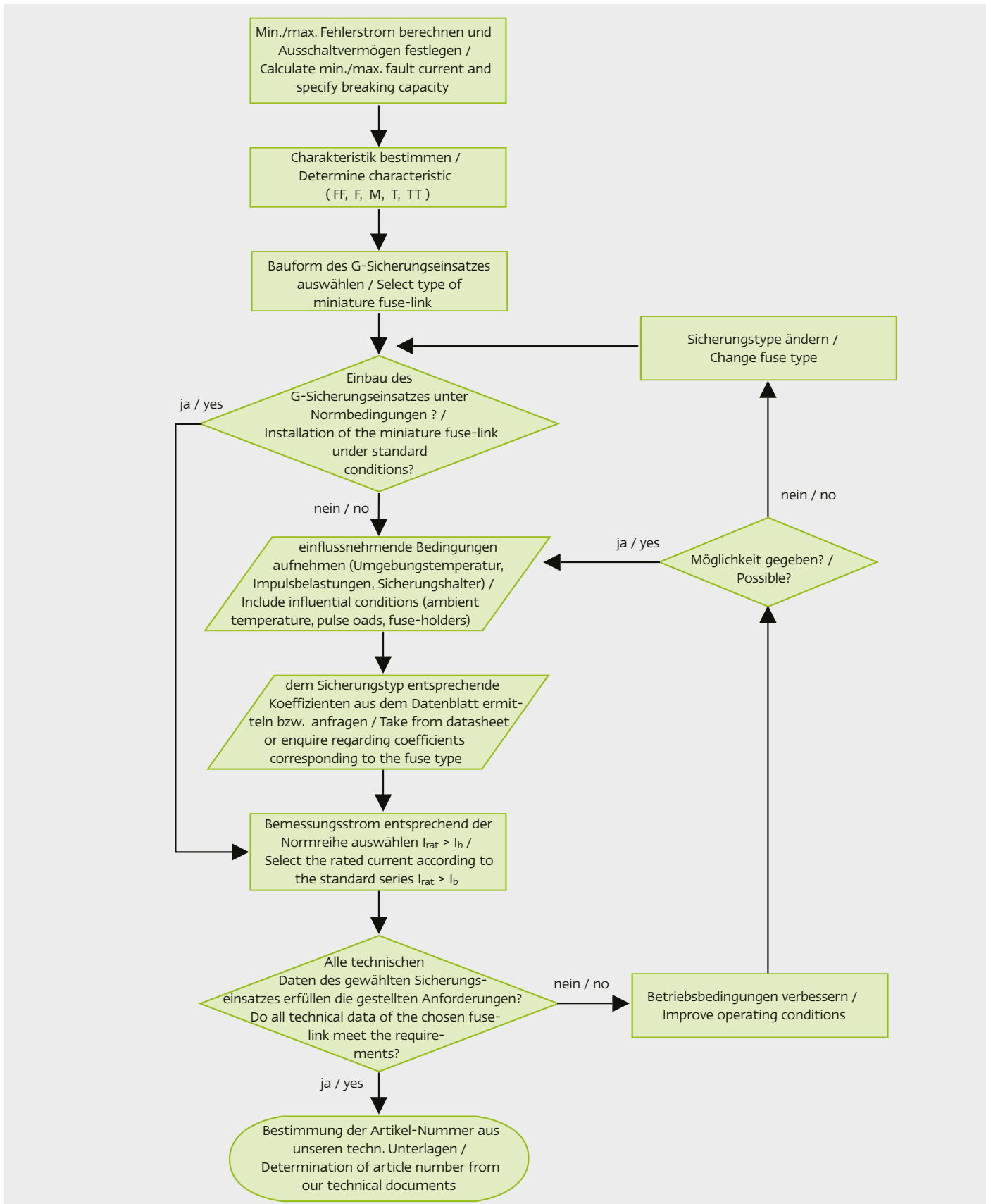
## 9 Auswahldiagramm

siehe nächste Seite

## 9 Selection diagram

see next page

## Auswahldiagramm / Selection diagram





# Kleinstsicherungen / Sub-miniature Fuses

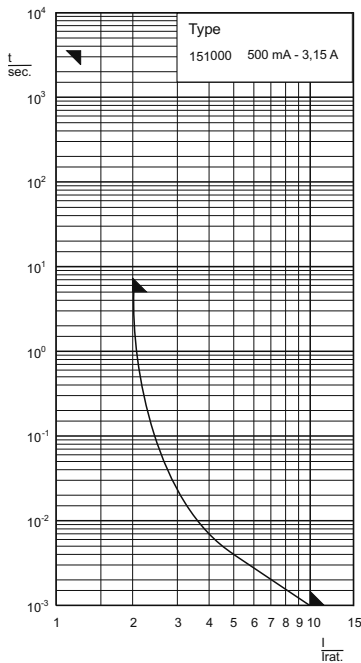
Chip-Sicherungen / Chip Fuses  
SMD-Sicherungen / SMD Fuses  
Kleinstsicherungen / Sub-miniature Fuses

Type  
**151000**

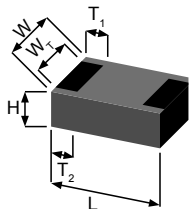
**CAUS**  
E167295



Zeit/Strom-Kennlinien  
Time-Current Characteristics

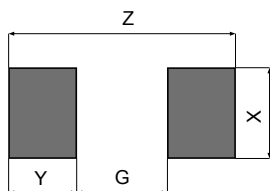


Abmessungen  
Dimensions



|                |                       |
|----------------|-----------------------|
| H              | 0,32 ± 0,05 mm        |
| L              | 1,0 ± 0,05 mm         |
| W              | 0,5 ± 0,05 mm         |
| W <sub>T</sub> | > 75% von/of W        |
| T <sub>1</sub> | 0,2 + 0,1 / - 0,15 mm |
| T <sub>2</sub> | 0,2 ± 0,1 mm          |

Empfohlene Anschlussflächen  
Recommended pad layout



|   | Reflow  | Reflow |
|---|---------|--------|
| G | 0,25 mm |        |
| X | 0,55 mm |        |
| Y | 0,6 mm  |        |
| Z | 1,45 mm |        |

**Aufbau / Construction**

Keramiksubstrat / ceramic substrate  
Schmelzleiter gedruckt / printed fuse-element

Lötwärmebeständigkeit /  
resistance to soldering heat: 260 °C, 10 s (Lötbad / solder bath)  
(nach IEC 60068-2-58 / to IEC 60068-2-58) 260 °C, 10 s (reflow)

Vibration / vibration: IEC 60068-2-6  
Isolationswiderstand / insulation resistance: IEC 60127-4

**Schmelzeitgrenzwerte / Fusing time limits**

| Bemessungsstrom<br>Rated Current | 1,25 I <sub>n</sub> | 2 I <sub>n</sub> | 2,75 I <sub>n</sub> |      | 4 I <sub>n</sub> |      | 10 I <sub>n</sub> |      |
|----------------------------------|---------------------|------------------|---------------------|------|------------------|------|-------------------|------|
|                                  | min.                | max.             | min.                | max. | min.             | max. | min.              | max. |
| 500 mA - 3,15 A                  | 1 h                 | 1 s              | -                   | -    | -                | -    | -                 | 1 ms |

|           |                           |      |                                       |
|-----------|---------------------------|------|---------------------------------------|
| UL 248-14 | <b>0402</b><br>1 x 0,5 mm | 32 V | FF<br>superflink<br>very quick acting |
|-----------|---------------------------|------|---------------------------------------|

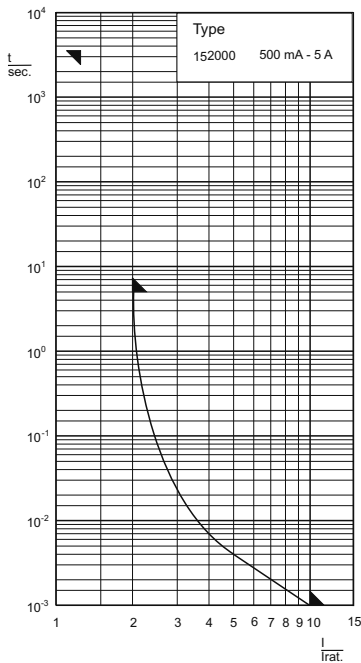
| Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking<br>Capacity | Spannungs-<br>fall<br>Voltage Drop | Kalt-<br>widerstand<br>Cold<br>Resistance | Schmelz-<br>integral<br>I <sup>2</sup> t <sub>s</sub> Value | Kenn-<br>zeichnung<br>Marking | Approbationen<br>Approvals |
|----------------------------|---------------------------------------|----------------------------------------------------------------|------------------------------------|-------------------------------------------|-------------------------------------------------------------|-------------------------------|----------------------------|
|                            |                                       |                                                                | mV                                 | mΩ                                        | A's                                                         |                               | UL rec.                    |
| 151000.0,5                 | 500 mA                                | 50 A @ DC 32 V                                                 | 420                                | 640                                       | 0,0009                                                      |                               | ✓                          |
| 151000.0,63                | 630 mA                                | 50 A @ DC 32 V                                                 | 331                                | 400                                       | 0,0014                                                      |                               | ✓                          |
| 151000.0,75                | 750 mA                                | 50 A @ DC 32 V                                                 | 275                                | 280                                       | 0,002                                                       |                               | ✓                          |
| 151000.0,8                 | 800 mA                                | 50 A @ DC 32 V                                                 | 231                                | 220                                       | 0,0023                                                      |                               | ✓                          |
| 151000.1                   | 1 A                                   | 50 A @ DC 32 V                                                 | 184                                | 140                                       | 0,0028                                                      |                               | ✓                          |
| 151000.1,25                | 1,25 A                                | 50 A @ DC 32 V                                                 | 159                                | 97                                        | 0,0039                                                      |                               | ✓                          |
| 151000.1,5                 | 1,5 A                                 | 50 A @ DC 32 V                                                 | 146                                | 74                                        | 0,0059                                                      |                               | ✓                          |
| 151000.1,6                 | 1,6 A                                 | 50 A @ DC 32 V                                                 | 136                                | 65                                        | 0,0065                                                      |                               | ✓                          |
| 151000.1,75                | 1,75 A                                | 50 A @ DC 32 V                                                 | 124                                | 54                                        | 0,0077                                                      |                               | ✓                          |
| 151000.2                   | 2 A                                   | 50 A @ DC 32 V                                                 | 115                                | 44                                        | 0,0101                                                      |                               | ✓                          |
| 151000.2,5                 | 2,5 A                                 | 50 A @ DC 32 V                                                 | 107                                | 33                                        | 0,0157                                                      |                               |                            |
| 151000.3                   | 3 A                                   | 50 A @ DC 32 V                                                 | 95                                 | 24                                        | 0,0227                                                      |                               |                            |
| 151000.3,15                | 3,15 A                                | 50 A @ DC 32 V                                                 | 90                                 | 22                                        | 0,025                                                       |                               |                            |

| Type       | Abk.<br>Abbr.    | Beschreibung<br>Description                   |
|------------|------------------|-----------------------------------------------|
| 151000     | GT-1K            | 1.000 Stück gegurtet / 1.000 pieces on tape   |
|            | GT-5K            | 5.000 Stück gegurtet / 5.000 pieces on tape   |
|            | GT-10K           | 10.000 Stück gegurtet / 10.000 pieces on tape |
| z.B./ e.g. | 151000.0,75GT-1K |                                               |

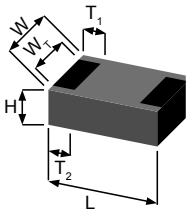
**Type**  
**152000**

  
E167295


Zeit/Strom-Kennlinien  
Time-Current Characteristics

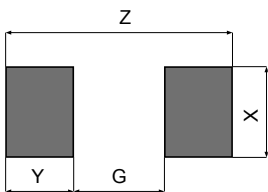


Abmessungen  
Dimensions



|                |                      |
|----------------|----------------------|
| H              | 0,45 +0,1 / -0,05 mm |
| L              | 1,55 ±0,05 mm        |
| W              | 0,85 ±0,1 mm         |
| W <sub>T</sub> | > 75% von/of W       |
| T <sub>1</sub> | 0,3 +0,15 / -0,2 mm  |
| T <sub>2</sub> | 0,3 +0,15 / -0,2 mm  |

Empfohlene Anschlussflächen  
Recommended pad layout



| Lötung<br>Soldering | Reflow<br>Reflow | Welle<br>Wave |
|---------------------|------------------|---------------|
| G                   | 0,5 mm           | 0,5 mm        |
| X                   | 0,95 mm          | 1,1 mm        |
| Y                   | 0,95 mm          | 1,2 mm        |
| Z                   | 2,4 mm           | 2,9 mm        |

### Aufbau / Construction

Keramiksubstrat / ceramic substrate  
Schmelzleiter gedruckt / printed fuse-element

Lötwärmebeständigkeit /

resistance to soldering heat:  
(nach IEC 60068-2-58 / to IEC 60068-2-58)

260 °C, 10 s (Lötbad / solder bath)

260 °C, 10 s (reflow)

Vibration / vibration:

IEC 60068-2-6

Isolationswiderstand / insulation resistance

IEC 60127-4

### Schmelzeitgrenzwerte / Fusing time limits

| Bemessungsstrom<br>Rated Current | 1,25 I <sub>n</sub> |      | 2 I <sub>n</sub> |      | 2,75 I <sub>n</sub> |      | 4 I <sub>n</sub> |      | 10 I <sub>n</sub> |      |
|----------------------------------|---------------------|------|------------------|------|---------------------|------|------------------|------|-------------------|------|
|                                  | min.                | max. | min.             | max. | min.                | max. | min.             | max. | min.              | max. |
| 500 mA - 5 A                     | 1 h                 | 5 s  | -                | -    | -                   | -    | -                | -    | -                 | 1 ms |

|                          |                               |      |                                       |
|--------------------------|-------------------------------|------|---------------------------------------|
| UL 248-14<br>IEC 60127-4 | <b>0603</b><br>1,55 x 0,85 mm | 32 V | FF<br>superflink<br>very quick acting |
|--------------------------|-------------------------------|------|---------------------------------------|

| Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking<br>Capacity | Spannungsfall<br>Voltage Drop | Kalt-<br>widerstand<br>Cold<br>Resistance | Schmelz-<br>integral<br>I <sup>2</sup> t <sub>s</sub> Value | Kenn-<br>zeichnung<br>Marking | Approbationen<br>Approvals |     |
|----------------------------|---------------------------------------|----------------------------------------------------------------|-------------------------------|-------------------------------------------|-------------------------------------------------------------|-------------------------------|----------------------------|-----|
|                            |                                       |                                                                | mV                            | mΩ                                        | A's                                                         |                               | UL rec.                    | VDE |
| 152000.0,5                 | 500 mA                                | 50 A @ DC 32 V <sup>1)</sup>                                   | 361                           | 550                                       | 0,0009                                                      | F                             | ✓                          | ✓   |
| 152000.0,63                | 630 mA                                | 50 A @ DC 32 V                                                 | 331                           | 400                                       | 0,0014                                                      | CT                            | ✓                          |     |
| 152000.0,75                | 750 mA                                | 50 A @ DC 32 V                                                 | 258                           | 262                                       | 0,002                                                       | G                             | ✓                          |     |
| 152000.0,8                 | 800 mA                                | 50 A @ DC 32 V                                                 | 249                           | 237                                       | 0,0023                                                      | CV                            | ✓                          |     |
| 152000.1                   | 1 A                                   | 50 A @ DC 32 V <sup>1)</sup>                                   | 223                           | 170                                       | 0,0028                                                      | H                             | ✓                          | ✓   |
| 152000.1,25                | 1,25 A                                | 50 A @ DC 32 V                                                 | 180                           | 110                                       | 0,0039                                                      | J                             | ✓                          |     |
| 152000.1,5                 | 1,5 A                                 | 50 A @ DC 32 V                                                 | 155                           | 79                                        | 0,0059                                                      | K                             | ✓                          |     |
| 152000.1,6                 | 1,6 A                                 | 50 A @ DC 32 V <sup>1)</sup>                                   | 159                           | 76                                        | 0,0065                                                      | EF                            | ✓                          | ✓   |
| 152000.1,75                | 1,75 A                                | 50 A @ DC 32 V                                                 | 138                           | 60                                        | 0,0077                                                      | L                             | ✓                          |     |
| 152000.2                   | 2 A                                   | 50 A @ DC 32 V <sup>1)</sup>                                   | 150                           | 57                                        | 0,0101                                                      | N                             | ✓                          | ✓   |
| 152000.2,5                 | 2,5 A                                 | 50 A @ DC 32 V                                                 | 151                           | 37                                        | 0,0157                                                      | O                             | ✓                          |     |
| 152000.3                   | 3 A                                   | 50 A @ DC 32 V                                                 | 126                           | 32                                        | 0,0227                                                      | P                             | ✓                          |     |
| 152000.3,15                | 3,15 A                                | 50 A @ DC 32 V <sup>1)</sup>                                   | 120                           | 29                                        | 0,025                                                       | EL                            | ✓                          | ✓   |
| 152000.3,5                 | 3,5 A                                 | 50 A @ DC 32 V                                                 | 106                           | 23                                        | 0,0308                                                      | R                             | ✓                          |     |
| 152000.4                   | 4 A                                   | 50 A @ DC 32 V                                                 | 100                           | 19                                        | 0,0403                                                      | S                             | ✓                          |     |
| 152000.5                   | 5 A                                   | 50 A @ DC 32 V                                                 | 85                            | 13                                        | 0,2275                                                      | T                             |                            |     |

<sup>1)</sup> 50 A @ DC 50 V mit/with VDE Approbation/approval

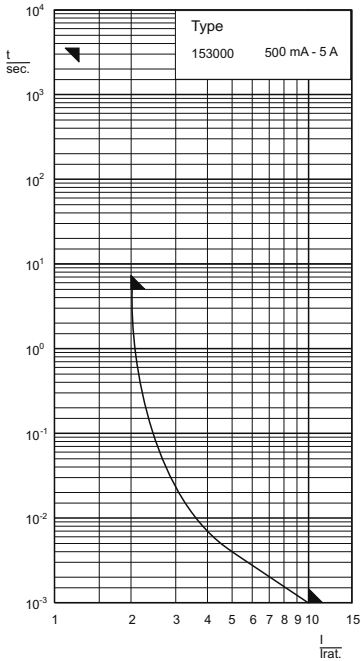
| Type       | Abk.<br>Abbr. | Beschreibung<br>Description                   |
|------------|---------------|-----------------------------------------------|
| 152000     | GT-1K         | 1.000 Stück gegurtet / 1.000 pieces on tape   |
|            | GT-5K         | 5.000 Stück gegurtet / 5.000 pieces on tape   |
|            | GT-20K        | 20.000 Stück gegurtet / 20.000 pieces on tape |
| z.B./ e.g. |               | 152000.3,15GT-1K                              |

Type  
**153000**

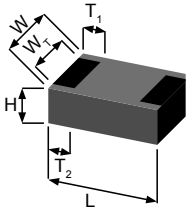
**GAUS**  
E167295



Zeit/Strom-Kennlinien  
Time-Current Characteristics

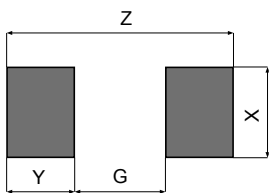


Abmessungen  
Dimensions



|                |                      |
|----------------|----------------------|
| H              | 0,45 +0,1 / -0,05 mm |
| L              | 2,0 ±0,1 mm          |
| W              | 1,25 ±0,15 mm        |
| W <sub>1</sub> | > 75% von/of W       |
| T <sub>1</sub> | 0,4 +0,1 / -0,2 mm   |
| T <sub>2</sub> | 0,4 +0,1 / -0,2 mm   |

Empfohlene Anschlussflächen  
Recommended pad layout



| Lötung<br>Soldering | Reflow<br>Reflow | Welle<br>Wave |
|---------------------|------------------|---------------|
| G                   | 0,65 mm          | 0,65 mm       |
| X                   | 1,4 mm           | 1,5 mm        |
| Y                   | 1,1 mm           | 1,4 mm        |
| Z                   | 2,85 mm          | 3,45 mm       |

**Aufbau / Construction**

Keramiksubstrat / ceramic substrate  
Schmelzleiter gedruckt / printed fuse-element

Lötwärmebeständigkeit /

resistance to soldering heat:  
(nach IEC 60068-2-58 / to IEC 60068-2-58)

260 °C, 10 s (Lötbad / solder bath)  
260 °C, 10 s (reflow)

Vibration / vibration:

IEC 60068-2-6

Isolationswiderstand / insulation resistance

IEC 60127-4

**Schmelzeitgrenzwerte / Fusing time limits**

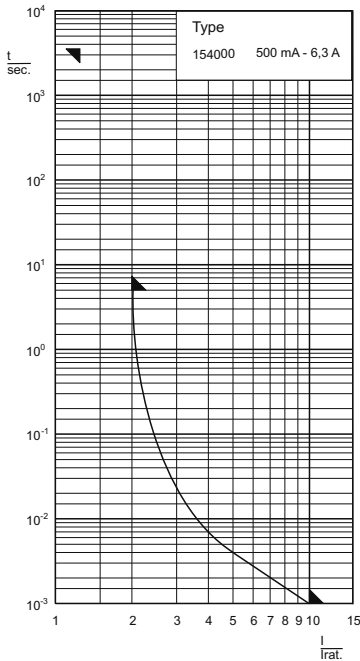
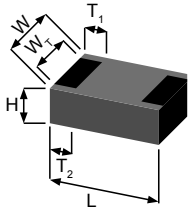
| Bemessungsstrom<br>Rated Current | 1,25 I <sub>n</sub> | 2 I <sub>n</sub> | 2,75 I <sub>n</sub> |      | 4 I <sub>n</sub> |      | 10 I <sub>n</sub> |      |
|----------------------------------|---------------------|------------------|---------------------|------|------------------|------|-------------------|------|
|                                  | min.                | max.             | min.                | max. | min.             | max. | min.              | max. |
| 500 mA - 5 A                     | 1 h                 | 5 s              | -                   | -    | -                | -    | -                 | 1 ms |

|                          |                            |      |                                       |
|--------------------------|----------------------------|------|---------------------------------------|
| UL 248-14<br>IEC 60127-4 | <b>0805</b><br>2 x 1,25 mm | 32 V | FF<br>superflink<br>very quick acting |
|--------------------------|----------------------------|------|---------------------------------------|

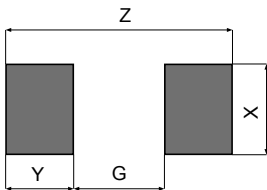
| Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking<br>Capacity | Spannungsfall<br>Voltage Drop | Kalt-<br>widerstand<br>Cold<br>Resistance | Schmelz-<br>integral<br>I <sup>2</sup> t <sub>s</sub> Value | Kenn-<br>zeichnung<br>Marking | Approbationen<br>Approvals |
|----------------------------|---------------------------------------|----------------------------------------------------------------|-------------------------------|-------------------------------------------|-------------------------------------------------------------|-------------------------------|----------------------------|
|                            |                                       |                                                                | mV                            | mΩ                                        | A <sup>2</sup> s                                            |                               | UL rec.                    |
| 153000.0,5                 | 500 mA                                | 50 A @ DC 32 V                                                 | 374                           | 570                                       | 0,0009                                                      | F                             | ✓                          |
| 153000.0,63                | 630 mA                                | 50 A @ DC 32 V                                                 | 347                           | 420                                       | 0,0014                                                      | CT                            | ✓                          |
| 153000.0,75                | 750 mA                                | 50 A @ DC 32 V                                                 | 280                           | 285                                       | 0,0021                                                      | G                             | ✓                          |
| 153000.0,8                 | 800 mA                                | 50 A @ DC 32 V                                                 | 262                           | 250                                       | 0,0023                                                      | CV                            | ✓                          |
| 153000.1                   | 1 A                                   | 50 A @ DC 32 V                                                 | 243                           | 185                                       | 0,0028                                                      | H                             | ✓                          |
| 153000.1,25                | 1,25 A                                | 50 A @ DC 32 V                                                 | 205                           | 125                                       | 0,004                                                       | J                             | ✓                          |
| 153000.1,5                 | 1,5 A                                 | 50 A @ DC 32 V                                                 | 171                           | 87                                        | 0,0059                                                      | K                             | ✓                          |
| 153000.1,6                 | 1,6 A                                 | 50 A @ DC 32 V                                                 | 164                           | 78                                        | 0,0065                                                      | EF                            | ✓                          |
| 153000.1,75                | 1,75 A                                | 50 A @ DC 32 V                                                 | 161                           | 70                                        | 0,0077                                                      | L                             | ✓                          |
| 153000.2                   | 2 A                                   | 50 A @ DC 32 V                                                 | 176                           | 67                                        | 0,0101                                                      | N                             | ✓                          |
| 153000.2,5                 | 2,5 A                                 | 50 A @ DC 32 V                                                 | 131                           | 40                                        | 0,0157                                                      | O                             | ✓                          |
| 153000.3                   | 3 A                                   | 50 A @ DC 32 V                                                 | 134                           | 34                                        | 0,0227                                                      | P                             | ✓                          |
| 153000.3,15                | 3,15 A                                | 50 A @ DC 32 V                                                 | 128                           | 31                                        | 0,025                                                       | EL                            | ✓                          |
| 153000.3,5                 | 3,5 A                                 | 50 A @ DC 32 V                                                 | 119                           | 26                                        | 0,0308                                                      | R                             | ✓                          |
| 153000.4                   | 4 A                                   | 50 A @ DC 32 V                                                 | 105                           | 20                                        | 0,0403                                                      | S                             | ✓                          |

| Type                        | Abk.<br>Abbr. | Beschreibung<br>Description                   |
|-----------------------------|---------------|-----------------------------------------------|
| 153000                      | GT-1K         | 1.000 Stück gegurtet / 1.000 pieces on tape   |
|                             | GT-5K         | 5.000 Stück gegurtet / 5.000 pieces on tape   |
|                             | GT-20K        | 20.000 Stück gegurtet / 20.000 pieces on tape |
| z.B./ e.g. 153000.1,75GT-1K |               |                                               |

**Type**  
**154000**
**CE** **US**  
 E167295

 Zeit/Strom-Kennlinien  
 Time-Current Characteristics

 Abmessungen  
 Dimensions


|                |                     |
|----------------|---------------------|
| H              | 0,55 ± 0,1 mm       |
| L              | 3,2 ± 0,1 / -0,2 mm |
| W              | 1,6 ± 0,15 mm       |
| W <sub>T</sub> | > 75% von/of W      |
| T <sub>1</sub> | 0,5 ± 0,25 mm       |
| T <sub>2</sub> | 0,3 ± 0,25 mm       |

 Empfohlene Anschlussflächen  
 Recommended pad layout


| Lötung<br>Soldering | Reflow<br>Reflow | Welle<br>Wave |
|---------------------|------------------|---------------|
| G                   | 1,5 mm           | 1,5 mm        |
| X                   | 1,75 mm          | 1,9 mm        |
| Y                   | 1,25 mm          | 1,6 mm        |
| Z                   | 4,0 mm           | 4,7 mm        |

**Aufbau / Construction**

Keramiksubstrat / ceramic substrate

Schmelzleiter gedruckt / printed fuse-element

Lötwärmebeständigkeit /

resistance to soldering heat:

(nach IEC 60068-2-58 / to IEC 60068-2-58)

260 °C, 10 s (Lötbad / solder bath)

260 °C, 10 s (reflow)

Vibration / vibration:

IEC 60068-2-6

Isolationswiderstand / insulation resistance

IEC 60127-4

**Schmelzeitgrenzwerte / Fusing time limits**

| Bemessungsstrom<br>Rated Current | 1 I <sub>n</sub> | 1,25 I <sub>n</sub> | 2 I <sub>n</sub> |      | 3 I <sub>n</sub> |        | 10 I <sub>n</sub> |      |
|----------------------------------|------------------|---------------------|------------------|------|------------------|--------|-------------------|------|
|                                  | min.             | min.                | min.             | max. | min.             | max.   | min.              | max. |
| 250 mA - 375 mA                  | 1 h              | -                   | -                | 5 s  | -                | 200 ms | -                 | -    |
| 500 mA - 6,3 A                   | -                | 1 h                 | -                | 5 s  | -                | -      | -                 | 1 ms |

|                          |                             |      |                                       |
|--------------------------|-----------------------------|------|---------------------------------------|
| UL 248-14<br>IEC 60127-4 | <b>1206</b><br>3,2 x 1,6 mm | 63 V | FF<br>superflink<br>very quick acting |
|--------------------------|-----------------------------|------|---------------------------------------|

| Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking<br>Capacity | Spannungsfall<br>Voltage Drop | Kalt-<br>widerstand<br>Cold<br>Resistance | Schmelz-<br>integral<br>I <sup>2</sup> t <sub>s</sub> Value | Kenn-<br>zeichnung<br>Marking | Approbationen<br>Approvals |
|----------------------------|---------------------------------------|----------------------------------------------------------------|-------------------------------|-------------------------------------------|-------------------------------------------------------------|-------------------------------|----------------------------|
|                            |                                       |                                                                | mV                            | mΩ                                        | A <sup>2</sup> s                                            |                               | UL rec. VDE                |
| 154000.0,25                | 250 mA                                | <sup>1)</sup>                                                  | 310                           | 880                                       | 0.0001                                                      |                               | listed                     |
| 154000.0,375               | 375 mA                                | <sup>1)</sup>                                                  | 260                           | 470                                       | 0.0004                                                      |                               | listed                     |
| 154000.0,5                 | 500 mA                                | 50 A @ DC 63 V <sup>2)</sup>                                   | 433                           | 660                                       | 0.0009                                                      | F                             | ✓ ✓                        |
| 154000.0,63                | 630 mA                                | 50 A @ DC 63 V                                                 | 372                           | 450                                       | 0.0014                                                      | CT                            | ✓                          |
| 154000.0,75                | 750 mA                                | 50 A @ DC 63 V                                                 | 325                           | 330                                       | 0.0022                                                      | G                             | ✓                          |
| 154000.0,8                 | 800 mA                                | 50 A @ DC 63 V                                                 | 273                           | 260                                       | 0.0023                                                      | CV                            | ✓                          |
| 154000.1                   | 1 A                                   | 50 A @ DC 63 V <sup>2)</sup>                                   | 262                           | 200                                       | 0.0028                                                      | H                             | ✓ ✓                        |
| 154000.1,25                | 1,25 A                                | 50 A @ DC 63 V                                                 | 230                           | 140                                       | 0.0041                                                      | J                             | ✓                          |
| 154000.1,5                 | 1,5 A                                 | 50 A @ DC 63 V                                                 | 207                           | 105                                       | 0.0059                                                      | K                             | ✓                          |
| 154000.1,6                 | 1,6 A                                 | 50 A @ DC 63 V <sup>2)</sup>                                   | 168                           | 80                                        | 0.0066                                                      | EF                            | ✓ ✓                        |
| 154000.1,75                | 1,75 A                                | 50 A @ DC 63 V                                                 | 174                           | 76                                        | 0.0077                                                      | L                             | ✓                          |
| 154000.2                   | 2 A                                   | 50 A @ DC 63 V <sup>2)</sup>                                   | 181                           | 69                                        | 0.0102                                                      | N                             | ✓ ✓                        |
| 154000.2,5                 | 2,5 A                                 | 50 A @ DC 63 V                                                 | 161                           | 49                                        | 0.0159                                                      | O                             | ✓                          |
| 154000.3                   | 3 A                                   | 50 A @ DC 63 V                                                 | 173                           | 44                                        | 0.0229                                                      | P                             | ✓                          |
| 154000.3,15                | 3,15 A                                | 50 A @ DC 63 V <sup>2)</sup>                                   | 153                           | 37                                        | 0.0251                                                      | EL                            | ✓ ✓                        |
| 154000.3,5                 | 3,5 A                                 | 50 A @ DC 63 V                                                 | 161                           | 35                                        | 0.0310                                                      | R                             | ✓                          |
| 154000.4                   | 4 A                                   | 50 A @ DC 63 V                                                 | 147                           | 28                                        | 0.0404                                                      | S                             | ✓                          |
| 154000.5                   | 5 A                                   | 50 A @ DC 63 V                                                 | 131                           | 20                                        | 0.2275                                                      | T                             |                            |
| 154000.6,3                 | 6,3 A                                 | 50 A @ DC 63 V                                                 | 116                           | 14                                        | 0.516                                                       | ET                            |                            |

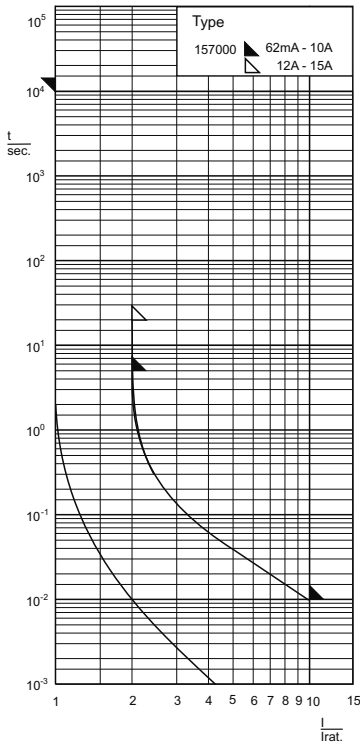
<sup>1)</sup> 50 A @ DC 63 V und 100 A @ AC 125 V

| Type       | Abk.<br>Abbr.   | Beschreibung<br>Description                   |
|------------|-----------------|-----------------------------------------------|
| 154000     | GT-1K           | 1.000 Stück gegurtet / 1.000 pieces on tape   |
|            | GT-5K           | 5.000 Stück gegurtet / 5.000 pieces on tape   |
|            | GT-20K          | 20.000 Stück gegurtet / 20.000 pieces on tape |
| z.B./ e.g. | 154000.6,3GT-5K |                                               |

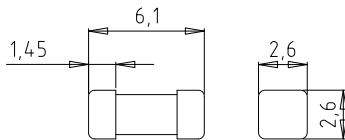
Type  
**157000**



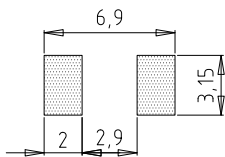
Zeit/Strom-Kennlinien  
Time-Current Characteristics



Abmessungen  
Dimensions



Empfohlene Anschlussflächen  
Recommended pad layout



**Aufbau / Construction**

Isolierkörper / insulating body

Kontaktkappen / contact caps

Lötwärmebeständigkeit /  
resistance to soldering heat:

Keramikkrohr undurchsichtig /

ceramic tube non-transparent

Messing, versilbert / brass, silver-plated

260 °C, 10 s (nach IEC 60068 / to IEC 60068)

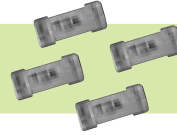
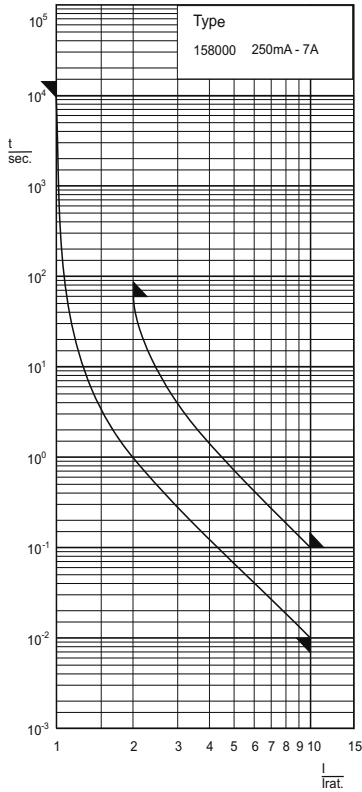
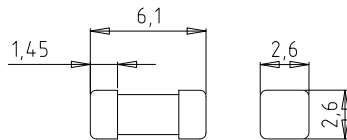
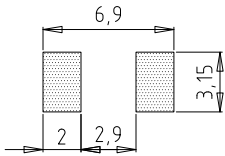
**Schmelzzeitgrenzwerte / Fusing time limits**

| Bemessungsstrom<br>Rated Current | 1 I <sub>n</sub> | 2 I <sub>n</sub> | 2,75 I <sub>n</sub> |      | 4 I <sub>n</sub> |      | 10 I <sub>n</sub> |       |
|----------------------------------|------------------|------------------|---------------------|------|------------------|------|-------------------|-------|
|                                  | min.             | max.             | min.                | max. | min.             | max. | min.              | max.  |
| 62 mA - 10 A                     | 4 h              | 5 s              | -                   | -    | -                | -    | -                 | 10 ms |
| 12 - 15 A                        | 4 h              | 20 s             | -                   | -    | -                | -    | -                 | 10 ms |

|                                   |                     |               |                            |
|-----------------------------------|---------------------|---------------|----------------------------|
| UL 248-14<br>CSA C22.s No. 248.14 | <b>2,6 x 6,1 mm</b> | 125 V<br>65 V | F<br>flick<br>quick acting |
|-----------------------------------|---------------------|---------------|----------------------------|

| Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking<br>Capacity | Spannungsfall<br>Voltage Drop | Kaltwiderstand<br>Cold<br>Resistance | Schmelzintegral<br>I <sup>2</sup> t <sub>90</sub> Value | Approbationen<br>Approvals |
|----------------------------|---------------------------------------|----------------------------------------------------------------|-------------------------------|--------------------------------------|---------------------------------------------------------|----------------------------|
|                            |                                       |                                                                | mV                            | mΩ                                   | A <sup>2</sup> s                                        | UL rec.                    |
| 157000.0,062               | 62 mA                                 | 50 A @ AC/DC 125 V                                             | 600                           | 5500                                 | 0,00019                                                 | ✓                          |
| 157000.0,080               | 80 mA                                 | 50 A @ AC/DC 125 V                                             | 550                           | 4050                                 | 0,00033                                                 | ✓                          |
| 157000.0,1                 | 100 mA                                | 50 A @ AC/DC 125 V                                             | 350                           | 2000                                 | 0,0014                                                  | ✓                          |
| 157000.0,125               | 125 mA                                | 50 A @ AC/DC 125 V                                             | 240                           | 1500                                 | 0,0028                                                  | ✓                          |
| 157000.0,16                | 160 mA                                | 50 A @ AC/DC 125 V                                             | 350                           | 1400                                 | 0,0031                                                  | ✓                          |
| 157000.0,2                 | 200 mA                                | 50 A @ AC/DC 125 V                                             | 250                           | 800                                  | 0,0066                                                  | ✓                          |
| 157000.0,25                | 250 mA                                | 50 A @ AC/DC 125 V                                             | 230                           | 600                                  | 0,011                                                   | ✓                          |
| 157000.0,315               | 315 mA                                | 50 A @ AC/DC 125 V                                             | 210                           | 420                                  | 0,023                                                   | ✓                          |
| 157000.0,375               | 375 mA                                | 50 A @ AC/DC 125 V                                             | 180                           | 300                                  | 0,043                                                   | ✓                          |
| 157000.0,4                 | 400 mA                                | 50 A @ AC/DC 125 V                                             | 180                           | 290                                  | 0,048                                                   | ✓                          |
| 157000.0,5                 | 500 mA                                | 50 A @ AC/DC 125 V                                             | 180                           | 230                                  | 0,073                                                   | ✓                          |
| 157000.0,63                | 630 mA                                | 50 A @ AC/DC 125 V                                             | 180                           | 190                                  | 0,12                                                    | ✓                          |
| 157000.0,75                | 750 mA                                | 50 A @ AC/DC 125 V                                             | 170                           | 160                                  | 0,18                                                    | ✓                          |
| 157000.0,8                 | 800 mA                                | 50 A @ AC/DC 125 V                                             | 160                           | 130                                  | 0,26                                                    | ✓                          |
| 157000.1                   | 1 A                                   | 50 A @ AC/DC 125 V                                             | 150                           | 100                                  | 0,45                                                    | ✓                          |
| 157000.1,25                | 1,25 A                                | 50 A @ AC/DC 125 V                                             | 150                           | 78                                   | 0,68                                                    | ✓                          |
| 157000.1,5                 | 1,5 A                                 | 50 A @ AC/DC 125 V                                             | 150                           | 63                                   | 0,85                                                    | ✓                          |
| 157000.1,6                 | 1,6 A                                 | 50 A @ AC/DC 125 V                                             | 140                           | 58                                   | 1,05                                                    | ✓                          |
| 157000.2                   | 2 A                                   | 50 A @ AC/DC 125 V                                             | 100                           | 37                                   | 0,57                                                    | ✓                          |
| 157000.2,5                 | 2,5 A                                 | 50 A @ AC/DC 125 V                                             | 100                           | 28                                   | 1,1                                                     | ✓                          |
| 157000.3                   | 3 A                                   | 50 A @ AC/DC 125 V                                             | 100                           | 23                                   | 1,5                                                     | ✓                          |
| 157000.3,15                | 3,15 A                                | 50 A @ AC/DC 125 V                                             | 100                           | 21                                   | 1,9                                                     | ✓                          |
| 157000.3,5                 | 3,5 A                                 | 50 A @ AC/DC 125 V                                             | 100                           | 19                                   | 2,5                                                     | ✓                          |
| 157000.4                   | 4 A                                   | 50 A @ AC/DC 125 V                                             | 100                           | 16                                   | 3,3                                                     | ✓                          |
| 157000.5                   | 5 A                                   | 50 A @ AC/DC 125 V                                             | 90                            | 12,5                                 | 6,2                                                     | ✓                          |
| 157000.6,3                 | 6,3 A                                 | 50 A @ AC/DC 125 V                                             | 90                            | 10                                   | 9,1                                                     | ✓                          |
| 157000.7                   | 7 A                                   | 50 A @ AC/DC 125 V                                             | 90                            | 8,6                                  | 11                                                      | ✓                          |
| 157000.10                  | 10 A                                  | 50 A @ AC/DC 65 V                                              | 90                            | 5,9                                  | 27                                                      | ✓                          |
| 157000.12                  | 12 A                                  | 50 A @ AC/DC 65 V                                              | 90                            | 4,9                                  | 45                                                      | ✓                          |

| Type       | Abk.<br>Abbr. | Beschreibung<br>Description                                                 |
|------------|---------------|-----------------------------------------------------------------------------|
| 157000     | -             | 100 Stück / pieces (5 Gurtabschnitte/tape sections von/of 20 Stück/pieces.) |
|            | GT            | 1.500 Stück gegurtet / 1.500 pieces on tape                                 |
| z.B./ e.g. |               | 157000.3,15GT                                                               |

**Type**  
**158000**
**CAUS**  
 E167295

**Zeit/Strom-Kennlinien**  
**Time-Current Characteristics**

**Abmessungen**  
**Dimensions**

**Empfohlene Anschlussflächen**  
**Recommended pad layout**

**Aufbau / Construction**

Isolierkörper / insulating body

Kontaktkappen / contact caps

 Lötwärmebeständigkeit /  
 resistance to soldering heat:

Keramikrohr undurchsichtig /

ceramic tube non-transparent

Messing, versilbert / brass, silver-plated

260 °C, 10 s (nach IEC 60068 / to IEC 60068)

**Schmelzeitgrenzwerte / Fusing time limits**

| Bernessungsstrom<br>Rated Current | 1 I <sub>n</sub> | 2 I <sub>n</sub> | 2,75 I <sub>n</sub> |      | 4 I <sub>n</sub> |      | 10 I <sub>n</sub> |        |
|-----------------------------------|------------------|------------------|---------------------|------|------------------|------|-------------------|--------|
|                                   | min.             | max.             | min.                | max. | min.             | max. | min.              | max.   |
| 250 mA - 7 A                      | 4 h              | 60 s             | -                   | -    | -                | -    | 10 ms             | 100 ms |

|                                   |                     |       |                        |
|-----------------------------------|---------------------|-------|------------------------|
| UL 248-14<br>CSA C22.2 No. 248.14 | <b>2,6 x 6,1 mm</b> | 125 V | T<br>träge<br>time-lag |
|-----------------------------------|---------------------|-------|------------------------|

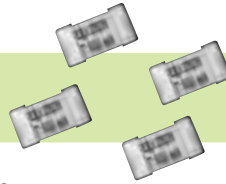
| Artikel-Nr.<br>Article-no. | Bernessungs-<br>strom<br>Rated Current | Bernessungs-<br>Ausschaltvermögen<br>Rated Breaking<br>Capacity | Spannungsfall<br>Voltage Drop | Kaltwiderstand<br>Cold<br>Resistance | Schmelz-<br>integral<br>I <sup>2</sup> t <sub>90</sub> Value | Approbationen<br>Approvals |
|----------------------------|----------------------------------------|-----------------------------------------------------------------|-------------------------------|--------------------------------------|--------------------------------------------------------------|----------------------------|
|                            |                                        |                                                                 | mV                            | mΩ                                   | A's                                                          | UL rec.                    |
| 158000.0,25                | 250 mA                                 | 50 A @ AC/DC 125 V <sup>1)</sup>                                | 280                           | 900                                  | 0,08                                                         | ✓ <sup>1)</sup>            |
| 158000.0,315               | 315 mA                                 | 50 A @ AC/DC 125 V <sup>1)</sup>                                | 260                           | 700                                  | 0,16                                                         | ✓ <sup>1)</sup>            |
| 158000.0,375               | 375 mA                                 | 50 A @ AC/DC 125 V <sup>1)</sup>                                | 230                           | 500                                  | 0,35                                                         | ✓ <sup>1)</sup>            |
| 158000.0,4                 | 400 mA                                 | 50 A @ AC/DC 125 V <sup>1)</sup>                                | 220                           | 450                                  | 0,35                                                         | ✓ <sup>1)</sup>            |
| 158000.0,5                 | 500 mA                                 | 50 A @ AC/DC 125 V <sup>1)</sup>                                | 200                           | 300                                  | 1,0                                                          | ✓ <sup>1)</sup>            |
| 158000.0,63                | 630 mA                                 | 50 A @ AC/DC 125 V <sup>1)</sup>                                | 200                           | 200                                  | 1,4                                                          | ✓ <sup>1)</sup>            |
| 158000.0,75                | 750 mA                                 | 50 A @ AC/DC 125 V <sup>1)</sup>                                | 190                           | 170                                  | 1,5                                                          | ✓ <sup>1)</sup>            |
| 158000.0,8                 | 800 mA                                 | 50 A @ AC/DC 125 V <sup>1)</sup>                                | 170                           | 140                                  | 1,5                                                          | ✓ <sup>1)</sup>            |
| 158000.1                   | 1 A                                    | 50 A @ AC/DC 125 V <sup>1)</sup>                                | 150                           | 120                                  | 4,0                                                          | ✓ <sup>1)</sup>            |
| 158000.1,25                | 1,25 A                                 | 50 A @ AC/DC 125 V <sup>1)</sup>                                | 150                           | 90                                   | 4,6                                                          | ✓ <sup>1)</sup>            |
| 158000.1,5                 | 1,5 A                                  | 50 A @ AC/DC 125 V <sup>1)</sup>                                | 130                           | 60                                   | 4,8                                                          | ✓ <sup>1)</sup>            |
| 158000.1,6                 | 1,6 A                                  | 50 A @ AC/DC 125 V <sup>1)</sup>                                | 130                           | 55                                   | 4,8                                                          | ✓ <sup>1)</sup>            |
| 158000.2                   | 2 A                                    | 50 A @ AC/DC 125 V <sup>1)</sup>                                | 120                           | 45                                   | 8,6                                                          | ✓ <sup>1)</sup>            |
| 158000.2,5                 | 2,5 A                                  | 50 A @ AC/DC 125 V <sup>1)</sup>                                | 120                           | 30                                   | 16                                                           | ✓ <sup>1)</sup>            |
| 158000.3                   | 3 A                                    | 50 A @ AC/DC 125 V <sup>1)</sup>                                | 110                           | 23                                   | 24                                                           | ✓ <sup>1)</sup>            |
| 158000.3,15                | 3,15 A                                 | 50 A @ AC/DC 125 V <sup>1)</sup>                                | 100                           | 20                                   | 24                                                           | ✓ <sup>1)</sup>            |
| 158000.3,5                 | 3,5 A                                  | 50 A @ AC/DC 125 V <sup>1)</sup>                                | 100                           | 18                                   | 38                                                           | ✓ <sup>1)</sup>            |
| 158000.4                   | 4 A                                    | 50 A @ AC/DC 125 V <sup>1)</sup>                                | 100                           | 15                                   | 44                                                           | ✓ <sup>1)</sup>            |
| 158000.5                   | 5 A                                    | 50 A @ AC/DC 125 V <sup>1)</sup>                                | 90                            | 11                                   | 77                                                           | ✓ <sup>1)</sup>            |
| 158000.6,3                 | 6,3 A                                  | 50 A @ AC/DC 125 V <sup>1)</sup>                                | 80                            | 8                                    | 130                                                          | ✓ <sup>1)</sup>            |
| 158000.7                   | 7 A                                    | 50 A @ AC 125 V                                                 | 90                            | 8                                    | 130                                                          |                            |

<sup>1)</sup> 50 A @ AC 125 V und/and 50 A @ DC 65 V mit/with UL rec.

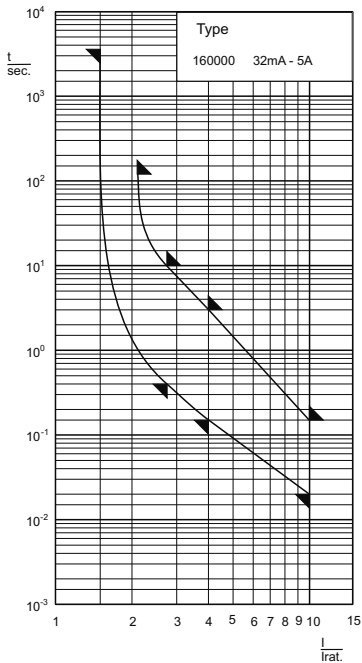
| Type       | Abk.<br>Abbr. | Beschreibung<br>Description                                                 |
|------------|---------------|-----------------------------------------------------------------------------|
| 158000     | -             | 100 Stück / pieces (5 Gurtabschnitte/tape sections von/of 20 Stück/pieces.) |
|            | GT            | 1.500 Stück gegurtet / 1.500 pieces on tape                                 |
| z.B./ e.g. | 158000.2,5GT  |                                                                             |

Type  
**160000**

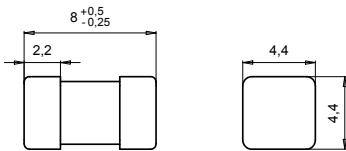
**CAUS**  
E167295



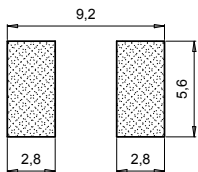
Zeit/Strom-Kennlinien  
Time-Current Characteristics



Abmessungen  
Dimensions



Empfohlene Anschlussflächen  
Recommended pad layout



**Aufbau / Construction**

Isolierkörper / insulating body

Kontaktappen / contact caps

Lötwärmebeständigkeit /  
resistance to soldering heat:

Keramikrohr undurchsichtig /  
ceramic tube non-transparent  
Messing, versilbert / brass, silver-plated

260 °C, 10 s (Lötbad / solder bath)  
(nach IEC 60068-2-58 / to IEC 60068-2-58)

**Schmelzzeitgrenzwerte / Fusing time limits**

| Bernessungsstrom<br>Rated Current | 1,5 I <sub>n</sub> |       | 2,1 I <sub>n</sub> |      | 2,75 I <sub>n</sub> |      | 4 I <sub>n</sub> |        | 10 I <sub>n</sub> |      |
|-----------------------------------|--------------------|-------|--------------------|------|---------------------|------|------------------|--------|-------------------|------|
|                                   | min.               | max.  | min.               | max. | min.                | max. | min.             | max.   | min.              | max. |
| 32 mA - 5 A                       | 1 h                | 2 min | 400 ms             | 10 s | 150 ms              | 3 s  | 20 ms            | 150 ms |                   |      |

|           |                   |       |                        |
|-----------|-------------------|-------|------------------------|
| IEC 60127 | <b>4,5 x 8 mm</b> | 250 V | T<br>träge<br>time-lag |
|-----------|-------------------|-------|------------------------|

| Artikel-Nr.<br>Article-no. | Bernessungs-<br>strom<br>Rated Current | Bernessungs-<br>Ausschaltvermögen<br>Rated Breaking<br>Capacity | Spannungsfall<br>Voltage Drop | Leistungsabgabe<br>Power Dissipa-<br>tion (@1,5 I <sub>n</sub> ) | Schmelzintegral<br>I <sup>2</sup> t <sub>s</sub> Value | Approbationen<br>Approvals |
|----------------------------|----------------------------------------|-----------------------------------------------------------------|-------------------------------|------------------------------------------------------------------|--------------------------------------------------------|----------------------------|
|                            |                                        |                                                                 | mV                            | mW                                                               | A <sup>2</sup> s                                       | UL rec.                    |
| 160000.0,032               | 32 mA                                  | 100 A @ AC 250 V <sup>2)</sup>                                  | 1150                          | 125                                                              | 0,014                                                  | ✓ <sup>1)</sup>            |
| 160000.0,04                | 40 mA                                  | 100 A @ AC 250 V <sup>2)</sup>                                  | 860                           | 150                                                              | 0,013                                                  | ✓ <sup>1)</sup>            |
| 160000.0,05                | 50 mA                                  | 100 A @ AC 250 V <sup>2)</sup>                                  | 800                           | 155                                                              | 0,013                                                  | ✓ <sup>1)</sup>            |
| 160000.0,063               | 63 mA                                  | 100 A @ AC 250 V <sup>2)</sup>                                  | 580                           | 160                                                              | 0,02                                                   | ✓ <sup>1)</sup>            |
| 160000.0,08                | 80 mA                                  | 100 A @ AC 250 V <sup>2)</sup>                                  | 480                           | 165                                                              | 0,035                                                  | ✓ <sup>1)</sup>            |
| 160000.0,1                 | 100 mA                                 | 100 A @ AC 250 V <sup>2)</sup>                                  | 350                           | 170                                                              | 0,06                                                   | ✓ <sup>1)</sup>            |
| 160000.0,125               | 125 mA                                 | 100 A @ AC 250 V <sup>2)</sup>                                  | 300                           | 180                                                              | 0,12                                                   | ✓ <sup>1)</sup>            |
| 160000.0,16                | 160 mA                                 | 100 A @ AC 250 V <sup>2)</sup>                                  | 280                           | 190                                                              | 0,21                                                   | ✓ <sup>1)</sup>            |
| 160000.0,2                 | 200 mA                                 | 100 A @ AC 250 V <sup>2)</sup>                                  | 260                           | 200                                                              | 0,32                                                   | ✓ <sup>1)</sup>            |
| 160000.0,25                | 250 mA                                 | 100 A @ AC 250 V <sup>2)</sup>                                  | 240                           | 220                                                              | 0,5                                                    | ✓ <sup>1)</sup>            |
| 160000.0,315               | 315 mA                                 | 100 A @ AC 250 V <sup>3)</sup>                                  | 220                           | 250                                                              | 0,8                                                    | ✓ <sup>1)</sup>            |
| 160000.0,4                 | 400 mA                                 | 100 A @ AC 250 V <sup>3)</sup>                                  | 200                           | 280                                                              | 1,1                                                    | ✓ <sup>1)</sup>            |
| 160000.0,5                 | 500 mA                                 | 100 A @ AC 250 V <sup>3)</sup>                                  | 190                           | 310                                                              | 1,8                                                    | ✓ <sup>1)</sup>            |
| 160000.0,63                | 630 mA                                 | 100 A @ AC 250 V <sup>3)</sup>                                  | 180                           | 360                                                              | 3,2                                                    | ✓ <sup>1)</sup>            |
| 160000.0,8                 | 800 mA                                 | 100 A @ AC 250 V <sup>3)</sup>                                  | 160                           | 430                                                              | 5,2                                                    | ✓ <sup>1)</sup>            |
| 160000.1                   | 1 A                                    | 100 A @ AC 250 V <sup>3)</sup>                                  | 140                           | 500                                                              | 6,8                                                    | ✓ <sup>1)</sup>            |
| 160000.1,25                | 1,25 A                                 | 100 A @ AC 250 V <sup>3)</sup>                                  | 130                           | 600                                                              | 12                                                     | ✓ <sup>1)</sup>            |
| 160000.1,6                 | 1,6 A                                  | 100 A @ AC 250 V <sup>3)</sup>                                  | 120                           | 730                                                              | 22                                                     | ✓ <sup>1)</sup>            |
| 160000.2                   | 2 A                                    | 100 A @ AC 250 V <sup>3)</sup>                                  | 100                           | 870                                                              | 30                                                     | ✓ <sup>1)</sup>            |
| 160000.2,5                 | 2,5 A                                  | 100 A @ AC 250 V <sup>3)</sup>                                  | 100                           | 1000                                                             | 46                                                     | ✓ <sup>1)</sup>            |
| 160000.3,15                | 3,15 A                                 | 100 A @ AC 250 V <sup>3)</sup>                                  | 100                           | 1200                                                             | 80                                                     | ✓ <sup>1)</sup>            |
| 160000.4                   | 4 A                                    | 100 A @ AC 250 V <sup>3)</sup>                                  | 100                           | 1400                                                             | 130                                                    | ✓ <sup>1)</sup>            |

<sup>1)</sup> 100A @ AC 250V und/and 100 A @ DC 72 V mit/with UL rec.

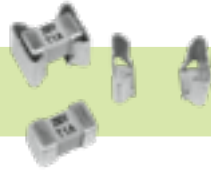
<sup>2)</sup> 1500 A @ DC 24V und/and 100 A @ DC 125 V

<sup>3)</sup> 1500 A @ DC 24V

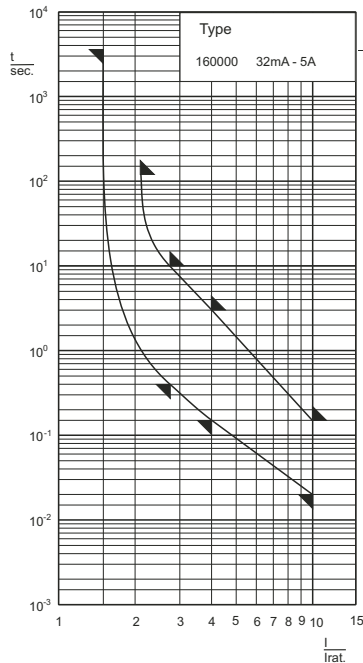
| Type       | Abk.<br>Abbr. | Beschreibung<br>Description                                                 |
|------------|---------------|-----------------------------------------------------------------------------|
| 160000     | -             | 100 Stück / pieces (5 Gurtabschnitte/tape sections von/of 20 Stück/pieces.) |
|            | GT            | 1.500 Stück gegurtet / 1.500 pieces on tape                                 |
| z.B./ e.g. | 160000.0,5GT  |                                                                             |

Type  
**160500**

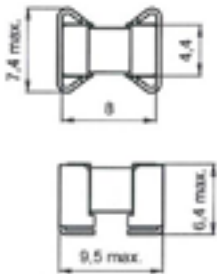
**C<sub>RU</sub>S**  
E167295



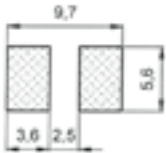
Zeit/Strom-Kennlinien  
Time-Current Characteristics



Abmessungen  
Dimensions



Empfohlene Anschlussflächen  
Recommended pad layout



### Aufbau / Construction

Isolierkörper / insulating body

Kontaktkappen / contact caps

Sicherungs Clip / Fuse Clip

Lötwärmebeständigkeit /

resistance to soldering heat:

Keramikrohr undurchsichtig /

ceramic tube non-transparent

Messing, versilbert / brass, silver-plated

Bronze verzinnt / bronze, tin plated

260 °C, 10 s (nach IEC 60068/ to IEC 60068)

### Schmelzeitgrenzwerte / Fusing time limits

| Bemessungsstrom<br>Rated Current | 1,5 I <sub>n</sub> | 2,1 I <sub>n</sub> | 2,75 I <sub>n</sub> |      | 4 I <sub>n</sub> |      | 10 I <sub>n</sub> |        |
|----------------------------------|--------------------|--------------------|---------------------|------|------------------|------|-------------------|--------|
|                                  | min.               | max.               | min.                | max. | min.             | max. | min.              | max.   |
| 32 mA - 5 A                      | 1 h                | 2 min              | 400 ms              | 10 s | 150 ms           | 3 s  | 20 ms             | 150 ms |

|           |                   |       |                        |
|-----------|-------------------|-------|------------------------|
| IEC 60127 | <b>4,5 x 8 mm</b> | 250 V | T<br>träge<br>time-lag |
|-----------|-------------------|-------|------------------------|

| Artikel-Nr.<br>Article-no. | Bernessungs-<br>strom<br>Rated Current | Bernessungs-<br>Ausschaltvermögen<br>Rated Breaking<br>Capacity | Spannungsfall<br>Voltage Drop | Leistungsabgabe<br>Power Dissipa-<br>tion (@1,5 I <sub>n</sub> ) | Schmelzintegral<br>I <sup>2</sup> t <sub>s</sub> Value | Approbationen<br>Approvals |
|----------------------------|----------------------------------------|-----------------------------------------------------------------|-------------------------------|------------------------------------------------------------------|--------------------------------------------------------|----------------------------|
|                            |                                        |                                                                 | mV                            | mW                                                               | A <sup>2</sup> s                                       | UL rec.                    |
| 160500.0,032               | 32 mA                                  | 100 A @ AC 250 V <sup>2)</sup>                                  | 1150                          | 125                                                              | 0,014                                                  | ✓ <sup>1)</sup>            |
| 160500.0,04                | 40 mA                                  | 100 A @ AC 250 V <sup>2)</sup>                                  | 860                           | 150                                                              | 0,013                                                  | ✓ <sup>1)</sup>            |
| 160500.0,05                | 50 mA                                  | 100 A @ AC 250 V <sup>2)</sup>                                  | 800                           | 155                                                              | 0,013                                                  | ✓ <sup>1)</sup>            |
| 160500.0,063               | 63 mA                                  | 100 A @ AC 250 V <sup>2)</sup>                                  | 580                           | 160                                                              | 0,02                                                   | ✓ <sup>1)</sup>            |
| 160500.0,08                | 80 mA                                  | 100 A @ AC 250 V <sup>2)</sup>                                  | 480                           | 165                                                              | 0,035                                                  | ✓ <sup>1)</sup>            |
| 160500.0,1                 | 100 mA                                 | 100 A @ AC 250 V <sup>2)</sup>                                  | 350                           | 170                                                              | 0,06                                                   | ✓ <sup>1)</sup>            |
| 160500.0,125               | 125 mA                                 | 100 A @ AC 250 V <sup>2)</sup>                                  | 300                           | 180                                                              | 0,12                                                   | ✓ <sup>1)</sup>            |
| 160500.0,16                | 160 mA                                 | 100 A @ AC 250 V <sup>2)</sup>                                  | 280                           | 190                                                              | 0,21                                                   | ✓ <sup>1)</sup>            |
| 160500.0,2                 | 200 mA                                 | 100 A @ AC 250 V <sup>2)</sup>                                  | 260                           | 200                                                              | 0,32                                                   | ✓ <sup>1)</sup>            |
| 160500.0,25                | 250 mA                                 | 100 A @ AC 250 V <sup>2)</sup>                                  | 240                           | 220                                                              | 0,5                                                    | ✓ <sup>1)</sup>            |
| 160500.0,315               | 315 mA                                 | 100 A @ AC 250 V <sup>3)</sup>                                  | 220                           | 250                                                              | 0,8                                                    | ✓ <sup>1)</sup>            |
| 160500.0,4                 | 400 mA                                 | 100 A @ AC 250 V <sup>3)</sup>                                  | 200                           | 280                                                              | 1,1                                                    | ✓ <sup>1)</sup>            |
| 160500.0,5                 | 500 mA                                 | 100 A @ AC 250 V <sup>3)</sup>                                  | 190                           | 310                                                              | 1,8                                                    | ✓ <sup>1)</sup>            |
| 160500.0,63                | 630 mA                                 | 100 A @ AC 250 V <sup>3)</sup>                                  | 180                           | 360                                                              | 3,2                                                    | ✓ <sup>1)</sup>            |
| 160500.0,8                 | 800 mA                                 | 100 A @ AC 250 V <sup>3)</sup>                                  | 160                           | 430                                                              | 5,2                                                    | ✓ <sup>1)</sup>            |
| 160500.1                   | 1 A                                    | 100 A @ AC 250 V <sup>3)</sup>                                  | 140                           | 500                                                              | 6,8                                                    | ✓ <sup>1)</sup>            |
| 160500.1,25                | 1,25 A                                 | 100 A @ AC 250 V <sup>3)</sup>                                  | 130                           | 600                                                              | 12                                                     | ✓ <sup>1)</sup>            |
| 160500.1,6                 | 1,6 A                                  | 100 A @ AC 250 V <sup>3)</sup>                                  | 120                           | 730                                                              | 22                                                     | ✓ <sup>1)</sup>            |
| 160500.2                   | 2 A                                    | 100 A @ AC 250 V <sup>3)</sup>                                  | 100                           | 870                                                              | 30                                                     | ✓ <sup>1)</sup>            |
| 160500.2,5                 | 2,5 A                                  | 100 A @ AC 250 V <sup>3)</sup>                                  | 100                           | 1000                                                             | 46                                                     | ✓ <sup>1)</sup>            |
| 160500.3,15                | 3,15 A                                 | 100 A @ AC 250 V <sup>3)</sup>                                  | 100                           | 1200                                                             | 80                                                     | ✓ <sup>1)</sup>            |
| 160500.4                   | 4 A                                    | 100 A @ AC 250 V <sup>3)</sup>                                  | 100                           | 1400                                                             | 130                                                    | ✓ <sup>1)</sup>            |

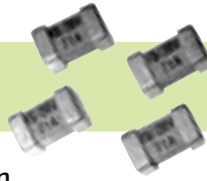
<sup>1)</sup> 100A @ AC 250V und/and 100 A @ DC 72 V mit/with UL rec.

<sup>2)</sup> 1500 A @ DC 24V und/and 100 A @ DC 125 V

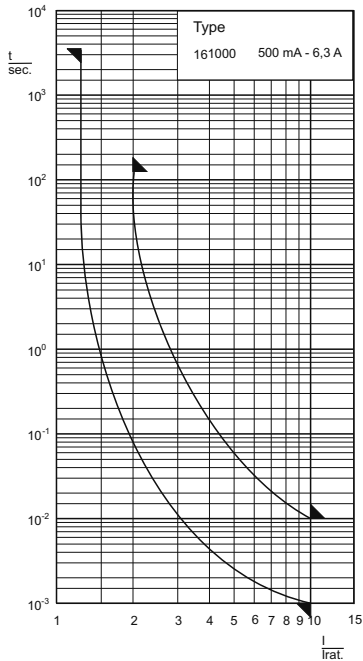
<sup>3)</sup> 1500 A @ DC 24V

| Type | Abk.<br>Abbr. | Beschreibung<br>Description |
|------|---------------|-----------------------------|
|------|---------------|-----------------------------|

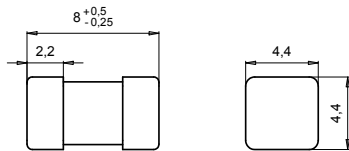
## Type 161000



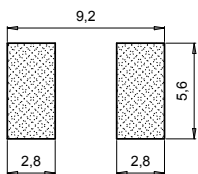
Zeit/Strom-Kennlinien  
Time-Current Characteristics



Abmessungen  
Dimensions



Empfohlene Anschlussflächen  
Recommended pad layout



### Aufbau / Construction

Keramikrohr / ceramic tube

Kontaktkappen / contact caps

Lötwärmebeständigkeit /  
resistance to soldering heat:

undurchsichtig mit Löschmittelfüllung /  
non-transparent / with filling

Messing, versilbert / brass, silver-plated

260 °C, 10 s (Lötbad / solder bath)  
(nach IEC 60068-2-58 / to IEC 60068-2-58)

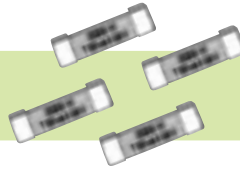
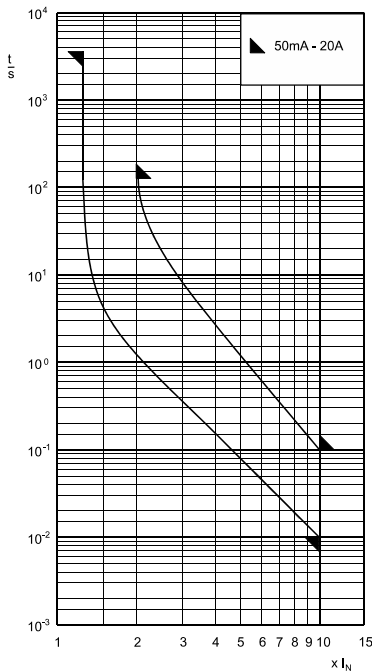
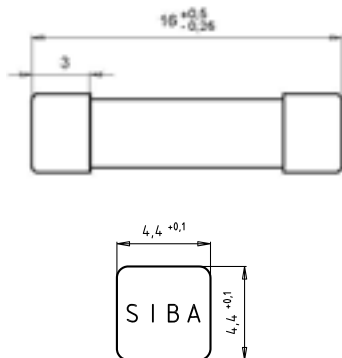
### Schmelzeitgrenzwerte / Fusing time limits

| Bemessungsstrom<br>Rated Current | 1,25 I <sub>n</sub> | 2 I <sub>n</sub> | 2,75 I <sub>n</sub> |      | 4 I <sub>n</sub> |      | 10 I <sub>n</sub> |       |
|----------------------------------|---------------------|------------------|---------------------|------|------------------|------|-------------------|-------|
|                                  | min.                | max.             | min.                | max. | min.             | max. | min.              | max.  |
| 500 mA - 6,3 A                   | 1 h                 | 120 s            | -                   | -    | -                | -    | 1 ms              | 10 ms |

|             |                   |       |                            |
|-------------|-------------------|-------|----------------------------|
| IEC 60127-4 | <b>4,5 x 8 mm</b> | 250 V | F<br>flink<br>quick acting |
|-------------|-------------------|-------|----------------------------|

| Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking<br>Capacity | Spannungsfall<br>Voltage Drop | Leistungsabgabe<br>Power Dissipa-<br>tion (@1,25I <sub>n</sub> ) | Schmelzintegral<br>I <sup>2</sup> t <sub>s</sub> Value | Approbationen<br>Approvals |
|----------------------------|---------------------------------------|----------------------------------------------------------------|-------------------------------|------------------------------------------------------------------|--------------------------------------------------------|----------------------------|
|                            |                                       |                                                                | mV                            | mW                                                               | A <sup>2</sup> s                                       |                            |
| 161000.0,5                 | 500 mA                                | 100 A @ AC 250V                                                | 200                           | 300                                                              | 0.076                                                  |                            |
| 161000.0,63                | 630 mA                                | 100 A @ AC 250V                                                | 180                           | 300                                                              | 0.19                                                   |                            |
| 161000.0,8                 | 800 mA                                | 100 A @ AC 250V                                                | 160                           | 300                                                              | 0.38                                                   |                            |
| 161000.1                   | 1 A                                   | 100 A @ AC 250V                                                | 140                           | 300                                                              | 0.71                                                   |                            |
| 161000.1,25                | 1,25 A                                | 100 A @ AC 250V                                                | 140                           | 400                                                              | 0.94                                                   |                            |
| 161000.1,6                 | 1,6 A                                 | 100 A @ AC 250V                                                | 120                           | 400                                                              | 0.56                                                   |                            |
| 161000.2                   | 2 A                                   | 100 A @ AC 250V                                                | 110                           | 500                                                              | 1.1                                                    |                            |
| 161000.2,5                 | 2,5 A                                 | 100 A @ AC 250V                                                | 100                           | 600                                                              | 2.0                                                    |                            |
| 161000.3,15                | 3,15 A                                | 100 A @ AC 250V                                                | 100                           | 700                                                              | 3.2                                                    |                            |
| 161000.4                   | 4 A                                   | 100 A @ AC 250V                                                | 100                           | 900                                                              | 5.0                                                    |                            |
| 161000.5                   | 5 A                                   | 100 A @ AC 250V                                                | 100                           | 1000                                                             | 9.0                                                    |                            |
| 161000.6,3                 | 6,3 A                                 | 100 A @ AC 250V                                                | 100                           | 1400                                                             | 13                                                     |                            |

| Type       | Abk.<br>Abbr. | Beschreibung<br>Description                                                 |
|------------|---------------|-----------------------------------------------------------------------------|
| 161000     | -             | 100 Stück / pieces (5 Gurtabschnitte/tape sections von/of 20 Stück/pieces.) |
|            | GT            | 1.500 Stück gegurtet / 1.500 pieces on tape                                 |
| z.B./ e.g. | 161000.1,6GT  |                                                                             |

**Type**  
**160016**

 Zeit/Strom-Kennlinien  
 Time-Current Characteristics

 Abmessungen  
 Dimensions

 Empfohlene Anschlussflächen  
 Recommended pad layout

**Aufbau / Construction**

Isolierkörper / insulating body

Kontaktkappen / contact caps

 Lötwärmebeständigkeit /  
 resistance to soldering heat:

 Keramikrohr mit Füllung /  
 ceramic tube with filling  
 Kupferlegierung, versilbert / copper-alloy,  
 silver-plated

260 °C, 10 s (nach IEC 60068 / to IEC 60068)

**Schmelzzeitgrenzwerte / Fusing time limits**

| Bemessungsstrom<br>Rated Current | 1,25 I <sub>N</sub> | 2 I <sub>N</sub> | 2,75 I <sub>N</sub> |      | 4 I <sub>N</sub> |      | 10 I <sub>N</sub> |        |
|----------------------------------|---------------------|------------------|---------------------|------|------------------|------|-------------------|--------|
|                                  | min.                | max.             | min.                | max. | min.             | max. | min.              | max.   |
| 50 mA - 20 A                     | 1 h                 | 2 min            | -                   | -    | -                | -    | 10 ms             | 100 ms |

|                            |                    |       |                        |
|----------------------------|--------------------|-------|------------------------|
| IEC 60127-4/2<br>UL 248-14 | <b>4,5 x 16 mm</b> | 250 V | T<br>träge<br>time-lag |
|----------------------------|--------------------|-------|------------------------|

| Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking Capacity | Spannungsfall<br>Voltage Drop | Leistungsabgabe<br>Power Dissipa-<br>tion (@ 1,25 I <sub>N</sub> ) | Schmelzintegral<br>I²t <sub>9</sub> Value<br>(@ 10 I <sub>N</sub> ) | Approbationen<br>Approvals |        |
|----------------------------|---------------------------------------|-------------------------------------------------------------|-------------------------------|--------------------------------------------------------------------|---------------------------------------------------------------------|----------------------------|--------|
|                            |                                       |                                                             | mV                            | mW                                                                 | A's                                                                 | Semko                      | UL rec |
| 160016.0,05                | 50 mA                                 | 1500 A @ AC 305 V <sup>1)</sup>                             | 2600                          | 260                                                                | 0,010                                                               |                            | ✓      |
| 160016.0,08                | 80 mA                                 | 1500 A @ AC 305 V <sup>1)</sup>                             | 2050                          | 270                                                                | 0,025                                                               | ✓                          | ✓      |
| 160016.0,1                 | 100 mA                                | 1500 A @ AC 305 V <sup>1)</sup>                             | 1750                          | 290                                                                | 0,030                                                               | ✓                          | ✓      |
| 160016.0,125               | 125 mA                                | 1500 A @ AC 305 V <sup>1)</sup>                             | 1430                          | 310                                                                | 0,055                                                               | ✓                          | ✓      |
| 160016.0,16                | 160 mA                                | 1500 A @ AC 305 V <sup>1)</sup>                             | 1220                          | 340                                                                | 0,065                                                               | ✓                          | ✓      |
| 160016.0,2                 | 200 mA                                | 1500 A @ AC 305 V <sup>1)</sup>                             | 960                           | 350                                                                | 0,11                                                                | ✓                          | ✓      |
| 160016.0,25                | 250 mA                                | 1500 A @ AC 305 V <sup>1)</sup>                             | 840                           | 360                                                                | 0,19                                                                | ✓                          | ✓      |
| 160016.0,315               | 315 mA                                | 1500 A @ AC 305 V <sup>1)</sup>                             | 700                           | 380                                                                | 0,34                                                                | ✓                          | ✓      |
| 160016.0,4                 | 400 mA                                | 1500 A @ AC 305 V <sup>1)</sup>                             | 570                           | 400                                                                | 0,54                                                                | ✓                          | ✓      |
| 160016.0,5                 | 500 mA                                | 1500 A @ AC 305 V <sup>1)</sup>                             | 490                           | 430                                                                | 0,86                                                                | ✓                          | ✓      |
| 160016.0,63                | 630 mA                                | 1500 A @ AC 305 V <sup>1)</sup>                             | 410                           | 460                                                                | 1,5                                                                 | ✓                          | ✓      |
| 160016.0,8                 | 800 mA                                | 1500 A @ AC 305 V <sup>1)</sup>                             | 350                           | 490                                                                | 2,6                                                                 | ✓                          | ✓      |
| 160016.1                   | 1 A                                   | 1500 A @ AC 305 V <sup>1)</sup>                             | 380                           | 640                                                                | 4,5                                                                 | ✓                          | ✓      |
| 160016.1,25                | 1,25 A                                | 1500 A @ AC 305 V <sup>1)</sup>                             | 340                           | 790                                                                | 4,1                                                                 | ✓                          | ✓      |
| 160016.1,6                 | 1,6 A                                 | 1500 A @ AC 305 V <sup>1)</sup>                             | 330                           | 970                                                                | 6,2                                                                 | ✓                          | ✓      |
| 160016.2                   | 2 A                                   | 1500 A @ AC 305 V <sup>1)</sup>                             | 280                           | 1060                                                               | 13                                                                  | ✓                          | ✓      |
| 160016.2,5                 | 2,5 A                                 | 1500 A @ AC 305 V <sup>1)</sup>                             | 240                           | 1120                                                               | 21                                                                  | ✓                          | ✓      |
| 160016.3,15                | 3,15 A                                | 1500 A @ AC 305 V <sup>1)</sup>                             | 200                           | 1200                                                               | 35                                                                  | ✓                          | ✓      |
| 160016.4                   | 4 A                                   | 1500 A @ AC 305 V <sup>1)</sup>                             | 160                           | 1250                                                               | 49                                                                  | ✓                          | ✓      |
| 160016.5                   | 5 A                                   | 1500 A @ AC 277 V <sup>1)</sup>                             | 140                           | 1300                                                               | 92                                                                  | ✓                          | ✓      |
| 160016.6,3                 | 6,3 A                                 | 1500 A @ AC 277 V <sup>1)</sup>                             | 120                           | 1370                                                               | 170                                                                 | ✓                          | ✓      |
| 160016.8                   | 8 A                                   | 1500 A @ AC 250 V <sup>1)</sup>                             | 90                            | 1250                                                               | 160                                                                 | ✓                          | ✓      |
| 160016.10                  | 10 A                                  | 1500 A @ AC 250 V <sup>1)</sup>                             | 80                            | 1500                                                               | 280                                                                 | ✓                          | ✓      |

<sup>1)</sup> 1500A @ DC 250V

Sonderausschaltvermögen - special breaking capacity 4000A @ AC 250V cosφ = 0,7-0,8

**Neu / New**

|                    |               |                                       |           |             |            |   |
|--------------------|---------------|---------------------------------------|-----------|-------------|------------|---|
| <b>160016.12,5</b> | <b>12,5 A</b> | <b>1000 A @ AC 125 V<sup>2)</sup></b> | <b>90</b> | <b>2000</b> | <b>330</b> | ✓ |
| <b>160016.16</b>   | <b>16 A</b>   | <b>1000 A @ AC 125 V<sup>2)</sup></b> | <b>90</b> | <b>3200</b> | <b>590</b> | ✓ |

| Type       | Abk.<br>Abbr. | Beschreibung<br>Description                                                 |
|------------|---------------|-----------------------------------------------------------------------------|
| 160016     | -             | 100 Stück / pieces (5 Gurtabschnitte/tape sections von/of 20 Stück/pieces.) |
|            | GT            | 1.500 Stück gegurtet / 1.500 pieces on tape                                 |
| z.B./ e.g. | 160016.1,25GT |                                                                             |

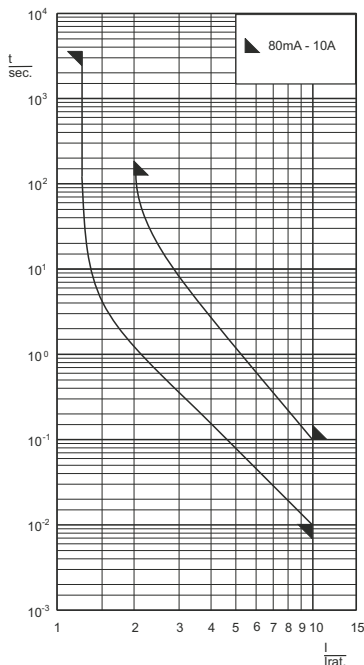
Type  
**160516**



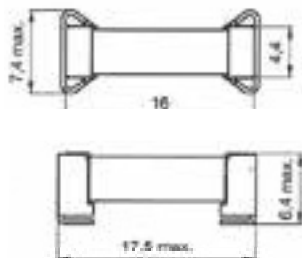
**CAUS**  
E167295



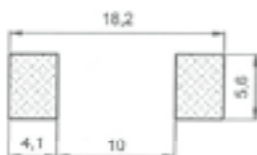
Zeit/Strom-Kennlinien  
Time-Current Characteristics



Abmessungen  
Dimensions



Empfohlene Anschlussflächen  
Recommended pad layout



**Aufbau / Construction**

Isolierkörper / insulating body

Keramikrohr mit Füllung / ceramic tube with filling

Kontaktkappen / contact caps

Kupferlegierung, versilbert / copper-alloy, silver-plated

Sicherungs Clip / Fuse Clip

Bronze, verzinkt / bronze, tin plated

Lötwärmebeständigkeit /

260 °C, 10 s (nach IEC 60068 / to IEC 60068)

**Schmelzzeitgrenzwerte / Fusing time limits**

| Bemessungsstrom<br>Rated Current | 1,25 I <sub>N</sub> | 2 I <sub>N</sub> | 2,75 I <sub>N</sub> |      | 4 I <sub>N</sub> |      | 10 I <sub>N</sub> |        |
|----------------------------------|---------------------|------------------|---------------------|------|------------------|------|-------------------|--------|
|                                  | min.                | max.             | min.                | max. | min.             | max. | min.              | max.   |
| 80 mA - 10 A                     | 1 h                 | 2 min            | -                   | -    | -                | -    | 10 ms             | 100 ms |

|                            |                    |       |                        |
|----------------------------|--------------------|-------|------------------------|
| IEC 60127-4/2<br>UL 248-14 | <b>4,5 x 16 mm</b> | 250 V | T<br>träge<br>time-lag |
|----------------------------|--------------------|-------|------------------------|

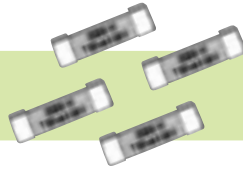
| Artikel-Nr.<br>Article-no. | Bernessungs-<br>strom<br>Rated Current | Bernessungs-<br>Ausschaltvermögen<br>Rated Breaking<br>Capacity | Spannungsfall<br>Voltage Drop | Leistungsabgabe<br>Power Dissipa-<br>tion (@ 1,25 I <sub>N</sub> ) | Schmelzintegral<br>I <sup>2</sup> t <sub>s</sub> Value<br>(@ 10 I <sub>N</sub> ) | Approbationen<br>Approvals |        |
|----------------------------|----------------------------------------|-----------------------------------------------------------------|-------------------------------|--------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------|--------|
|                            |                                        |                                                                 | mV                            | mW                                                                 | A <sup>2</sup> s                                                                 | Semko                      | UL rec |
| 160516.0,05                | 50 mA                                  | 1500 A @ AC 305 V <sup>1)</sup>                                 | 2600                          | 260                                                                | 0,010                                                                            | ✓                          | ✓      |
| 160516.0,08                | 80 mA                                  | 1500 A @ AC 305 V <sup>1)</sup>                                 | 2050                          | 270                                                                | 0,025                                                                            | ✓                          | ✓      |
| 160516.0,1                 | 100 mA                                 | 1500 A @ AC 305 V <sup>1)</sup>                                 | 1750                          | 290                                                                | 0,030                                                                            | ✓                          | ✓      |
| 160516.0,125               | 125 mA                                 | 1500 A @ AC 305 V <sup>1)</sup>                                 | 1430                          | 310                                                                | 0,055                                                                            | ✓                          | ✓      |
| 160516.0,16                | 160 mA                                 | 1500 A @ AC 305 V <sup>1)</sup>                                 | 1220                          | 340                                                                | 0,065                                                                            | ✓                          | ✓      |
| 160516.0,2                 | 200 mA                                 | 1500 A @ AC 305 V <sup>1)</sup>                                 | 960                           | 350                                                                | 0,11                                                                             | ✓                          | ✓      |
| 160516.0,25                | 250 mA                                 | 1500 A @ AC 305 V <sup>1)</sup>                                 | 840                           | 360                                                                | 0,19                                                                             | ✓                          | ✓      |
| 160516.0,315               | 315 mA                                 | 1500 A @ AC 305 V <sup>1)</sup>                                 | 700                           | 380                                                                | 0,34                                                                             | ✓                          | ✓      |
| 160516.0,4                 | 400 mA                                 | 1500 A @ AC 305 V <sup>1)</sup>                                 | 570                           | 400                                                                | 0,54                                                                             | ✓                          | ✓      |
| 160516.0,5                 | 500 mA                                 | 1500 A @ AC 305 V <sup>1)</sup>                                 | 490                           | 430                                                                | 0,86                                                                             | ✓                          | ✓      |
| 160516.0,63                | 630 mA                                 | 1500 A @ AC 305 V <sup>1)</sup>                                 | 410                           | 460                                                                | 1,5                                                                              | ✓                          | ✓      |
| 160516.0,8                 | 800 mA                                 | 1500 A @ AC 305 V <sup>1)</sup>                                 | 350                           | 490                                                                | 2,6                                                                              | ✓                          | ✓      |
| 160516.1                   | 1 A                                    | 1500 A @ AC 305 V <sup>1)</sup>                                 | 380                           | 640                                                                | 4,5                                                                              | ✓                          | ✓      |
| 160516.1,25                | 1,25 A                                 | 1500 A @ AC 305 V <sup>1)</sup>                                 | 340                           | 790                                                                | 4,1                                                                              | ✓                          | ✓      |
| 160516.1,6                 | 1,6 A                                  | 1500 A @ AC 305 V <sup>1)</sup>                                 | 330                           | 970                                                                | 6,2                                                                              | ✓                          | ✓      |
| 160516.2                   | 2 A                                    | 1500 A @ AC 305 V <sup>1)</sup>                                 | 280                           | 1060                                                               | 13                                                                               | ✓                          | ✓      |
| 160516.2,5                 | 2,5 A                                  | 1500 A @ AC 305 V <sup>1)</sup>                                 | 240                           | 1120                                                               | 21                                                                               | ✓                          | ✓      |
| 160516.3,15                | 3,15 A                                 | 1500 A @ AC 305 V <sup>1)</sup>                                 | 200                           | 1200                                                               | 35                                                                               | ✓                          | ✓      |
| 160516.4                   | 4 A                                    | 1500 A @ AC 305 V <sup>1)</sup>                                 | 160                           | 1250                                                               | 49                                                                               | ✓                          | ✓      |
| 160516.5                   | 5 A                                    | 1500 A @ AC 277 V <sup>1)</sup>                                 | 140                           | 1300                                                               | 92                                                                               | ✓                          | ✓      |
| 160516.6,3                 | 6,3 A                                  | 1500 A @ AC 277 V <sup>1)</sup>                                 | 120                           | 1370                                                               | 170                                                                              | ✓                          | ✓      |
| 160516.8                   | 8 A                                    | 1500 A @ AC 250 V <sup>1)</sup>                                 | 90                            | 1250                                                               | 160                                                                              | ✓                          | ✓      |
| 160516.10                  | 10 A                                   | 1500 A @ AC 250 V <sup>1)</sup>                                 | 80                            | 1500                                                               | 280                                                                              | ✓                          | ✓      |

<sup>1)</sup> 1500A @ DC 250V

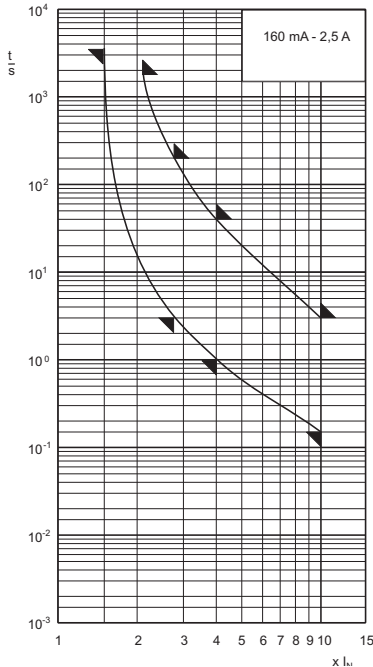
Sonderausschaltvermögen - special breaking capacity 4000A @ AC 250V cosφ = 0,7-0,8

| Type       | Abk.<br>Abbr. | Beschreibung<br>Description                                                 |
|------------|---------------|-----------------------------------------------------------------------------|
| 160516     | -             | 100 Stück / pieces (5 Gurtabschnitte/tape sections von/of 20 Stück/pieces.) |
|            | GT            | 800 Stück gegurtet / 800 pieces on tape                                     |
| z.B./ e.g. | 160516.1,25GT |                                                                             |

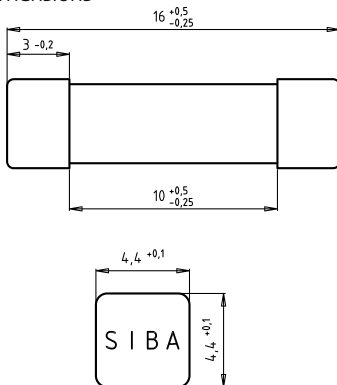
## Type 163016



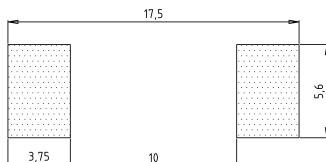
### Zeit/Strom-Kennlinien Time-Current Characteristics



### Abmessungen Dimensions



### Empfohlene Anschlussflächen Recommended pad layout



### Aufbau / Construction

Isolierkörper / insulating body

Keramikrohr / ceramic tube

Kontaktkappen / contact caps

Kupferlegierung, versilbert / copper-alloy, silver-plated

Lötwärmebeständigkeit /  
resistance to soldering heat:

260 °C, 10 s (nach IEC 60068 / to IEC 60068)

### Schmelzzeitgrenzwerte / Fusing time limits

| Bemessungsstrom<br>Rated Current | 1,5 I <sub>N</sub> | 2,1 I <sub>N</sub> | 2,75 I <sub>N</sub> |       | 4 I <sub>N</sub> |      | 10 I <sub>N</sub> |      |
|----------------------------------|--------------------|--------------------|---------------------|-------|------------------|------|-------------------|------|
|                                  | min.               | max.               | min.                | max.  | min.             | max. | min.              | max. |
| 160 mA - 2,5 A                   | 1 h                | 30 min             | 3 s                 | 200 s | 1 s              | 40 s | 150 ms            | 3 s  |

|               |                    |       |                                   |
|---------------|--------------------|-------|-----------------------------------|
| (IEC 60127-4) | <b>4,5 x 16 mm</b> | 250 V | TT<br>superträge<br>very time-lag |
|---------------|--------------------|-------|-----------------------------------|

| Artikel-Nr.<br>Article-no. | Bernessungs-<br>strom<br>Rated Current | Bernessungs-<br>Ausschaltvermögen<br>Rated Breaking<br>Capacity | Spannungsfall<br>Voltage Drop | Leistungsabgabe<br>Power Dissipa-<br>tion (@ 1,5 I <sub>N</sub> ) | Schmelzintegral<br>I <sup>2</sup> t <sub>5</sub> Value<br>(@ 10 I <sub>N</sub> ) | Approbationen<br>Approvals |
|----------------------------|----------------------------------------|-----------------------------------------------------------------|-------------------------------|-------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------|
|                            |                                        |                                                                 | mV                            | mW                                                                | A <sup>2</sup> s                                                                 |                            |
| 163016.0,16GT              | 160 mA                                 | 35 A @ AC 250 V                                                 | 1                             | 1                                                                 | 1                                                                                |                            |
| 163016.0,2GT               | 200 mA                                 | 35 A @ AC 250 V                                                 | 1                             | 1                                                                 | 1                                                                                |                            |
| 163016.0,25GT              | 250 mA                                 | 35 A @ AC 250 V                                                 | 1                             | 1                                                                 | 1                                                                                |                            |
| 163016.0,315GT             | 315 mA                                 | 35 A @ AC 250 V                                                 | 1                             | 1                                                                 | 1                                                                                |                            |
| 163016.0,4GT               | 400 mA                                 | 35 A @ AC 250 V                                                 | 190                           | 190                                                               | 4,5                                                                              |                            |
| 163016.0,5GT               | 500 mA                                 | 35 A @ AC 250 V                                                 | 1                             | 1                                                                 | 1                                                                                |                            |
| 163016.0,63GT              | 630 mA                                 | 35 A @ AC 250 V                                                 | 1                             | 1                                                                 | 1                                                                                |                            |
| 163016.0,8GT               | 800 mA                                 | 35 A @ AC 250 V                                                 | 160                           | 350                                                               | 14                                                                               |                            |
| 163016.1GT                 | 1 A                                    | 35 A @ AC 250 V                                                 | 160                           | 550                                                               | 23                                                                               |                            |
| 163016.2GT                 | 2 A                                    | 35 A @ AC 250 V                                                 | 80                            | 500                                                               | 80                                                                               |                            |
| 163016.2,5GT               | 2,5 A                                  | 35 A @ AC 250 V                                                 | 1                             | 1                                                                 | 1                                                                                |                            |

<sup>1)</sup> Auf Anfrage / upon request

| Type | Abk.<br>Abbr. | Beschreibung<br>Description                 |
|------|---------------|---------------------------------------------|
|      | GT            | 1.500 Stück gegurtet / 1.500 pieces on tape |

Type  
**160020**

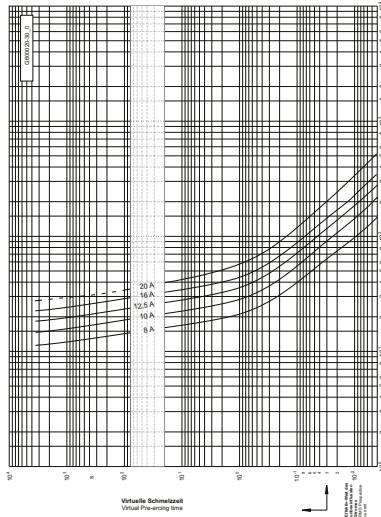


**CAUS**  
E167295



**Neu / New**

Zeit/Strom-Kennlinien  
Time-Current Characteristics



### Aufbau / Construction

Isolierkörper / insulating body

Kontaktkappen / contact caps

Lötwärmebeständigkeit /  
resistance to soldering heat:

Keramikrohr mit Füllung /

ceramic tube with filling

Kupferlegierung, versilbert / copper-alloy,  
silver-plated

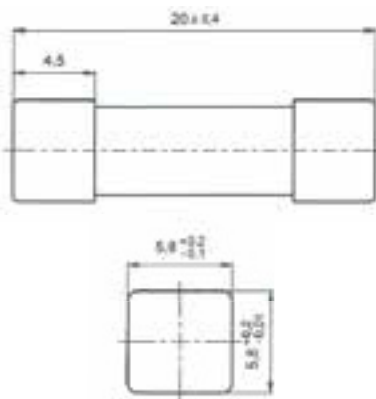
260 °C, 10 s (nach IEC 60068 / to IEC 60068)

### Schmelzeitgrenzwerte / Fusing time limits

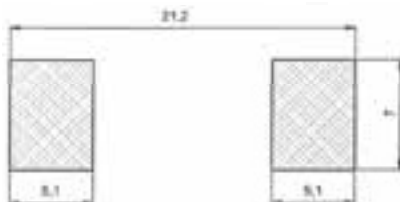
| Bemessungsstrom<br>Rated Current | 1,25 I <sub>N</sub> | 2 I <sub>N</sub> | 2,75 I <sub>N</sub> |      | 4 I <sub>N</sub> |      | 10 I <sub>N</sub> |        |
|----------------------------------|---------------------|------------------|---------------------|------|------------------|------|-------------------|--------|
|                                  | min.                | max.             | min.                | max. | min.             | max. | min.              | max.   |
| 8 A - 16 A                       | 1 h                 | 120 s            | -                   | -    | -                | -    | 10 ms             | 100 ms |
| 20 A                             | -                   | 120 s            | -                   | -    | -                | -    | 10 ms             | 100 ms |

|             |                    |       |                        |
|-------------|--------------------|-------|------------------------|
| IEC 60127-7 | <b>5,8 x 20 mm</b> | 250 V | T<br>träge<br>time-lag |
|-------------|--------------------|-------|------------------------|

Abmessungen  
Dimensions



Empfohlene Anschlussflächen  
Recommended pad layout



| Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking<br>Capacity | Spannungsfall<br>Voltage Drop | Leistungsabgabe<br>Power Dissipa-<br>tion (@ 1,25 I <sub>N</sub> ) | Schmelzintegral<br>I²t <sub>90</sub> Value<br>(@ 10 I <sub>N</sub> ) | Approbationen<br>Approvals |
|----------------------------|---------------------------------------|----------------------------------------------------------------|-------------------------------|--------------------------------------------------------------------|----------------------------------------------------------------------|----------------------------|
|                            |                                       |                                                                | mV                            | mW                                                                 | A²s                                                                  | Semko<br>UL rec            |
| 160020.8                   | 8 A                                   | 1500 A @ AC 277 V <sup>1)</sup>                                | 105                           | 1550                                                               | 110                                                                  | ✓                          |
| 160020.10                  | 10 A                                  | 1500 A @ AC 277 V <sup>1)</sup>                                | 90                            | 1650                                                               | 240                                                                  | ✓                          |
| 160020.12,5                | 12,5 A                                | 1500 A @ AC 277 V <sup>1)</sup>                                | 95                            | 2150                                                               | 400                                                                  | ✓                          |
| 160020.16                  | 16 A                                  | 1500 A @ AC 277 V <sup>1)</sup>                                | 100                           | 3800                                                               | 630                                                                  | ✓                          |
| 160020.20                  | 20 A                                  | 1500 A @ AC 250 V <sup>1)</sup>                                | 110                           | 2200 <sup>2)</sup>                                                 | 1200                                                                 | 3) ✓                       |

<sup>1)</sup> 1500A @ DC 250V

<sup>2)</sup> Leistungsabgabe / Powerloss @1,0xI<sub>N</sub>

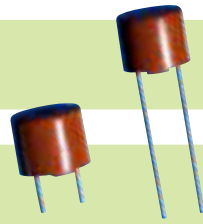
<sup>3)</sup> In Vorbereitung / In preparation

| Type       | Abk.<br>Abbr. | Beschreibung<br>Description             |
|------------|---------------|-----------------------------------------|
| 160020     | -             | 100 Stück / pieces                      |
|            | GT            | 800 Stück gegurtet / 800 pieces on tape |
| z.B./ e.g. | 160020.12,5GT |                                         |

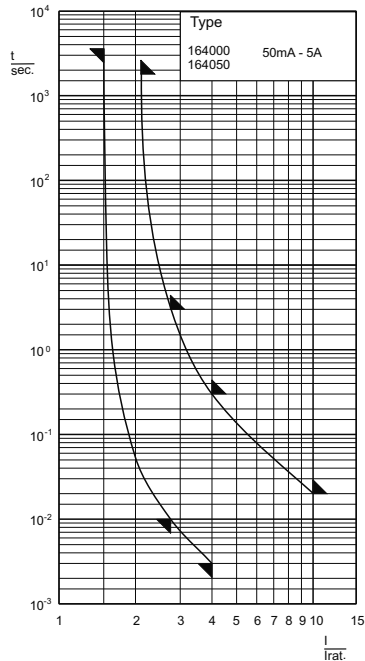
Type  
**164000**



Type  
**164050**

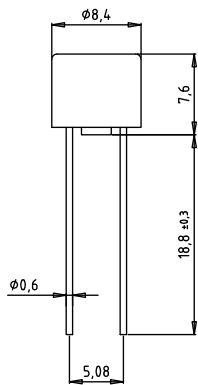


Zeit/Strom-Kennlinien  
Time-Current Characteristics

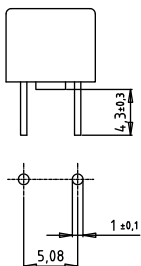


Abmessungen  
Dimensions

164000 (x=0 lange Stifte/long pins)



164050 (x=5 kurze Stifte/short pins)



### Aufbau / Construction

Gehäuse / body

Thermoplast, braun / thermoplastic, brown  
temperaturbeständig / temperature resistant  
selbstverlöschend / self-extinguishing

Anschlussstifte / terminations

0,6 mm Ø, verzinkt / tinned  
löt- oder steckbar / solder or plug

### Zubehör / Related Products

Sicherungs-Halter / fuse-holder 166602

siehe Seite 74 / see page 74

### Schmelzeitgrenzwerte / Fusing time limits

| Bemessungsstrom<br>Rated Current              | 1,5 I <sub>n</sub>  |        | 2,1 I <sub>n</sub> |      | 2,75 I <sub>n</sub> |        | 4 I <sub>n</sub>           |       | 10 I <sub>n</sub> |      |
|-----------------------------------------------|---------------------|--------|--------------------|------|---------------------|--------|----------------------------|-------|-------------------|------|
|                                               | min.                | max.   | min.               | max. | min.                | max.   | min.                       | max.  | min.              | max. |
| 50 mA - 6,3 A                                 | 1 h                 | 30 min | 10 ms              | 3 s  | 3 ms                | 300 ms | -                          | 20 ms |                   |      |
| IEC 60127-3/3<br>EN 60127-3/3<br>VDE 0820-3/3 | <b>8,4 x 7,6 mm</b> |        |                    |      | 250 V               |        | F<br>flink<br>quick acting |       |                   |      |

| Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking<br>Capacity | Spannungsfall<br>Voltage Drop | Leistungs-<br>abgabe<br>Power<br>Dissipation<br>(@1,5 I <sub>n</sub> ) | Schmelz-<br>integral<br>I <sup>2</sup> t <sub>90</sub> Value | Approbationen<br>Approvals |         |
|----------------------------|---------------------------------------|----------------------------------------------------------------|-------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------|----------------------------|---------|
|                            |                                       |                                                                | mV                            | mW                                                                     | A <sup>2</sup> s                                             | Semko                      | UL rec. |
| 1640x0,05                  | 50 mA                                 | 35 A @ AC 250 V                                                | 820                           | 95                                                                     | 0,0003                                                       | ✓                          | ✓       |
| 1640x0,063                 | 63 mA                                 | 35 A @ AC 250 V                                                | 750                           | 110                                                                    | 0,0007                                                       | ✓                          | ✓       |
| 1640x0,08                  | 80 mA                                 | 35 A @ AC 250 V                                                | 630                           | 120                                                                    | 0,0015                                                       | ✓                          | ✓       |
| 1640x0,0,1                 | 100 mA                                | 35 A @ AC 250 V                                                | 550                           | 155                                                                    | 0,0035                                                       | ✓                          | ✓       |
| 1640x0,0,125               | 125 mA                                | 35 A @ AC 250 V                                                | 500                           | 175                                                                    | 0,006                                                        | ✓                          | ✓       |
| 1640x0,0,16                | 160 mA                                | 35 A @ AC 250 V                                                | 460                           | 210                                                                    | 0,011                                                        | ✓                          | ✓       |
| 1640x0,0,2                 | 200 mA                                | 35 A @ AC 250 V                                                | 150                           | 80                                                                     | 0,018                                                        | ✓                          | ✓       |
| 1640x0,0,25                | 250 mA                                | 35 A @ AC 250 V                                                | 140                           | 90                                                                     | 0,036                                                        | ✓                          | ✓       |
| 1640x0,0,315               | 315 mA                                | 35 A @ AC 250 V                                                | 130                           | 120                                                                    | 0,05                                                         | ✓                          | ✓       |
| 1640x0,0,4                 | 400 mA                                | 35 A @ AC 250 V                                                | 120                           | 140                                                                    | 0,10                                                         | ✓                          | ✓       |
| 1640x0,0,5                 | 500 mA                                | 35 A @ AC 250 V                                                | 110                           | 160                                                                    | 0,18                                                         | ✓                          | ✓       |
| 1640x0,0,63                | 630 mA                                | 35 A @ AC 250 V                                                | 100                           | 180                                                                    | 0,33                                                         | ✓                          | ✓       |
| 1640x0,0,8                 | 800 mA                                | 35 A @ AC 250 V                                                | 90                            | 200                                                                    | 0,14                                                         | ✓                          | ✓       |
| 1640x0,1                   | 1 A                                   | 35 A @ AC 250 V                                                | 80                            | 220                                                                    | 0,24                                                         | ✓                          | ✓       |
| 1640x0,1,25                | 1,25 A                                | 35 A @ AC 250 V                                                | 75                            | 260                                                                    | 0,35                                                         | ✓                          | ✓       |
| 1640x0,1,6                 | 1,6 A                                 | 35 A @ AC 250 V                                                | 70                            | 350                                                                    | 0,6                                                          | ✓                          | ✓       |
| 1640x0,2                   | 2 A                                   | 35 A @ AC 250 V                                                | 65                            | 380                                                                    | 1,2                                                          | ✓                          | ✓       |
| 1640x0,2,5                 | 2,5 A                                 | 35 A @ AC 250 V                                                | 60                            | 420                                                                    | 2,0                                                          | ✓                          | ✓       |
| 1640x0,3,15                | 3,15 A                                | 35 A @ AC 250 V                                                | 60                            | 580                                                                    | 3,5                                                          | ✓                          | ✓       |
| 1640x0,4                   | 4 A                                   | 40 A @ AC 250 V                                                | 60                            | 700                                                                    | 6,2                                                          | ✓                          | ✓       |
| 1640x0,5                   | 5 A                                   | 50 A @ AC 250 V                                                | 60                            | 900                                                                    | 13                                                           | ✓                          | ✓       |
| 1640x0,6,3                 | 6,3 A <sup>1)</sup>                   | 63 A @ AC 250 V                                                | 60                            | 1100                                                                   | 19                                                           | ✓                          | ✓       |

x = 0 lange Stifte / long pins

x = 5 kurze Stifte / short pins

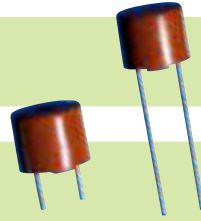
<sup>1)</sup> Zusätzlich lieferbare Bemessungsströme / Non-standard ratings also available

| Type          | Abk.<br>Abbr. | Beschreibung<br>Description                              |
|---------------|---------------|----------------------------------------------------------|
| 164000/164050 | -             | 100 Stück / pieces                                       |
| 164000        | GT            | 1.000 Stück gegurtet / 1.000 pieces on tape              |
| 164050        | IP            | 2.000 Stück Industrieverpackung / 2.000 industrial packs |

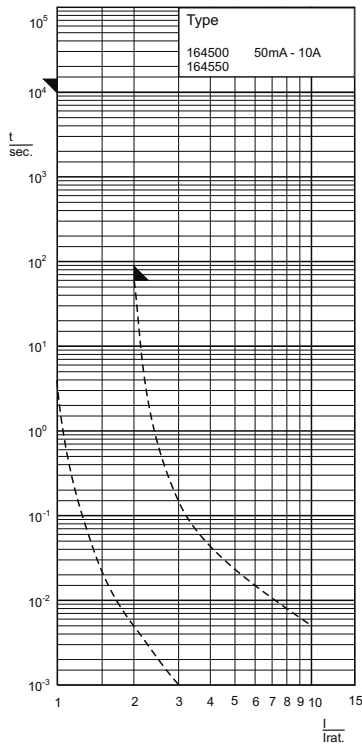
Type  
**164500**



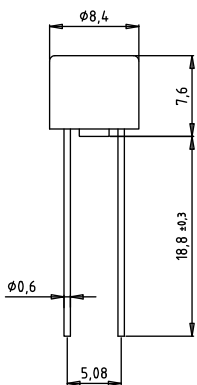
Type  
**164550**



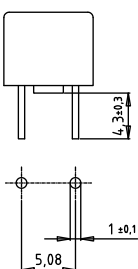
#### Zeit/Strom-Kennlinien Time-Current Characteristics



#### Abmessungen Dimensions 164500 (x=0 lange Stifte/long pins)



#### 164550 (x=5 kurze Stifte/short pins)



#### Aufbau / Construction

Gehäuse / body

Thermoplast, braun / thermoplastic, brown  
temperaturbeständig / temperature resistant  
selbstverlöschend / self-extinguishing

Anschlussstifte / terminations

0,6 mm Ø, verzinkt / tinned  
löt- oder steckbar / solder or plug

#### Zubehör / Related Products

Halter / holder 166602

siehe Seite 74 / see page 74

#### Schmelzeitgrenzwerte / Fusing time limits

| Bemessungsstrom<br>Rated Current | 100% I <sub>n</sub> |      | 135% I <sub>n</sub> |      | 150% I <sub>n</sub> |      | 200% I <sub>n</sub> |      |
|----------------------------------|---------------------|------|---------------------|------|---------------------|------|---------------------|------|
|                                  | min.                | max. | min.                | max. | min.                | max. | min.                | max. |
| 50 mA - 10 A                     | 4 h                 | -    | -                   | -    | -                   | -    | -                   | 60 s |

|                                   |                     |       |                            |
|-----------------------------------|---------------------|-------|----------------------------|
| UL 248-14<br>CSA C22.2 No. 248.14 | <b>8,4 x 7,6 mm</b> | 250 V | F<br>flink<br>quick acting |
|-----------------------------------|---------------------|-------|----------------------------|

| Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking<br>Capacity | Spannungsfall<br>Voltage Drop | Leistungsabgabe<br>Power Dissipa-<br>tion (@1,0 I <sub>n</sub> ) | Schmelz-<br>integral<br>I <sup>2</sup> t <sub>s</sub> Value | Approbationen<br>Approvals |
|----------------------------|---------------------------------------|----------------------------------------------------------------|-------------------------------|------------------------------------------------------------------|-------------------------------------------------------------|----------------------------|
|                            |                                       |                                                                | mV                            | mW                                                               | A's                                                         | UL                         |
| 1645x0.0,05                | 50 mA                                 | 50 A @ AC 250 V                                                | 2400                          | 120                                                              | 0,0001                                                      | ✓                          |
| 1645x0.0,063               | 63 mA                                 | 50 A @ AC 250 V                                                | 1350                          | 85                                                               | 0,0003                                                      | ✓                          |
| 1645x0.0,08                | 80 mA                                 | 50 A @ AC 250 V                                                | 1200                          | 95                                                               | 0,0007                                                      | ✓                          |
| 1645x0.0,1                 | 100 mA                                | 50 A @ AC 250 V                                                | 1100                          | 110                                                              | 0,0015                                                      | ✓                          |
| 1645x0.0,125               | 125 mA                                | 50 A @ AC 250 V                                                | 1000                          | 125                                                              | 0,003                                                       | ✓                          |
| 1645x0.0,16                | 160 mA                                | 50 A @ AC 250 V                                                | 950                           | 155                                                              | 0,0075                                                      | ✓                          |
| 1645x0.0,2                 | 200 mA                                | 50 A @ AC 250 V                                                | 850                           | 170                                                              | 0,013                                                       | ✓                          |
| 1645x0.0,25                | 250 mA                                | 50 A @ AC 250 V                                                | 240                           | 60                                                               | 0,02                                                        | ✓                          |
| 1645x0.0,315               | 315 mA                                | 50 A @ AC 250 V                                                | 230                           | 75                                                               | 0,03                                                        | ✓                          |
| 1645x0.0,4                 | 400 mA                                | 50 A @ AC 250 V                                                | 220                           | 90                                                               | 0,055                                                       | ✓                          |
| 1645x0.0,5                 | 500 mA                                | 50 A @ AC 250 V                                                | 210                           | 105                                                              | 0,1                                                         | ✓                          |
| 1645x0.0,63                | 630 mA                                | 50 A @ AC 250 V                                                | 200                           | 130                                                              | 0,19                                                        | ✓                          |
| 1645x0.0,8                 | 800 mA                                | 50 A @ AC 250 V                                                | 190                           | 155                                                              | 0,36                                                        | ✓                          |
| 1645x0.1                   | 1 A                                   | 50 A @ AC 250 V                                                | 180                           | 180                                                              | 0,14                                                        | ✓                          |
| 1645x0.1,25                | 1,25 A                                | 50 A @ AC 250 V                                                | 170                           | 215                                                              | 0,24                                                        | ✓                          |
| 1645x0.1,6                 | 1,6 A                                 | 50 A @ AC 250 V                                                | 160                           | 260                                                              | 0,34                                                        | ✓                          |
| 1645x0.2                   | 2 A                                   | 50 A @ AC 250 V                                                | 150                           | 300                                                              | 0,56                                                        | ✓                          |
| 1645x0.2,5                 | 2,5 A                                 | 50 A @ AC 250 V                                                | 140                           | 350                                                              | 1,1                                                         | ✓                          |
| 1645x0.3,15                | 3,15 A                                | 50 A @ AC 250 V                                                | 130                           | 410                                                              | 2                                                           | ✓                          |
| 1645x0.4                   | 4 A                                   | 50 A @ AC 250 V                                                | 120                           | 480                                                              | 3,2                                                         | ✓                          |
| 1645x0.5                   | 5 A                                   | 50 A @ AC 250 V                                                | 110                           | 550                                                              | 6,2                                                         | ✓                          |
| 1645x0.6,3                 | 6,3 A                                 | 50 A @ AC 250 V                                                | 100                           | 630                                                              | 14                                                          | ✓                          |
| 1645x0.8                   | 8 A                                   | 50 A @ AC 250 V                                                | 90                            | 720                                                              | 24                                                          |                            |
| 1645x0.10                  | 10 A                                  | 50 A @ AC 250 V                                                | 90                            | 900                                                              | 40                                                          |                            |

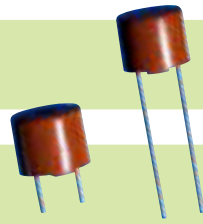
x = 0 lange Stifte / long pins

x = 5 kurze Stifte / short pins

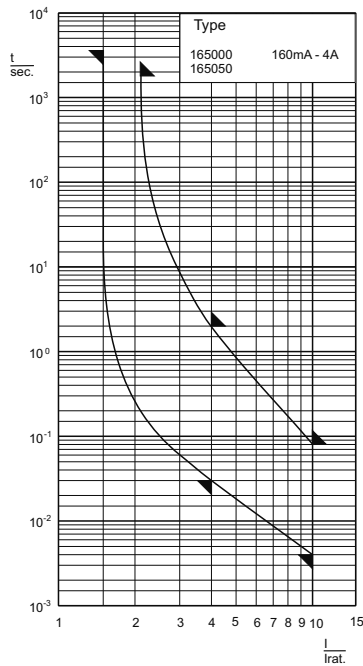
| Type          | Abk.<br>Abbr. | Beschreibung<br>Description                              |
|---------------|---------------|----------------------------------------------------------|
| 164500/164550 | -             | 100 Stück / pieces                                       |
| 164500        | GT            | 1.000 Stück gegurtet / 1.000 pieces on tape              |
| 164550        | IP            | 2.000 Stück Industrieverpackung / 2.000 industrial packs |

## Type 165000

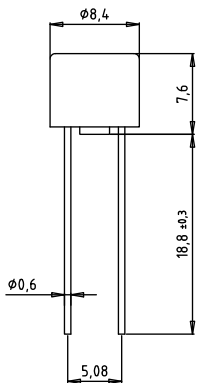
## Type 165050



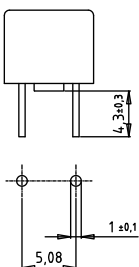
Zeit/Strom-Kennlinien  
Time-Current Characteristics



Abmessungen  
Dimensions  
165000 (x=0 lange Stifte/long pins)



165050 (x=5 kurze Stifte/short pins)



### Aufbau / Construction

Gehäuse / body

Thermoplast, braun / thermoplastic, brown  
temperaturbeständig / temperature resistant  
selbstverlöschend / self-extinguishing

Anschlussstifte / terminations

0,6 mm Ø, verzinkt / tinned  
löt- oder steckbar / solder or plug

### Zubehör / Related Products

Halter / holder 166602

siehe Seite 74 / see page 74

### Schmelzeitgrenzwerte / Fusing time limits

| Bemessungsstrom<br>Rated Current | 1,5 I <sub>n</sub> | 2,1 I <sub>n</sub> | 2,75 I <sub>n</sub> |      | 4 I <sub>n</sub> |      | 10 I <sub>n</sub> |       |
|----------------------------------|--------------------|--------------------|---------------------|------|------------------|------|-------------------|-------|
|                                  | min.               | max.               | min.                | max. | min.             | max. | min.              | max.  |
| 160 mA - 4 A                     | 1 h                | 30 min             | -                   | -    | 30 ms            | 2 s  | 4 ms              | 80 ms |

|               |                     |       |                                     |
|---------------|---------------------|-------|-------------------------------------|
| (IEC 60127-3) | <b>8,4 x 7,6 mm</b> | 250 V | M<br>mittelträge<br>medium time-lag |
|---------------|---------------------|-------|-------------------------------------|

| Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking<br>Capacity | Spannungsfall<br>Voltage Drop | Leistungsabgabe<br>Power Dissipa-<br>tion (@1,5 I <sub>n</sub> ) | Schmelzintegral<br>I <sup>2</sup> t <sub>s</sub> Value | Approbationen<br>Approvals |
|----------------------------|---------------------------------------|----------------------------------------------------------------|-------------------------------|------------------------------------------------------------------|--------------------------------------------------------|----------------------------|
|                            |                                       |                                                                | mV                            | mW                                                               | A <sup>2</sup> s                                       |                            |
| 1650x0,0,16                | 160 mA                                | 35 A @ AC 250 V                                                | 325                           | 140                                                              | 0,075                                                  |                            |
| 1650x0,0,2                 | 200 mA                                | 35 A @ AC 250 V                                                | 120                           | 80                                                               | 0,02                                                   |                            |
| 1650x0,0,25                | 250 mA                                | 35 A @ AC 250 V                                                | 120                           | 90                                                               | 0,036                                                  |                            |
| 1650x0,0,315               | 315 mA                                | 35 A @ AC 250 V                                                | 120                           | 120                                                              | 0,055                                                  |                            |
| 1650x0,0,4                 | 400 mA                                | 35 A @ AC 250 V                                                | 110                           | 140                                                              | 0,11                                                   |                            |
| 1650x0,0,5                 | 500 mA                                | 35 A @ AC 250 V                                                | 100                           | 160                                                              | 0,2                                                    |                            |
| 1650x0,0,63                | 630 mA                                | 35 A @ AC 250 V                                                | 90                            | 180                                                              | 0,33                                                   |                            |
| 1650x0,0,8                 | 800 mA                                | 35 A @ AC 250 V                                                | 80                            | 140                                                              | 0,58                                                   |                            |
| 1650x0,1                   | 1 A                                   | 35 A @ AC 250 V                                                | 70                            | 160                                                              | 0,9                                                    |                            |
| 1650x0,1,25                | 1,25 A                                | 35 A @ AC 250 V                                                | 65                            | 190                                                              | 1,4                                                    |                            |
| 1650x0,1,6                 | 1,6 A                                 | 35 A @ AC 250 V                                                | 65                            | 200                                                              | 2,5                                                    |                            |
| 1650x0,2                   | 2 A                                   | 35 A @ AC 250 V                                                | 60                            | 350                                                              | 3,1                                                    |                            |
| 1650x0,2,5                 | 2,5 A                                 | 35 A @ AC 250 V                                                | 55                            | 380                                                              | 5,2                                                    |                            |
| 1650x0,3,15                | 3,15 A                                | 35 A @ AC 250 V                                                | 55                            | 510                                                              | 9,9                                                    |                            |
| 1650x0,4                   | 4 A                                   | 40 A @ AC 250 V                                                | 50                            | 550                                                              | 16                                                     |                            |

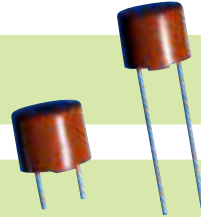
### x = 0 lange Stifte / long pins

| Type          | Abk.<br>Abbr. | Beschreibung<br>Description                                     |
|---------------|---------------|-----------------------------------------------------------------|
| 165000/165050 | -             | 100 Stück / pieces                                              |
| 165000        | GT            | 1.000 Stück gegurtet / 1.000 pieces on tape                     |
| 165050        | IP            | 2.000 Stück Industrieverpackung / 2.000 pieces industrial packs |
| z.B./ e.g.    | 165000.1,25GT |                                                                 |

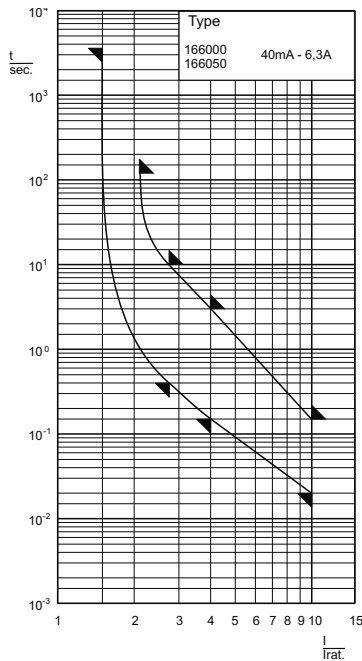
Type  
**166000**



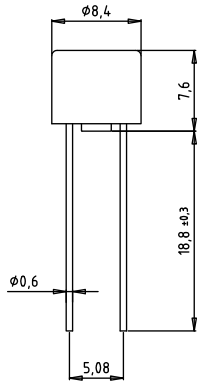
Type  
**166050**



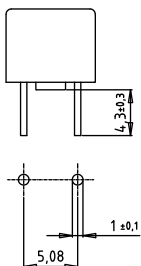
Zeit/Strom-Kennlinien  
Time-Current Characteristics



Abmessungen  
Dimensions  
166000 (x=0 lange Stifte/long pins)



166050 (x=5 kurze Stifte/short pins)



Aufbau / Construction  
Gehäuse / body

Thermoplast, braun / thermoplastic, brown  
temperaturbeständig / temperature resistant  
selbstverlöschend / self-extinguishing

Anschlussstifte / terminations

0,6 mm Ø, verzinkt / tinned  
löt- oder steckbar / solder or plug

Zubehör / Related Products

Halter / holder 166602

siehe Seite 74 / see page 74

Schmelzeitgrenzwerte / Fusing time limits

| Bemessungsstrom<br>Rated Current | 1,5 I <sub>n</sub> |       | 2,1 I <sub>n</sub> |      | 2,75 I <sub>n</sub> |      | 4 I <sub>n</sub> |        | 10 I <sub>n</sub> |      |
|----------------------------------|--------------------|-------|--------------------|------|---------------------|------|------------------|--------|-------------------|------|
|                                  | min.               | max.  | min.               | max. | min.                | max. | min.             | max.   | min.              | max. |
| 40 mA - 6,3 A                    | 1 h                | 2 min | 400 ms             | 10 s | 150 ms              | 3 s  | 20 ms            | 150 ms |                   |      |

|                                               |                     |       |                        |
|-----------------------------------------------|---------------------|-------|------------------------|
| IEC 60127-3/4<br>EN 60127-3/4<br>VDE 0820-3/4 | <b>8,4 x 7,6 mm</b> | 250 V | T<br>träge<br>time-lag |
|-----------------------------------------------|---------------------|-------|------------------------|

| Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking<br>Capacity | Spannungs-<br>fall<br>Voltage Drop | Leistungs-<br>abgabe<br>Power Dissipa-<br>tion (@1,5 I <sub>n</sub> ) | Schmelz-<br>integral<br>I <sup>2</sup> t <sub>5</sub> Value | Approbationen<br>Approvals |     |         |
|----------------------------|---------------------------------------|----------------------------------------------------------------|------------------------------------|-----------------------------------------------------------------------|-------------------------------------------------------------|----------------------------|-----|---------|
|                            |                                       |                                                                | mV                                 | mW                                                                    | A's                                                         | Semko                      | VDE | UL rec. |
| 1660x0,04                  | 40 mA                                 | 35 A @ AC 250 V                                                | 530                                | 60                                                                    | 0,015                                                       | ✓                          | ✓   | ✓       |
| 1660x0,05                  | 50 mA                                 | 35 A @ AC 250 V                                                | 490                                | 70                                                                    | 0,017                                                       | ✓                          | ✓   | ✓       |
| 1660x0,063                 | 63 mA                                 | 35 A @ AC 250 V                                                | 390                                | 80                                                                    | 0,02                                                        | ✓                          | ✓   | ✓       |
| 1660x0,08                  | 80 mA                                 | 35 A @ AC 250 V                                                | 300                                | 90                                                                    | 0,035                                                       | ✓                          | ✓   | ✓       |
| 1660x0,1                   | 100 mA                                | 35 A @ AC 250 V                                                | 260                                | 100                                                                   | 0,06                                                        | ✓                          | ✓   | ✓       |
| 1660x0,125                 | 125 mA                                | 35 A @ AC 250 V                                                | 180                                | 110                                                                   | 0,12                                                        | ✓                          | ✓   | ✓       |
| 1660x0,16                  | 160 mA                                | 35 A @ AC 250 V                                                | 170                                | 130                                                                   | 0,21                                                        | ✓                          | ✓   | ✓       |
| 1660x0,2                   | 200 mA                                | 35 A @ AC 250 V                                                | 160                                | 140                                                                   | 0,32                                                        | ✓                          | ✓   | ✓       |
| 1660x0,25                  | 250 mA                                | 35 A @ AC 250 V                                                | 150                                | 150                                                                   | 0,5                                                         | ✓                          | ✓   | ✓       |
| 1660x0,315                 | 315 mA                                | 35 A @ AC 250 V                                                | 140                                | 160                                                                   | 0,8                                                         | ✓                          | ✓   | ✓       |
| 1660x0,4                   | 400 mA                                | 35 A @ AC 250 V                                                | 130                                | 170                                                                   | 1,1                                                         | ✓                          | ✓   | ✓       |
| 1660x0,5                   | 500 mA                                | 35 A @ AC 250 V                                                | 120                                | 180                                                                   | 1,8                                                         | ✓                          | ✓   | ✓       |
| 1660x0,63                  | 630 mA                                | 35 A @ AC 250 V                                                | 110                                | 200                                                                   | 3,2                                                         | ✓                          | ✓   | ✓       |
| 1660x0,8                   | 800 mA                                | 35 A @ AC 250 V                                                | 100                                | 220                                                                   | 5,2                                                         | ✓                          | ✓   | ✓       |
| 1660x0,1                   | 1 A                                   | 35 A @ AC 250 V                                                | 85                                 | 240                                                                   | 8                                                           | ✓                          | ✓   | ✓       |
| 1660x0,1,25                | 1,25 A                                | 35 A @ AC 250 V                                                | 75                                 | 290                                                                   | 12                                                          | ✓                          | ✓   | ✓       |
| 1660x0,1,6                 | 1,6 A                                 | 35 A @ AC 250 V                                                | 70                                 | 350                                                                   | 22                                                          | ✓                          | ✓   | ✓       |
| 1660x0,2                   | 2 A                                   | 35 A @ AC 250 V                                                | 70                                 | 480                                                                   | 30                                                          | ✓                          | ✓   | ✓       |
| 1660x0,2,5                 | 2,5 A                                 | 35 A @ AC 250 V                                                | 70                                 | 520                                                                   | 46                                                          | ✓                          | ✓   | ✓       |
| 1660x0,3,15                | 3,15 A                                | 35 A @ AC 250 V                                                | 70                                 | 600                                                                   | 80                                                          | ✓                          | ✓   | ✓       |
| 1660x0,4                   | 4 A                                   | 40 A @ AC 250 V                                                | 70                                 | 800                                                                   | 130                                                         | ✓                          | ✓   | ✓       |
| 1660x0,5                   | 5 A <sup>1)</sup>                     | 50 A @ AC 250 V                                                | 70                                 | 1000                                                                  | 130                                                         | ✓                          | ✓   | ✓       |
| 1660x0,6,3                 | 6,3 A <sup>1)</sup>                   | 63 A @ AC 250 V                                                | 70                                 | 1200                                                                  | 230                                                         | ✓                          | ✓   |         |

x = 0 lange Stifte / long pins

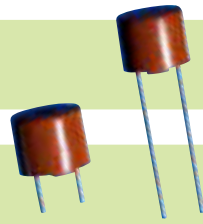
x = 5 kurze Stifte / short pins

| Type          | Abk.<br>Abbr. | Beschreibung<br>Description                                     |
|---------------|---------------|-----------------------------------------------------------------|
| 160000/166050 | -             | 100 Stück / pieces                                              |
| 166000        | GT            | 1.000 Stück gegurtet / 1.000 pieces on tape                     |
| 166050        | IP            | 2.000 Stück Industrieverpackung / 2.000 pieces industrial packs |
| z.B./ e.g.    |               | 166000,0,315GT                                                  |

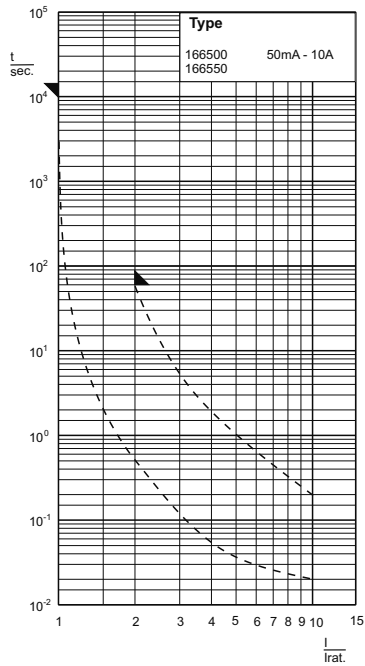
Type  
**166500**



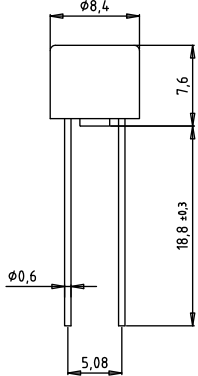
Type  
**166550**



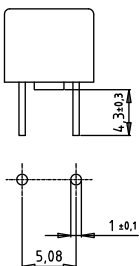
Zeit/Strom-Kennlinien  
Time-Current Characteristics



Abmessungen  
Dimensions  
166500 (x=0 lange Stifte/long pins)



166550 (x=5 kurze Stifte/short pins)



### Aufbau / Construction

Gehäuse / body

Thermoplast, braun / thermoplastic, brown  
temperaturbeständig / temperature resistant  
selbstverlöschend / self-extinguishing

Schmelzleiter gedruckt / printed fuse-element

Anschlussstifte / terminations

0,6 mm Ø, verzinkt / tinned  
löt- oder steckbar / solder or plug

### Zubehör / Related Products

Halter / holder 166602

siehe Seite 74 / see page 74

### Schmelzeitgrenzwerte / Fusing time limits

| Bemessungsstrom<br>Rated Current  | 100% I <sub>n</sub> |      | 135% I <sub>n</sub> |      | 150% I <sub>n</sub>    |      | 200% I <sub>n</sub> |      |
|-----------------------------------|---------------------|------|---------------------|------|------------------------|------|---------------------|------|
|                                   | min.                | max. | min.                | max. | min.                   | max. | min.                | max. |
| 50 mA - 10 A                      | 4 h                 | -    | -                   | -    | -                      | -    | -                   | 60 s |
| UL 248-14<br>CSA C22.2 No. 248.14 | 8,4 x 7,6 mm        |      | 250 V               |      | T<br>träge<br>time-lag |      |                     |      |

| Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking<br>Capacity | Spannungsfall<br>Voltage Drop | Leistungsabgabe<br>Power Dissipa-<br>tion (@1,0 I <sub>n</sub> ) | Schmelz-<br>integral<br>I <sup>2</sup> t <sub>s</sub> Value | Approbationen<br>Approvals |     |
|----------------------------|---------------------------------------|----------------------------------------------------------------|-------------------------------|------------------------------------------------------------------|-------------------------------------------------------------|----------------------------|-----|
|                            |                                       |                                                                | mV                            | mW                                                               | A <sup>2</sup> s                                            | UL                         | cUL |
| 1665x0.0,05                | 50 mA                                 | 50 A @ AC 250 V                                                | 800                           | 40                                                               | 0,015                                                       | ✓                          | ✓   |
| 1665x0.0,063               | 63 mA                                 | 50 A @ AC 250 V                                                | 700                           | 45                                                               | 0,017                                                       | ✓                          | ✓   |
| 1665x0.0,08                | 80 mA                                 | 50 A @ AC 250 V                                                | 600                           | 50                                                               | 0,02                                                        | ✓                          | ✓   |
| 1665x0.0,1                 | 100 mA                                | 50 A @ AC 250 V                                                | 500                           | 50                                                               | 0,025                                                       | ✓                          | ✓   |
| 1665x0.0,125               | 125 mA                                | 50 A @ AC 250 V                                                | 400                           | 50                                                               | 0,03                                                        | ✓                          | ✓   |
| 1665x0.0,16                | 160 mA                                | 50 A @ AC 250 V                                                | 350                           | 55                                                               | 0,07                                                        | ✓                          | ✓   |
| 1665x0.0,2                 | 200 mA                                | 50 A @ AC 250 V                                                | 300                           | 60                                                               | 0,14                                                        | ✓                          | ✓   |
| 1665x0.0,25                | 250 mA                                | 50 A @ AC 250 V                                                | 250                           | 65                                                               | 0,25                                                        | ✓                          | ✓   |
| 1665x0.0,315               | 315 mA                                | 50 A @ AC 250 V                                                | 240                           | 75                                                               | 0,42                                                        | ✓                          | ✓   |
| 1665x0.0,4                 | 400 mA                                | 50 A @ AC 250 V                                                | 230                           | 95                                                               | 0,53                                                        | ✓                          | ✓   |
| 1665x0.0,5                 | 500 mA                                | 50 A @ AC 250 V                                                | 220                           | 110                                                              | 1,0                                                         | ✓                          | ✓   |
| 1665x0.0,63                | 630 mA                                | 50 A @ AC 250 V                                                | 170                           | 110                                                              | 1,5                                                         | ✓                          | ✓   |
| 1665x0.0,8                 | 800 mA                                | 50 A @ AC 250 V                                                | 150                           | 120                                                              | 3,1                                                         | ✓                          | ✓   |
| 1665x0.1                   | 1 A                                   | 50 A @ AC 250 V                                                | 130                           | 130                                                              | 4,8                                                         | ✓                          | ✓   |
| 1665x0.1,25                | 1,25 A                                | 50 A @ AC 250 V                                                | 150                           | 190                                                              | 5,7                                                         | ✓                          | ✓   |
| 1665x0.1,6                 | 1,6 A                                 | 50 A @ AC 250 V                                                | 145                           | 235                                                              | 11                                                          | ✓                          | ✓   |
| 1665x0.2                   | 2 A                                   | 50 A @ AC 250 V                                                | 125                           | 250                                                              | 18                                                          | ✓                          | ✓   |
| 1665x0.2,5                 | 2,5 A                                 | 50 A @ AC 250 V                                                | 120                           | 300                                                              | 25                                                          | ✓                          | ✓   |
| 1665x0.3,15                | 3,15 A                                | 50 A @ AC 250 V                                                | 110                           | 350                                                              | 40                                                          | ✓                          | ✓   |
| 1665x0.4                   | 4 A                                   | 50 A @ AC 250 V                                                | 100                           | 400                                                              | 72                                                          | ✓                          | ✓   |
| 1665x0.5                   | 5 A                                   | 50 A @ AC 250 V                                                | 95                            | 475                                                              | 130                                                         | ✓                          | ✓   |
| 1665x0.6,3                 | 6,3 A                                 | 50 A @ AC 250 V                                                | 90                            | 570                                                              | 130                                                         | ✓                          | ✓   |
| 1665x0.8                   | 8 A                                   | 50 A @ AC 250 V                                                | 90                            | 720                                                              | 230                                                         |                            |     |
| 1665x0.10                  | 10 A                                  | 50 A @ AC 250 V                                                | 90                            | 900                                                              | 370                                                         |                            |     |

x = 0 lange Stifte / long pins

x = 5 kurze Stifte / short pins

| Type          | Abk.<br>Abbr. | Beschreibung<br>Description                                     |
|---------------|---------------|-----------------------------------------------------------------|
| 166500/166550 | -             | 100 Stück / pieces                                              |
| 166500        | GT            | 1.000 Stück gegurtet / 1.000 pieces on tap                      |
| 166550        | IP            | 2.000 Stück Industrieverpackung / 2.000 pieces industrial packs |
| z.B./ e.g.    | 166500.3,15GT |                                                                 |



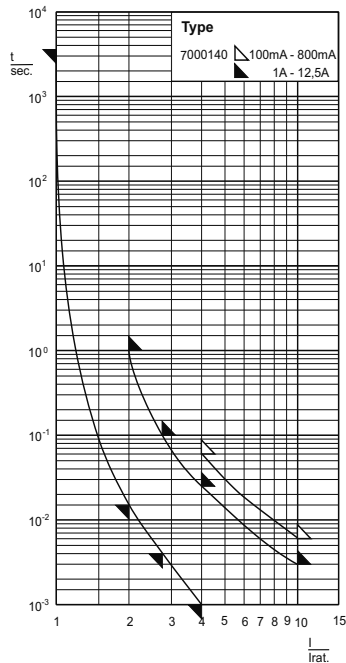
# G-Sicherungseinsätze / Miniature Fuse-Links

Keramikrohr / Ceramic tube  
Glasrohr/ Glass tube  
Ohne und mit Kennmelder / Without  
or with indicator

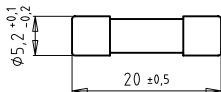
## Type



### Zeit/Strom-Kennlinien Time-Current Characteristics



### Abmessungen Dimensions



### Aufbau / Construction

Keramikrohr / ceramic tube

undurchsichtig / non-transparent  
mit Löschmittelfüllung / with filling

Kontaktkappen / end caps

Messing vernickelt / brass, nickel-plated

### Schmelzeitgrenzwerte / Fusing time limits

| Bemessungsstrom<br>Rated Current | 1 I <sub>n</sub> | 2 I <sub>n</sub> | 2,75 I <sub>n</sub> |        | 4 I <sub>n</sub> |       | 10 I <sub>n</sub> |      |
|----------------------------------|------------------|------------------|---------------------|--------|------------------|-------|-------------------|------|
|                                  | min.             | max.             | min.                | max.   | min.             | max.  | min.              | max. |
| 100 mA - 800 mA                  | 1 h              | -                | -                   | -      | -                | 60 ms | -                 | 6 ms |
| 1 A - 12,5 A                     | 1 h              | 1 s              | 4 ms                | 100 ms | 1 ms             | 25 ms | -                 | 3 ms |

|                           |                  |       |                                       |
|---------------------------|------------------|-------|---------------------------------------|
| Sondertyp<br>Special type | <b>5 x 20 mm</b> | 250 V | FF<br>superflink<br>very quick acting |
|---------------------------|------------------|-------|---------------------------------------|

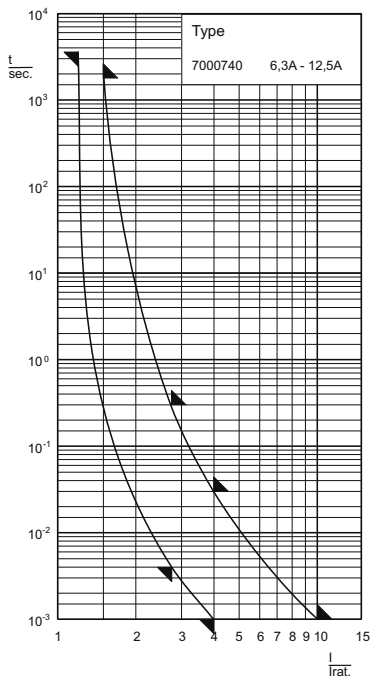
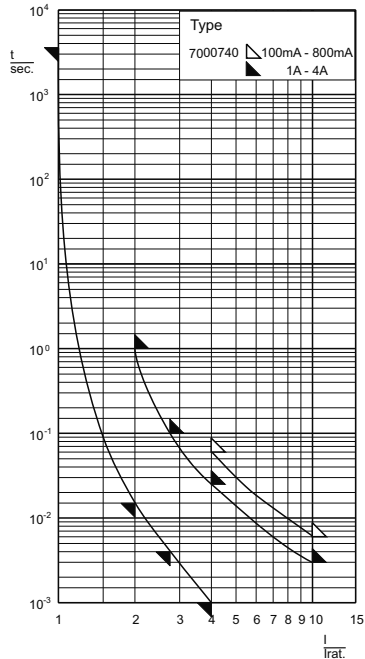
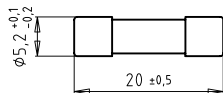
| Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking<br>Capacity | Spannungsfall<br>Voltage Drop | Leistungsabgabe<br>Power Dissipa-<br>tion (@1,0 I <sub>n</sub> ) | Schmelzintegral<br>I <sup>2</sup> t <sub>s</sub> Value | Approbationen<br>Approvals |
|----------------------------|---------------------------------------|----------------------------------------------------------------|-------------------------------|------------------------------------------------------------------|--------------------------------------------------------|----------------------------|
|                            |                                       |                                                                | mV                            | W                                                                | A <sup>2</sup> s                                       | UL rec.                    |
| 7000140.0,1                | 100 mA                                | 200 kA @ AC 250 V                                              | 1000                          | 0,1                                                              | 0,0016                                                 |                            |
| 7000140.0,125              | 125 mA                                | 200 kA @ AC 250 V                                              | 950                           | 0,12                                                             | 0,0024                                                 | ✓                          |
| 7000140.0,16               | 160 mA                                | 200 kA @ AC 250 V                                              | 1300                          | 0,3                                                              | 0,004                                                  | ✓                          |
| 7000140.0,2                | 200 mA                                | 200 kA @ AC 250 V                                              | 600                           | 0,2                                                              | 0,01                                                   | ✓                          |
| 7000140.0,25               | 250 mA                                | 200 kA @ AC 250 V                                              | 550                           | 0,2                                                              | 0,02                                                   | ✓                          |
| 7000140.0,315              | 315 mA                                | 200 kA @ AC 250 V                                              | 500                           | 0,2                                                              | 0,04                                                   | ✓                          |
| 7000140.0,4                | 400 mA                                | 200 kA @ AC 250 V                                              | 500                           | 0,2                                                              | 0,07                                                   | ✓                          |
| 7000140.0,5                | 500 mA                                | 200 kA @ AC 250 V                                              | 550                           | 0,3                                                              | 0,07                                                   | ✓                          |
| 7000140.0,63               | 630 mA                                | 200 kA @ AC 250 V                                              | 600                           | 0,4                                                              | 0,15                                                   | ✓                          |
| 7000140.0,8                | 800 mA                                | 200 kA @ AC 250 V                                              | 600                           | 0,5                                                              | 0,32                                                   | ✓                          |
| 7000140.1                  | 1 A                                   | 200 kA @ AC 250 V                                              | 600                           | 0,6                                                              | 0,32                                                   | ✓                          |
| 7000140.1,25               | 1,25 A                                | 200 kA @ AC 250 V                                              | 400                           | 0,5                                                              | 0,20                                                   | ✓                          |
| 7000140.1,6                | 1,6 A                                 | 200 kA @ AC 250 V                                              | 400                           | 0,7                                                              | 0,31                                                   | ✓                          |
| 7000140.2                  | 2 A                                   | 200 kA @ AC 250 V                                              | 400                           | 0,8                                                              | 0,64                                                   | ✓                          |
| 7000140.2,5                | 2,5 A                                 | 200 kA @ AC 250 V                                              | 400                           | 1,0                                                              | 0,88                                                   | ✓                          |
| 7000140.3,15               | 3,15 A                                | 200 kA @ AC 250 V                                              | 400                           | 1,3                                                              | 1,6                                                    | ✓                          |
| 7000140.4                  | 4 A                                   | 200 kA @ AC 250 V                                              | 350                           | 1,4                                                              | 3,2                                                    | ✓                          |
| 7000140.5                  | 5 A                                   | 200 kA @ AC 250 V                                              | 350                           | 1,8                                                              | 5,9                                                    | ✓                          |
| 7000140.6,3                | 6,3 A                                 | 1500 A @ AC 250 V                                              | 300                           | 1,9                                                              | 10                                                     |                            |
| 7000140.8                  | 8 A                                   | 1500 A @ AC 250 V                                              | 300                           | 2,4                                                              | 19                                                     |                            |
| 7000140.10                 | 10 A                                  | 1500 A @ AC 250 V                                              | 300                           | 3,0                                                              | 30                                                     |                            |
| 7000140.12,5               | 12,5 A                                | 1500 A @ AC 250 V                                              | 200                           | 2,5                                                              | 115                                                    |                            |

Bei Verwendung dieser G-Sicherungseinsätze ab 6,3 A ist auf ausreichende Wärmeabfuhr zu achten.  
When using this type from 6.3 A up, consideration should be given to heat

| Type       | Abk.<br>Abbr.  | Beschreibung<br>Description                                     |
|------------|----------------|-----------------------------------------------------------------|
| 7000140    | -              | 100 Stück / pieces (10 x 10)                                    |
|            | IP             | 1.000 Stück Industrieverpackung / 1.000 pieces industrial packs |
| z.B./ e.g. | 7000140.3,15IP |                                                                 |

## Type


  
E180276

Zeit/Strom-Kennlinien  
Time-Current Characteristics

Abmessungen  
Dimensions


## Aufbau / Construction

Keramikrohr / ceramic tube

undurchsichtig / non-transparent  
mit Löschmittelfüllung / with filling

Kontaktkappen / end caps

Messing vernickelt / brass, nickel-plated

## Schmelzeitgrenzwerte / Fusing time limits

| Bemessungsstrom<br>Rated Current | 1 I <sub>n</sub> | 2 I <sub>n</sub> | 2,75 I <sub>n</sub> |        | 4 I <sub>n</sub> |       | 10 I <sub>n</sub> |      |
|----------------------------------|------------------|------------------|---------------------|--------|------------------|-------|-------------------|------|
|                                  | min.             | max.             | min.                | max.   | min.             | max.  | min.              | max. |
| 100 mA - 800 mA                  | 1 h              | -                | -                   | -      | -                | -     | 60 ms             | 6 ms |
| 1 A - 4 A                        | 1 h              | 1 s              | 4 ms                | 100 ms | 1 ms             | 25 ms | -                 | 3 ms |

| Bemessungsstrom<br>Rated Current | 1,2 I <sub>n</sub> | 1,5 I <sub>n</sub> | 2,75 I <sub>n</sub> |        | 4 I <sub>n</sub> |       | 10 I <sub>n</sub> |      |
|----------------------------------|--------------------|--------------------|---------------------|--------|------------------|-------|-------------------|------|
|                                  | min.               | max.               | min.                | max.   | min.             | max.  | min.              | max. |
| 6,3 A - 12,5 A                   | 1 h                | 30 min.            | 4 ms                | 300 ms | 1 ms             | 30 ms | -                 | 1 ms |

|                            |                  |       |                                      |
|----------------------------|------------------|-------|--------------------------------------|
| Sondertype<br>Special type | <b>5 x 20 mm</b> | 400 V | FF<br>superlink<br>very quick acting |
|----------------------------|------------------|-------|--------------------------------------|

| Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking<br>Capacity | Spannungsfall<br>Voltage Drop | Leistungsabgabe<br>Power Dissipa-<br>tion (@1,0 I <sub>n</sub> ) | Schmelz-<br>integral<br>I <sup>2</sup> t <sub>s</sub> Value | Approbationen<br>Approvals |
|----------------------------|---------------------------------------|----------------------------------------------------------------|-------------------------------|------------------------------------------------------------------|-------------------------------------------------------------|----------------------------|
|                            |                                       |                                                                | mV                            | W                                                                | A <sup>2</sup> s                                            |                            |
| 7000740.0,1                | 100 mA                                | 10 kA @ AC 400 V                                               | 4000                          | 0,4                                                              | 0,0016                                                      |                            |
| 7000740.0,125              | 125 mA                                | 10 kA @ AC 400 V                                               | 3500                          | 0,5                                                              | 0,0024                                                      |                            |
| 7000740.0,16               | 160 mA                                | 10 kA @ AC 400 V                                               | 1300                          | 0,3                                                              | 0,004                                                       |                            |
| 7000740.0,2                | 200 mA                                | 10 kA @ AC 400 V                                               | 600                           | 0,2                                                              | 0,01                                                        |                            |
| 7000740.0,25               | 250 mA                                | 10 kA @ AC 400 V                                               | 550                           | 0,2                                                              | 0,02                                                        |                            |
| 7000740.0,315              | 315 mA                                | 10 kA @ AC 400 V                                               | 500                           | 0,2                                                              | 0,04                                                        |                            |
| 7000740.0,4                | 400 mA                                | 10 kA @ AC 400 V                                               | 500                           | 0,2                                                              | 0,07                                                        |                            |
| 7000740.0,5                | 500 mA                                | 10 kA @ AC 400 V                                               | 550                           | 0,3                                                              | 0,07                                                        |                            |
| 7000740.0,63               | 630 mA                                | 10 kA @ AC 400 V                                               | 600                           | 0,4                                                              | 0,15                                                        |                            |
| 7000740.0,8                | 800 mA                                | 10 kA @ AC 400 V                                               | 600                           | 0,5                                                              | 0,32                                                        |                            |
| 7000740.1                  | 1 A                                   | 10 kA @ AC 400 V                                               | 600                           | 0,6                                                              | 0,32                                                        |                            |
| 7000740.1,25               | 1,25 A                                | 10 kA @ AC 400 V                                               | 400                           | 0,5                                                              | 0,2                                                         |                            |
| 7000740.1,6                | 1,6 A                                 | 10 kA @ AC 400 V                                               | 400                           | 0,7                                                              | 0,31                                                        |                            |
| 7000740.2                  | 2 A                                   | 10 kA @ AC 400 V                                               | 400                           | 0,8                                                              | 0,64                                                        |                            |
| 7000740.2,5                | 2,5 A                                 | 10 kA @ AC 400 V                                               | 400                           | 1,0                                                              | 0,88                                                        |                            |
| 7000740.3,15               | 3,15 A                                | 10 kA @ AC 400 V                                               | 400                           | 1,3                                                              | 1,6                                                         |                            |
| 7000740.4                  | 4 A                                   | 10 kA @ AC 400 V                                               | 350                           | 1,4                                                              | 3,2                                                         |                            |

cos φ = 0,7

| Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking<br>Capacity | Spannungsfall<br>Voltage Drop | Leistungsabgabe<br>Power dissipa-<br>tion (@1,5 I <sub>n</sub> ) | Schmelz-<br>integral<br>I <sup>2</sup> t <sub>s</sub> Value | Approbationen<br>Approvals |
|----------------------------|---------------------------------------|----------------------------------------------------------------|-------------------------------|------------------------------------------------------------------|-------------------------------------------------------------|----------------------------|
|                            |                                       |                                                                | mV                            | W                                                                | A <sup>2</sup> s                                            | UL rec.                    |
| 7000740.6,3                | 6,3 A                                 | 200 kA @ AC 250 V <sup>1)</sup>                                | 250                           | 2,8                                                              | 1,6                                                         | ✓                          |
| 7000740.8                  | 8 A                                   | 200 kA @ AC 250 V <sup>1)</sup>                                | 230                           | 3,0                                                              | 4,5                                                         | ✓                          |
| 7000740.10                 | 10 A                                  | 200 kA @ AC 250 V <sup>1)</sup>                                | 180                           | 3,4                                                              | 8,8                                                         | ✓                          |
| 7000740.12,5               | 12,5 A                                | 200 kA @ AC 250 V <sup>1)</sup>                                | 150                           | 4,0                                                              | 15                                                          | ✓                          |
| 7000740.16                 | 16 A                                  | 10 kA @ AC 125 V                                               | 130                           | 3,8                                                              | 46                                                          |                            |

<sup>1)</sup> cos φ < 0,2

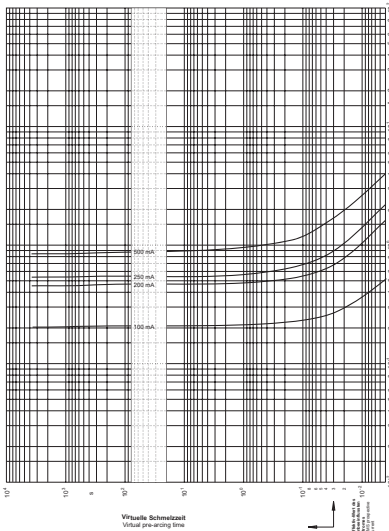
Bei Verwendung dieser G-Sicherungseinsätze ab 6,3 A ist auf ausreichende Wärmeabfuhr zu achten.

| Type       | Abk.<br>Abbr. | Beschreibung<br>Description                                     |
|------------|---------------|-----------------------------------------------------------------|
| 7000740    | -             | 100 Stück / pieces (10 x 10)                                    |
|            | IP            | 1.000 Stück Industrieverpackung / 1.000 pieces industrial packs |
| z.B./ e.g. |               | 7000740.1,25IP                                                  |

## Type



### Zeit/Strom-Kennlinien Time-Current Characteristics



### Aufbau / Construction

Keramikrohr / ceramic tube

undurchsichtig / non-transparent  
mit Löschmittelfüllung / with filling

Kontaktkappen / end caps

Messing vernickelt / brass, nickel-plated

### Schmelzeitgrenzwerte / Fusing time limits

| Bemessungsstrom<br>Rated Current | 1 I <sub>n</sub> | 2 I <sub>n</sub> | 2,75 I <sub>n</sub> |      | 4 I <sub>n</sub> |      | 10 I <sub>n</sub> |      |
|----------------------------------|------------------|------------------|---------------------|------|------------------|------|-------------------|------|
|                                  | min.             | max.             | min.                | max. | min.             | max. | min.              | max. |
| 100 mA - 500 mA                  | 1 h              | -                | -                   | -    | -                | -    | 60 ms             | 6 ms |

nur für Kurzschlusschutz  
for short circuit protection only

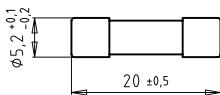
**5 x 20 mm**

660 V

aR (FF)

| Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking Capacity | Spannungsfall<br>Voltage Drop | Leistungsabgabe<br>Power Dissipation (@1,0 I <sub>n</sub> ) | Schmelz-<br>integral<br>I <sup>2</sup> t <sub>s</sub> Value | Approbationen<br>Approvals |
|----------------------------|---------------------------------------|-------------------------------------------------------------|-------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|----------------------------|
|                            |                                       |                                                             | mV                            | W                                                           | A <sup>2</sup> s                                            | .                          |
| 7018040.0,1                | 100 mA                                | 100 kA @ AC/DC 660 V                                        | 1000                          | 0,1                                                         | 0,0009                                                      |                            |
| 7018040.0,2                | 200 mA                                | 100 kA @ AC/DC 660 V                                        | 600                           | 0,2                                                         | 0,01                                                        |                            |
| 7018040.0,25               | 250 mA                                | 100 kA @ AC/DC 660 V                                        | 550                           | 0,2                                                         | 0,02                                                        |                            |
| 7018040.0,5                | 500 mA                                | 100 kA @ AC/DC 660 V                                        | 550                           | 0,3                                                         | 0,07                                                        |                            |

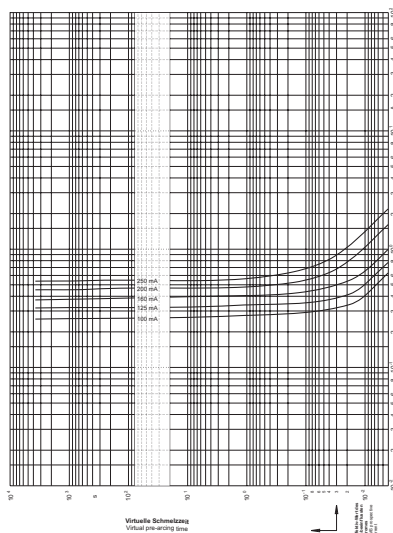
### Abmessungen Dimensions



| Type | Abk.<br>Abbr. | Beschreibung<br>Description  |
|------|---------------|------------------------------|
|      | -             | 100 Stück / pieces (10 x 10) |

## Type


**Neu / New**

 Zeit/Strom-Kennlinien  
 Time-Current Characteristics


## Aufbau / Construction

Keramikrohr / ceramic tube

 undurchsichtig / non-transparent  
 mit Löschmittelfüllung / with filling

Kontaktdeckungen / end caps

Messing vernickelt / brass, nickel-plated

## Schmelzzeitgrenzwerte / Fusing time limits

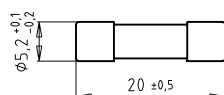
| Bemessungsstrom<br>Rated Current | $1 I_n$ | $2 I_n$ | $2,75 I_n$ |      | $4 I_n$ |      | $10 I_n$ |      |
|----------------------------------|---------|---------|------------|------|---------|------|----------|------|
|                                  | min.    | max.    | min.       | max. | min.    | max. | min.     | max. |
| 100 mA - 250 mA                  | 1 h     | -       | -          | -    | -       | -    | 60 ms    | 6 ms |

 nur für Kurzschlusschutz  
 for short circuit protection only
**5 x 20 mm**

1000 V

aR (FF)

| Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking Capacity | Spannungsfall<br>Voltage Drop | Leistungsabgabe<br>Power Dissipation<br>(@1,0 I <sub>n</sub> ) | Schmelz-<br>integral<br>I <sup>2</sup> t <sub>90</sub> Value | Approbationen<br>Approvals |
|----------------------------|---------------------------------------|-------------------------------------------------------------|-------------------------------|----------------------------------------------------------------|--------------------------------------------------------------|----------------------------|
|                            |                                       |                                                             | mV                            | W                                                              | A <sup>2</sup> s                                             | .                          |
| 7017640.0,1                | 100 mA                                | 100 kA @ AC 1000 V                                          | 4000                          | 0,4                                                            | 0,0016                                                       |                            |
| 7017640.0,125              | 125 mA                                | 100 kA @ AC 1000 V                                          | 3500                          | 0,5                                                            | 0,0024                                                       |                            |
| 7017640.0,16               | 160 mA                                | 100 kA @ AC 1000 V                                          | 1300                          | 0,3                                                            | 0,004                                                        |                            |
| 7017640.0,2                | 200 mA                                | 100 kA @ AC 1000 V                                          | 600                           | 0,2                                                            | 0,01                                                         |                            |
| 7017640.0,25               | 250 mA                                | 100 kA @ AC 1000 V                                          | 550                           | 0,2                                                            | 0,02                                                         |                            |

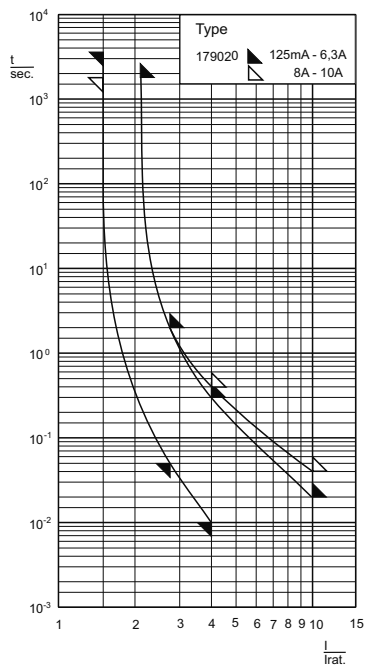
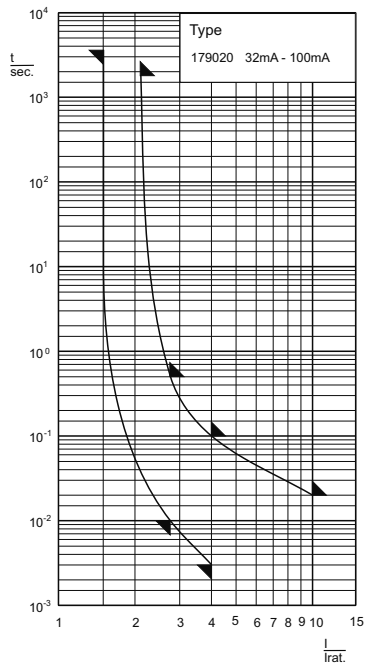
 Abmessungen  
 Dimensions


| Type | Abk.<br>Abbr. | Beschreibung<br>Description  |
|------|---------------|------------------------------|
|      | -             | 100 Stück / pieces (10 x 10) |

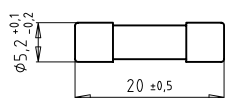
Type  
**179020**



Zeit/Strom-Kennlinien  
Time-Current Characteristics



Abmessungen  
Dimensions



**Aufbau / Construction**

Glasrohr / glass tube

durchsichtig / transparent

Kontaktkappen / end caps

Messing, vernickelt / brass, nickel-plated

**Schmelzeitgrenzwerte / Fusing time limits**

| Bemessungsstrom<br>Rated Current              | 1,5 I <sub>n</sub> | 2,1 I <sub>n</sub> | 2,75 I <sub>n</sub> |        | 4 I <sub>n</sub>           |        | 10 I <sub>n</sub> |       |
|-----------------------------------------------|--------------------|--------------------|---------------------|--------|----------------------------|--------|-------------------|-------|
|                                               | min.               | max.               | min.                | max.   | min.                       | max.   | min.              | max.  |
| 50 - 100 mA                                   | 1 h                | 30 min             | 10 ms               | 500 ms | 3 ms                       | 100 ms | -                 | 20 ms |
| 125 mA - 6,3 A                                | 1h                 | 30 min             | 50 ms               | 2 s    | 10 ms                      | 300 ms | -                 | 20 ms |
| 8 - 10 A                                      | 30 min             | 30 min             | 50 ms               | 2 s    | 10 ms                      | 400 ms | -                 | 40 ms |
| IEC 60127-2/2<br>EN 60127-2/2<br>VDE 0820-2/2 | <b>5 x 20 mm</b>   |                    | 250 V               |        | F<br>flink<br>quick acting |        |                   |       |

| Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking Capacity | Spannungsfall<br>Voltage Drop | Leistungs-<br>abgabe<br>Power<br>Dissipation<br>(@1,5 I <sub>n</sub> ) | Schmelz-<br>integral<br>I <sup>2</sup> t <sub>s</sub> Value | Approbationen<br>Approvals |     |      |       |
|----------------------------|---------------------------------------|-------------------------------------------------------------|-------------------------------|------------------------------------------------------------------------|-------------------------------------------------------------|----------------------------|-----|------|-------|
|                            |                                       |                                                             | mV                            | W                                                                      | A <sup>2</sup> s                                            | Semko                      | VDE | BEAB | ULrec |
| 179020.0,05                | 50 mA                                 | 35 A @ AC 250 V                                             | 3500                          | 0,4                                                                    | 0,0004                                                      | ✓                          | ✓   |      | ✓     |
| 179020.0,063               | 63 mA                                 | 35 A @ AC 250 V                                             | 3500                          | 0,5                                                                    | 0,0007                                                      | ✓                          | ✓   | ✓    | ✓     |
| 179020.0,08                | 80 mA                                 | 35 A @ AC 250 V                                             | 2500                          | 0,5                                                                    | 0,0017                                                      | ✓                          | ✓   | ✓    | ✓     |
| 179020.0,1                 | 100 mA                                | 35 A @ AC 250 V                                             | 2200                          | 0,6                                                                    | 0,0022                                                      | ✓                          | ✓   | ✓    | ✓     |
| 179020.0,125               | 125 mA                                | 35 A @ AC 250 V                                             | 350                           | 0,2                                                                    | 0,01                                                        | ✓                          | ✓   | ✓    | ✓     |
| 179020.0,16                | 160 mA                                | 35 A @ AC 250 V                                             | 310                           | 0,2                                                                    | 0,02                                                        | ✓                          | ✓   | ✓    | ✓     |
| 179020.0,2                 | 200 mA                                | 35 A @ AC 250 V                                             | 290                           | 0,2                                                                    | 0,037                                                       | ✓                          | ✓   | ✓    | ✓     |
| 179020.0,25                | 250 mA                                | 35 A @ AC 250 V                                             | 280                           | 0,3                                                                    | 0,073                                                       | ✓                          | ✓   | ✓    | ✓     |
| 179020.0,315               | 315 mA                                | 35 A @ AC 250 V                                             | 230                           | 0,3                                                                    | 0,16                                                        | ✓                          | ✓   | ✓    | ✓     |
| 179020.0,4                 | 400 mA                                | 35 A @ AC 250 V                                             | 200                           | 0,3                                                                    | 0,31                                                        | ✓                          | ✓   | ✓    | ✓     |
| 179020.0,5                 | 500 mA                                | 35 A @ AC 250 V                                             | 160                           | 0,3                                                                    | 0,16                                                        | ✓                          | ✓   | ✓    | ✓     |
| 179020.0,63                | 630 mA                                | 35 A @ AC 250 V                                             | 140                           | 0,3                                                                    | 0,39                                                        | ✓                          | ✓   | ✓    | ✓     |
| 179020.0,7                 | 700 <sup>1)</sup> mA                  | 35 A @ AC 250 V                                             | 140                           | 0,4                                                                    | 0,56                                                        |                            |     |      | ✓     |
| 179020.0,8                 | 800 mA                                | 35 A @ AC 250 V                                             | 130                           | 0,4                                                                    | 0,8                                                         | ✓                          | ✓   | ✓    | ✓     |
| 179020.1                   | 1 A                                   | 35 A @ AC 250 V                                             | 130                           | 0,5                                                                    | 1,5                                                         | ✓                          | ✓   | ✓    | ✓     |
| 179020.1,25                | 1,25 A                                | 35 A @ AC 250 V                                             | 120                           | 0,6                                                                    | 2,0                                                         | ✓                          | ✓   | ✓    | ✓     |
| 179020.1,4                 | 1,4 A <sup>1)</sup>                   | 35 A @ AC 250 V                                             | 120                           | 0,6                                                                    | 2,5                                                         |                            |     |      | ✓     |
| 179020.1,5                 | 1,5 A <sup>1)</sup>                   | 35 A @ AC 250 V                                             | 120                           | 0,7                                                                    | 3,2                                                         |                            |     |      | ✓     |
| 179020.1,6                 | 1,6 A                                 | 35 A @ AC 250 V                                             | 120                           | 0,7                                                                    | 4,1                                                         | ✓                          | ✓   | ✓    | ✓     |
| 179020.2                   | 2 A                                   | 35 A @ AC 250 V                                             | 120                           | 0,9                                                                    | 6,2                                                         | ✓                          | ✓   | ✓    | ✓     |
| 179020.2,5                 | 2,5 A                                 | 35 A @ AC 250 V                                             | 120                           | 1,0                                                                    | 11                                                          | ✓                          | ✓   | ✓    | ✓     |
| 179020.3,15                | 3,15 A                                | 35 A @ AC 250 V                                             | 120                           | 1,2                                                                    | 20                                                          | ✓                          | ✓   | ✓    | ✓     |
| 179020.3,5                 | 3,5 A <sup>1)</sup>                   | 35 A @ AC 250 V                                             | 110                           | 1,3                                                                    | 20                                                          |                            |     |      |       |
| 179020.4                   | 4 A                                   | 40 A @ AC 250 V                                             | 100                           | 1,4                                                                    | 25                                                          | ✓                          | ✓   | ✓    | ✓     |
| 179020.5                   | 5 A                                   | 50 A @ AC 250 V                                             | 100                           | 1,7                                                                    | 42                                                          | ✓                          | ✓   | ✓    | ✓     |
| 179020.6,3                 | 6,3 A                                 | 63 A @ AC 250 V                                             | 100                           | 2,0                                                                    | 79                                                          | ✓                          | ✓   | ✓    | ✓     |
| 179020.8                   | 8 A                                   | 80 A @ AC 250 V                                             | 100                           | 2,2                                                                    | 125                                                         |                            |     |      |       |
| 179020.10                  | 10 A                                  | 100 A @ AC 250 V                                            | 100                           | 2,4                                                                    | 220                                                         |                            |     |      |       |

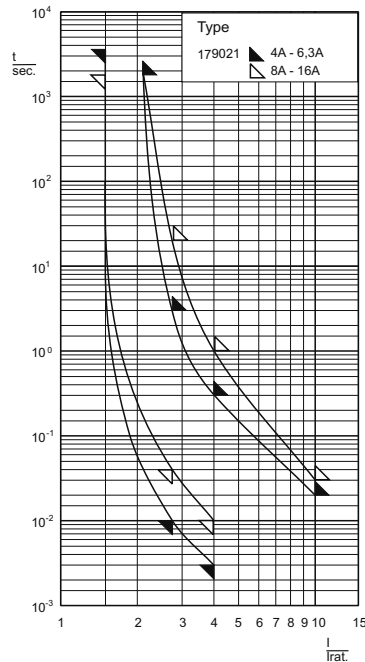
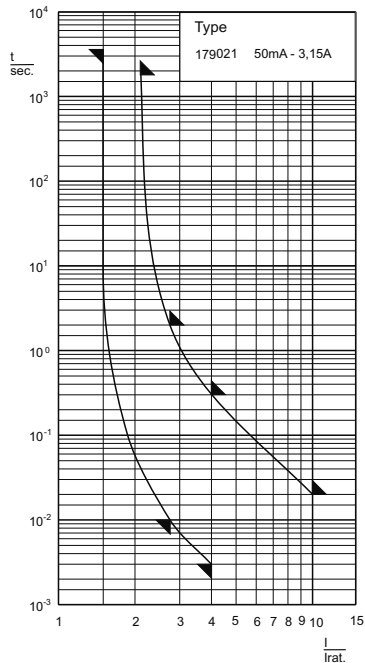
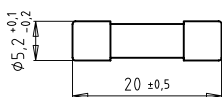
<sup>1)</sup> zusätzlich lieferbare Bemessungsströme / Non-standard ratings also available

| Type   | Abk.<br>Abbr. | Beschreibung<br>Description                                     |
|--------|---------------|-----------------------------------------------------------------|
| 179020 | -             | 100 Stück / Pieces (10 x 10)                                    |
|        | IP            | 1.000 Stück Industrieverpackung / 1.000 pieces industrial packs |
|        | FC            | 1.000 Stück mit Farbcode / 1.000 pieces with colour code        |
|        | AK            | mit montierten Aufsteckkappen/ with assembled push-on caps      |

z.B. / e.g. 179020.3,15IP

**Type**  
**179021**

**cFUS**  
 E167295

 Zeit/Strom-Kennlinien  
 Time-Current Characteristics

 Abmessungen  
 Dimensions

**Aufbau / Construction**

Keramikrohr / ceramic tube

undurchsichtig / non transparent

ab/from 250mA mit Löschmittelfüllung / with filling

Kontaktkappen / end caps

Messing, vernickelt / brass, nickel-plated

**Schmelzeitgrenzwerte / Fusing time limits**

| Bemessungsstrom<br>Rated Current | 1,5 I <sub>n</sub> | 2,1 I <sub>n</sub> | 2,75 I <sub>n</sub> |      | 4 I <sub>n</sub> |        | 10 I <sub>n</sub> |       |
|----------------------------------|--------------------|--------------------|---------------------|------|------------------|--------|-------------------|-------|
|                                  | min.               | max.               | min.                | max. | min.             | max.   | min.              | max.  |
| 50 mA - 3,15 A                   | 1 h                | 30 min             | 10 ms               | 2 s  | 3 ms             | 300 ms | -                 | 20 ms |
| 4 - 6,3 A                        | 1 h                | 30 min             | 10 ms               | 3 s  | 3 ms             | 300 ms | -                 | 20 ms |
| 8 - 16 A                         | 30 min             | 30 min             | 40 ms               | 20 s | 10 ms            | 1 s    | -                 | 30 ms |

|                                               |                  |       |                            |
|-----------------------------------------------|------------------|-------|----------------------------|
| IEC 60127-2/1<br>EN 60127-2/1<br>VDE 0820-2/1 | <b>5 x 20 mm</b> | 250 V | F<br>flink<br>quick acting |
|-----------------------------------------------|------------------|-------|----------------------------|

| Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking Capacity | Spannungsfall<br>Voltage Drop | Leistungsabgabe<br>Power Dissipation<br>(@1,5 I <sub>n</sub> ) | Schmelz-<br>integral<br>I <sup>2</sup> t <sub>90</sub> Value | Approbationen<br>Approvals |         |
|----------------------------|---------------------------------------|-------------------------------------------------------------|-------------------------------|----------------------------------------------------------------|--------------------------------------------------------------|----------------------------|---------|
|                            |                                       |                                                             | mV                            | W                                                              | A <sup>2</sup> s                                             | Semko                      | UL rec. |
| 179021.0,05                | 50 mA                                 | 1500 A @ AC 250 V <sup>1)</sup>                             | 4000                          | 0,5                                                            | 0,00022                                                      | ✓                          |         |
| 179021.0,063               | 63 mA                                 | 1500 A @ AC 250 V <sup>1)</sup>                             | 3900                          | 0,6                                                            | 0,00037                                                      | ✓                          |         |
| 179021.0,08                | 80 mA                                 | 1500 A @ AC 250 V <sup>1)</sup>                             | 3200                          | 0,7                                                            | 0,00073                                                      | ✓                          |         |
| 179021.0,1                 | 100 mA                                | 1500 A @ AC 250 V <sup>1)</sup>                             | 2600                          | 0,8                                                            | 0,0011                                                       | ✓                          |         |
| 179021.0,125               | 125 mA                                | 1500 A @ AC 250 V <sup>1)</sup>                             | 360                           | 0,2                                                            | 0,01                                                         | ✓                          |         |
| 179021.0,16                | 160 mA                                | 1500 A @ AC 250 V <sup>1)</sup>                             | 320                           | 0,2                                                            | 0,02                                                         | ✓                          |         |
| 179021.0,2                 | 200 mA                                | 1500 A @ AC 250 V <sup>1)</sup>                             | 290                           | 0,2                                                            | 0,04                                                         | ✓                          | ✓       |
| 179021.0,25                | 250 mA                                | 1500 A @ AC 250 V <sup>1)</sup>                             | 280                           | 0,3                                                            | 0,07                                                         | ✓                          | ✓       |
| 179021.0,315               | 315 mA                                | 1500 A @ AC 250 V <sup>1)</sup>                             | 230                           | 0,3                                                            | 0,17                                                         | ✓                          | ✓       |
| 179021.0,4                 | 400 mA                                | 1500 A @ AC 250 V <sup>1)</sup>                             | 650                           | 0,9                                                            | 0,07                                                         | ✓                          | ✓       |
| 179021.0,5                 | 500 mA                                | 1500 A @ AC 250 V <sup>1)</sup>                             | 600                           | 1,0                                                            | 0,23                                                         | ✓                          | ✓       |
| 179021.0,63                | 630 mA                                | 1500 A @ AC 250 V <sup>1)</sup>                             | 550                           | 1,1                                                            | 0,31                                                         | ✓                          | ✓       |
| 179021.0,8                 | 800 mA                                | 1500 A @ AC 250 V <sup>1)</sup>                             | 500                           | 1,3                                                            | 0,47                                                         | ✓                          | ✓       |
| 179021.1                   | 1 A                                   | 1500 A @ AC 250 V <sup>1)</sup>                             | 450                           | 1,4                                                            | 0,25                                                         | ✓                          | ✓       |
| 179021.1,25                | 1,25 A                                | 1500 A @ AC 250 V <sup>1)</sup>                             | 400                           | 1,6                                                            | 0,39                                                         | ✓                          | ✓       |
| 179021.1,6                 | 1,6 A                                 | 1500 A @ AC 250 V <sup>1)</sup>                             | 350                           | 1,8                                                            | 0,45                                                         | ✓                          | ✓       |
| 179021.2                   | 2 A                                   | 1500 A @ AC 250 V <sup>1)</sup>                             | 320                           | 2,0                                                            | 0,88                                                         | ✓                          | ✓       |
| 179021.2,5                 | 2,5 A                                 | 1500 A @ AC 250 V <sup>1)</sup>                             | 270                           | 2,1                                                            | 1,2                                                          | ✓                          | ✓       |
| 179021.3,15                | 3,15 A                                | 1500 A @ AC 250 V <sup>1)</sup>                             | 220                           | 2,2                                                            | 4,0                                                          | ✓                          | ✓       |
| 179021.4                   | 4 A                                   | 1500 A @ AC 250 V <sup>1)</sup>                             | 180                           | 2,3                                                            | 10                                                           | ✓                          | ✓       |
| 179021.5                   | 5 A                                   | 1500 A @ AC 250 V <sup>1)</sup>                             | 150                           | 2,4                                                            | 19                                                           | ✓                          | ✓       |
| 179021.6,3                 | 6,3 A                                 | 1500 A @ AC 250 V <sup>1)</sup>                             | 130                           | 2,6                                                            | 32                                                           | ✓                          | ✓       |
| 179021.8                   | 8 A                                   | 1500 A @ AC 250 V <sup>1)</sup>                             | 100                           | 2,8                                                            | 120                                                          |                            | ✓       |
| 179021.10                  | 10 A                                  | 1500 A @ AC 250 V <sup>1)</sup>                             | 100                           | 3,0                                                            | 190                                                          |                            | ✓       |
| 179021.12,5                | 12,5 A <sup>2)</sup>                  | 1000 A @ AC 250 V                                           | 100                           | 3,4                                                            | 300                                                          |                            |         |
| 179021.16                  | 16 A <sup>2)</sup>                    | 1000 A @ AC 250 V                                           | 100                           | 4,0                                                            | 600                                                          |                            |         |

<sup>1)</sup> cos φ = 0,7-0,8

<sup>2)</sup> zusätzlich lieferbare Bemessungsströme / Non-standard ratings also available)

IEC: 400mA - 4A

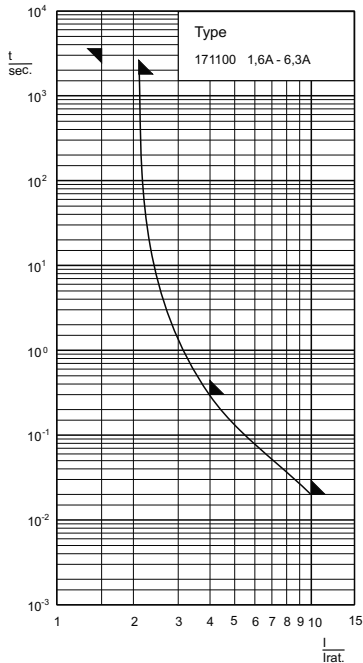
1500A @ DC 250V

| Type       | Abk.<br>Abbr. | Beschreibung<br>Description                                     |
|------------|---------------|-----------------------------------------------------------------|
| 179021     | -             | 100 Stück/ Pieces (10 x 10)                                     |
|            | IP            | 1.000 Stück Industrieverpackung / 1.000 pieces industrial packs |
|            | FC            | 1.000 Stück mit Farbcode / 1.000 pieces with colour code        |
|            | AK            | mit montierten Aufsteckkappen/ with assembled push-on caps      |
| z.B./ e.g. | 179021.2,5IP  |                                                                 |

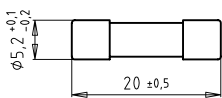
## Type 171100



### Zeit/Strom-Kennlinien Time-Current Characteristics



### Abmessungen Dimensions



### Aufbau / Construction

Glasrohr / glass tube

undurchsichtig / non transparent  
mit Löschmittelfüllung / with filling

Kontaktkappen / end caps

Messing, vernickelt / brass, nickel-plated

### Schmelzeitgrenzwerte / Fusing time limits

| Bemessungsstrom<br>Rated Current | 1,5 I <sub>n</sub> | 2,1 I <sub>n</sub> | 2,75 I <sub>n</sub> |      | 4 I <sub>n</sub> |        | 10 I <sub>n</sub> |       |
|----------------------------------|--------------------|--------------------|---------------------|------|------------------|--------|-------------------|-------|
|                                  | min.               | max.               | min.                | max. | min.             | max.   | min.              | max.  |
| 1,6 - 6,3 A                      | 1 h                | 30 min             | -                   | -    | -                | 300 ms | -                 | 20 ms |

|               |                  |       |                            |
|---------------|------------------|-------|----------------------------|
| (DIN 41571-1) | <b>5 x 20 mm</b> | 250 V | F<br>flink<br>quick acting |
|---------------|------------------|-------|----------------------------|

| Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking<br>Capacity | Spannungsfall<br>Voltage Drop | Leistungsabgabe<br>Power Dissipa-<br>tion (@1,5 I <sub>n</sub> ) | Schmelz-<br>integral<br>I <sup>2</sup> t <sub>s</sub> Value | Approbationen<br>Approvals |
|----------------------------|---------------------------------------|----------------------------------------------------------------|-------------------------------|------------------------------------------------------------------|-------------------------------------------------------------|----------------------------|
|                            |                                       |                                                                | mV                            | W                                                                | A <sup>2</sup> s                                            |                            |
| 171100.1,6                 | 1,6 A                                 | 1000 A @ AC 250 V                                              | 480                           | 1,3                                                              | 1,1                                                         |                            |
| 171100.2                   | 2 A                                   | 1000 A @ AC 250 V                                              | 400                           | 1,5                                                              | 2                                                           |                            |
| 171100.2,5                 | 2,5 A                                 | 1000 A @ AC 250 V                                              | 400                           | 1,6                                                              | 4                                                           |                            |
| 171100.3,15                | 3,15 A                                | 1000 A @ AC 250 V                                              | 240                           | 1,7                                                              | 9                                                           |                            |
| 171100.4                   | 4 A                                   | 1000 A @ AC 250 V                                              | 240                           | 1,9                                                              | 18                                                          |                            |
| 171100.5                   | 5 A                                   | 1000 A @ AC 250 V                                              | 230                           | 2,3                                                              | 32                                                          |                            |
| 171100.6,3                 | 6,3 A                                 | 1000 A @ AC 250 V                                              | 170                           | 2,8                                                              | 52                                                          |                            |
| 171100.8                   | 8 A <sup>1)</sup>                     | 300 A @ AC 250 V                                               | 160                           | 3,2                                                              | 100                                                         |                            |
| 171100.10                  | 10 A <sup>1)</sup>                    | 300 A @ AC 250 V                                               | 150                           | 3,4                                                              | 200                                                         |                            |

<sup>1)</sup> zusätzlich lieferbare Bemessungsströme / Non-standard ratings also available

| Type       | Abk.<br>Abbr. | Beschreibung<br>Description                                     |
|------------|---------------|-----------------------------------------------------------------|
| 171100     | -             | 100 Stück / Pieces (10 x 10)                                    |
|            | IP            | 1.000 Stück Industrieverpackung / 1.000 pieces industrial packs |
| z.B./ e.g. | 171100.3,15IP |                                                                 |

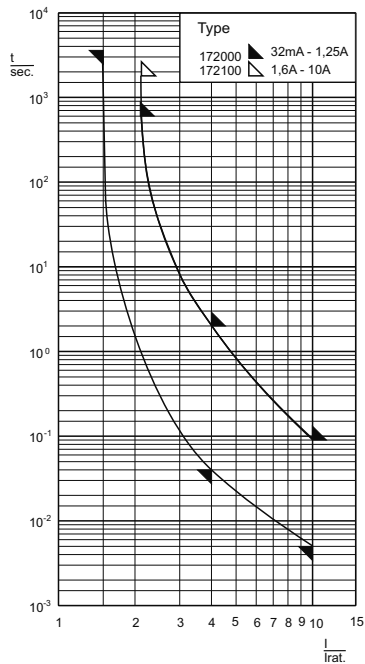
## Type 172000



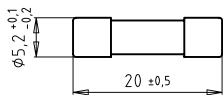
## Type 172100



Zeit/Strom-Kennlinien  
Time-Current Characteristics



Abmessungen  
Dimensions



### Aufbau / Construction

Glasrohr / glass tube

bis 1,25 A durchsichtig / up to 1,25 A transparent  
ab 1,4 A undurchsichtig / from 1,4 A non transparent  
mit Löschmittelfüllung / with filling

Kontaktkappen / end caps

Messing, vernickelt / brass, nickel-plated

### Schmelzeitgrenzwerte / Fusing time limits

| Bemessungsstrom<br>Rated Current | 1,5 I <sub>n</sub> |        | 2,1 I <sub>n</sub> |      | 2,75 I <sub>n</sub> |      | 4 I <sub>n</sub> |      | 10 I <sub>n</sub> |       |
|----------------------------------|--------------------|--------|--------------------|------|---------------------|------|------------------|------|-------------------|-------|
|                                  | min.               | max.   | min.               | max. | min.                | max. | min.             | max. | min.              | max.  |
| 32 mA - 1,25 A                   | 1 h                | 10 min | -                  | -    | -                   | -    | 40 ms            | 2 s  | 5 ms              | 90 ms |
| 1,6 - 10 A                       | 1 h                | 30 min | -                  | -    | -                   | -    | 40 ms            | 2 s  | 5 ms              | 90 ms |

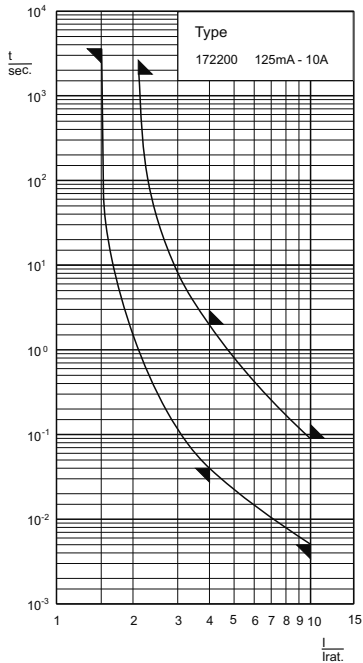
|             |           |       |                                     |
|-------------|-----------|-------|-------------------------------------|
| DIN 41571-2 | 5 x 20 mm | 250 V | M<br>mittelträge<br>medium time-lag |
|-------------|-----------|-------|-------------------------------------|

| Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking Capacity     | Spannungsfall<br>Voltage Drop | Leistungsabgabe<br>Power Dissipation<br>(@1,5 I <sub>n</sub> ) | Schmelzintegral<br>I <sup>2</sup> t <sub>s</sub> Value |
|----------------------------|---------------------------------------|-----------------------------------------------------------------|-------------------------------|----------------------------------------------------------------|--------------------------------------------------------|
|                            |                                       |                                                                 | mV                            | W                                                              | A <sup>2</sup> s                                       |
| 172000.0,032               | 32 mA                                 | 80 A @ AC 250 V                                                 | 560                           | 0,1                                                            | 0,0055                                                 |
| 172000.0,04                | 40 mA                                 | 80 A @ AC 250 V                                                 | 490                           | 0,1                                                            | 0,008                                                  |
| 172000.0,05                | 50 mA                                 | 80 A @ AC 250 V                                                 | 440                           | 0,1                                                            | 0,013                                                  |
| 172000.0,063               | 63 mA                                 | 80 A @ AC 250 V                                                 | 330                           | 0,1                                                            | 0,025                                                  |
| 172000.0,08                | 80 mA                                 | 80 A @ AC 250 V                                                 | 490                           | 0,1                                                            | 0,040                                                  |
| 172000.0,1                 | 100 mA                                | 80 A @ AC 250 V                                                 | 330                           | 0,1                                                            | 0,007                                                  |
| 172000.0,125               | 125 mA                                | 80 A @ AC 250 V                                                 | 230                           | 0,1                                                            | 0,018                                                  |
| 172000.0,16                | 160 mA                                | 80 A @ AC 250 V                                                 | 220                           | 0,1                                                            | 0,036                                                  |
| 172000.0,2                 | 200 mA                                | 80 A @ AC 250 V                                                 | 190                           | 0,2                                                            | 0,07                                                   |
| 172000.0,25                | 250 mA                                | 80 A @ AC 250 V                                                 | 150                           | 0,2                                                            | 0,19                                                   |
| 172000.0,315               | 315 mA                                | 80 A @ AC 250 V                                                 | 140                           | 0,2                                                            | 0,35                                                   |
| 172000.0,4                 | 400 mA                                | 80 A @ AC 250 V                                                 | 130                           | 0,2                                                            | 0,49                                                   |
| 172000.0,5                 | 500 mA                                | 80 A @ AC 250 V                                                 | 120                           | 0,2                                                            | 0,9                                                    |
| 172000.0,63                | 630 mA                                | 80 A @ AC 250 V                                                 | 110                           | 0,2                                                            | 1,4                                                    |
| 172000.0,7                 | 700 mA <sup>1)</sup>                  | 80 A @ AC 250 V                                                 | 140                           | 0,3                                                            | 1,6                                                    |
| 172000.0,8                 | 800 mA                                | 80 A @ AC 250 V                                                 | 100                           | 0,3                                                            | 3,2                                                    |
| 172000.1                   | 1 A                                   | 80 A @ AC 250 V                                                 | 90                            | 0,3                                                            | 6,5                                                    |
| 172000.1,25                | 1,25 A                                | 80 A @ AC 250 V                                                 | 80                            | 0,3                                                            | 5                                                      |
| 172100.1,4                 | 1,4 A <sup>1)</sup>                   | 1000 A @ AC 250 V                                               | 160                           | 0,7                                                            | 2,8                                                    |
| 172100.1,5                 | 1,5 A <sup>1)</sup>                   | 1000 A @ AC 250 V                                               | 160                           | 0,8                                                            | 3,0                                                    |
| 172100.1,6                 | 1,6 A                                 | 1000 A @ AC 250 V                                               | 150                           | 0,8                                                            | 6,1                                                    |
| 172100.2                   | 2 A                                   | 1000 A @ AC 250 V                                               | 130                           | 0,8                                                            | 5,2                                                    |
| 172100.2,5                 | 2,5 A                                 | 1000 A @ AC 250 V                                               | 110                           | 0,9                                                            | 10                                                     |
| 172100.3,15                | 3,15 A                                | 1000 A @ AC 250 V                                               | 100                           | 1,0                                                            | 20                                                     |
| 172100.4                   | 4 A                                   | 1000 A @ AC 250 V                                               | 90                            | 1,1                                                            | 37                                                     |
| 172100.5                   | 5 A                                   | 1000 A @ AC 250 V                                               | 90                            | 1,3                                                            | 72                                                     |
| 172100.6,3                 | 6,3 A                                 | 1000 A @ AC 250 V                                               | 90                            | 1,6                                                            | 130                                                    |
| 172100.8                   | 8 A                                   | 300 A @ AC 250 V                                                | 90                            | 2,0                                                            | 230                                                    |
| 172100.10                  | 10 A                                  | 300 A @ AC 250 V                                                | 90                            | 2,5                                                            | 370                                                    |
| Type                       | Abk.<br>Abbr.                         | Beschreibung<br>Description                                     |                               |                                                                |                                                        |
| 172000/172100              | -                                     | 100 Stück / Pieces (10 x 10)                                    |                               |                                                                |                                                        |
|                            | IP                                    | 1.000 Stück Industrieverpackung / 1.000 pieces industrial packs |                               |                                                                |                                                        |
| z.B./ e.g.                 |                                       | 172100.3,15IP                                                   |                               |                                                                |                                                        |

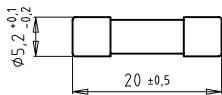
## Type 172200



Zeit/Strom-Kennlinien  
Time-Current Characteristics



Abmessungen  
Dimensions



### Aufbau / Construction

Keramikrohr / ceramic tube

undurchsichtig / non-transparent  
mit Löschmittelfüllung / with filling

Kontaktkappen / end caps

Messing vernickelt / brass, nickel-plated

### Schmelzzeitgrenzwerte / Fusing time limits

| Bemessungsstrom<br>Rated Current | 1,5 I <sub>n</sub> | 2,1 I <sub>n</sub> | 2,75 I <sub>n</sub> |      | 4 I <sub>n</sub> |      | 10 I <sub>n</sub> |       |
|----------------------------------|--------------------|--------------------|---------------------|------|------------------|------|-------------------|-------|
|                                  | min.               | max.               | min.                | max. | min.             | max. | min.              | max.  |
| 125 mA - 10 A                    | 1 h                | 30 min             | -                   | -    | 40 ms            | 2 s  | 5 ms              | 90 ms |

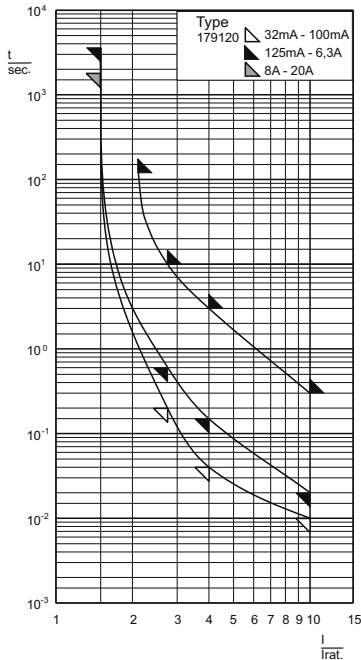
|               |                  |       |                                     |
|---------------|------------------|-------|-------------------------------------|
| (DIN 41571-2) | <b>5 x 20 mm</b> | 250 V | M<br>mittelträge<br>medium time-lag |
|---------------|------------------|-------|-------------------------------------|

| Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking<br>Capacity  | Spannungsfall<br>Voltage Drop | Leistungsabgabe<br>Power Dissipa-<br>tion (@1,5 I <sub>n</sub> ) | Schmelzintegral<br>I <sup>2</sup> t <sub>s</sub> Value | Approbationen<br>Approvals |
|----------------------------|---------------------------------------|-----------------------------------------------------------------|-------------------------------|------------------------------------------------------------------|--------------------------------------------------------|----------------------------|
|                            |                                       |                                                                 | mV                            | W                                                                | A <sup>2</sup> s                                       |                            |
| 172200.0,125               | 125 mA                                | 1500 A @ AC 250 V                                               | 230                           | 0,1                                                              | 0,018                                                  |                            |
| 172200.0,16                | 160 mA                                | 1500 A @ AC 250 V                                               | 220                           | 0,1                                                              | 0,036                                                  |                            |
| 172200.0,2                 | 200 mA                                | 1500 A @ AC 250 V                                               | 190                           | 0,2                                                              | 0,07                                                   |                            |
| 172200.0,25                | 250 mA                                | 1500 A @ AC 250 V                                               | 150                           | 0,2                                                              | 0,19                                                   |                            |
| 172200.0,315               | 315 mA                                | 1500 A @ AC 250 V                                               | 140                           | 0,2                                                              | 0,35                                                   |                            |
| 172200.0,4                 | 400 mA                                | 1500 A @ AC 250 V                                               | 130                           | 0,2                                                              | 0,49                                                   |                            |
| 172200.0,5                 | 500 mA                                | 1500 A @ AC 250 V                                               | 120                           | 0,2                                                              | 0,9                                                    |                            |
| 172200.0,63                | 630 mA                                | 1500 A @ AC 250 V                                               | 650                           | 0,4                                                              | 0,6                                                    |                            |
| 172200.0,8                 | 800 mA                                | 1500 A @ AC 250 V                                               | 500                           | 0,6                                                              | 1,0                                                    |                            |
| 172200.1                   | 1 A                                   | 1500 A @ AC 250 V                                               | 450                           | 0,8                                                              | 1,5                                                    |                            |
| 172200.1,25                | 1,25 A                                | 1500 A @ AC 250 V                                               | 400                           | 0,8                                                              | 3,1                                                    |                            |
| 172200.1,6                 | 1,6 A                                 | 1500 A @ AC 250 V                                               | 150                           | 0,8                                                              | 6,1                                                    |                            |
| 172200.2                   | 2 A                                   | 1500 A @ AC 250 V                                               | 130                           | 0,8                                                              | 5,2                                                    |                            |
| 172200.2,5                 | 2,5 A                                 | 1500 A @ AC 250 V                                               | 110                           | 0,9                                                              | 10                                                     |                            |
| 172200.3,15                | 3,15 A                                | 1500 A @ AC 250 V                                               | 100                           | 1,0                                                              | 20                                                     |                            |
| 172200.4                   | 4 A                                   | 1500 A @ AC 250 V                                               | 90                            | 1,1                                                              | 37                                                     |                            |
| 172200.5                   | 5 A                                   | 1500 A @ AC 250 V                                               | 90                            | 1,3                                                              | 72                                                     |                            |
| 172200.6,3                 | 6,3 A                                 | 1500 A @ AC 250 V                                               | 90                            | 1,6                                                              | 130                                                    |                            |
| 172200.8                   | 8 A                                   | 1500 A @ AC 250 V                                               | 90                            | 2,0                                                              | 230                                                    |                            |
| Type                       | Abk.<br>Abbr.                         | Beschreibung<br>Description                                     |                               |                                                                  |                                                        |                            |
| 172200                     | -                                     | 100 Stück / Pieces (10 x 10)                                    |                               |                                                                  |                                                        |                            |
|                            | IP                                    | 1.000 Stück Industrieverpackung / 1.000 pieces industrial packs |                               |                                                                  |                                                        |                            |
| z.B./ e.g.                 | 172200.10IP                           |                                                                 |                               |                                                                  |                                                        |                            |

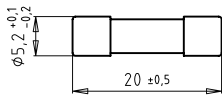
# Type 179120



## Zeit/Strom-Kennlinien Time-Current Characteristics



## Abmessungen Dimensions



## Aufbau / Construction

Glasrohr / glass tube

durchsichtig / transparent

Kontaktkappen / end caps

Messing, vernickelt / brass, nickel-plated

## Schmelzeitgrenzwerte / Fusing time limits

| Bemessungsstrom<br>Rated Current              | 1,5 I <sub>n</sub> |       | 2,1 I <sub>n</sub> |      | 2,75 I <sub>n</sub>    |      | 4 I <sub>n</sub> |        | 10 I <sub>n</sub> |      |
|-----------------------------------------------|--------------------|-------|--------------------|------|------------------------|------|------------------|--------|-------------------|------|
|                                               | min.               | max.  | min.               | max. | min.                   | max. | min.             | max.   | min.              | max. |
| 32 mA - 100 mA                                | 1 h                | 2 min | 200 ms             | 10 s | 40 ms                  | 3 s  | 10 ms            | 300 ms |                   |      |
| 125 mA - 6,3 A                                | 1 h                | 2 min | 600 ms             | 10 s | 150 ms                 | 3 s  | 20 ms            | 300 ms |                   |      |
| 8 A - 20 A                                    | 30 min             | 2 min | 600 ms             | 10 s | 150 ms                 | 3 s  | 20 ms            | 300 ms |                   |      |
| IEC 60127-2/3<br>EN 60127-2/3<br>VDE 0820-2/3 | 5 x 20 mm          |       | 250 V              |      | T<br>träge<br>time-lag |      |                  |        |                   |      |

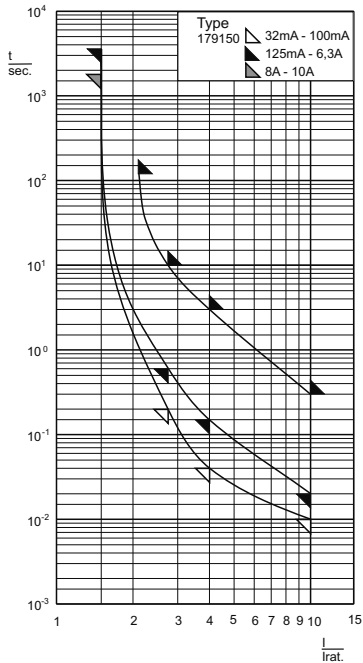
| Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking<br>Capacity | Spannungs-<br>fall<br>Voltage Drop | Leistungs-<br>abgabe<br>Power Dissipa-<br>tion (@ 1,5 I <sub>n</sub> ) | Schmelz-<br>integral<br>I <sup>2</sup> t <sub>90</sub> Value | Approbationen<br>Approvals |     |         |
|----------------------------|---------------------------------------|----------------------------------------------------------------|------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------|----------------------------|-----|---------|
|                            |                                       |                                                                | mV                                 | W                                                                      | A's                                                          | Semko                      | VDE | UL rec. |
| 179120.0,032               | 32 mA                                 | 35 A @ AC 250 V                                                | 3000                               | 0,2                                                                    | 0,010                                                        | ✓                          | ✓   | ✓       |
| 179120.0,04                | 40 mA                                 | 35 A @ AC 250 V                                                | 2000                               | 0,2                                                                    | 0,020                                                        | ✓                          | ✓   | ✓       |
| 179120.0,05                | 50 mA                                 | 35 A @ AC 250 V                                                | 1500                               | 0,2                                                                    | 0,035                                                        | ✓                          | ✓   | ✓       |
| 179120.0,063               | 63 mA                                 | 35 A @ AC 250 V                                                | 1000                               | 0,2                                                                    | 0,05                                                         | ✓                          | ✓   | ✓       |
| 179120.0,08                | 80 mA                                 | 35 A @ AC 250 V                                                | 800                                | 0,2                                                                    | 0,12                                                         | ✓                          | ✓   | ✓       |
| 179120.0,1                 | 100 mA                                | 35 A @ AC 250 V                                                | 700                                | 0,3                                                                    | 0,16                                                         | ✓                          | ✓   | ✓       |
| 179120.0,125               | 125 mA                                | 35 A @ AC 250 V                                                | 600                                | 0,3                                                                    | 0,24                                                         | ✓                          | ✓   | ✓       |
| 179120.0,160               | 160 mA                                | 35 A @ AC 250 V                                                | 600                                | 0,3                                                                    | 0,4                                                          | ✓                          | ✓   | ✓       |
| 179120.0,2                 | 200 mA                                | 35 A @ AC 250 V                                                | 500                                | 0,3                                                                    | 0,7                                                          | ✓                          | ✓   | ✓       |
| 179120.0,25                | 250 mA                                | 35 A @ AC 250 V                                                | 400                                | 0,3                                                                    | 1,4                                                          | ✓                          | ✓   | ✓       |
| 179120.0,315               | 315 mA                                | 35 A @ AC 250 V                                                | 140                                | 0,2                                                                    | 0,35                                                         | ✓                          | ✓   | ✓       |
| 179120.0,4                 | 400 mA                                | 35 A @ AC 250 V                                                | 130                                | 0,2                                                                    | 0,49                                                         | ✓                          | ✓   | ✓       |
| 179120.0,5                 | 500 mA                                | 35 A @ AC 250 V                                                | 120                                | 0,2                                                                    | 0,9                                                          | ✓                          | ✓   | ✓       |
| 179120.0,63                | 630 mA                                | 35 A @ AC 250 V                                                | 110                                | 0,2                                                                    | 1,4                                                          | ✓                          | ✓   | ✓       |
| 179120.0,7                 | 700 mA                                | 35 A @ AC 250 V                                                | 140                                | 0,3                                                                    | 1,6                                                          |                            |     |         |
| 179120.0,8                 | 800 mA                                | 35 A @ AC 250 V                                                | 100                                | 0,3                                                                    | 3,2                                                          | ✓                          | ✓   | ✓       |
| 179120.1                   | 1 A                                   | 35 A @ AC 250 V                                                | 90                                 | 0,3                                                                    | 6,5                                                          | ✓                          | ✓   | ✓       |
| 179120.1,25                | 1,25 A                                | 35 A @ AC 250 V                                                | 80                                 | 0,3                                                                    | 5,0                                                          | ✓                          | ✓   | ✓       |
| 179120.1,4                 | 1,4 A                                 | 35 A @ AC 250 V                                                | 80                                 | 0,4                                                                    | 5,2                                                          |                            |     |         |
| 179120.1,5                 | 1,5 A                                 | 35 A @ AC 250 V                                                | 80                                 | 0,4                                                                    | 8,5                                                          |                            |     |         |
| 179120.1,6                 | 1,6 A                                 | 35 A @ AC 250 V                                                | 80                                 | 0,4                                                                    | 10                                                           | ✓                          | ✓   | ✓       |
| 179120.2                   | 2 A                                   | 35 A @ AC 250 V                                                | 80                                 | 0,5                                                                    | 20                                                           | ✓                          | ✓   | ✓       |
| 179120.2,5                 | 2,5 A                                 | 35 A @ AC 250 V                                                | 80                                 | 0,6                                                                    | 26                                                           | ✓                          | ✓   | ✓       |
| 179120.3,15                | 3,15 A                                | 35 A @ AC 250 V                                                | 80                                 | 0,6                                                                    | 44                                                           | ✓                          | ✓   | ✓       |
| 179120.3,5                 | 3,5 A                                 | 35 A @ AC 250 V                                                | 80                                 | 0,8                                                                    | 50                                                           |                            |     |         |
| 179120.4                   | 4 A                                   | 40 A @ AC 250 V                                                | 80                                 | 0,8                                                                    | 72                                                           | ✓                          | ✓   | ✓       |
| 179120.5                   | 5 A                                   | 50 A @ AC 250 V                                                | 80                                 | 1,2                                                                    | 130                                                          | ✓                          | ✓   | ✓       |
| 179120.6,3                 | 6,3 A                                 | 63 A @ AC 250 V                                                | 70                                 | 1,3                                                                    | 230                                                          | ✓                          | ✓   | ✓       |
| 179120.8                   | 8 A                                   | 80 A @ AC 250 V                                                | 70                                 | 1,8                                                                    | 240                                                          |                            |     |         |
| 179120.10                  | 10 A                                  | 100 A @ AC 250 V                                               | 70                                 | 2,4                                                                    | 380                                                          |                            |     |         |
| 179120.12,5                | 12,5 A                                | 125 A @ AC 250 V                                               | 70                                 | 3,0                                                                    | 650                                                          |                            |     |         |
| 179120.16                  | 16 A                                  | 160 A @ AC 250 V                                               | 70                                 | 3,2                                                                    | 1300                                                         |                            |     |         |

| Type       | Abk.<br>Abbr. | Beschreibung<br>Description                                     |
|------------|---------------|-----------------------------------------------------------------|
| 179120     | -             | 100 Stück / 100 Pieces (10 x 10)                                |
|            | IP            | 1.000 Stück Industrieverpackung / 1.000 pieces industrial packs |
|            | FC            | 1.000 Stück mit Farbcode / 1.000 pieces with colour code        |
|            | AK            | mit montierten Aufsteckkappen/ with assembled push-on caps      |
| z.B./ e.g. | 179120.1,25IP |                                                                 |

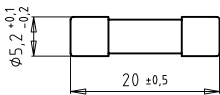
## Type 179150



### Zeit/Strom-Kennlinien Time-Current Characteristics



### Abmessungen Dimensions



### Aufbau / Construction

Glasrohr / glass tube

durchsichtig / transparent

Kontaktkappen / end caps

Messing, vernickelt / brass, nickel-plated

### Schmelzzeitgrenzwerte / Fusing time limits

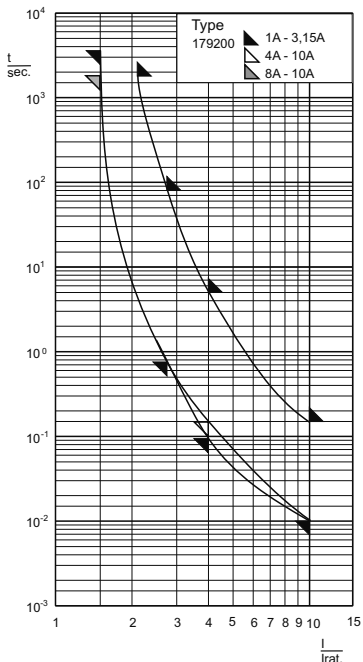
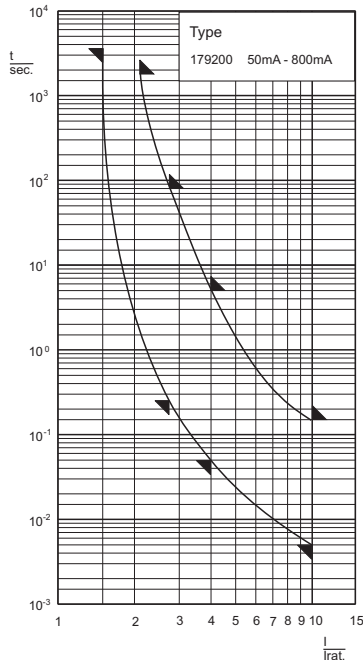
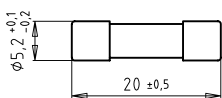
| Bemessungsstrom<br>Rated Current | 1,5 I <sub>n</sub> |       | 2,1 I <sub>n</sub> |      | 2,75 I <sub>n</sub> |      | 4 I <sub>n</sub> |        | 10 I <sub>n</sub> |      |
|----------------------------------|--------------------|-------|--------------------|------|---------------------|------|------------------|--------|-------------------|------|
|                                  | min.               | max.  | min.               | max. | min.                | max. | min.             | max.   | min.              | max. |
| 32 mA - 100 mA                   | 1 h                | 2 min | 200 ms             | 10 s | 40 ms               | 3 s  | 10 ms            | 300 ms |                   |      |
| 125 mA - 6,3 A                   | 1 h                | 2 min | 600 ms             | 10 s | 150 ms              | 3 s  | 20 ms            | 300 ms |                   |      |
| 8 A - 10 A                       | 30 min             | 2 min | 600 ms             | 10 s | 150 ms              | 3 s  | 20 ms            | 300 ms |                   |      |

|                                               |                  |       |                        |
|-----------------------------------------------|------------------|-------|------------------------|
| IEC 60127-2/6<br>EN 60127-2/6<br>VDE 0820-2/6 | <b>5 x 20 mm</b> | 250 V | T<br>träge<br>time-lag |
|-----------------------------------------------|------------------|-------|------------------------|

| Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking<br>Capacity | Spannungsfall<br>Voltage Drop | Leistungsabgabe<br>Power Dissipa-<br>tion (@1,5 I <sub>n</sub> ) | Schmelzintegral<br>I <sup>2</sup> t <sub>s</sub> Value | Approbationen<br>Approvals |
|----------------------------|---------------------------------------|----------------------------------------------------------------|-------------------------------|------------------------------------------------------------------|--------------------------------------------------------|----------------------------|
|                            |                                       |                                                                | mV                            | W                                                                | A <sup>2</sup> s                                       |                            |
| 179150.0,032               | 32 mA                                 | 150 A @ AC 250 V                                               | 3000                          | 0,2                                                              | 0,010                                                  |                            |
| 179150.0,04                | 40 mA                                 | 150 A @ AC 250 V                                               | 2000                          | 0,2                                                              | 0,020                                                  |                            |
| 179150.0,05                | 50 mA                                 | 150 A @ AC 250 V                                               | 1500                          | 0,2                                                              | 0,035                                                  |                            |
| 179150.0,063               | 63 mA                                 | 150 A @ AC 250 V                                               | 1000                          | 0,2                                                              | 0,05                                                   |                            |
| 179150.0,08                | 80 mA                                 | 150 A @ AC 250 V                                               | 800                           | 0,2                                                              | 0,12                                                   |                            |
| 179150.0,1                 | 100 mA                                | 150 A @ AC 250 V                                               | 700                           | 0,3                                                              | 0,16                                                   |                            |
| 179150.0,125               | 125 mA                                | 150 A @ AC 250 V                                               | 600                           | 0,3                                                              | 0,24                                                   |                            |
| 179150.0,16                | 160 mA                                | 150 A @ AC 250 V                                               | 600                           | 0,3                                                              | 0,4                                                    |                            |
| 179150.0,2                 | 200 mA                                | 150 A @ AC 250 V                                               | 500                           | 0,3                                                              | 0,7                                                    |                            |
| 179150.0,25                | 250 mA                                | 150 A @ AC 250 V                                               | 400                           | 0,3                                                              | 1,4                                                    |                            |
| 179150.0,315               | 315 mA                                | 150 A @ AC 250 V                                               | 140                           | 0,2                                                              | 0,35                                                   |                            |
| 179150.0,4                 | 400 mA                                | 150 A @ AC 250 V                                               | 130                           | 0,2                                                              | 0,49                                                   |                            |
| 179150.0,5                 | 500 mA                                | 150 A @ AC 250 V                                               | 120                           | 0,2                                                              | 0,9                                                    |                            |
| 179150.0,63                | 630 mA                                | 150 A @ AC 250 V                                               | 110                           | 0,2                                                              | 1,4                                                    |                            |
| 179150.0,8                 | 800 mA                                | 150 A @ AC 250 V                                               | 100                           | 0,3                                                              | 3,2                                                    |                            |
| 179150.1                   | 1 A                                   | 150 A @ AC 250 V                                               | 90                            | 0,3                                                              | 6,5                                                    |                            |
| 179150.1,25                | 1,25 A                                | 150 A @ AC 250 V                                               | 80                            | 0,3                                                              | 5,0                                                    |                            |
| 179150.1,6                 | 1,6 A                                 | 150 A @ AC 250 V                                               | 80                            | 0,4                                                              | 10                                                     |                            |
| 179150.2                   | 2 A                                   | 150 A @ AC 250 V                                               | 80                            | 0,5                                                              | 20                                                     |                            |
| 179150.2,5                 | 2,5 A                                 | 150 A @ AC 250 V                                               | 80                            | 0,6                                                              | 26                                                     |                            |
| 179150.3,15                | 3,15 A                                | 150 A @ AC 250 V                                               | 80                            | 0,6                                                              | 44                                                     |                            |
| 179150.4                   | 4 A                                   | 150 A @ AC 250 V                                               | 80                            | 0,8                                                              | 72                                                     |                            |
| 179150.5                   | 5 A                                   | 150 A @ AC 250 V                                               | 80                            | 1,2                                                              | 130                                                    |                            |
| 179150.6,3                 | 6,3 A                                 | 150 A @ AC 250 V                                               | 70                            | 1,3                                                              | 230                                                    |                            |
| 179150.8                   | 8 A                                   | 150 A @ AC 250 V                                               | 70                            | 1,8                                                              | 240                                                    |                            |
| 179150.10                  | 10 A                                  | 150 A @ AC 250 V                                               | 70                            | 2,4                                                              | 380                                                    |                            |

| Type       | Abk.<br>Abbr. | Beschreibung<br>Description                                     |
|------------|---------------|-----------------------------------------------------------------|
| 179150     | -             | 100 Stück / Pieces (10 x 10)                                    |
|            | IP            | 1.000 Stück Industrieverpackung / 1.000 pieces industrial packs |
| z.B./ e.g. | 179150.0,63IP |                                                                 |

**Type**  
**179200**

 Zeit/Strom-Kennlinien  
 Time-Current Characteristics

 Abmessungen  
 Dimensions

**Aufbau / Construction**

Keramikrohr / ceramic tube

Kontaktkappen / end caps

undurchsichtig / non transparent

ab/from 80mA mit Löschmittelfüllung/with filling

Messing, vernickelt / brass, nickel-plated

**Schmelzeitgrenzwerte / Fusing time limits**

| Bemessungsstrom<br>Rated Current | 1,5 I <sub>n</sub> | 2,1 I <sub>n</sub> | 2,75 I <sub>n</sub> |      | 4 I <sub>n</sub> |      | 10 I <sub>n</sub> |        |
|----------------------------------|--------------------|--------------------|---------------------|------|------------------|------|-------------------|--------|
|                                  | min.               | max.               | min.                | max. | min.             | max. | min.              | max.   |
| 50 mA - 800 mA                   | 1 h                | 30 min             | 250 ms              | 80 s | 50 ms            | 5 s  | 5 ms              | 150 ms |
| 1 A - 3,15 A                     | 1 h                | 30 min             | 750 ms              | 80 s | 95 ms            | 5 s  | 10 ms             | 150 ms |
| 4 A - 6,3 A                      | 1 h                | 30 min             | 750 ms              | 80 s | 150 ms           | 5 s  | 10 ms             | 150 ms |
| 8 A - 16 A                       | 30 min             | 30 min             | 750 ms              | 80 s | 150 ms           | 5 s  | 10 ms             | 150 ms |

|                                               |                  |      |                        |
|-----------------------------------------------|------------------|------|------------------------|
| IEC 60127-2/5<br>EN 60127-2/5<br>VDE 0820-2/5 | <b>5 x 20 mm</b> | 250V | T<br>träge<br>time-lag |
|-----------------------------------------------|------------------|------|------------------------|

| Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking<br>Capacity | Spannungsfall<br>Voltage Drop | Leistungs-<br>abgabe<br>Power<br>Dissipation<br>(@1,5 I <sub>n</sub> ) | Schmelz-<br>integral<br>I <sup>2</sup> t <sub>90</sub> Value | Approbationen<br>Approvals |     |                 |
|----------------------------|---------------------------------------|----------------------------------------------------------------|-------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------|----------------------------|-----|-----------------|
|                            |                                       |                                                                | mV                            | W                                                                      | A <sup>2</sup> s                                             | Semko                      | VDE | UL rec.         |
| 179200.0,05                | 50 mA                                 | 1500 A @ AC 250 V <sup>1)</sup>                                | 1500                          | 0,2                                                                    | 0,02                                                         |                            |     | ✓               |
| 179200.0,063               | 63 mA                                 | 1500 A @ AC 250 V <sup>1)</sup>                                | 1000                          | 0,2                                                                    | 0,05                                                         |                            |     | ✓               |
| 179200.0,08                | 80 mA                                 | 1500 A @ AC 250 V <sup>1)</sup>                                | 2800                          | 0,6                                                                    | 0,02                                                         |                            |     | ✓               |
| 179200.0,1                 | 100 mA                                | 1500 A @ AC 250 V <sup>1)</sup>                                | 2300                          | 0,6                                                                    | 0,02                                                         |                            |     | ✓               |
| 179200.0,125               | 125 mA                                | 1500 A @ AC 250 V <sup>1)</sup>                                | 2200                          | 0,8                                                                    | 0,045                                                        |                            |     | ✓               |
| 179200.0,16                | 160 mA                                | 1500 A @ AC 250 V <sup>1)</sup>                                | 2100                          | 0,9                                                                    | 0,08                                                         |                            |     | ✓               |
| 179200.0,2                 | 200 mA                                | 1500 A @ AC 250 V <sup>1)</sup>                                | 1800                          | 0,9                                                                    | 0,14                                                         |                            |     | ✓               |
| 179200.0,25                | 250 mA                                | 1500 A @ AC 250 V <sup>1)</sup>                                | 1500                          | 1,0                                                                    | 0,25                                                         |                            |     | ✓               |
| 179200.0,315               | 315 mA                                | 1500 A @ AC 250 V <sup>1)</sup>                                | 1000                          | 1,0                                                                    | 0,45                                                         |                            |     | ✓               |
| 179200.0,4                 | 400 mA                                | 1500 A @ AC 250 V <sup>1)</sup>                                | 850                           | 1,0                                                                    | 0,8                                                          |                            |     | ✓               |
| 179200.0,5                 | 500 mA                                | 1500 A @ AC 250 V <sup>1)</sup>                                | 350                           | 0,4                                                                    | 0,35                                                         |                            |     | ✓               |
| 179200.0,63                | 630 mA                                | 1500 A @ AC 250 V <sup>1)</sup>                                | 300                           | 0,4                                                                    | 0,6                                                          |                            |     | ✓               |
| 179200.0,8                 | 800 mA                                | 1500 A @ AC 250 V <sup>1)</sup>                                | 300                           | 0,6                                                                    | 1,0                                                          |                            |     | ✓               |
| 179200.1                   | 1 A <sup>3)</sup>                     | 1500 A @ AC 250 V <sup>1)</sup>                                | 250                           | 0,8                                                                    | 1,5                                                          | ✓                          | ✓   | ✓ <sup>3)</sup> |
| 179200.1,25                | 1,25 A <sup>3)</sup>                  | 1500 A @ AC 250 V <sup>1)</sup>                                | 200                           | 0,8                                                                    | 3,1                                                          | ✓                          | ✓   | ✓ <sup>3)</sup> |
| 179200.1,6                 | 1,6 A <sup>3)</sup>                   | 1500 A @ AC 250 V <sup>1)</sup>                                | 150                           | 0,8                                                                    | 6,1                                                          | ✓                          | ✓   | ✓ <sup>3)</sup> |
| 179200.2                   | 2 A <sup>3)</sup>                     | 1500 A @ AC 250 V <sup>1)</sup>                                | 130                           | 0,8                                                                    | 5,2                                                          | ✓                          | ✓   | ✓ <sup>3)</sup> |
| 179200.2,5                 | 2,5 A <sup>3)</sup>                   | 1500 A @ AC 250 V <sup>1)</sup>                                | 110                           | 0,9                                                                    | 10                                                           | ✓                          | ✓   | ✓ <sup>3)</sup> |
| 179200.3,15                | 3,15 A <sup>3)</sup>                  | 1500 A @ AC 250 V <sup>1)</sup>                                | 100                           | 1,0                                                                    | 20                                                           | ✓                          | ✓   | ✓ <sup>3)</sup> |
| 179200.4                   | 4 A <sup>3)</sup>                     | 1500 A @ AC 250 V <sup>1)</sup>                                | 90                            | 1,1                                                                    | 37                                                           | ✓                          | ✓   | ✓ <sup>3)</sup> |
| 179200.5                   | 5 A                                   | 1500 A @ AC 250 V <sup>1)</sup>                                | 90                            | 1,3                                                                    | 72                                                           | ✓                          | ✓   | ✓               |
| 179200.6,3                 | 6,3 A                                 | 1500 A @ AC 250 V <sup>1)</sup>                                | 90                            | 1,6                                                                    | 130                                                          | ✓                          | ✓   | ✓               |
| 179200.8                   | 8 A                                   | 1500 A @ AC 250 V <sup>1)</sup>                                | 90                            | 2,0                                                                    | 230                                                          |                            |     | ✓               |
| 179200.10                  | 10 A                                  | 1500 A @ AC 250 V <sup>1)</sup>                                | 90                            | 2,5                                                                    | 370                                                          |                            |     | ✓               |
| 179200.12,5                | 12,5 A <sup>2)</sup>                  | 1500 A @ AC 250 V                                              | 70                            | 3,1                                                                    | 630                                                          |                            |     |                 |
| 179200.16                  | 16 A <sup>2)</sup>                    | 1500 A @ AC 250 V                                              | 70                            | 3,9                                                                    | 1500                                                         |                            |     |                 |

<sup>1)</sup> cosφ = 0,7-0,8

<sup>2)</sup> zusätzlich lieferbare Bemessungsströme / non-standard ratings also available

<sup>3)</sup> ULrec: 1500 A @ DC 300 V, L/R = res.

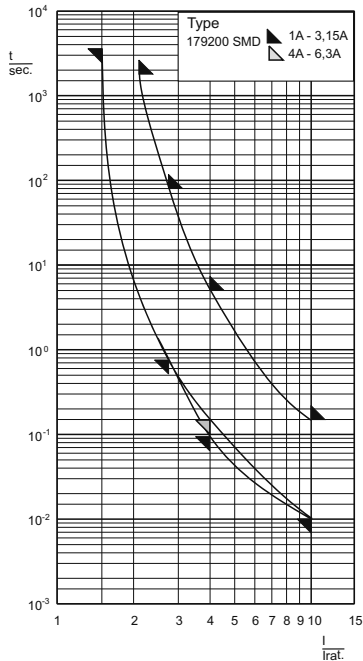
| Type   | Abk.<br>Abbr. | Beschreibung<br>Description                                       |
|--------|---------------|-------------------------------------------------------------------|
| 179200 | SMD           | 2.000 Stück T&R als SMD Version/ as SMD version (Seite/ Page 500) |
|        | -             | 100 Stück / Pieces (10 x 10)                                      |
|        | IP            | 1.000 Stück Industrieverpackung / 1.000 pieces industrial packs   |
|        | FC            | 1.000 Stück mit Farbcode / 1.000 pieces with colour code          |
|        | AK            | mit montierten Aufsteckkappen/ with assembled push-on caps        |

Type  
**179200 SMD**

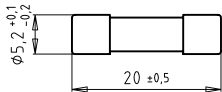
**CAUS**  
E167295



Zeit/Strom-Kennlinien  
Time-Current Characteristics



Abmessungen  
Dimensions



**Aufbau / Construction**  
Keramikrohr / ceramic tube

Kontaktkappen / end caps

undurchsichtig / non transparent  
mit Löschmittelfüllung / with filling

Messing, vergoldet / brass, gold-plated

**Schmelzeitgrenzwerte / Fusing time limits**

| Bemessungsstrom<br>Rated Current | 1,5 I <sub>n</sub> | 2,1 I <sub>n</sub> | 2,75 I <sub>n</sub> |      | 4 I <sub>n</sub> |      | 10 I <sub>n</sub> |        |
|----------------------------------|--------------------|--------------------|---------------------|------|------------------|------|-------------------|--------|
|                                  | min.               | max.               | min.                | max. | min.             | max. | min.              | max.   |
| 1 A - 3,15 A                     | 1 h                | 30 min             | 750 ms              | 80 s | 95 ms            | 5 s  | 10 ms             | 150 ms |
| 4 A - 6,3 A                      | 1 h                | 30 min             | 750 ms              | 80 s | 150 ms           | 5 s  | 10 ms             | 150 ms |

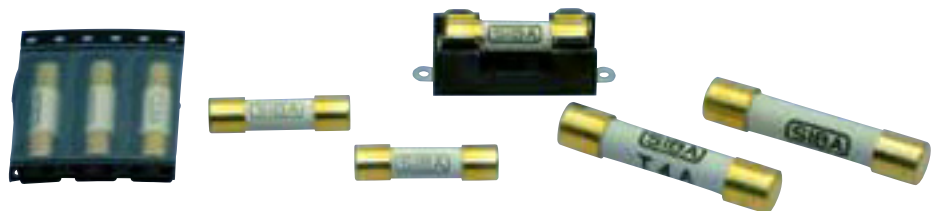
|                                               |                  |      |                        |
|-----------------------------------------------|------------------|------|------------------------|
| IEC 60127-2/5<br>EN 60127-2/5<br>VDE 0820-2/5 | <b>5 x 20 mm</b> | 250V | T<br>träge<br>time-lag |
|-----------------------------------------------|------------------|------|------------------------|

| Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking<br>Capacity | Spannungsfall<br>Voltage Drop | Leistungsabgabe<br>Power Dissipation<br>(@1,5 I <sub>n</sub> ) | Schmelz-<br>integral<br>I <sup>2</sup> t <sub>s</sub> Value | Approbationen<br>Approvals |
|----------------------------|---------------------------------------|----------------------------------------------------------------|-------------------------------|----------------------------------------------------------------|-------------------------------------------------------------|----------------------------|
|                            |                                       |                                                                | mV                            | W                                                              | A <sup>2</sup> s                                            | UL rec.                    |
| 179200.1SMD                | 1 A                                   | 1500 A @ AC 250 V <sup>1)</sup>                                | 250                           | 0,8                                                            | 1,5                                                         | ✓                          |
| 179200.1,25 SMD            | 1,25 A                                | 1500 A @ AC 250 V <sup>1)</sup>                                | 200                           | 0,8                                                            | 3,1                                                         | ✓                          |
| 179200.1,6SMD              | 1,6 A                                 | 1500 A @ AC 250 V <sup>1)</sup>                                | 150                           | 0,8                                                            | 6,1                                                         | ✓                          |
| 179200.2SMD                | 2 A                                   | 1500 A @ AC 250 V <sup>1)</sup>                                | 130                           | 0,8                                                            | 5,2                                                         | ✓                          |
| 179200.2,5SMD              | 2,5 A                                 | 1500 A @ AC 250 V <sup>1)</sup>                                | 110                           | 0,9                                                            | 10                                                          | ✓                          |
| 179200.3,15SMD             | 3,15 A                                | 1500 A @ AC 250 V <sup>1)</sup>                                | 100                           | 1,0                                                            | 20                                                          | ✓                          |
| 179200.4SMD                | 4 A                                   | 1500 A @ AC 250 V <sup>1)</sup>                                | 90                            | 1,1                                                            | 37                                                          | ✓                          |
| 179200.5SMD                | 5 A                                   | 1500 A @ AC 250 V <sup>1)</sup>                                | 90                            | 1,3                                                            | 72                                                          | ✓                          |
| 179200.6,3SMD              | 6,3 A                                 | 1500 A @ AC 250 V <sup>1)</sup>                                | 90                            | 1,6                                                            | 130                                                         | ✓                          |

<sup>1)</sup> cosφ = 0,7-0,8

| Type | Abk.<br>Abbr. | Beschreibung<br>Description        |
|------|---------------|------------------------------------|
|      | SMD           | 2.000 Stück T&R / 2.000 pieces T&R |

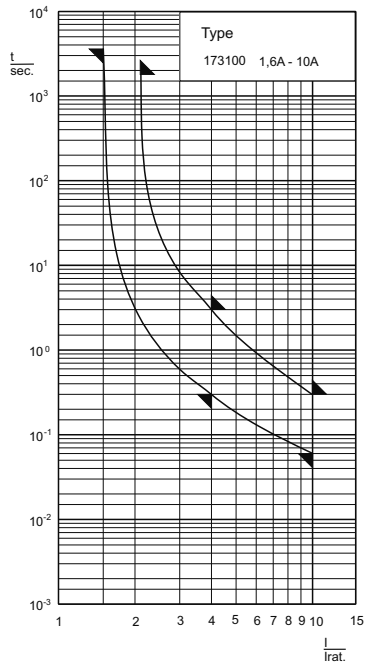
Weitere zylindrische Sicherungen als SMD Version auf Anfrage /  
Further cylindrical fuses as SMD version on request



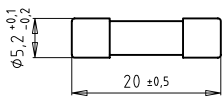
## Type 173100



Zeit/Strom-Kennlinien  
Time-Current Characteristics



Abmessungen  
Dimensions



### Aufbau / Construction

Glasrohr / glass tube

undurchsichtig / non-transparent  
mit Löschmittelfüllung / with filling

Kontaktkappen / end caps

Messing, vernickelt / brass, nickel-plated

### Schmelzeitgrenzwerte / Fusing time limits

| Bemessungsstrom<br>Rated Current | 1,5 I <sub>n</sub> | 2,1 I <sub>n</sub> | 2,75 I <sub>n</sub> |      | 4 I <sub>n</sub> |      | 10 I <sub>n</sub> |        |
|----------------------------------|--------------------|--------------------|---------------------|------|------------------|------|-------------------|--------|
|                                  | min.               | max.               | min.                | max. | min.             | max. | min.              | max.   |
| 1,6 A - 10 A                     | 1 h                | 30 min             | -                   | -    | 300 ms           | 3 s  | 60 ms             | 300 ms |

|             |                  |       |                        |
|-------------|------------------|-------|------------------------|
| DIN 41571-3 | <b>5 x 20 mm</b> | 250 V | T<br>träge<br>time-lag |
|-------------|------------------|-------|------------------------|

| Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking<br>Capacity | Spannungsfall<br>Voltage Drop | Leistungsab-<br>gabe<br>Power Dissipa-<br>tion (@1,5 I <sub>n</sub> ) | Schmelzintegral<br>I <sup>2</sup> t <sub>s</sub> Value | Approbationen<br>Approvals |
|----------------------------|---------------------------------------|----------------------------------------------------------------|-------------------------------|-----------------------------------------------------------------------|--------------------------------------------------------|----------------------------|
|                            |                                       |                                                                | mV                            | W                                                                     | A <sup>2</sup> s                                       |                            |
| 173100.1,6                 | 1,6 A                                 | 300 A @ AC 250 V                                               | 200 <sup>1)</sup>             | 0,8                                                                   | 16                                                     |                            |
| 173100.2                   | 2 A                                   | 300 A @ AC 250 V                                               | 190 <sup>1)</sup>             | 0,9                                                                   | 26                                                     |                            |
| 173100.2,5                 | 2,5 A                                 | 300 A @ AC 250 V                                               | 180 <sup>1)</sup>             | 1,1                                                                   | 45                                                     |                            |
| 173100.3,15                | 3,15 A                                | 300 A @ AC 250 V                                               | 140                           | 1,3                                                                   | 72                                                     |                            |
| 173100.4                   | 4 A                                   | 300 A @ AC 250 V                                               | 135                           | 1,4                                                                   | 130                                                    |                            |
| 173100.5                   | 5 A                                   | 300 A @ AC 250 V                                               | 130                           | 1,2                                                                   | 150                                                    |                            |
| 173100.6,3                 | 6,3 A                                 | 300 A @ AC 250 V                                               | 125                           | 1,3                                                                   | 240                                                    |                            |
| 173100.8                   | 8 A                                   | 300 A @ AC 250 V                                               | 120                           | 1,6                                                                   | 390                                                    |                            |
| 173100.10                  | 10 A                                  | 300 A @ AC 250 V                                               | 115                           | 1,9                                                                   | 620                                                    |                            |
| 173100.12,5                | 12,5 <sup>2)</sup> A                  | 300 A @ AC 250 V                                               | 100                           | 2,8                                                                   | 1150                                                   |                            |
| 173100.15                  | 15 <sup>2)</sup> A                    | 300 A @ AC 250 V                                               | 80                            | 3,3                                                                   | 1800                                                   |                            |
| 173100.16                  | 16 <sup>2)</sup> A                    | 300 A @ AC 250 V                                               | 80                            | 3,8                                                                   | 1800                                                   |                            |

<sup>1)</sup> (max. nach / according to EN 60127-2/5)

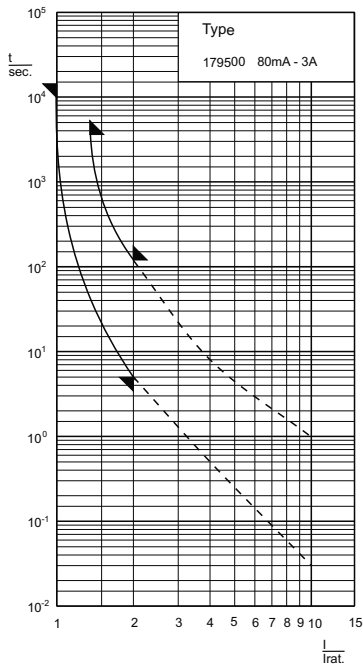
<sup>2)</sup> zusätzlich lieferbare Bemessungsströme / non-standard ratings also available

| Type       | Abk.<br>Abbr. | Beschreibung<br>Description                                     |
|------------|---------------|-----------------------------------------------------------------|
| 173100     | -             | 100 Stück / Pieces (10 x 10)                                    |
|            | IP            | 1.000 Stück Industrieverpackung / 1.000 pieces industrial packs |
| z.B./ e.g. | 173100.1,6IP  |                                                                 |

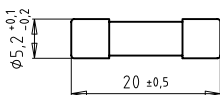
**Type  
179500**



Zeit/Strom-Kennlinien  
Time-Current Characteristics



Abmessungen  
Dimensions



**Aufbau / Construction**

Glasrohr / glass tube

durchsichtig / transparent

Kontaktkappen / end caps

Messing, vernickelt / brass, nickel-plated

**Schmelzzeitgrenzwerte / Fusing time limits**

| Bemessungsstrom<br>Rated Current |      |      | 100% I <sub>n</sub> |      | 135% I <sub>n</sub> |      | 200% I <sub>n</sub> |       |
|----------------------------------|------|------|---------------------|------|---------------------|------|---------------------|-------|
|                                  | min. | max. | min.                | max. | min.                | max. | min.                | max.  |
| 80 mA - 3 A                      | -    | -    | 4 h                 | -    | -                   | 1 h  | 5 s                 | 120 s |

|                                   |                  |       |                            |
|-----------------------------------|------------------|-------|----------------------------|
| UL 248-14<br>CSA C22.2 No. 248.14 | <b>5 x 20 mm</b> | 250 V | T/D<br>träge<br>time delay |
|-----------------------------------|------------------|-------|----------------------------|

| Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking<br>Capacity | Spannungsfall<br>Voltage Drop | Leistungsabgabe<br>Power Dissipa-<br>tion (@1,0 I <sub>n</sub> ) | Schmelz-<br>integral<br>I <sup>2</sup> t <sub>s</sub> Value | Approbationen<br>Approvals |
|----------------------------|---------------------------------------|----------------------------------------------------------------|-------------------------------|------------------------------------------------------------------|-------------------------------------------------------------|----------------------------|
|                            |                                       |                                                                | mV                            | W                                                                | A <sup>2</sup> s                                            | UL cUL                     |
| 179500.0,08                | 80 mA                                 | 35 A @ AC 250 V <sup>1)</sup>                                  | 2800                          | 0,3                                                              | 0,024                                                       | ✓ ✓                        |
| 179500.0,1                 | 100 mA                                | 35 A @ AC 250 V <sup>1)</sup>                                  | 2400                          | 0,3                                                              | 0,053                                                       | ✓ ✓                        |
| 179500.0,125               | 125 mA                                | 35 A @ AC 250 V <sup>1)</sup>                                  | 2100                          | 0,3                                                              | 0,08                                                        | ✓ ✓                        |
| 179500.0,15                | 150 mA                                | 35 A @ AC 250 V <sup>1)</sup>                                  | 1800                          | 0,3                                                              | 0,13                                                        | ✓ ✓                        |
| 179500.0,2                 | 200 mA                                | 35 A @ AC 250 V <sup>1)</sup>                                  | 1300                          | 0,3                                                              | 0,24                                                        | ✓ ✓                        |
| 179500.0,25                | 250 mA                                | 35 A @ AC 250 V <sup>1)</sup>                                  | 1100                          | 0,3                                                              | 0,42                                                        | ✓ ✓                        |
| 179500.0,3                 | 300 mA                                | 35 A @ AC 250 V <sup>1)</sup>                                  | 1050                          | 0,4                                                              | 0,8                                                         | ✓ ✓                        |
| 179500.0,375               | 375 mA                                | 35 A @ AC 250 V <sup>1)</sup>                                  | 900                           | 0,4                                                              | 1,5                                                         | ✓ ✓                        |
| 179500.0,4                 | 400 mA                                | 35 A @ AC 250 V <sup>1)</sup>                                  | 850                           | 0,4                                                              | 1,6                                                         | ✓ ✓                        |
| 179500.0,5                 | 500 mA                                | 35 A @ AC 250 V <sup>1)</sup>                                  | 650                           | 0,4                                                              | 2,0                                                         | ✓ ✓                        |
| 179500.0,6                 | 600 mA                                | 35 A @ AC 250 V <sup>1)</sup>                                  | 550                           | 0,4                                                              | 3,1                                                         | ✓ ✓                        |
| 179500.0,7                 | 700 mA                                | 35 A @ AC 250 V <sup>1)</sup>                                  | 500                           | 0,4                                                              | 4,5                                                         | ✓ ✓                        |
| 179500.0,75                | 750 mA                                | 35 A @ AC 250 V <sup>1)</sup>                                  | 450                           | 0,4                                                              | 5,5                                                         | ✓ ✓                        |
| 179500.0,8                 | 800 mA                                | 35 A @ AC 250 V <sup>1)</sup>                                  | 400                           | 0,4                                                              | 6,4                                                         | ✓ ✓                        |
| 179500.1                   | 1 A                                   | 35 A @ AC 250 V <sup>1)</sup>                                  | 350                           | 0,4                                                              | 12                                                          | ✓ ✓                        |
| 179500.1,25                | 1,25 A                                | 100 A @ AC 250 V <sup>2)</sup>                                 | 300                           | 0,4                                                              | 19                                                          | ✓ ✓                        |
| 179500.1,5                 | 1,5 A                                 | 100 A @ AC 250 V <sup>2)</sup>                                 | 280                           | 0,5                                                              | 25                                                          | ✓ ✓                        |
| 179500.1,6                 | 1,6 A                                 | 100 A @ AC 250 V <sup>2)</sup>                                 | 270                           | 0,5                                                              | 32                                                          | ✓ ✓                        |
| 179500.2                   | 2 A                                   | 100 A @ AC 250 V <sup>2)</sup>                                 | 235                           | 0,5                                                              | 55                                                          | ✓ ✓                        |
| 179500.2,5                 | 2,5 A                                 | 100 A @ AC 250 V <sup>2)</sup>                                 | 215                           | 0,6                                                              | 90                                                          | ✓ ✓                        |
| 179500.3                   | 3 A                                   | 100 A @ AC 250 V <sup>2)</sup>                                 | 200                           | 0,6                                                              | 160                                                         | ✓ ✓                        |

<sup>1)</sup> 10 kA @ AC 125 V 35 A @ AC 250 V cosφ = 0,7-0,8

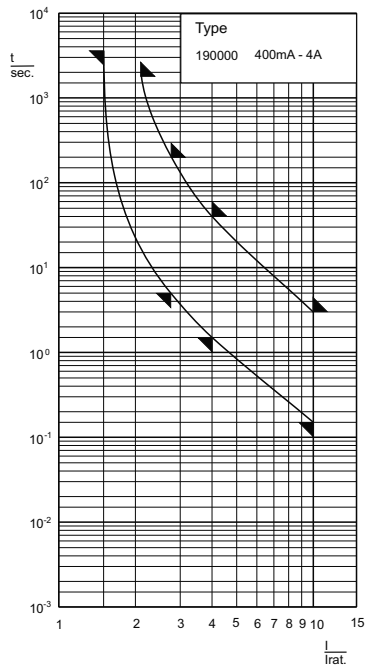
<sup>2)</sup> 10 kA @ AC 125 V 100 A @ AC 250 V cosφ = 0,7-0,8

| Type       | Abk.<br>Abbr. | Beschreibung<br>Description                                     |
|------------|---------------|-----------------------------------------------------------------|
| 179500     |               | 100 Stück / Pieces (10 x 10)                                    |
|            | IP            | 1.000 Stück Industrieverpackung / 1.000 pieces industrial packs |
| z.B./ e.g. | 179500.1,6IP  |                                                                 |

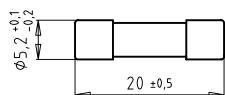
## Type 190000



### Zeit/Strom-Kennlinien Time-Current Characteristics



### Abmessungen Dimensions



### Aufbau / Construction

Glasrohr / glass tube

durchsichtig / transparent

Kontaktkappen / end caps

Messing, vernickelt / brass, nickel-plated

### Schmelzeitgrenzwerte / Fusing time limits

| Bemessungsstrom<br>Rated Current | 1,5 I <sub>n</sub> |        | 2,1 I <sub>n</sub> |       | 2,75 I <sub>n</sub> |      | 4 I <sub>n</sub> |      | 10 I <sub>n</sub> |      |
|----------------------------------|--------------------|--------|--------------------|-------|---------------------|------|------------------|------|-------------------|------|
|                                  | min.               | max.   | min.               | max.  | min.                | max. | min.             | max. | min.              | max. |
| 400 mA - 4 A                     | 1 h                | 30 min | 5 s                | 200 s | 1,5 s               | 40 s | 150 ms           | 3 s  |                   |      |

|                           |                  |       |                                   |
|---------------------------|------------------|-------|-----------------------------------|
| Sondertyp<br>Special type | <b>5 x 20 mm</b> | 250 V | TT<br>superträge<br>very time-lag |
|---------------------------|------------------|-------|-----------------------------------|

| Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking<br>Capacity | Spannungsfall<br>Voltage Drop | Leistungsabgabe<br>Power Dissipa-<br>tion (@1,5 I <sub>n</sub> ) | Schmelz-<br>integral<br>I <sup>2</sup> t <sub>s</sub> Value | Approbationen<br>Approvals |
|----------------------------|---------------------------------------|----------------------------------------------------------------|-------------------------------|------------------------------------------------------------------|-------------------------------------------------------------|----------------------------|
|                            |                                       |                                                                |                               | mW                                                               | A <sup>2</sup> s                                            |                            |
| 190000.0,4                 | 400 mA                                | 35 A @ AC 250 V                                                | 500 mV                        | 0,3                                                              | 2,5                                                         |                            |
| 190000.0,5                 | 500 mA                                | 35 A @ AC 250 V                                                | 450 mV                        | 0,3                                                              | 4,6                                                         |                            |
| 190000.0,63                | 630 mA                                | 35 A @ AC 250 V                                                | 400 mV                        | 0,3                                                              | 10                                                          |                            |
| 190000.0,8                 | 800 mA                                | 35 A @ AC 250 V                                                | 300 mV                        | 0,4                                                              | 15                                                          |                            |
| 190000.1                   | 1 A                                   | 35 A @ AC 250 V                                                | 250 mV                        | 0,4                                                              | 26                                                          |                            |
| 190000.1,25                | 1,25 A                                | 35 A @ AC 250 V                                                | 200 mV                        | 0,4                                                              | 37                                                          |                            |
| 190000.1,6                 | 1,6 A                                 | 35 A @ AC 250 V                                                | 200 mV                        | 0,5                                                              | 45                                                          |                            |
| 190000.2                   | 2 A                                   | 35 A @ AC 250 V                                                | 200 mV                        | 0,6                                                              | 72                                                          |                            |
| 190000.2,5                 | 2,5 A                                 | 35 A @ AC 250 V                                                | 150 mV                        | 0,6                                                              | 130                                                         |                            |
| 190000.3,15                | 3,15 A                                | 35 A @ AC 250 V                                                | 150 mV                        | 0,6                                                              | 230                                                         |                            |
| 190000.4                   | 4 A                                   | 40 A @ AC 250 V                                                | 100 mV                        | 0,8                                                              | 370                                                         |                            |

| Type       | Abk.<br>Abbr. | Beschreibung<br>Description                                     |
|------------|---------------|-----------------------------------------------------------------|
| 190000     | -             | 100 Stück / Pieces (10 x 10)                                    |
|            | IP            | 1.000 Stück Industrieverpackung / 1.000 pieces industrial packs |
| z.B./ e.g. | 190000.2IP    |                                                                 |

|                       |                               |                                       |
|-----------------------|-------------------------------|---------------------------------------|
| Type<br><b>179901</b> | <b>Sortiment / Assortment</b> | F (IEC 60127-2/2, Type 179020)        |
| Type<br><b>179900</b> | <b>Sortiment / Assortment</b> | T (IEC 60127-2/3, Type 179120)        |
| Type<br><b>172900</b> | <b>Sortiment / Assortment</b> | M (DIN 41571-2, Type 172000 / 172100) |

**Inhalt / Contents**

 Sicherungseinsätze / fuse-links 5 x 20 mm  
 18 x 20 = 360 Stück / pieces

Je 20 Stück / 20 pcs. each:

 100 mA, 125 mA, 160 mA, 200 mA, 250 mA,  
 315 mA, 400 mA, 500 mA, 630 mA, 800 mA,  
 1 A, 1,25 A, 1,6 A, 2 A, 2,5 A, 3,15 A, 4 A, 6,3 A

|      |                               |                                                                     |
|------|-------------------------------|---------------------------------------------------------------------|
| Type | <b>Sortiment / Assortment</b> | F (IEC 60127-2/2, Type 179020 ) &<br>T (IEC 60127-2/3, Type 179120) |
|------|-------------------------------|---------------------------------------------------------------------|


**Inhalt / Contents**

 Sicherungseinsätze / fuse-links 5 x 20 mm  
 36 x 10 = 360 Stück / pieces

F 179020; 100 mA - 10 A

T 179120; 400 mA - 10 A

|                       |                               |                                |
|-----------------------|-------------------------------|--------------------------------|
| Type<br><b>189701</b> | <b>Sortiment / Assortment</b> | F (IEC 60127-2/4, Type 189000) |
|-----------------------|-------------------------------|--------------------------------|

|                       |                               |                                      |
|-----------------------|-------------------------------|--------------------------------------|
| Type<br><b>189700</b> | <b>Sortiment / Assortment</b> | T (Sondertype / Special type 189100) |
|-----------------------|-------------------------------|--------------------------------------|

**Inhalt / Contents**

 Sicherungseinsätze / fuse-links 6,3 x 32 mm  
 12 x 10 = 120 Stück / pieces

Je 10 Stück / 10 pcs. each:

500 mA, 800 mA, 1 A, 1,25 A, 1,6 A, 2 A, 2,5 A, 3,15 A, 4 A, 5 A, 6,3 A, 10 A



**Type  
171525**


≤ 1,25 A



&gt; 1,25 A

F

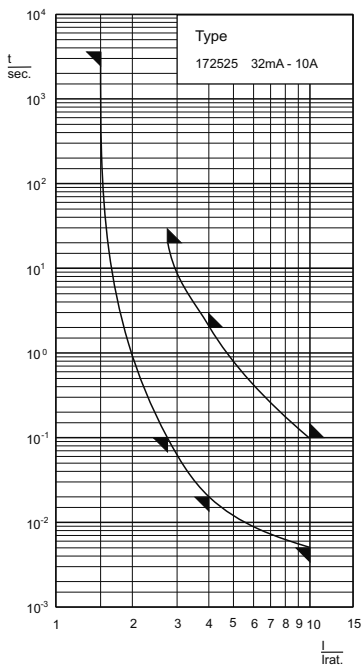
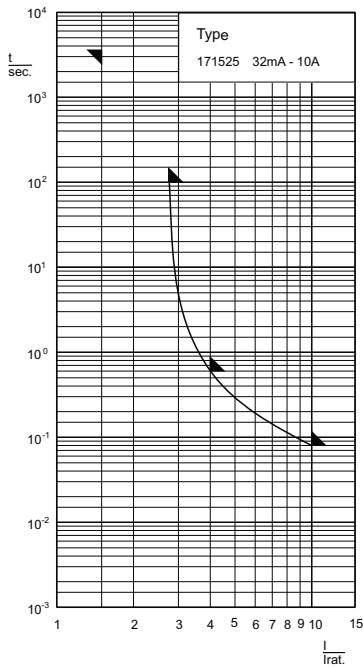
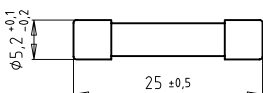
**Type  
172525**


≤ 1,25 A



&gt; 1,25 A

M

 Zeit/Strom-Kennlinien  
 Time-Current Characteristics

 Abmessungen  
 Dimensions

**Aufbau / Construction**

Glasrohr / glass tube

 bis 1,25 A durchsichtig / up to 1,25 A transparent  
 ab 1,25 A undurchsichtig / from 1.25 A non transparent  
 mit Löschmittelfüllung / with filling

Kontaktkappen / end caps

Messing, vernickelt / brass, nickel-plated

**Schmelzeitgrenzwerte / Fusing time limits**

| Bemessungsstrom<br>Rated Current | 1,5 I <sub>n</sub> |      | 2,75 I <sub>n</sub> |       | 4 I <sub>n</sub> |        | 10 I <sub>n</sub> |        |
|----------------------------------|--------------------|------|---------------------|-------|------------------|--------|-------------------|--------|
|                                  | min.               | max. | min.                | max.  | min.             | max.   | min.              | max.   |
| 32 mA - 10 A (Type 171525)       | 1 h                | -    | -                   | 100 s | -                | 600 ms | -                 | 80 ms  |
| 32 mA - 10 A (Type 172525)       | 1 h                | -    | 100 ms              | 20 s  | 20 ms            | 2 s    | 5 ms              | 100 ms |

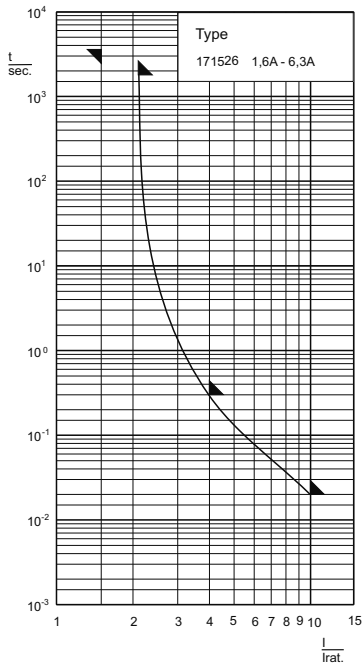
|                           |                  |       |                                                         |
|---------------------------|------------------|-------|---------------------------------------------------------|
| Sondertyp<br>Special type | <b>5 x 25 mm</b> | 250 V | F flink / quick acting<br>M mittelträge / med. time lag |
|---------------------------|------------------|-------|---------------------------------------------------------|

| Artikel-Nr.<br>Article-no. | Artikel-Nr.<br>Article-no. | Bemessungsstrom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking Capacity | Approbationen<br>Approvals |
|----------------------------|----------------------------|----------------------------------|-------------------------------------------------------------|----------------------------|
| F                          | M                          |                                  |                                                             |                            |
| 171525.0,032               | 172525.0,032               | 32 mA                            | 50 A @ AC 250 V                                             |                            |
| 171525.0,05                | 172525.0,05                | 50 mA                            | 50 A @ AC 250 V                                             |                            |
| 171525.0,063               | 172525.0,063               | 63 mA                            | 50 A @ AC 250 V                                             |                            |
| 171525.0,08                | 172525.0,08                | 80 mA                            | 50 A @ AC 250 V                                             |                            |
| 171525.0,1                 | 172525.0,1                 | 100 mA                           | 50 A @ AC 250 V                                             |                            |
| 171525.0,125               | 172525.0,125               | 125 mA                           | 50 A @ AC 250 V                                             |                            |
| 171525.0,16                | 172525.0,16                | 160 mA                           | 50 A @ AC 250 V                                             |                            |
| 171525.0,2                 | 172525.0,2                 | 200 mA                           | 50 A @ AC 250 V                                             |                            |
| 171525.0,25                | 172525.0,25                | 250 mA                           | 50 A @ AC 250 V                                             |                            |
| 171525.0,315               | 172525.0,315               | 315 mA                           | 50 A @ AC 250 V                                             |                            |
| 171525.0,4                 | 172525.0,4                 | 400 mA                           | 50 A @ AC 250 V                                             |                            |
| 171525.0,5                 | 172525.0,5                 | 500 mA                           | 50 A @ AC 250 V                                             |                            |
| 171525.0,63                | 172525.0,63                | 630 mA                           | 50 A @ AC 250 V                                             |                            |
| 171525.0,8                 | 172525.0,8                 | 800 mA                           | 50 A @ AC 250 V                                             |                            |
| 171525.1                   | 172525.1                   | 1 A                              | 50 A @ AC 250 V                                             |                            |
| 171525.1,25                | 172525.1,25                | 1,25 A                           | 50 A @ AC 250 V                                             |                            |
| 171525.1,6                 | 172525.1,6                 | 1,6 A                            | 80 A @ AC 250 V                                             |                            |
| 171525.2                   | 172525.2                   | 2 A                              | 80 A @ AC 250 V                                             |                            |
| 171525.2,5                 | 172525.2,5                 | 2,5 A                            | 80 A @ AC 250 V                                             |                            |
| 171525.3,15                | 172525.3,15                | 3,15 A                           | 80 A @ AC 250 V                                             |                            |
| 171525.4                   | 172525.4                   | 4 A                              | 80 A @ AC 250 V                                             |                            |
| 171525.5                   | 172525.5                   | 5 A                              | 80 A @ AC 250 V                                             |                            |
| 171525.6,3                 | 172525.6,3                 | 6,3 A                            | 80 A @ AC 250 V                                             |                            |
| 171525.8                   | 172525.8                   | 8 A                              | 80 A @ AC 250 V                                             |                            |
| Type                       | Abk.<br>Abbr.              | Beschreibung<br>Description      |                                                             |                            |
|                            |                            | - 100 Stück/ Pieces (10 x 10)    |                                                             |                            |

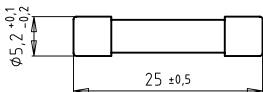
## Type 171526



Zeit/Strom-Kennlinien  
Time-Current Characteristics



Abmessungen  
Dimensions



### Aufbau / Construction

Keramikrohr / ceramic tube

Kontaktkappen / end caps

undurchsichtig / non-transparent  
mit Löschmittelfüllung / with filling

Messing vernickelt / brass nickel-plated

mit Kennmelder / with indicator

### Schmelzeitgrenzwerte / Fusing time limits

| Bemessungsstrom<br>Rated Current | 1,5 I <sub>n</sub> | 2,1 I <sub>n</sub> | 2,75 I <sub>n</sub> |      | 4 I <sub>n</sub> |        | 10 I <sub>n</sub> |       |
|----------------------------------|--------------------|--------------------|---------------------|------|------------------|--------|-------------------|-------|
|                                  | min.               | max.               | min.                | max. | min.             | max.   | min.              | max.  |
| 1,6 A - 6,3 A                    | 1 h                | 30 min             | -                   | -    | -                | 300 ms | -                 | 20 ms |

|             |           |       |                            |
|-------------|-----------|-------|----------------------------|
| DIN 41576-1 | 5 x 25 mm | 250 V | F<br>flink<br>quick acting |
|-------------|-----------|-------|----------------------------|

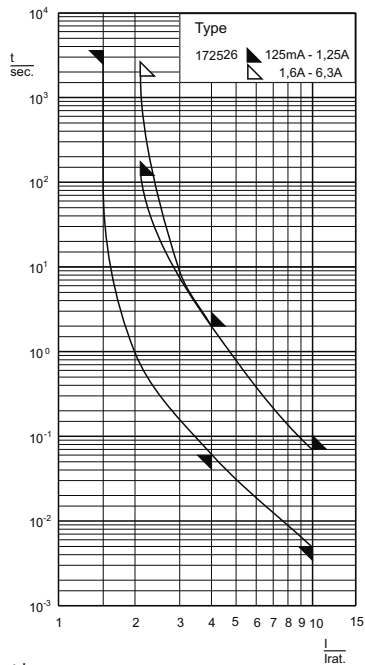
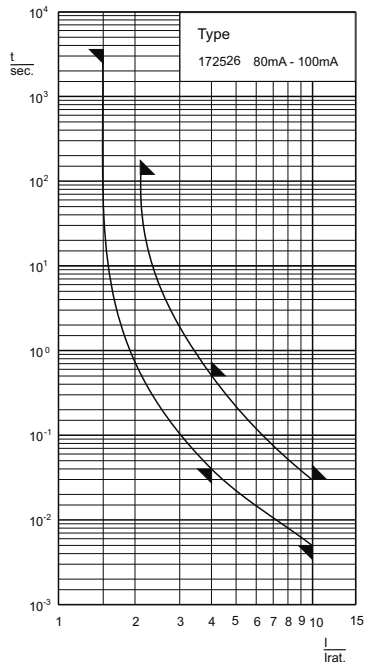
| Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking<br>Capacity | Spannungsfall<br>Voltage Drop | Leistungsabgabe<br>Power Dissipa-<br>tion (@1,5 I <sub>n</sub> ) | Schmelz-<br>integral<br>I <sup>2</sup> t <sub>90</sub> Value | Kennmelderfarbe<br>Color code |         |
|----------------------------|---------------------------------------|----------------------------------------------------------------|-------------------------------|------------------------------------------------------------------|--------------------------------------------------------------|-------------------------------|---------|
|                            |                                       |                                                                | mV                            | W                                                                | A <sup>2</sup> s                                             | deutsch                       | english |
| 171526.1,6                 | 1,6 A                                 | 1500 A @ AC 250 V                                              | 640                           | 0,9                                                              | 2,3                                                          | orange                        | orange  |
| 171526.2                   | 2 A                                   | 1500 A @ AC 250 V                                              | 420                           | 1,1                                                              | 2,4                                                          | blau                          | blue    |
| 171526.2,5                 | 2,5 A                                 | 1500 A @ AC 250 V                                              | 320                           | 1,2                                                              | 4                                                            | gelb                          | yellow  |
| 171526.3,15                | 3,15 A                                | 1500 A @ AC 250 V                                              | 250                           | 1,4                                                              | 6,5                                                          | schwarz                       | black   |
| 171526.4                   | 4 A                                   | 1500 A @ AC 250 V                                              | 200                           | 1,7                                                              | 16                                                           | braun                         | brown   |
| 171526.5                   | 5 A                                   | 1500 A @ AC 250 V                                              | 180                           | 2,1                                                              | 33                                                           | weiß                          | white   |
| 171526.6,3                 | 6,3 A                                 | 1500 A @ AC 250 V                                              | 170                           | 2,5                                                              | 63                                                           | grün                          | green   |
| 171526.8                   | 8 A                                   | 1500 A @ AC 250 V                                              | 150                           | 3,0                                                              | 100                                                          | grau                          | grey    |
| 171526.10                  | 10 A                                  | 1500 A @ AC 250 V                                              | 120                           | 3,3                                                              | 200                                                          | rot                           | red     |

| Type | Abk.<br>Abbr. | Beschreibung<br>Description  |
|------|---------------|------------------------------|
|      | -             | 100 Stück / Pieces (10 x 10) |

## Type 172526



Zeit/Strom-Kennlinien  
Time-Current Characteristics



Abmessungen  
Dimensions



### Aufbau / Construction

Keramikrohr / ceramic tube

Kontaktkappen / end caps

mit Kennmelder / with indicator

### Schmelzeitgrenzwerte / Fusing time limits

| Bernessungsstrom<br>Rated Current | 1,5 I <sub>n</sub> |        | 2,1 I <sub>n</sub> |      | 2,75 I <sub>n</sub> |      | 5 I <sub>n</sub> |        | 10 I <sub>n</sub> |       |
|-----------------------------------|--------------------|--------|--------------------|------|---------------------|------|------------------|--------|-------------------|-------|
|                                   | min.               | max.   | min.               | max. | min.                | max. | min.             | max.   | min.              | max.  |
| 80 mA - 100 mA                    | 1 h                | 2 min  | -                  | -    | -                   | -    | 40 ms            | 500 ms | 5 ms              | 30 ms |
| 125 mA - 1,25 A                   | 1 h                | 2 min  | -                  | -    | -                   | -    | 60 ms            | 2 s    | 5 ms              | 70 ms |
| 1,6 A - 6,3 A                     | 1 h                | 30 min | -                  | -    | -                   | -    | 60 ms            | 2 s    | 5 ms              | 70 ms |

|             |           |       |                                     |
|-------------|-----------|-------|-------------------------------------|
| DIN 41576-2 | 5 x 25 mm | 250 V | M<br>mittelträge<br>medium time-lag |
|-------------|-----------|-------|-------------------------------------|

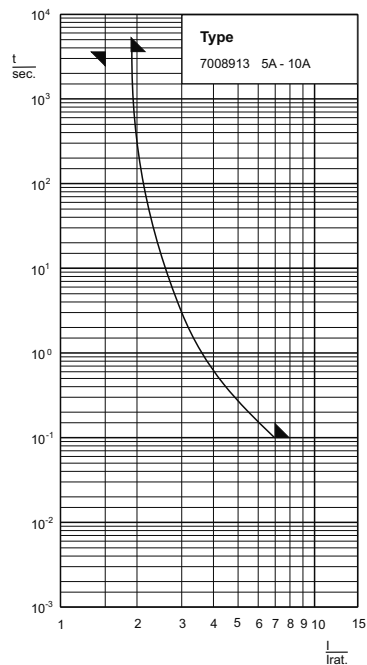
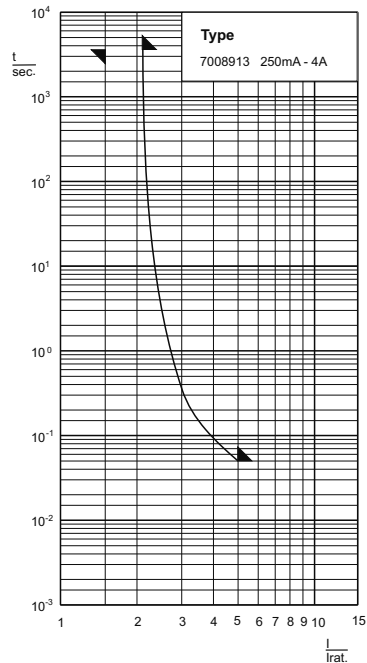
| Artikel-Nr.<br>Article-no. | Bernessungs-<br>strom<br>Rated Current | Bernessungs-<br>Ausschaltvermögen<br>Rated Breaking<br>Capacity | Spannungsfall<br>Voltage Drop | Leistungsabgabe<br>Power Dissipa-<br>tion (@1,5 I <sub>n</sub> ) | Schmelz-<br>integral<br>I <sup>2</sup> t <sub>s</sub> Value | Kennmelderfarbe<br>Color code |         |
|----------------------------|----------------------------------------|-----------------------------------------------------------------|-------------------------------|------------------------------------------------------------------|-------------------------------------------------------------|-------------------------------|---------|
|                            |                                        |                                                                 | mV                            | W                                                                | A <sup>2</sup> s                                            | deutsch                       | english |
| 172526.0,05                | 50 mA                                  | 80 A @ AC 250 V                                                 | 520                           | 0,1                                                              | 0,005                                                       | weiß                          | white   |
| 172526.0,063               | 63 mA                                  | 80 A @ AC 250 V                                                 | 520                           | 0,1                                                              | 0,007                                                       | grün                          | green   |
| 172526.0,08                | 80 mA                                  | 80 A @ AC 250 V                                                 | 520                           | 0,1                                                              | 0,009                                                       | grau                          | grey    |
| 172526.0,1                 | 100 mA                                 | 80 A @ AC 250 V                                                 | 500                           | 0,1                                                              | 0,022                                                       | rot                           | red     |
| 172526.0,125               | 125 mA                                 | 80 A @ AC 250 V                                                 | 500                           | 0,1                                                              | 0,041                                                       | violett                       | lilac   |
| 172526.0,16                | 160 mA                                 | 80 A @ AC 250 V                                                 | 400                           | 0,1                                                              | 0,1                                                         | orange                        | orange  |
| 172526.0,2                 | 200 mA                                 | 80 A @ AC 250 V                                                 | 400                           | 0,2                                                              | 0,2                                                         | blau                          | blue    |
| 172526.0,25                | 250 mA                                 | 1500 A @ AC 250 V                                               | 375                           | 0,2                                                              | 0,22                                                        | gelb                          | yellow  |
| 172526.0,315               | 315 mA                                 | 1500 A @ AC 250 V                                               | 410                           | 0,2                                                              | 0,31                                                        | schwarz                       | black   |
| 172526.0,4                 | 400 mA                                 | 1500 A @ AC 250 V                                               | 280                           | 0,2                                                              | 0,56                                                        | braun                         | brown   |
| 172526.0,5                 | 500 mA                                 | 1500 A @ AC 250 V                                               | 250                           | 0,2                                                              | 1,1                                                         | weiß                          | white   |
| 172526.0,63                | 630 mA                                 | 1500 A @ AC 250 V                                               | 220                           | 0,2                                                              | 0,7                                                         | grün                          | green   |
| 172526.0,8                 | 800 mA                                 | 1500 A @ AC 250 V                                               | 400                           | 0,2                                                              | 1,6                                                         | grau                          | grey    |
| 172526.1                   | 1 A                                    | 1500 A @ AC 250 V                                               | 350                           | 0,2                                                              | 3,5                                                         | rot                           | red     |
| 172526.1,25                | 1,25 A                                 | 1500 A @ AC 250 V                                               | 315                           | 0,4                                                              | 5,5                                                         | violett                       | lilac   |
| 172526.1,6                 | 1,6 A                                  | 1500 A @ AC 250 V                                               | 480                           | 0,6                                                              | 5,6                                                         | orange                        | orange  |
| 172526.2                   | 2 A                                    | 1500 A @ AC 250 V                                               | 360                           | 0,7                                                              | 9,6                                                         | blau                          | blue    |
| 172526.2,5                 | 2,5 A                                  | 1500 A @ AC 250 V                                               | 300                           | 0,9                                                              | 15                                                          | gelb                          | yellow  |
| 172526.3,15                | 3,15 A                                 | 1500 A @ AC 250 V                                               | 250                           | 1,1                                                              | 24                                                          | schwarz                       | black   |
| 172526.4                   | 4 A                                    | 1500 A @ AC 250 V                                               | 180                           | 1,3                                                              | 40                                                          | braun                         | brown   |
| 172526.5                   | 5 A                                    | 1500 A @ AC 250 V                                               | 180                           | 1,5                                                              | 87                                                          | weiß                          | white   |
| 172526.6,3                 | 6,3 A                                  | 1500 A @ AC 250 V                                               | 160                           | 1,8                                                              | 170                                                         | grün                          | green   |
| 172526.8                   | 8 A                                    | 1500 A @ AC 250 V                                               | 150                           | 3                                                                | 190                                                         | grau                          | grey    |

| Type | Abk.<br>Abbr. | Beschreibung<br>Description |
|------|---------------|-----------------------------|
|      | -             | 100 Stück/ Pieces (10 x 10) |

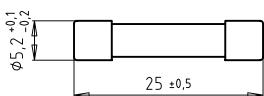
## Type



Zeit/Strom-Kennlinien  
Time-Current Characteristics



Abmessungen  
Dimensions



### Aufbau / Construction

Keramikrohr / ceramic tube

Kontaktkappen / end caps

undurchsichtig / non-transparent

Messing vernickelt / brass nickel-plated

mit Kennmelder / with indicator

### Zubehör / Related Products

Aufbausicherungshalter 7104403 und Schraubkappe 7204402 siehe Liste M

suitable fuse-holder for panel mounting No. 7104403 and screw-cap No. 7204402 see catalog M

### Schmelzeitgrenzwerte / Fusing time limits

| Bemessungsstrom<br>Rated Current | 1,5 I <sub>n</sub> |      | 1,9 I <sub>n</sub> |      | 2,1 I <sub>n</sub> |      | 5 I <sub>n</sub> |      | 7 I <sub>n</sub> |        |
|----------------------------------|--------------------|------|--------------------|------|--------------------|------|------------------|------|------------------|--------|
|                                  | min.               | max. | min.               | max. | min.               | max. | min.             | max. | min.             | max.   |
| 500 mA - 4 A                     | 1 h                | -    | -                  | -    | 1 h                | -    | 50 ms            | -    | -                | -      |
| 5 A - 10 A                       | 1 h                | 1 h  | -                  | -    | -                  | -    | -                | -    | -                | 100 ms |

|          |           |       |                            |
|----------|-----------|-------|----------------------------|
| VG 88851 | 5 x 25 mm | 450 V | F<br>flink<br>quick acting |
|----------|-----------|-------|----------------------------|

| Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking<br>Capacity | Spannungsfall<br>Voltage Drop | Leistungsabgabe<br>Power Dissipa-<br>tion (@ 1,5 I <sub>n</sub> ) | Schmelz-<br>integral<br>I <sup>2</sup> t <sub>90</sub> Value | Kennmelderfarbe<br>Color code |         |
|----------------------------|---------------------------------------|----------------------------------------------------------------|-------------------------------|-------------------------------------------------------------------|--------------------------------------------------------------|-------------------------------|---------|
|                            |                                       |                                                                | mV                            | W                                                                 | A <sup>2</sup> s                                             | deutsch                       | english |
| 7008913.0,25               | 250 mA                                | 70 kA @ AC 500 V <sup>1)</sup>                                 | 950                           | 0,3                                                               | 0,05                                                         | gelb                          | yellow  |
| 7008913.0,315              | 315 mA                                | 70 kA @ AC 500 V <sup>1)</sup>                                 | 900                           | 0,5                                                               | 0,05                                                         | schwarz                       | black   |
| 7008913.0,4                | 400 mA                                | 70 kA @ AC 500 V <sup>1)</sup>                                 | 800                           | 0,5                                                               | 0,15                                                         | braun                         | brown   |
| 7008913.0,5                | 500 mA                                | 70 kA @ AC 500 V <sup>1)</sup>                                 | 700                           | 0,6                                                               | 0,15                                                         | weiß                          | white   |
| 7008913.0,8                | 800 mA                                | 70 kA @ AC 500 V <sup>1)</sup>                                 | 300                           | 0,3                                                               | 0,25                                                         | grau                          | grey    |
| 7008913.1                  | 1 A                                   | 70 kA @ AC 500 V <sup>1)</sup>                                 | 300                           | 0,3                                                               | 0,5                                                          | rot                           | red     |
| 7008913.1,25               | 1,25 A                                | 70 kA @ AC 500 V <sup>1)</sup>                                 | 250                           | 0,4                                                               | 1,1                                                          | violett                       | lilac   |
| 7008913.1,6                | 1,6 A                                 | 70 kA @ AC 500 V <sup>1)</sup>                                 | 400                           | 0,9                                                               | 2,3                                                          | orange                        | orange  |
| 7008913.2                  | 2 A                                   | 70 kA @ AC 500 V <sup>1)</sup>                                 | 400                           | 1,1                                                               | 2,4                                                          | blau                          | blue    |
| 7008913.2,5                | 2,5 A                                 | 70 kA @ AC 500 V <sup>1)</sup>                                 | 350                           | 1,2                                                               | 4                                                            | gelb                          | yellow  |
| 7008913.3,15               | 3,15 A                                | 70 kA @ AC 500 V <sup>1)</sup>                                 | 300                           | 1,4                                                               | 6,5                                                          | schwarz                       | black   |
| 7008913.4                  | 4 A                                   | 70 kA @ AC 500 V <sup>1)</sup>                                 | 200                           | 1,7                                                               | 16                                                           | braun                         | brown   |
| 7008913.5                  | 5 A                                   | 70 kA @ AC 500 V <sup>1)</sup>                                 | 200                           | 2,1                                                               | 33                                                           | weiß                          | white   |
| 7008913.6,3                | 6,3 A                                 | 70 kA @ AC 500 V <sup>1)</sup>                                 | 150                           | 2,5                                                               | 63                                                           | grün                          | green   |
| 7008913.8                  | 8 A                                   | 70 kA @ AC 500 V <sup>1)</sup>                                 | 190                           | 6                                                                 | 13                                                           | grau                          | grey    |
| 7008913.10                 | 10 A                                  | 70 kA @ AC 500 V <sup>1)</sup>                                 | 150                           | 5                                                                 | 32                                                           | rot                           | red     |

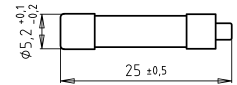
| Type | Abk.<br>Abbr. | Beschreibung<br>Description |
|------|---------------|-----------------------------|
| -    | -             | 100 Stück/ Pieces (10 x 10) |

Type



Abmessungen  
Dimensions

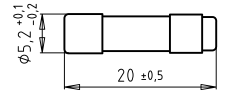
7001607 / 7001707



Type



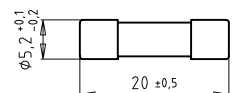
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Type



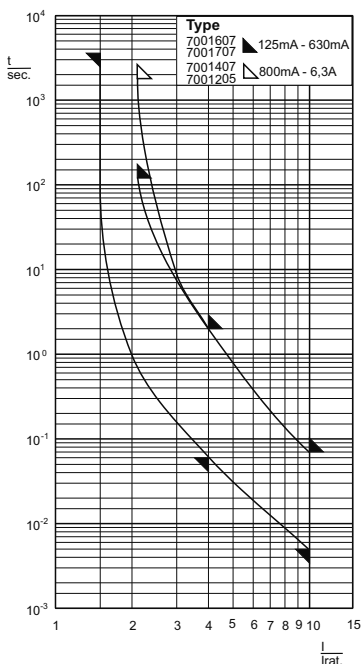
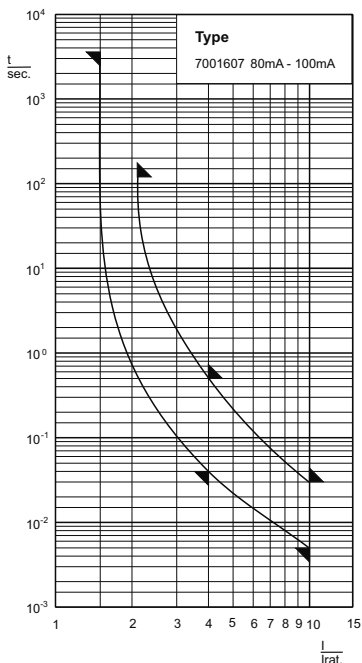
7001205



Type



Zeit/Strom-Kennlinien  
Time-Current Characteristics



**Aufbau / Construction**  
Keramicrohr / ceramic tube  
Kontaktkappen / end caps

undurchsichtig / non-transparent  
Messing vernickelt / brass nickel-plated

mit Kennmelder / with indicator

#### Schmelzeitgrenzwerte / Fusing time limits

| Bemessungsstrom<br>Rated Current | 1,5 I <sub>n</sub> |      | 2,1 I <sub>n</sub> |        | 4 I <sub>n</sub> |        | 10 I <sub>n</sub> |       |
|----------------------------------|--------------------|------|--------------------|--------|------------------|--------|-------------------|-------|
|                                  | min.               | max. | min.               | max.   | min.             | max.   | min.              | max.  |
| 80 mA - 100 mA                   | 1 h                | -    | -                  | 2 min  | 40 ms            | 500 ms | 5 ms              | 30 ms |
| 125 mA - 630 mA                  | 1 h                | -    | -                  | 2 min  | 60 ms            | 2 s    | 5 ms              | 70 ms |
| 800 mA - 6,3 A                   | 1 h                | -    | -                  | 30 min | 60 ms            | 2 s    | 5 ms              | 70 ms |

|               |          |       |                                     |
|---------------|----------|-------|-------------------------------------|
| DIN 41577 T.2 | 5 x L mm | 250 V | M<br>mittelträge<br>medium time-lag |
|---------------|----------|-------|-------------------------------------|

| Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking Capacity | Spannungsfall<br>Voltage Drop | Leistungs-<br>abgabe<br>Power Dissipation<br>(@ 1,5 I <sub>n</sub> ) | Schmelzintegral<br>I <sup>2</sup> t <sub>s</sub> Value | Länge L<br>Length L |
|----------------------------|---------------------------------------|-------------------------------------------------------------|-------------------------------|----------------------------------------------------------------------|--------------------------------------------------------|---------------------|
|                            |                                       |                                                             | mV                            | W                                                                    | A <sup>2</sup> s                                       | mm                  |
| 7001607.0,08               | 80 mA                                 | 80 A @ AC 250 V                                             | 520                           | 0,1                                                                  | 0,017                                                  | 25                  |
| 7001607.0,1                | 100 mA                                | 80 A @ AC 250 V                                             | 500                           | 0,1                                                                  | 0,022                                                  | 25                  |
| 7001607.0,125              | 125 mA                                | 80 A @ AC 250 V                                             | 500                           | 0,1                                                                  | 0,041                                                  | 25                  |
| 7001607.0,16               | 160 mA                                | 80 A @ AC 250 V                                             | 400                           | 0,1                                                                  | 0,1                                                    | 25                  |
| 7001607.0,2                | 200 mA                                | 80 A @ AC 250 V                                             | 400                           | 0,2                                                                  | 0,2                                                    | 25                  |
| 7001707.0,25               | 250 mA                                | 1500 A @ AC 250 V                                           | 500                           | 0,2                                                                  | 0,22                                                   | 25                  |
| 7001707.0,315              | 315 mA                                | 1500 A @ AC 250 V                                           | 470                           | 0,2                                                                  | 0,31                                                   | 25                  |
| 7001707.0,4                | 400 mA                                | 1500 A @ AC 250 V                                           | 400                           | 0,2                                                                  | 0,56                                                   | 25                  |
| 7001707.0,5                | 500 mA                                | 1500 A @ AC 250 V                                           | 400                           | 0,2                                                                  | 1,1                                                    | 25                  |
| 7001707.0,63               | 630 mA                                | 1500 A @ AC 250 V                                           | 380                           | 0,2                                                                  | 0,7                                                    | 25                  |
| 7001407.0,8                | 800 mA                                | 1500 A @ AC 250 V                                           | 400                           | 0,3                                                                  | 1,6                                                    | 20                  |
| 7001407.1                  | 1 A                                   | 1500 A @ AC 250 V                                           | 350                           | 0,3                                                                  | 3,5                                                    | 20                  |
| 7001407.1,25               | 1,25 A                                | 1500 A @ AC 250 V                                           | 310                           | 0,3                                                                  | 5,5                                                    | 20                  |
| 7001407.1,6                | 1,6 A                                 | 1500 A @ AC 250 V                                           | 480                           | 1                                                                    | 5,6                                                    | 20                  |
| 7001407.2                  | 2 A                                   | 1500 A @ AC 250 V                                           | 360                           | 1                                                                    | 9,6                                                    | 20                  |
| 7001407.2,5                | 2,5 A                                 | 1500 A @ AC 250 V                                           | 300                           | 1,1                                                                  | 15                                                     | 20                  |
| 7001407.3,15               | (3,15) A <sup>1)</sup>                | 1500 A @ AC 250 V                                           | 250                           | 1,2                                                                  | 24                                                     | 20                  |
| 7001407.4                  | 4 A                                   | 1500 A @ AC 250 V                                           | 180                           | 1,3                                                                  | 40                                                     | 20                  |
| 7001205.6,3 <sup>2)</sup>  | 6,3 A                                 | 1500 A @ AC 250 V                                           | 160                           | 1,8                                                                  | 170                                                    | 20                  |

| Type | Abk.<br>Abbr. | Beschreibung<br>Description |
|------|---------------|-----------------------------|
|      | -             | 100 Stück/ Pieces (10 x 10) |

Type  
**171530**



≤ 1,25 A



> 1,25 A

F

Type  
**172530**



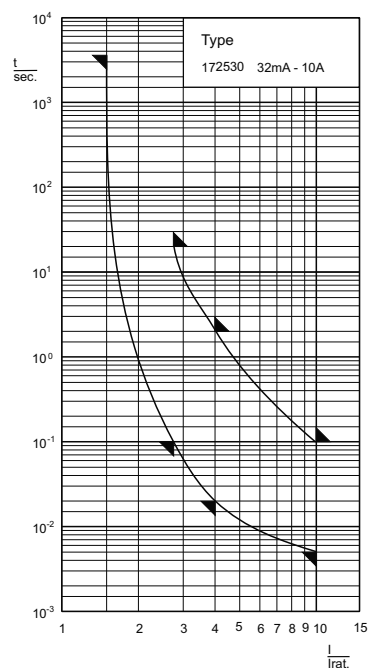
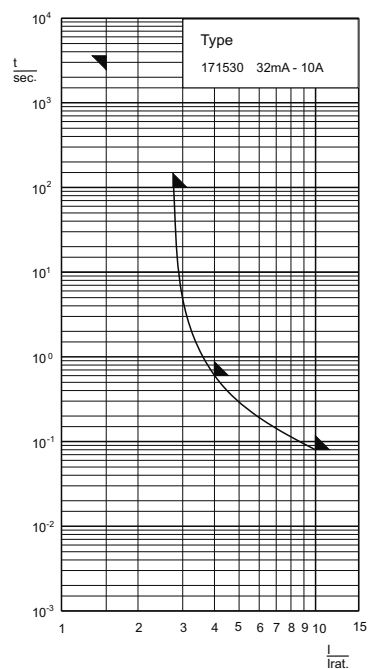
≤ 1,25 A



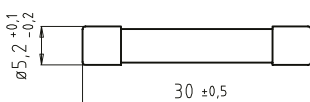
> 1,25 A

M

Zeit/Strom-Kennlinien  
Time-Current Characteristics



Abmessungen  
Dimensions



**Aufbau / Construction**

Glasrohr / glass tube

bis 1,25 A durchsichtig / up to 1,25 A transparent  
ab 1,25 A undurchsichtig / from 1.25 A non transparent  
mit Löschmittelfüllung / with filling

Kontaktkappen / end caps

Messing, vernickelt / brass, nickel-plated

**Schmelzeitgrenzwerte / Fusing time limits**

| Bemessungsstrom<br>Rated Current | 1,5 I <sub>n</sub> |      | 2,75 I <sub>n</sub> |       | 4 I <sub>n</sub> |        | 10 I <sub>n</sub> |        |
|----------------------------------|--------------------|------|---------------------|-------|------------------|--------|-------------------|--------|
|                                  | min.               | max. | min.                | max.  | min.             | max.   | min.              | max.   |
| 32 mA - 10 A (Type 171530)       | 1 h                | -    | -                   | 100 s | -                | 600 ms | -                 | 80 ms  |
| 32 mA - 10 A (Type 172530)       | 1 h                | -    | 50 ms               | 30 s  | 20 ms            | 2 s    | 5 ms              | 100 ms |

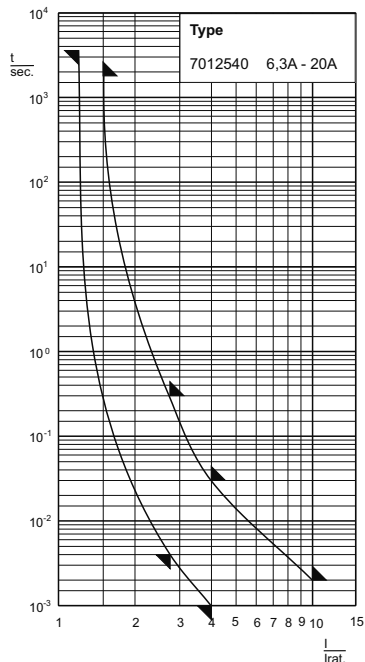
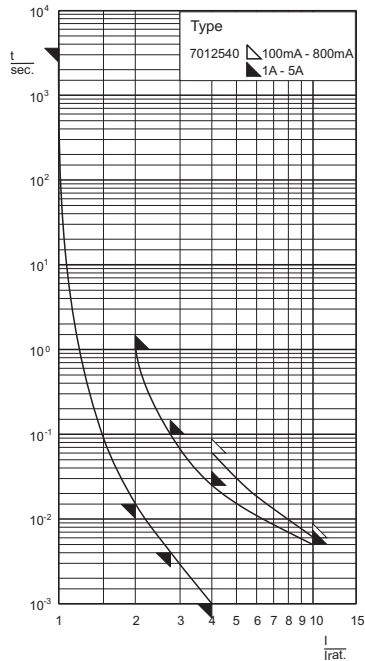
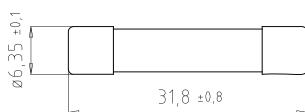
|                           |                  |       |                                                         |
|---------------------------|------------------|-------|---------------------------------------------------------|
| Sondertyp<br>Special type | <b>5 x 30 mm</b> | 500 V | F flink / quick acting<br>M mittelträge / med. time-lag |
|---------------------------|------------------|-------|---------------------------------------------------------|

| Artikel-Nr.<br>Article-no. | Artikel-Nr.<br>Article-no. | Bemessungsstrom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking Capacity | Approbationen<br>Approvals |
|----------------------------|----------------------------|----------------------------------|-------------------------------------------------------------|----------------------------|
| F                          | M                          |                                  |                                                             |                            |
| 171530.0,032               | 172530.0,032               | 32 mA                            | 50 A @ AC 500 V                                             |                            |
| 171530.0,05                | 172530.0,05                | 50 mA                            | 50 A @ AC 500 V                                             |                            |
| 171530.0,063               | 172530.0,063               | 63 mA                            | 50 A @ AC 500 V                                             |                            |
| 171530.0,08                | 172530.0,08                | 80 mA                            | 50 A @ AC 500 V                                             |                            |
| 171530.0,1                 | 172530.0,1                 | 100 mA                           | 50 A @ AC 500 V                                             |                            |
| 171530.0,125               | 172530.0,125               | 125 mA                           | 50 A @ AC 500 V                                             |                            |
| 171530.0,16                | 172530.0,16                | 160 mA                           | 50 A @ AC 500 V                                             |                            |
| 171530.0,2                 | 172530.0,2                 | 200 mA                           | 50 A @ AC 500 V                                             |                            |
| 171530.0,25                | 172530.0,25                | 250 mA                           | 50 A @ AC 500 V                                             |                            |
| 171530.0,315               | 172530.0,315               | 315 mA                           | 50 A @ AC 500 V                                             |                            |
| 171530.0,4                 | 172530.0,4                 | 400 mA                           | 50 A @ AC 500 V                                             |                            |
| 171530.0,5                 | 172530.0,5                 | 500 mA                           | 50 A @ AC 500 V                                             |                            |
| 171530.0,63                | 172530.0,63                | 630 mA                           | 50 A @ AC 500 V                                             |                            |
| 171530.0,8                 | 172530.0,8                 | 800 mA                           | 50 A @ AC 500 V                                             |                            |
| 171530.1                   | 172530.1                   | 1 A                              | 50 A @ AC 500 V                                             |                            |
| 171530.1,25                | 172530.1,25                | 1,25 A                           | 50 A @ AC 500 V                                             |                            |
| 171530.1,6                 | 172530.1,6                 | 1,6 A                            | 80 A @ AC 500 V                                             |                            |
| 171530.2                   | 172530.2                   | 2 A                              | 80 A @ AC 500 V                                             |                            |
| 171530.2,5                 | 172530.2,5                 | 2,5 A                            | 80 A @ AC 500 V                                             |                            |
| 171530.3,15                | 172530.3,15                | 3,15 A                           | 80 A @ AC 500 V                                             |                            |
| 171530.4                   | 172530.4                   | 4 A                              | 80 A @ AC 500 V                                             |                            |
| 171530.5                   | 172530.5                   | 5 A                              | 80 A @ AC 500 V                                             |                            |
| 171530.6,3                 | 172530.6,3                 | 6,3 A                            | 80 A @ AC 500 V                                             |                            |
| 171530.8                   | 172530.8                   | 8 A                              | 80 A @ AC 500 V                                             |                            |
| 171530.10                  | 172530.10                  | 10 A                             | 80 A @ AC 500 V                                             |                            |

| Type | Abk.<br>Abbr. | Beschreibung<br>Description |
|------|---------------|-----------------------------|
|      | -             | 100 Stück/ Pieces (10 x 10) |

## Type


  
 E167295

 Zeit/Strom-Kennlinien  
 Time-Current Characteristics

 Abmessungen  
 Dimensions

 Aufbau / Construction  
 Keramikrohr / ceramic tube

 undurchsichtig / non transparent  
 mit Löschmittelfüllung / with filling

Kontaktkappen / end caps

Messing, vernickelt / brass, nickel-plated

## Schmelzeitgrenzwerte / Fusing time limits

| Bernessungsstrom<br>Rated Current | 1 I <sub>n</sub> | 1,2 I <sub>n</sub> | 2,75 I <sub>n</sub> |        | 4 I <sub>n</sub> |       | 10 I <sub>n</sub> |      |
|-----------------------------------|------------------|--------------------|---------------------|--------|------------------|-------|-------------------|------|
|                                   | min.             | min.               | min.                | max.   | min.             | max.  | min.              | max. |
| 100 mA - 800 mA                   | 1 h              | -                  | -                   | -      | -                | 60 ms | -                 | 6 ms |
| 1 A - 5 A                         | 1 h              | -                  | 4 ms                | 150 ms | 1 ms             | 25 ms | -                 | 5 ms |
| 6,3 A - 20 A                      | -                | 1 h                | 4 ms                | 300 ms | 1 ms             | 30 ms | -                 | 2 ms |

|                           |                                      |                         |                                       |
|---------------------------|--------------------------------------|-------------------------|---------------------------------------|
| Sondertyp<br>Special type | <b>6,3 x 32 mm</b><br>(0,25 x 1,25") | 700 V<br>600 V<br>500 V | FF<br>superflink<br>very quick acting |
|---------------------------|--------------------------------------|-------------------------|---------------------------------------|

| Artikel-Nr.<br>Article-no. | Bernessungs-<br>strom<br>Rated Current | Bernessungs-<br>Ausschaltvermögen<br>Rated Breaking<br>Capacity | Spannungsfall<br>Voltage Drop | Leistungsabgabe<br>Power Dissipa-<br>tion (@ 1,0/1,2 I <sub>n</sub> ) | Schmelz-<br>integral<br>I <sup>2</sup> t <sub>90</sub> Value | Approbationen<br>Approvals |
|----------------------------|----------------------------------------|-----------------------------------------------------------------|-------------------------------|-----------------------------------------------------------------------|--------------------------------------------------------------|----------------------------|
|                            |                                        |                                                                 | mV                            | W                                                                     | A <sup>2</sup> s                                             | UL rec.                    |
| 7012540.0,1                | 100 mA                                 | 50 kA @ AC 700 V <sup>1)</sup>                                  | 2500                          | 0,3                                                                   | 0,0009                                                       | ✓                          |
| 7012540.0,125              | 125 mA                                 | 50 kA @ AC 700 V <sup>1)</sup>                                  | 2200                          | 0,3                                                                   | 0,0017                                                       | ✓                          |
| 7012540.0,16               | 160 mA                                 | 50 kA @ AC 700 V <sup>1)</sup>                                  | 2000                          | 0,4                                                                   | 0,004                                                        | ✓                          |
| 7012540.0,2                | 200 mA                                 | 50 kA @ AC 700 V <sup>1)</sup>                                  | 900                           | 0,2                                                                   | 0,01                                                         | ✓                          |
| 7012540.0,25               | 250 mA                                 | 50 kA @ AC 700 V <sup>1)</sup>                                  | 800                           | 0,2                                                                   | 0,02                                                         | ✓                          |
| 7012540.0,315              | 315 mA                                 | 50 kA @ AC 700 V <sup>1)</sup>                                  | 700                           | 0,3                                                                   | 0,04                                                         | ✓                          |
| 7012540.0,4                | 400 mA                                 | 50 kA @ AC 700 V <sup>1)</sup>                                  | 650                           | 0,3                                                                   | 0,07                                                         | ✓                          |
| 7012540.0,5                | 500 mA                                 | 50 kA @ AC 700 V <sup>1)</sup>                                  | 650                           | 0,4                                                                   | 0,12                                                         | ✓                          |
| 7012540.0,63               | 630 mA                                 | 50 kA @ AC 700 V <sup>1)</sup>                                  | 650                           | 0,5                                                                   | 0,15                                                         | ✓                          |
| 7012540.0,8                | 800 mA                                 | 50 kA @ AC 700 V <sup>1)</sup>                                  | 600                           | 0,5                                                                   | 0,23                                                         | ✓                          |
| 7012540.1                  | 1 A                                    | 50 kA @ AC 700 V <sup>1)</sup>                                  | 750                           | 0,8                                                                   | 0,32                                                         | ✓                          |
| 7012540.1,25               | 1,25 A                                 | 50 kA @ AC 700 V <sup>1)</sup>                                  | 700                           | 0,9                                                                   | 0,20                                                         | ✓                          |
| 7012540.1,6                | 1,6 A                                  | 50 kA @ AC 700 V <sup>1)</sup>                                  | 650                           | 1,1                                                                   | 0,31                                                         | ✓                          |
| 7012540.2                  | 2 A                                    | 50 kA @ AC 700 V <sup>1)</sup>                                  | 650                           | 1,4                                                                   | 0,64                                                         | ✓                          |
| 7012540.2,5                | 2,5 A                                  | 50 kA @ AC 600 V <sup>1)</sup>                                  | 550                           | 1,4                                                                   | 1,2                                                          | ✓                          |
| 7012540.3,15               | 3,15 A                                 | 50 kA @ AC 600 V <sup>1)</sup>                                  | 500                           | 1,6                                                                   | 2,0                                                          | ✓                          |
| 7012540.4                  | 4 A                                    | 50 kA @ AC 600 V <sup>1)</sup>                                  | 450                           | 1,8                                                                   | 5,0                                                          | ✓                          |
| 7012540.5                  | 5 A                                    | 50 kA @ AC 600 V <sup>1)</sup>                                  | 400                           | 2,0                                                                   | 10                                                           | ✓                          |
| 7012540.6,3                | 6,3 A                                  | 50 kA @ AC 600 V <sup>1)</sup>                                  | 400                           | 4                                                                     | 3,0                                                          | ✓                          |
| 7012540.8                  | 8 A                                    | 50 kA @ AC 600 V                                                | 350                           | 4,5                                                                   | 6,5                                                          | ✓                          |
| 7012540.10                 | 10 A                                   | 50 kA @ AC 600 V                                                | 350                           | 5                                                                     | 12                                                           | ✓                          |
| 7012540.12,5               | 12,5 A                                 | 50 kA @ AC 500 V                                                | 300                           | 7                                                                     | 18                                                           | ✓                          |
| 7012540.16                 | 16 A                                   | 50 kA @ AC 500 V                                                | 300                           | 9                                                                     | 31                                                           | ✓                          |
| 7012540.20                 | 20 A                                   | 50 kA @ AC 500 V                                                | 300                           | 11                                                                    | 46                                                           | ✓                          |
| 7012540.25                 | 25 A                                   | 50 kA @ AC 500 V                                                | 230                           | 11                                                                    | 87                                                           | ✓                          |

 Bei Verwendung dieser G-Sicherungseinsätze ab 6,3 A ist auf ausreichende Wärmeabfuhr zu achten.  
 When using this type from 6.3 A up, consideration should be given to heat dissipation

<sup>1)</sup> 20 kA @ DC 500 V ohne/without Approbation/Approval

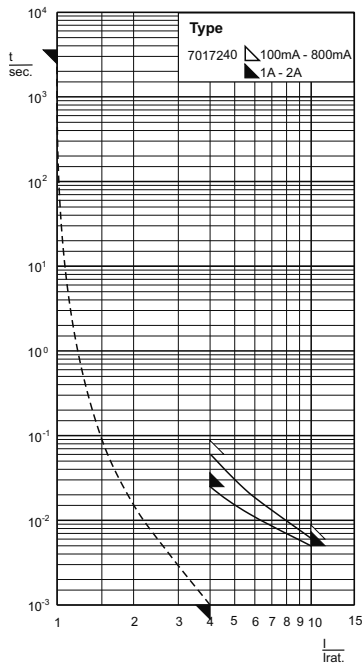
| Type       | Abk.<br>Abbr. | Beschreibung<br>Description                                     |
|------------|---------------|-----------------------------------------------------------------|
| 7012540    | -             | 100 Stück / Pieces (10 x 10)                                    |
|            | IP            | 1.000 Stück Industrieverpackung / 1.000 pieces industrial packs |
| z.B./ e.g. | 7012540.16IP  |                                                                 |

## Type

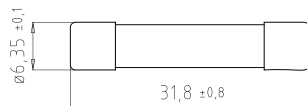
**C<sub>RU</sub>S**  
E167295



### Zeit/Strom-Kennlinien Time-Current Characteristics



### Abmessungen Dimensions



### Aufbau / Construction Keramikrohr / ceramic tube

undurchsichtig / non transparent  
mit Löschmittelfüllung / with filling

Kontaktkappen / end caps

Messing, vernickelt / brass, nickel-plated

### Schmelzeitgrenzwerte / Fusing time limits

| Bemessungsstrom<br>Rated Current | 1,0 I <sub>n</sub> |      | 2,75 I <sub>n</sub> |      | 4 I <sub>n</sub> |       | 10 I <sub>n</sub> |      |
|----------------------------------|--------------------|------|---------------------|------|------------------|-------|-------------------|------|
|                                  | min.               | max. | min.                | max. | min.             | max.  | min.              | max. |
| 100 mA - 800 mA                  | 1 h                | -    | -                   | -    | -                | -     | 60 ms             | -    |
| 1 A - 2 A                        | 1 h                | -    | -                   | -    | 1 ms             | 25 ms | -                 | 6ms  |

nur für Kurzschlusschutz  
for short circuit protection only

**6,3 x 32 mm**  
(0,25 x 1,25")

1000 V

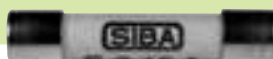
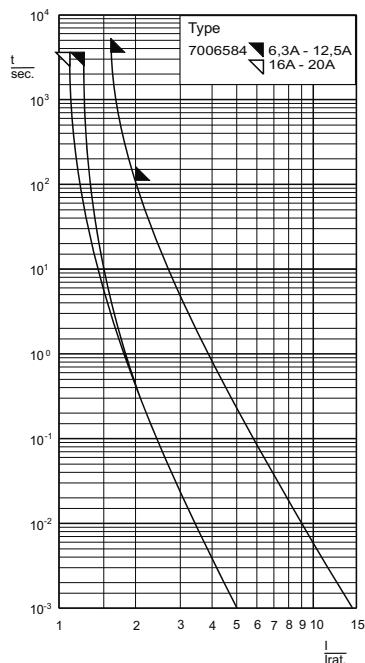
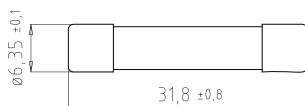
aR (FF)

| Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking<br>Capacity | Spannungsfall<br>Voltage Drop | Leistungsabgabe<br>Power Dissipa-<br>tion (@ 1,0 I <sub>n</sub> ) | Schmelz-<br>integral<br>I <sup>2</sup> t <sub>s</sub> Value | Approbationen<br>Approvals |
|----------------------------|---------------------------------------|----------------------------------------------------------------|-------------------------------|-------------------------------------------------------------------|-------------------------------------------------------------|----------------------------|
|                            |                                       |                                                                | mV                            | W                                                                 | A <sup>2</sup> s                                            | UL rec.                    |
| 7017240.0,1                | 100 mA                                | 30 kA@AC/DC 1000 V <sup>1)</sup>                               | 2500                          | 0,3                                                               | 0,0009                                                      | ✓                          |
| 7017240.0,125              | 125 mA                                | 30 kA@AC/DC 1000 V <sup>1)</sup>                               | 2200                          | 0,3                                                               | 0,0017                                                      | ✓                          |
| 7017240.0,16               | 160 mA                                | 30 kA@AC/DC 1000 V <sup>1)</sup>                               | 2000                          | 0,4                                                               | 0,004                                                       | ✓                          |
| 7017240.0,2                | 200 mA                                | 30 kA@AC/DC 1000 V <sup>1)</sup>                               | 900                           | 0,2                                                               | 0,01                                                        | ✓                          |
| 7017240.0,25               | 250 mA                                | 30 kA@AC/DC 1000 V <sup>1)</sup>                               | 800                           | 0,2                                                               | 0,02                                                        | ✓                          |
| 7017240.0,315              | 315 mA                                | 30 kA@AC/DC 1000 V <sup>1)</sup>                               | 700                           | 0,3                                                               | 0,04                                                        | ✓                          |
| 7017240.0,4                | 400 mA                                | 30 kA@AC/DC 1000 V <sup>1)</sup>                               | 650                           | 0,3                                                               | 0,07                                                        | ✓                          |
| 7017240.0,5                | 500 mA                                | 30 kA@AC/DC 1000 V <sup>1)</sup>                               | 650                           | 0,4                                                               | 0,12                                                        | ✓                          |
| 7017240.0,63               | 630 mA                                | 30 kA@AC/DC 1000 V                                             | 650                           | 0,5                                                               | 0,15                                                        | ✓                          |
| 7017240.0,8                | 800 mA                                | 30 kA@AC/DC 1000 V                                             | 600                           | 0,5                                                               | 0,23                                                        | ✓                          |
| 7017240.1                  | 1 A                                   | 30 kA@AC/DC 1000 V                                             | 750                           | 0,8                                                               | 0,32                                                        | ✓                          |
| 7017240.1,6                | 1,6 A                                 | 30 kA@AC/DC 1000 V                                             | 650                           | 1,1                                                               | 0,31                                                        | ✓                          |
| 7017240.2                  | 2 A                                   | 30 kA @ DC 1000 V                                              | 650                           | 1,4                                                               | 0,64                                                        | ✓                          |

<sup>1)</sup> 50kA @ AC/DC 1000V ohne/without Approbation/Approval

| Type       | Abk.<br>Abbr. | Beschreibung<br>Description                                     |
|------------|---------------|-----------------------------------------------------------------|
| 7017240    | -             | 100 Stück / Pieces (10 x 10)                                    |
|            | IP            | 1.000 Stück Industrieverpackung / 1.000 pieces industrial packs |
| z.B./ e.g. | 7017240.1,6IP |                                                                 |

## Type


 Zeit/Strom-Kennlinien  
 Time-Current Characteristics

 Abmessungen  
 Dimensions


## Aufbau / Construction

Keramikrohr / ceramic tube

 undurchsichtig / non transparent  
 mit Löschmittelfüllung / with filling

Kontaktkappen / end caps

Messing, vernickelt / brass, nickel-plated

## Schmelzeitgrenzwerte / Fusing time limits

| Bemessungsstrom<br>Rated Current | 1,1 I <sub>n</sub> |      | 1,25 I <sub>n</sub> |      | 1,6 I <sub>n</sub> |      | 2,0 I <sub>n</sub> |       |
|----------------------------------|--------------------|------|---------------------|------|--------------------|------|--------------------|-------|
|                                  | min.               | max. | min.                | max. | min.               | max. | min.               | max.  |
| 6,3 A - 12,5 A                   | -                  | -    | 1 h                 | -    | -                  | 1 h  | -                  | 120 s |
| 16 A - 20 A                      | 1 h                | -    | -                   | -    | -                  | 1 h  | -                  | 120 s |

|                                |                                      |       |     |
|--------------------------------|--------------------------------------|-------|-----|
| IEC 60269-4<br>VDE 0636 Teil 4 | <b>6,3 x 32 mm</b><br>(0,25 x 1,25") | 400 V | gRL |
|--------------------------------|--------------------------------------|-------|-----|

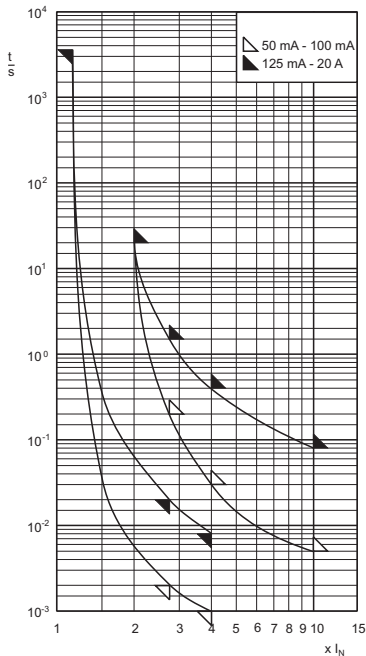
| Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking<br>Capacity | Spannungs-<br>fall<br>Voltage<br>Drop | Leistungs-<br>abgabe<br>Power Dissipa-<br>tion (@ 1,0 I <sub>n</sub> ) | Schmelz-<br>integral<br>I <sup>2</sup> t <sub>s</sub> Value | Ausschalt-<br>integral<br>Total I <sup>2</sup> t <sub>s</sub> Value<br>@ AC 400 V | Appro-<br>bationen<br>Approvals |
|----------------------------|---------------------------------------|----------------------------------------------------------------|---------------------------------------|------------------------------------------------------------------------|-------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------|
|                            |                                       |                                                                | mV                                    | W                                                                      | A <sup>2</sup> s                                            | A <sup>2</sup> s                                                                  | UL rec.                         |
| 7006584.6,3                | 6,3 A                                 | 120 kA @ AC 400 V                                              | 190                                   | 1,2                                                                    | 1,8                                                         | 11                                                                                | ✓                               |
| 7006584.8                  | 8 A                                   | 120 kA @ AC 400 V                                              | 190                                   | 1,5                                                                    | 3,0                                                         | 18                                                                                | ✓                               |
| 7006584.10                 | 10 A                                  | 120 kA @ AC 400 V                                              | 180                                   | 1,8                                                                    | 5,1                                                         | 31                                                                                | ✓                               |
| 7006584.12,5               | 12,5 A                                | 120 kA @ AC 400 V                                              | 150                                   | 1,9                                                                    | 12                                                          | 69                                                                                | ✓                               |
| 7006584.16                 | 16 A                                  | 120 kA @ AC 400 V                                              | 150                                   | 2,3                                                                    | 20                                                          | 120                                                                               | ✓                               |
| 7006584.20                 | 20 A                                  | 120 kA @ AC 400 V                                              | 160                                   | 3,2                                                                    | 35                                                          | 210                                                                               | ✓                               |

| Type                      | Abk.<br>Abbr. | Beschreibung<br>Description                                     |
|---------------------------|---------------|-----------------------------------------------------------------|
| 7006584                   | -             | 100 Stück / Pieces (10 x 10)                                    |
|                           | IP            | 1.000 Stück Industrieverpackung / 1.000 pieces industrial packs |
| z.B./ e.g. 7006584.12,5IP |               |                                                                 |

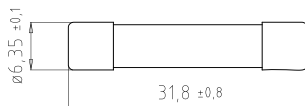
Type  
**189000**



Zeit/Strom-Kennlinien  
Time-Current Characteristics



Abmessungen  
Dimensions



**Aufbau / Construction**

Glasrohr / glass tube

durchsichtig / transparent

Kontaktkappen / end caps

Messing, vernickelt / brass, nickel-plated

**Schmelzzeitgrenzwerte / Fusing time limits**

| Bemessungsstrom<br>Rated Current | 2 I <sub>n</sub> |      | 2,75 I <sub>n</sub> |        | 4 I <sub>n</sub> |        | 10 I <sub>n</sub> |       |
|----------------------------------|------------------|------|---------------------|--------|------------------|--------|-------------------|-------|
|                                  | min.             | max. | min.                | max.   | min.             | max.   | min.              | max.  |
| 50 mA - 100 mA                   | -                | 20 s | 2 ms                | 200 ms | 1 ms             | 30 ms  | -                 | 5 ms  |
| 125 mA - 20 A                    | -                | 20 s | 20 ms               | 1,5 s  | 8 ms             | 400 ms | -                 | 80 ms |

|                 |                                      |       |                            |
|-----------------|--------------------------------------|-------|----------------------------|
| (IEC 60127-2/4) | <b>6,3 x 32 mm</b><br>(0,25 x 1,25") | 250 V | F<br>flink<br>quick acting |
|-----------------|--------------------------------------|-------|----------------------------|

| Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking<br>Capacity | Spannungsfall<br>Voltage Drop | Leistungsabgabe<br>Power Dissipation<br>(@ 1,15 I <sub>n</sub> ) | Schmelzintegral<br>I <sup>2</sup> t <sub>s</sub> Value | Approbationen<br>Approvals |
|----------------------------|---------------------------------------|----------------------------------------------------------------|-------------------------------|------------------------------------------------------------------|--------------------------------------------------------|----------------------------|
|                            |                                       |                                                                | mV                            | W                                                                | A <sup>2</sup> s                                       |                            |
| 189000.0,05                | 50 mA                                 | 35 A @ AC 250 V                                                | 9600                          | 0,7                                                              | 0,0003                                                 |                            |
| 189000.0,063               | 63 mA                                 | 35 A @ AC 250 V                                                | 6000                          | 0,5                                                              | 0,0005                                                 |                            |
| 189000.0,08                | 80 mA                                 | 35 A @ AC 250 V                                                | 5000                          | 0,6                                                              | 0,001                                                  |                            |
| 189000.0,1                 | 100 mA                                | 35 A @ AC 250 V                                                | 4500                          | 0,7                                                              | 0,0014                                                 |                            |
| 189000.0,125               | 125 mA                                | 35 A @ AC 250 V                                                | 4000                          | 0,7                                                              | 0,0034                                                 |                            |
| 189000.0,16                | 160 mA                                | 35 A @ AC 250 V                                                | 3500                          | 0,8                                                              | 0,007                                                  |                            |
| 189000.0,2                 | 200 mA                                | 35 A @ AC 250 V                                                | 650                           | 0,2                                                              | 0,02                                                   |                            |
| 189000.0,25                | 250 mA                                | 35 A @ AC 250 V                                                | 650                           | 0,3                                                              | 0,04                                                   |                            |
| 189000.0,315               | 315 mA                                | 35 A @ AC 250 V                                                | 600                           | 0,3                                                              | 0,08                                                   |                            |
| 189000.0,4                 | 400 mA                                | 35 A @ AC 250 V                                                | 500                           | 0,3                                                              | 0,15                                                   |                            |
| 189000.0,5                 | 500 mA                                | 35 A @ AC 250 V                                                | 450                           | 0,3                                                              | 0,32                                                   |                            |
| 189000.0,63                | 630 mA                                | 35 A @ AC 250 V                                                | 400                           | 0,4                                                              | 0,26                                                   |                            |
| 189000.0,8                 | 800 mA                                | 35 A @ AC 250 V                                                | 350                           | 0,4                                                              | 0,57                                                   |                            |
| 189000.1                   | 1 A                                   | 35 A @ AC 250 V                                                | 300                           | 0,5                                                              | 1,1                                                    |                            |
| 189000.1,25                | 1,25 A                                | 35 A @ AC 250 V                                                | 300                           | 0,6                                                              | 2                                                      |                            |
| 189000.1,6                 | 1,6 A                                 | 35 A @ AC 250 V                                                | 300                           | 0,7                                                              | 3,3                                                    |                            |
| 189000.2                   | 2 A                                   | 35 A @ AC 250 V                                                | 250                           | 0,8                                                              | 6,2                                                    |                            |
| 189000.2,5                 | 2,5 A                                 | 35 A @ AC 250 V                                                | 220                           | 0,9                                                              | 13                                                     |                            |
| 189000.3,15                | 3,15 A                                | 35 A @ AC 250 V                                                | 200                           | 1,1                                                              | 24                                                     |                            |
| 189000.4                   | 4 A                                   | 40 A @ AC 250 V                                                | 200                           | 1,3                                                              | 40                                                     |                            |
| 189000.5                   | 5 A                                   | 50 A @ AC 250 V                                                | 180                           | 1,4                                                              | 80                                                     |                            |
| 189000.6,3                 | 6,3 A                                 | 63 A @ AC 250 V                                                | 170                           | 1,6                                                              | 150                                                    |                            |
| 189000.8                   | 8 A                                   | 80 A @ AC 250 V                                                | 160                           | 2                                                                | 240                                                    |                            |
| 189000.10                  | 10 A                                  | 100 A @ AC 250 V                                               | 150                           | 2,3                                                              | 500                                                    |                            |
| 189000.12,5                | 12,5 A                                | 125 A @ AC 250 V                                               | 140                           | 2,5                                                              | 650                                                    |                            |
| 189000.16                  | 16 A                                  | 160 A @ AC 250 V                                               | 130                           | 2,8                                                              | 1250                                                   |                            |
| 189000.20                  | 20 A                                  | 200 A @ AC 250 V                                               | 130                           | 4,0                                                              | 1600                                                   |                            |

Bei Verwendung dieser G-Sicherungseinsätze ab 6,3 A ist auf ausreichende Wärmeabfuhr zu achten.  
When using this type from 6.3 A up, consideration should be given to heat dissipation.

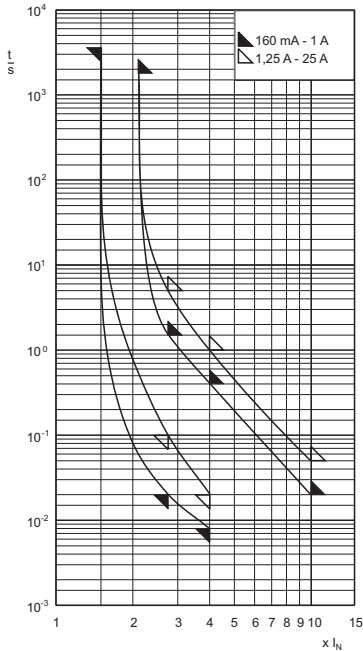
| Type       | Abk.<br>Abbr. | Beschreibung<br>Description                                     |
|------------|---------------|-----------------------------------------------------------------|
| 189000     | -             | 100 Stück / Pieces (10 x 10)                                    |
|            | IP            | 1.000 Stück Industrieverpackung / 1.000 pieces industrial packs |
|            | AK            | mit montierten Aufsteckkappen/ with assembled push-on caps      |
| z.B./ e.g. |               | 189000.3,15IP                                                   |

Type  
**189020**

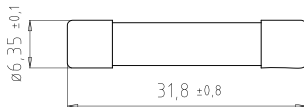
**CAUS**  
E167295



Zeit/Strom-Kennlinien  
Time-Current Characteristics



Abmessungen  
Dimensions



**Auch als SMD Version verfügbar**  
**Also available as SMD version**  
**1 A - 5 A**



**Aufbau / Construction**  
Keramikrohr / ceramic tube

undurchsichtig / non transparent  
mit Löschmittelfüllung / with filling

Kontaktkappen / end caps

Messing, vernickelt / brass, nickel-plated

**Schmelzeitgrenzwerte / Fusing time limits**

| Bemessungsstrom<br>Rated Current | 1,5 I <sub>n</sub> | 2,1 I <sub>n</sub> | 2,75 I <sub>n</sub> |       | 4 I <sub>n</sub> |        | 10 I <sub>n</sub> |       |
|----------------------------------|--------------------|--------------------|---------------------|-------|------------------|--------|-------------------|-------|
|                                  | min.               | max.               | min.                | max.  | min.             | max.   | min.              | max.  |
| 160 mA - 1 A                     | 1 h                | 30 min             | 20 ms               | 1,5 s | 8 ms             | 400 ms | -                 | 20 ms |
| 1,25 A - 25 A                    | 1 h                | 30 min             | 100 ms              | 5 s   | 20 ms            | 1 s    | -                 | 50 ms |

|                           |                                      |                |                            |
|---------------------------|--------------------------------------|----------------|----------------------------|
| Sondertyp<br>Special type | <b>6,3 x 32 mm</b><br>(0,25 x 1,25") | 500 V<br>440 V | F<br>flink<br>quick acting |
|---------------------------|--------------------------------------|----------------|----------------------------|

| Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking<br>Capacity | Spannungsfall<br>Voltage Drop | Leistungsabgabe<br>Power Dissipa-<br>tion (@ 1,5 I <sub>n</sub> ) | Schmelz-<br>integral<br>I <sup>2</sup> t <sub>q</sub> Value | Approbationen<br>Approvals |
|----------------------------|---------------------------------------|----------------------------------------------------------------|-------------------------------|-------------------------------------------------------------------|-------------------------------------------------------------|----------------------------|
|                            |                                       |                                                                | mV                            | W                                                                 | A <sup>2</sup> s                                            | UL rec.                    |
| 189020.0,16                | 160 mA                                | 50 kA @ AC 500 V <sup>1)</sup>                                 | 7000                          | 2,5                                                               | 0,0015                                                      | ✓                          |
| 189020.0,2                 | 200 mA                                | 50 kA @ AC 500 V <sup>1)</sup>                                 | 6500                          | 2,9                                                               | 0,0035                                                      | ✓                          |
| 189020.0,25                | 250 mA                                | 50 kA @ AC 500 V <sup>1)</sup>                                 | 6000                          | 3,4                                                               | 0,0085                                                      | ✓                          |
| 189020.0,315               | 315 mA                                | 50 kA @ AC 500 V <sup>1)</sup>                                 | 1000                          | 0,9                                                               | 0,036                                                       | ✓                          |
| 189020.0,4                 | 400 mA                                | 50 kA @ AC 500 V <sup>1)</sup>                                 | 900                           | 1,0                                                               | 0,07                                                        | ✓                          |
| 189020.0,5                 | 500 mA                                | 50 kA @ AC 500 V <sup>1)</sup>                                 | 800                           | 1,1                                                               | 0,19                                                        | ✓                          |
| 189020.0,63                | 630 mA                                | 50 kA @ AC 500 V <sup>1)</sup>                                 | 700                           | 1,3                                                               | 0,35                                                        | ✓                          |
| 189020.0,8                 | 800 mA                                | 50 kA @ AC 500 V <sup>1)</sup>                                 | 600                           | 1,4                                                               | 0,49                                                        | ✓                          |
| 189020.1                   | 1 A                                   | 50 kA @ AC 500 V <sup>1)</sup>                                 | 400                           | 1,2                                                               | 0,4                                                         | ✓                          |
| 189020.1,25                | 1,25 A                                | 50 kA @ AC 500 V <sup>1)</sup>                                 | 300                           | 1,3                                                               | 0,8                                                         | ✓                          |
| 189020.1,6                 | 1,6 A                                 | 50 kA @ AC 500 V <sup>1)</sup>                                 | 300                           | 1,4                                                               | 1,5                                                         | ✓                          |
| 189020.2                   | 2 A                                   | 50 kA @ AC 500 V <sup>1)</sup>                                 | 280                           | 1,6                                                               | 2,5                                                         | ✓                          |
| 189020.2,5                 | 2,5 A                                 | 50 kA @ AC 500 V <sup>1)</sup>                                 | 260                           | 1,8                                                               | 5                                                           | ✓                          |
| 189020.3,15                | 3,15 A                                | 50 kA @ AC 500 V <sup>1)</sup>                                 | 240                           | 2,3                                                               | 9                                                           | ✓                          |
| 189020.4                   | 4 A                                   | 50 kA @ AC 500 V <sup>1)</sup>                                 | 220                           | 2,6                                                               | 18                                                          | ✓                          |
| 189020.5                   | 5 A                                   | 50 kA @ AC 500 V <sup>1)</sup>                                 | 190                           | 2,9                                                               | 40                                                          | ✓                          |
| 189020.6,3                 | 6,3 A                                 | 50 kA @ AC 500 V <sup>1)</sup>                                 | 170                           | 3,2                                                               | 80                                                          | ✓                          |
| 189020.8                   | 8 A                                   | 1,5 kA @ AC 500 V <sup>2)</sup>                                | 160                           | 3,7                                                               | 150                                                         |                            |
| 189020.10                  | 10 A                                  | 1,5 kA @ AC 500 V <sup>2)</sup>                                | 150                           | 4,0                                                               | 240                                                         |                            |
| 189020.12,5                | 12,5 A                                | 1,5 kA @ AC 500 V <sup>2)</sup>                                | 140                           | 5,5                                                               | 500                                                         |                            |
| 189020.16                  | 16 A                                  | 1,5 kA @ AC 500 V <sup>2)</sup>                                | 130                           | 6,5                                                               | 920                                                         |                            |
| 189020.20                  | 20 A                                  | 1,5 kA @ AC 440 V <sup>2)</sup>                                | 120                           | 8,4                                                               | 1500                                                        |                            |
| 189020.25                  | 25 A                                  | 1,5 kA @ AC 440 V <sup>2)</sup>                                | 110                           | 11                                                                | 3100                                                        |                            |

<sup>1)</sup> cosφ = 0,3

1500 A @ DC 450 V resistiv

<sup>2)</sup> cosφ = 1

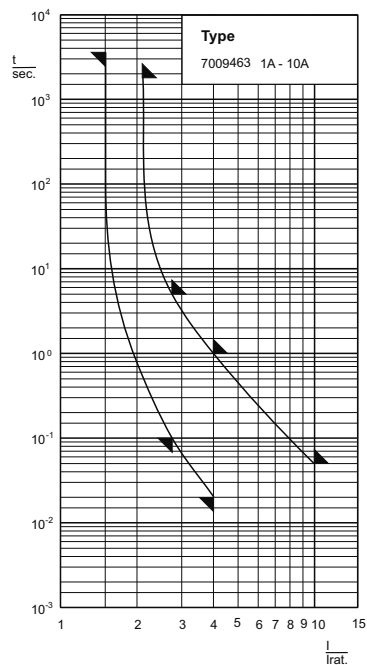
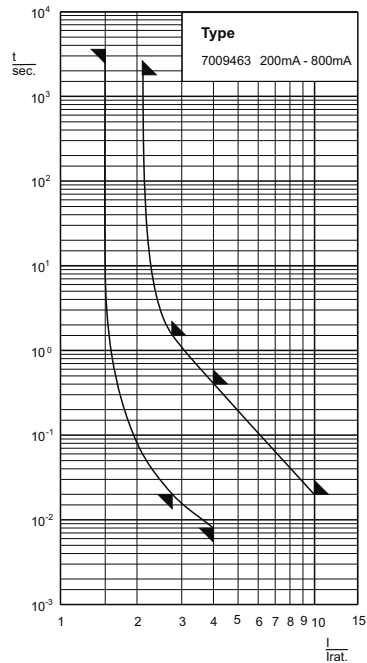
Bei Verwendung dieser G-Sicherungseinsätze ab 6,3 A ist auf ausreichende Wärmeabfuhr zu achten.  
When using this type from 6.3 A up, consideration should be given to heat dissipation.

| Type       | Abk.<br>Abbr. | Beschreibung<br>Description                                     |
|------------|---------------|-----------------------------------------------------------------|
|            | -             | 100 Stück / Pieces (10 x 10)                                    |
| 189020     | IP            | 1.000 Stück Industrieverpackung / 1.000 pieces industrial packs |
|            | AK            | mit montierten Aufsteckkappen/ with assembled push-on caps      |
| z.B./ e.g. | 189020.3,15AK |                                                                 |

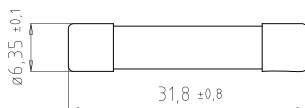
## Type



Zeit/Strom-Kennlinien  
Time-Current Characteristics



Abmessungen  
Dimensions



## Aufbau / Construction

Keramikrohr / ceramic tube

Kontaktkappen / end caps

undurchsichtig / non transparent  
mit Löschmittelfüllung / with filling

Messing, vernickelt / brass, nickel-plated

## Schmelzeitgrenzwerte / Fusing time limits

| Bemessungsstrom<br>Rated Current | 1,5 I <sub>n</sub> | 2,1 I <sub>n</sub> | 2,75 I <sub>n</sub> |       | 4 I <sub>n</sub> |        | 10 I <sub>n</sub> |       |
|----------------------------------|--------------------|--------------------|---------------------|-------|------------------|--------|-------------------|-------|
|                                  | min.               | max.               | min.                | max.  | min.             | max.   | min.              | max.  |
| 200 mA - 800 mA                  | 1 h                | 30 min             | 20 ms               | 1,5 s | 8 ms             | 400 ms | -                 | 20 ms |
| 1 A - 10 A                       | 1 h                | 30 min             | 100 ms              | 5 s   | 20 ms            | 1 s    | -                 | 50 ms |

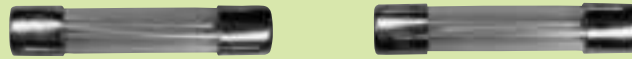
|                           |                                      |       |                            |
|---------------------------|--------------------------------------|-------|----------------------------|
| Sondertyp<br>Special type | <b>6,3 x 32 mm</b><br>(0,25 x 1,25") | 600 V | F<br>flink<br>quick acting |
|---------------------------|--------------------------------------|-------|----------------------------|

| Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking<br>Capacity | Spannungsfall<br>Voltage Drop | Leistungsabgabe<br>Power Dissipa-<br>tion (@ 1,5 I <sub>n</sub> ) | Schmelz-<br>integral<br>I <sup>2</sup> t <sub>s</sub> Value | Approbationen<br>Approvals |
|----------------------------|---------------------------------------|----------------------------------------------------------------|-------------------------------|-------------------------------------------------------------------|-------------------------------------------------------------|----------------------------|
|                            |                                       |                                                                | mV                            | W                                                                 | A <sup>2</sup> s                                            |                            |
| 7009463.0,2                | 200 mA                                | 50 kA @ AC 600 V                                               | 6500                          | 2.9                                                               | 0.0035                                                      |                            |
| 7009463.0,4                | 400 mA                                | 50 kA @ AC 600 V                                               | 900                           | 1,0                                                               | 0,07                                                        |                            |
| 7009463.0,5                | 500 mA                                | 50 kA @ AC 600 V                                               | 800                           | 1.1                                                               | 0.19                                                        |                            |
| 7009463.0,8                | 800 mA                                | 50 kA @ AC 600 V                                               | 600                           | 1.4                                                               | 0.49                                                        |                            |
| 7009463.1                  | 1 A                                   | 50 kA @ AC 600 V                                               | 400                           | 1.2                                                               | 0.4                                                         |                            |
| 7009463.2                  | 2 A                                   | 50 kA @ AC 600 V                                               | 280                           | 1.6                                                               | 2.5                                                         |                            |
| 7009463.3                  | 3 A                                   | 50 kA @ AC 600 V                                               | 260                           | 2.2                                                               | 7.5                                                         |                            |
| 7009463.5                  | 5 A                                   | 50 kA @ AC 600 V                                               | 190                           | 2.9                                                               | 40                                                          |                            |
| 7009463.7                  | 7 A                                   | 50 kA @ AC 600 V                                               | 150                           | 3.8                                                               | 100                                                         |                            |
| 7009463.10                 | 10 A                                  | 50 kA @ AC 600 V                                               | 150                           | 4.0                                                               | 240                                                         |                            |

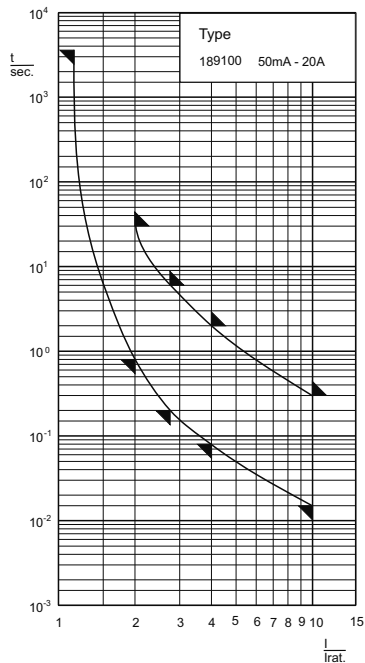
Bei Verwendung dieser G-Sicherungsinsätze ab 7 A ist auf ausreichende Wärmeabfuhr zu achten.  
When using this type from 7 A up, consideration should be given to heat dissipation.

| Type       | Abk.<br>Abbr. | Beschreibung<br>Description                                     |
|------------|---------------|-----------------------------------------------------------------|
|            | -             | 100 Stück / Pieces (10 x 10)                                    |
| 7009463    | IP            | 1.000 Stück Industrieverpackung / 1.000 pieces industrial packs |
|            | AK            | mit montierten Aufsteckkappen/ with assembled push-on caps      |
| z.B./ e.g. | 7009463.10IP  |                                                                 |

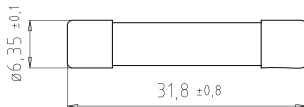
## Type 189100



### Zeit/Strom-Kennlinien Time-Current Characteristics



### Abmessungen Dimensions



### Aufbau / Construction

Glasrohr / glass tube

durchsichtig / transparent

Kontaktkappen / end caps

Messing, vernickelt / brass, nickel-plated

### Schmelzeitgrenzwerte / Fusing time limits

| Bemessungsstrom<br>Rated Current | 2 I <sub>n</sub> |      | 2,75 I <sub>n</sub> |      | 4 I <sub>n</sub> |      | 10 I <sub>n</sub> |        |
|----------------------------------|------------------|------|---------------------|------|------------------|------|-------------------|--------|
|                                  | min.             | max. | min.                | max. | min.             | max. | min.              | max.   |
| 50 mA - 20 A                     | 800 ms           | 30 s | 200 ms              | 6 s  | 80 ms            | 2 s  | 15 ms             | 300 ms |

|                           |                                      |       |                        |
|---------------------------|--------------------------------------|-------|------------------------|
| Sondertyp<br>Special type | <b>6,3 x 32 mm</b><br>(0,25 x 1,25") | 250 V | T<br>träge<br>time-lag |
|---------------------------|--------------------------------------|-------|------------------------|

| Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking<br>Capacity | Spannungsfall<br>Voltage Drop | Leistungsabgabe<br>Power Dissipa-<br>tion (@ 1,15 I <sub>n</sub> ) | Schmelz-<br>integral<br>I <sup>2</sup> t <sub>s</sub> Value | Approbationen<br>Approvals |
|----------------------------|---------------------------------------|----------------------------------------------------------------|-------------------------------|--------------------------------------------------------------------|-------------------------------------------------------------|----------------------------|
|                            |                                       |                                                                | mV                            | W                                                                  | A <sup>2</sup> s                                            |                            |
| 189100.0,05                | 50 mA                                 | 35 A @ AC 250 V                                                | 3000                          | 0,3                                                                | 0,035                                                       |                            |
| 189100.0,063               | 63 mA                                 | 35 A @ AC 250 V                                                | 2500                          | 0,3                                                                | 0,04                                                        |                            |
| 189100.0,08                | 80 mA                                 | 35 A @ AC 250 V                                                | 2000                          | 0,3                                                                | 0,08                                                        |                            |
| 189100.0,1                 | 100 mA                                | 35 A @ AC 250 V                                                | 1500                          | 0,3                                                                | 0,17                                                        |                            |
| 189100.0,125               | 125 mA                                | 35 A @ AC 250 V                                                | 1200                          | 0,3                                                                | 0,26                                                        |                            |
| 189100.0,16                | 160 mA                                | 35 A @ AC 250 V                                                | 1100                          | 0,4                                                                | 0,44                                                        |                            |
| 189100.0,2                 | 200 mA                                | 35 A @ AC 250 V                                                | 1000                          | 0,4                                                                | 0,6                                                         |                            |
| 189100.0,25                | 250 mA                                | 35 A @ AC 250 V                                                | 900                           | 0,5                                                                | 0,6                                                         |                            |
| 189100.0,315               | 315 mA                                | 35 A @ AC 250 V                                                | 300                           | 0,2                                                                | 0,35                                                        |                            |
| 189100.0,4                 | 400 mA                                | 35 A @ AC 250 V                                                | 300                           | 0,2                                                                | 0,49                                                        |                            |
| 189100.0,5                 | 500 mA                                | 35 A @ AC 250 V                                                | 300                           | 0,3                                                                | 0,9                                                         |                            |
| 189100.0,63                | 630 mA                                | 35 A @ AC 250 V                                                | 300                           | 0,3                                                                | 1,4                                                         |                            |
| 189100.0,8                 | 800 mA                                | 35 A @ AC 250 V                                                | 250                           | 0,4                                                                | 3,2                                                         |                            |
| 189100.1                   | 1 A                                   | 35 A @ AC 250 V                                                | 250                           | 0,4                                                                | 6,5                                                         |                            |
| 189100.1,25                | 1,25 A                                | 35 A @ AC 250 V                                                | 250                           | 0,4                                                                | 5                                                           |                            |
| 189100.1,6                 | 1,6 A                                 | 35 A @ AC 250 V                                                | 200                           | 0,5                                                                | 10                                                          |                            |
| 189100.2                   | 2 A                                   | 35 A @ AC 250 V                                                | 200                           | 0,6                                                                | 16                                                          |                            |
| 189100.2,5                 | 2,5 A                                 | 35 A @ AC 250 V                                                | 200                           | 0,7                                                                | 24                                                          |                            |
| 189100.3,15                | 3,15 A                                | 35 A @ AC 250 V                                                | 200                           | 0,8                                                                | 42                                                          |                            |
| 189100.4                   | 4 A                                   | 40 A @ AC 250 V                                                | 200                           | 1,0                                                                | 70                                                          |                            |
| 189100.5                   | 5 A                                   | 50 A @ AC 250 V                                                | 200                           | 1,3                                                                | 130                                                         |                            |
| 189100.6,3                 | 6,3 A                                 | 63 A @ AC 250 V                                                | 200                           | 1,6                                                                | 230                                                         |                            |
| 189100.8                   | 8 A                                   | 80 A @ AC 250 V                                                | 200                           | 2,0                                                                | 370                                                         |                            |
| 189100.10                  | 10 A                                  | 100 A @ AC 250 V                                               | 150                           | 2,3                                                                | 630                                                         |                            |
| 189100.12,5                | 12,5 A                                | 125 A @ AC 250 V                                               | 150                           | 2,8                                                                | 820                                                         |                            |
| 189100.15                  | 15 A                                  | 150 A @ AC 250 V                                               | 150                           | 2,9                                                                | 925                                                         |                            |
| 189100.16                  | 16 A                                  | 160 A @ AC 250 V                                               | 150                           | 3,0                                                                | 1200                                                        |                            |
| 189100.20                  | 20 A                                  | 200 A @ AC 250 V                                               | 150                           | 4,0                                                                | 1600                                                        |                            |

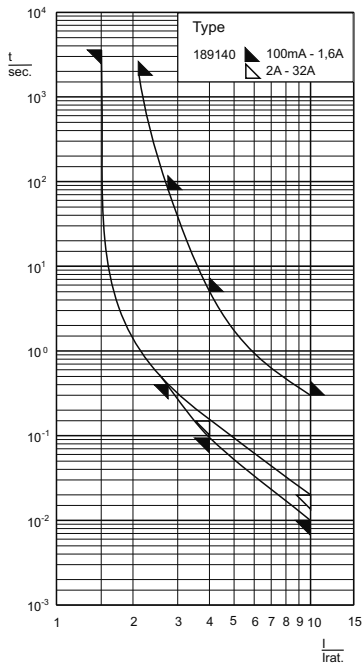
| Type       | Abk.<br>Abbr. | Beschreibung<br>Description                                     |
|------------|---------------|-----------------------------------------------------------------|
| 189100     | -             | 100 Stück / Pieces (10 x 10)                                    |
|            | IP            | 1.000 Stück Industrieverpackung / 1.000 pieces industrial packs |
|            | AK            | mit montierten Aufsteckkappen/ with assembled push-on caps      |
| z.B./ e.g. | 189100.2IP    |                                                                 |

Type  
**189140**

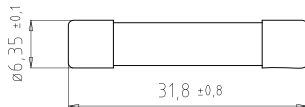
**CAUS**  
E167295



Zeit/Strom-Kennlinien  
Time-Current Characteristics



Abmessungen  
Dimensions



**Auch als SMD Version verfügbar**  
**Also available as SMD version**  
**1 A - 6,3 A**



**Aufbau / Construction**  
Keramikrohr / ceramic tube

undurchsichtig / non transparent  
mit Löschmittelfüllung / with filling

Kontaktkappen / end caps

Messing, vernickelt / brass, nickel-plated

**Schmelzeitgrenzwerte / Fusing time limits**

| Bemessungsstrom<br>Rated Current | 1,5 I <sub>n</sub> | 2,1 I <sub>n</sub> | 2,75 I <sub>n</sub> |      | 4 I <sub>n</sub> |      | 10 I <sub>n</sub> |        |
|----------------------------------|--------------------|--------------------|---------------------|------|------------------|------|-------------------|--------|
|                                  | min.               | max.               | min.                | max. | min.             | max. | min.              | max.   |
| 100 mA - 1,6 A                   | 1 h                | 30 min             | 400 ms              | 80 s | 95 ms            | 5 s  | 10 ms             | 300 ms |
| 2 A - 32 A                       | 1 h                | 30 min             | 400 ms              | 80 s | 150 ms           | 5 s  | 20 ms             | 300 ms |

|                           |                                      |                         |                        |
|---------------------------|--------------------------------------|-------------------------|------------------------|
| Sondertyp<br>Special type | <b>6,3 x 32 mm</b><br>(0,25 x 1,25") | 500 V<br>440 V<br>250 V | T<br>träge<br>time-lag |
|---------------------------|--------------------------------------|-------------------------|------------------------|

| Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking<br>Capacity | Spannungsfall<br>Voltage Drop | Leistungsabgabe<br>Power Dissipation<br>(@ 1,5 I <sub>n</sub> ) | Schmelz-<br>integral<br>I <sup>2</sup> t <sub>s</sub> Value | Approbationen<br>Approvals |
|----------------------------|---------------------------------------|----------------------------------------------------------------|-------------------------------|-----------------------------------------------------------------|-------------------------------------------------------------|----------------------------|
|                            |                                       |                                                                | mV                            | W                                                               | A <sup>2</sup> s                                            | UL rec.                    |
| 189140.0,1                 | 100 mA                                | 1,5 kA @ AC 500 V <sup>1)</sup>                                | 3600                          | 1,3                                                             | 0,04                                                        | ✓                          |
| 189140.0,125               | 125 mA                                | 1,5 kA @ AC 500 V <sup>1)</sup>                                | 3400                          | 1,4                                                             | 0,06                                                        | ✓                          |
| 189140.0,16                | 160 mA                                | 1,5 kA @ AC 500 V <sup>1)</sup>                                | 3000                          | 1,5                                                             | 0,1                                                         | ✓                          |
| 189140.0,2                 | 200 mA                                | 1,5 kA @ AC 500 V <sup>1)</sup>                                | 2500                          | 1,6                                                             | 0,18                                                        | ✓                          |
| 189140.0,25                | 250 mA                                | 1,5 kA @ AC 500 V <sup>1)</sup>                                | 2000                          | 1,7                                                             | 0,25                                                        | ✓                          |
| 189140.0,315               | 315 mA                                | 1,5 kA @ AC 500 V <sup>1)</sup>                                | 1800                          | 1,8                                                             | 0,45                                                        | ✓                          |
| 189140.0,4                 | 400 mA                                | 1,5 kA @ AC 500 V <sup>1)</sup>                                | 1600                          | 2,0                                                             | 0,45                                                        | ✓                          |
| 189140.0,5                 | 500 mA                                | 1,5 kA @ AC 500 V <sup>1)</sup>                                | 450                           | 0,6                                                             | 0,35                                                        | ✓                          |
| 189140.0,63                | 630 mA                                | 1,5 kA @ AC 500 V <sup>1)</sup>                                | 400                           | 0,7                                                             | 0,49                                                        | ✓                          |
| 189140.0,8                 | 800 mA                                | 1,5 kA @ AC 500 V <sup>1)</sup>                                | 350                           | 0,8                                                             | 0,9                                                         | ✓                          |
| 189140.1                   | 1 A                                   | 1,5 kA @ AC 500 V <sup>1)</sup>                                | 350                           | 0,9                                                             | 1,4                                                         | ✓                          |
| 189140.1,25                | 1,25 A                                | 1,5 kA @ AC 500 V <sup>1)</sup>                                | 300                           | 1,0                                                             | 3,2                                                         | ✓                          |
| 189140.1,6                 | 1,6 A                                 | 1,5 kA @ AC 500 V <sup>1)</sup>                                | 200                           | 1,1                                                             | 5,2                                                         | ✓                          |
| 189140.2                   | 2 A                                   | 1,5 kA @ AC 500 V <sup>1)</sup>                                | 180                           | 1,2                                                             | 10                                                          | ✓                          |
| 189140.2,5                 | 2,5 A                                 | 1,5 kA @ AC 500 V <sup>1)</sup>                                | 160                           | 1,3                                                             | 19                                                          | ✓                          |
| 189140.3,15                | 3,15 A                                | 1,5 kA @ AC 500 V <sup>2)</sup>                                | 150                           | 1,4                                                             | 37                                                          | ✓                          |
| 189140.4                   | 4 A                                   | 1,5 kA @ AC 500 V <sup>2)</sup>                                | 140                           | 1,5                                                             | 68                                                          | ✓                          |
| 189140.5                   | 5 A                                   | 1,5 kA @ AC 500 V <sup>2)</sup>                                | 135                           | 2,2                                                             | 80                                                          | ✓                          |
| 189140.6,3                 | 6,3 A                                 | 1,5 kA @ AC 500 V <sup>2)</sup>                                | 110                           | 2,2                                                             | 215                                                         | ✓                          |
| 189140.8                   | 8 A                                   | 1,5 kA @ AC 500 V <sup>1)</sup>                                | 110                           | 2,6                                                             | 370                                                         | ✓                          |
| 189140.10                  | 10 A                                  | 1,5 kA @ AC 500 V <sup>1)</sup>                                | 100                           | 3,0                                                             | 620                                                         | ✓                          |
| 189140.12,5                | 12,5 A                                | 1,5 kA @ AC 500 V <sup>3)</sup>                                | 100                           | 3,5                                                             | 1300                                                        | ✓                          |
| 189140.16                  | 16 A                                  | 1,5 kA @ AC 500 V <sup>3)</sup>                                | 100                           | 4                                                               | 2500                                                        | ✓                          |
| 189140.20                  | 20 A                                  | 1,5 kA @ AC 440 V <sup>3)</sup>                                | 100                           | 6                                                               | 3400                                                        |                            |
| 189140.25                  | 25 A                                  | 1,5 kA @ AC 440 V <sup>3)</sup>                                | 100                           | 8                                                               | 5600                                                        |                            |
| 189140.32                  | 32 A                                  | 1,5 kA @ AC 250 V <sup>3)</sup>                                | 80                            | 10                                                              | 3900                                                        |                            |

<sup>1)</sup> cosφ = 1 1,5kA @ DC 400 V (ohne Approbation / without approval)

<sup>2)</sup> cosφ = 1 **ULrec: 1,5kA @ DC 400 V**

<sup>3)</sup> cosφ = 1 1,5kA @ DC 300 V (ohne Approbation / without approval)

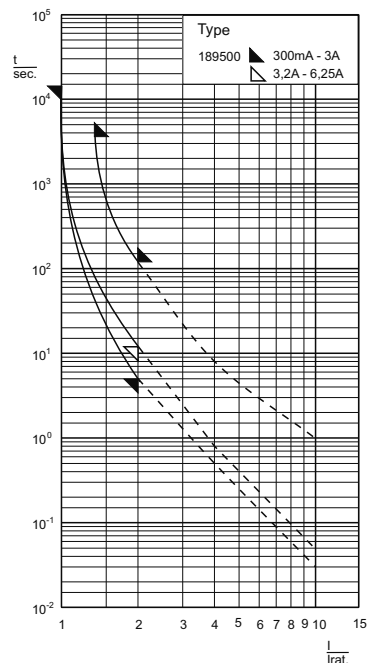
Bei Verwendung dieser G-Sicherungseinsätze ab 6,3 A ist auf ausreichende Wärmeabfuhr zu achten.  
When using this type from 6.3 A up, consideration should be given to heat dissipation.

| Type       | Abk.<br>Abbr. | Beschreibung<br>Description                                     |
|------------|---------------|-----------------------------------------------------------------|
|            | -             | 100 Stück / Pieces (10 x 10)                                    |
| 189140     | IP            | 1.000 Stück Industrieverpackung / 1.000 pieces industrial packs |
|            | AK            | mit montierten Aufsteckkappen/ with assembled push-on caps      |
| z.B./ e.g. | 189140.1,6IP  |                                                                 |

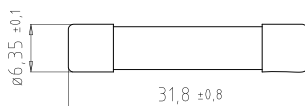
## Type 189500



### Zeit/Strom-Kennlinien Time-Current Characteristics



### Abmessungen Dimensions



### Aufbau / Construction

Glasrohr / glass tube

durchsichtig / transparent

Kontaktkappen / end caps

Messing, vernickelt / brass, nickel-plated

### Schmelzeitgrenzwerte / Fusing time limits

| Bemessungsstrom<br>Rated Current |      |      | 100% I <sub>n</sub> |      | 135% I <sub>n</sub> |      | 200% I <sub>n</sub> |      |
|----------------------------------|------|------|---------------------|------|---------------------|------|---------------------|------|
|                                  | min. | max. | min.                | max. | min.                | max. | min.                | max. |
| 300 mA - 3 A                     | -    | -    | 4 h                 | -    | -                   | 1 h  | 5 s                 | -    |
| 3,2 A - 6,25 A                   | -    | -    | 4 h                 | -    | -                   | 1 h  | 12 s                | -    |

|                                   |                                      |                |                            |
|-----------------------------------|--------------------------------------|----------------|----------------------------|
| UL 248-14<br>CSA C22.5 No. 248.14 | <b>6,3 x 32 mm</b><br>(0,25 x 1,25") | 250 V<br>125 V | T/D<br>träge<br>time-delay |
|-----------------------------------|--------------------------------------|----------------|----------------------------|

| Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking<br>Capacity | Spannungsfall<br>Voltage Drop | Leistungsabgabe<br>Power Dissipa-<br>tion (@ 1,0 I <sub>n</sub> ) | Schmelz-<br>integral<br>I <sup>2</sup> t <sub>s</sub> Value | Approbationen<br>Approvals |
|----------------------------|---------------------------------------|----------------------------------------------------------------|-------------------------------|-------------------------------------------------------------------|-------------------------------------------------------------|----------------------------|
|                            |                                       |                                                                | mV                            | W                                                                 | A <sup>2</sup> s                                            |                            |
| 189500.0,3                 | 300 mA                                | 100 A @ AC 250 V <sup>1)</sup>                                 | 870                           | 0,26                                                              | 1,5                                                         |                            |
| 189500.0,375               | 375 mA                                | 100 A @ AC 250 V <sup>1)</sup>                                 | 840                           | 0,32                                                              | 2,5                                                         |                            |
| 189500.0,4                 | 400 mA                                | 100 A @ AC 250 V <sup>1)</sup>                                 | 730                           | 0,29                                                              | 2,5                                                         |                            |
| 189500.0,5                 | 500 mA                                | 100 A @ AC 250 V <sup>1)</sup>                                 | 660                           | 0,33                                                              | 5,4                                                         |                            |
| 189500.0,6                 | 600 mA                                | 100 A @ AC 250 V <sup>1)</sup>                                 | 600                           | 0,36                                                              | 3,1                                                         |                            |
| 189500.0,7                 | 700 mA                                | 100 A @ AC 250 V <sup>1)</sup>                                 | 580                           | 0,41                                                              | 4,5                                                         |                            |
| 189500.0,8                 | 800 mA                                | 100 A @ AC 250 V <sup>1)</sup>                                 | 500                           | 0,4                                                               | 6,4                                                         |                            |
| 189500.1                   | 1 A                                   | 100 A @ AC 250 V <sup>1)</sup>                                 | 450                           | 0,45                                                              | 13                                                          |                            |
| 189500.1,25                | 1,25 A                                | 100 A @ AC 250 V <sup>1)</sup>                                 | 400                           | 0,5                                                               | 19                                                          |                            |
| 189500.1,5                 | 1,5 A                                 | 100 A @ AC 250 V <sup>1)</sup>                                 | 370                           | 0,56                                                              | 25                                                          |                            |
| 189500.1,6                 | 1,6 A                                 | 100 A @ AC 250 V <sup>1)</sup>                                 | 350                           | 0,56                                                              | 32                                                          |                            |
| 189500.2                   | 2 A                                   | 100 A @ AC 250 V <sup>1)</sup>                                 | 330                           | 0,66                                                              | 55                                                          |                            |
| 189500.2,5                 | 2,5 A                                 | 100 A @ AC 250 V <sup>1)</sup>                                 | 290                           | 0,73                                                              | 90                                                          |                            |
| 189500.2,8                 | 2,8 A                                 | 100 A @ AC 250 V <sup>1)</sup>                                 | 270                           | 0,76                                                              | 120                                                         |                            |
| 189500.3                   | 3 A                                   | 100 A @ AC 250 V <sup>1)</sup>                                 | 250                           | 0,75                                                              | 160                                                         |                            |
| 189500.3,2                 | 3,2 A                                 | 100 A @ AC 250 V <sup>1)</sup>                                 | 220                           | 0,7                                                               | 350                                                         |                            |
| 189500.4                   | 4 A                                   | 10 kA @ AC 125 V <sup>2)</sup>                                 | 200                           | 0,8                                                               | 590                                                         |                            |
| 189500.5                   | 5 A                                   | 10 kA @ AC 125 V <sup>2)</sup>                                 | 200                           | 1                                                                 | 600                                                         |                            |
| 189500.6,25                | 6,25 A                                | 10 kA @ AC 125 V <sup>2)</sup>                                 | 200                           | 1,3                                                               | 1300                                                        |                            |

<sup>1)</sup> 10 kA @ AC 125 V      100 A @ AC 250 V      cosφ = 0,7-0,8

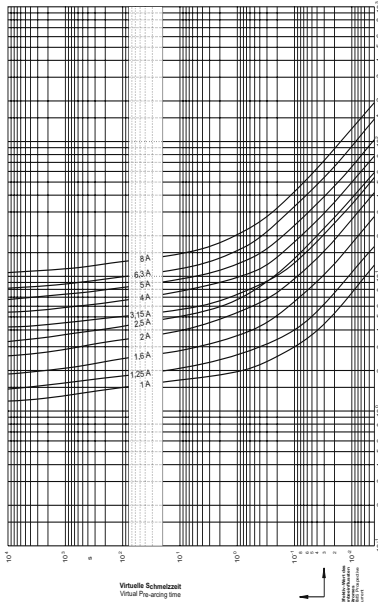
<sup>2)</sup> 10 kA @ AC 125 V      cosφ = 0,7-0,8

| Type       | Abk.<br>Abbr. | Beschreibung<br>Description                                     |
|------------|---------------|-----------------------------------------------------------------|
|            | -             | 100 Stück / Pieces (10 x 10)                                    |
| 189500     | IP            | 1.000 Stück Industrieverpackung / 1.000 pieces industrial packs |
|            | AK            | mit montierten Aufsteckkappen/ with assembled push-on caps      |
| z.B./ e.g. | 189500.1,25IP |                                                                 |

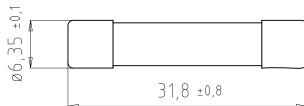
## Type



### Zeit/Strom-Kennlinien Time-Current Characteristics



### Abmessungen Dimensions



### Aufbau / Construction

Keramikrohr / ceramic tube

Kontaktkappen / end caps

undurchsichtig / non transparent  
mit Löschmittelfüllung / with filling

Kupferlegierung, vernickelt / Copper alloy,  
nickel-plated

### Schmelzzeitgrenzwerte / Fusing time limits

| Bemessungsstrom<br>Rated Current | 1,1 I <sub>n</sub> |      | 1,45 I <sub>n</sub> |      |      |      |      |      |
|----------------------------------|--------------------|------|---------------------|------|------|------|------|------|
|                                  | min.               | max. | min.                | max. | min. | max. | min. | max. |
| 1 A - 8 A                        | 1 h                | -    | -                   | 1 h  | -    | -    | -    | -    |

|                                                      |                                      |       |                                                                      |
|------------------------------------------------------|--------------------------------------|-------|----------------------------------------------------------------------|
| In Anlehnung an IEC 60269-4<br>Following IEC 60269-4 | <b>6,3 x 32 mm</b><br>(0,25 x 1,25") | 400 V | gPV (für Photovoltaik Anwendungen/<br>for photovoltaic applications) |
|------------------------------------------------------|--------------------------------------|-------|----------------------------------------------------------------------|

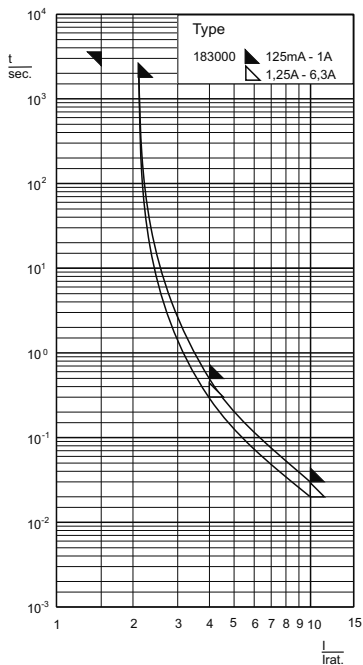
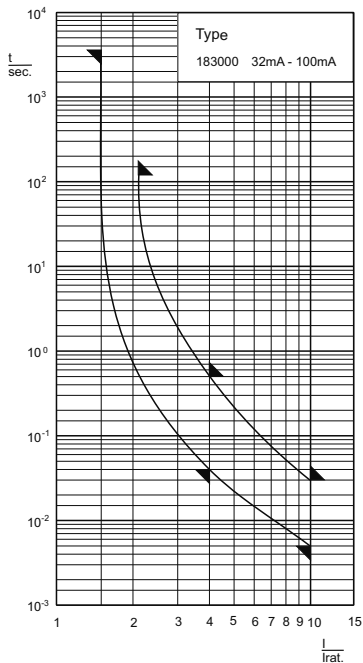
| Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking Capacity | Spannungs-<br>fall<br>Voltage Drop | Leistungs-<br>abgabe<br>Power Dissipation (@ 1,0 I <sub>n</sub> ) | Schmelz-<br>integral<br>I <sup>2</sup> t <sub>s</sub> Value | Ausschalt-<br>integral<br>Total I <sup>2</sup> t <sub>s</sub> Value @ DC 400 V | Appro-<br>bationen<br>Approvals |
|----------------------------|---------------------------------------|-------------------------------------------------------------|------------------------------------|-------------------------------------------------------------------|-------------------------------------------------------------|--------------------------------------------------------------------------------|---------------------------------|
|                            |                                       |                                                             | mV                                 | W                                                                 | A <sup>2</sup> s                                            | A <sup>2</sup> s                                                               |                                 |
| 7006526.1                  | 1 A                                   | 30 kA @ DC 400 V                                            | 600                                | 0,6                                                               | 0,58                                                        | 1,1                                                                            |                                 |
| 7006526.1,25               | 1,25 A                                | 30 kA @ DC 400 V                                            | 500                                | 0,63                                                              | 1,1                                                         | 2,2                                                                            |                                 |
| 7006526.1,6                | 1,6 A                                 | 30 kA @ DC 400 V                                            | 375                                | 0,6                                                               | 3,2                                                         | 6,5                                                                            |                                 |
| 7006526.2                  | 2 A                                   | 30 kA @ DC 400 V                                            | 300                                | 0,6                                                               | 7,1                                                         | 15                                                                             |                                 |
| 7006526.2,5                | 2,5 A                                 | 30 kA @ DC 400 V                                            | 270                                | 0,7                                                               | 14                                                          | 30                                                                             |                                 |
| 7006526.3,15               | 3,15 A                                | 30 kA @ DC 400 V                                            | 250                                | 0,8                                                               | 11                                                          | 22                                                                             |                                 |
| 7006526.4                  | 4 A                                   | 30 kA @ DC 400 V                                            | 220                                | 0,9                                                               | 23                                                          | 50                                                                             |                                 |
| 7006526.5                  | 5 A                                   | 30 kA @ DC 400 V                                            | 210                                | 1,1                                                               | 42                                                          | 85                                                                             |                                 |
| 7006526.6,3                | 6,3 A                                 | 30 kA @ DC 400 V                                            | 200                                | 1,3                                                               | 83                                                          | 150                                                                            |                                 |
| 7006526.8                  | 8 A                                   | 30 kA @ DC 400 V                                            | 175                                | 1,4                                                               | 150                                                         | 300                                                                            |                                 |

| Type       | Abk.<br>Abbr. | Beschreibung<br>Description                                     |
|------------|---------------|-----------------------------------------------------------------|
|            | -             | 100 Stück / Pieces (10 x 10)                                    |
| 7006526    | IP            | 1.000 Stück Industrieverpackung / 1.000 pieces industrial packs |
|            | AK            | mit montierten Aufsteckkappen/ with assembled push-on caps      |
| z.B./ e.g. |               | 7006526.3,15IP                                                  |

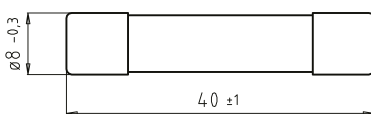
## Type 183000



Zeit/Strom-Kennlinien  
Time-Current Characteristics



Abmessungen  
Dimensions



### Aufbau / Construction

Glasrohr (bis 100 mA) / glass tube (up to 100 mA)

Keramikrohr (ab 100 mA) / ceramic tube (from 100 mA)

Kontaktkappen / end caps

durchsichtig / transparent

undurchsichtig / non-transparent

Messing, vernickelt / brass, nickel-plated

### Schmelzzeitgrenzwerte / Fusing time limits

| Bemessungsstrom<br>Rated Current | 1,5 I <sub>n</sub> |      | 2,1 I <sub>n</sub> |        | 4 I <sub>n</sub> |        | 10 I <sub>n</sub> |       |
|----------------------------------|--------------------|------|--------------------|--------|------------------|--------|-------------------|-------|
|                                  | min.               | max. | min.               | max.   | min.             | max.   | min.              | max.  |
| 32 mA - 100 mA                   | 1 h                | -    | -                  | 2 min  | 40 ms            | 500 ms | 5 ms              | 30 ms |
| 125 mA - 1 A                     | 1 h                | -    | -                  | 30 min | -                | 400 ms | -                 | 30 ms |
| 1,25 A - 6,3 A                   | 1 h                | -    | -                  | 30 min | -                | 300 ms | -                 | 20 ms |

|           |                  |       |                                                         |
|-----------|------------------|-------|---------------------------------------------------------|
| DIN 41686 | <b>8 x 40 mm</b> | 500 V | M mittelträge / med. time-lag<br>F flink / quick acting |
|-----------|------------------|-------|---------------------------------------------------------|

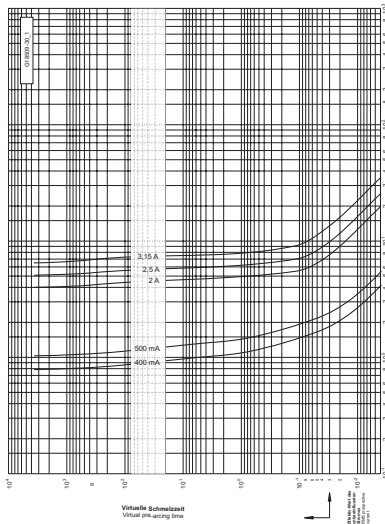
| Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking<br>Capacity | Span-<br>nungs-<br>fall<br>Voltage<br>Drop | Leistungs-<br>abgabe<br>Power<br>Dissipation | Schmelz-<br>integral<br>I <sup>2</sup> t <sub>s</sub> Value | Charakteristik<br>Characteristic | Approbationen<br>Approvals |
|----------------------------|---------------------------------------|----------------------------------------------------------------|--------------------------------------------|----------------------------------------------|-------------------------------------------------------------|----------------------------------|----------------------------|
|                            |                                       |                                                                | mV max.                                    | mW                                           | A²s                                                         |                                  |                            |
| 183000.0,032               | 32 mA                                 | 80 A @ AC 500 V                                                | 2300                                       | 1)                                           | 1)                                                          | M                                |                            |
| 183000.0,05                | 50 mA                                 | 80 A @ AC 500 V                                                | 1600                                       | 1)                                           | 1)                                                          | M                                |                            |
| 183000.0,063               | 63 mA                                 | 80 A @ AC 500 V                                                | 1300                                       | 1)                                           | 1)                                                          | M                                |                            |
| 183000.0,08                | 80 mA                                 | 80 A @ AC 500 V                                                | 950                                        | 1)                                           | 1)                                                          | M                                |                            |
| 183000.0,1                 | 100 mA                                | 80 A @ AC 500 V                                                | 700                                        | 1)                                           | 1)                                                          | M                                |                            |
| 183000.0,125               | 125 mA                                | 1500 A @ AC 500 V                                              | 6300                                       | 1)                                           | 1)                                                          | F                                |                            |
| 183000.0,16                | 160 mA                                | 1500 A @ AC 500 V                                              | 4700                                       | 1)                                           | 1)                                                          | F                                |                            |
| 183000.0,2                 | 200 mA                                | 1500 A @ AC 500 V                                              | 3600                                       | 1)                                           | 1)                                                          | F                                |                            |
| 183000.0,25                | 250 mA                                | 1500 A @ AC 500 V                                              | 2800                                       | 1)                                           | 1)                                                          | F                                |                            |
| 183000.0,315               | 315 mA                                | 1500 A @ AC 500 V                                              | 2100                                       | 1)                                           | 1)                                                          | F                                |                            |
| 183000.0,4                 | 400 mA                                | 1500 A @ AC 500 V                                              | 1600                                       | 1)                                           | 1)                                                          | F                                |                            |
| 183000.0,5                 | 500 mA                                | 1500 A @ AC 500 V                                              | 1250                                       | 1)                                           | 1)                                                          | F                                |                            |
| 183000.0,63                | 630 mA                                | 1500 A @ AC 500 V                                              | 1000                                       | 1)                                           | 1)                                                          | F                                |                            |
| 183000.0,8                 | 800 mA                                | 1500 A @ AC 500 V                                              | 800                                        | 1)                                           | 1)                                                          | F                                |                            |
| 183000.1                   | 1 A                                   | 1500 A @ AC 500 V                                              | 620                                        | 1)                                           | 1)                                                          | F                                |                            |
| 183000.1,25                | 1,25 A                                | 1500 A @ AC 500 V                                              | 520                                        | 1)                                           | 1)                                                          | F                                |                            |
| 183000.1,6                 | 1,6 A                                 | 1500 A @ AC 500 V                                              | 450                                        | 1)                                           | 1)                                                          | F                                |                            |
| 183000.2                   | 2 A                                   | 1500 A @ AC 500 V                                              | 400                                        | 1)                                           | 1)                                                          | F                                |                            |
| 183000.2,5                 | 2,5 A                                 | 1500 A @ AC 500 V                                              | 370                                        | 1)                                           | 1)                                                          | F                                |                            |
| 183000.3,15                | 3,15 A                                | 1500 A @ AC 500 V                                              | 340                                        | 1)                                           | 1)                                                          | F                                |                            |
| 183000.4                   | 4 A                                   | 1500 A @ AC 500 V                                              | 320                                        | 1)                                           | 1)                                                          | F                                |                            |
| 183000.5                   | 5 A                                   | 1500 A @ AC 500 V                                              | 310                                        | 1)                                           | 1)                                                          | F                                |                            |
| 183000.6.3                 | 6.3 A                                 | 1500 A @ AC 500 V                                              | 300                                        | 1)                                           | 1)                                                          | F                                |                            |
| Type                       | Abk.<br>Abbr.                         | Beschreibung<br>Description                                    |                                            |                                              |                                                             |                                  |                            |
|                            | - 25 Stück / Pieces                   |                                                                |                                            |                                              |                                                             |                                  |                            |

Type  
**7018509**



Neu / New

Zeit/Strom-Kennlinien  
Time-Current Characteristics



Abmessungen  
Dimensions



**Aufbau / Construction**

Keramikrohr / ceramic tube

undurchsichtig / non-transparent

Kontaktkappen / end caps

Kupferlegierung, vernickelt / Copper alloy, nickel-plated

**Schmelzeitgrenzwerte / Fusing time limits**

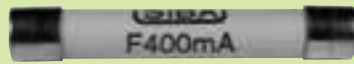
| Bemessungsstrom<br>Rated Current | 1,5 I <sub>n</sub> |      | 2,1 I <sub>n</sub> |        | 4 I <sub>n</sub> |        | 10 I <sub>n</sub> |       |
|----------------------------------|--------------------|------|--------------------|--------|------------------|--------|-------------------|-------|
|                                  | min.               | max. | min.               | max.   | min.             | max.   | min.              | max.  |
| 32 mA - 100 mA                   | 1 h                | -    | -                  | 2 min  | 40 ms            | 500 ms | 5 ms              | 30 ms |
| 125 mA - 1 A                     | 1 h                | -    | -                  | 30 min | -                | 400 ms | -                 | 30 ms |

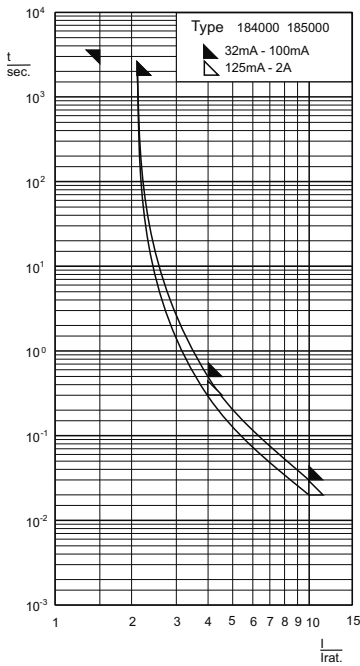
|                           |                  |        |                        |
|---------------------------|------------------|--------|------------------------|
| Sondertyp<br>Special type | <b>8 x 65 mm</b> | 1,5 kV | F flink / quick acting |
|---------------------------|------------------|--------|------------------------|

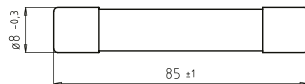
| Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking<br>Capacity | Spannungs-<br>fall<br>Voltage<br>Drop | Leistungs-<br>abgabe<br>Power<br>Dissipation | Schmelzintegral<br>Pre-arcing I <sup>2</sup> t <sub>s</sub> Value<br>(@ 10 x I <sub>n</sub> ) | Approbationen<br>Approvals |
|----------------------------|---------------------------------------|----------------------------------------------------------------|---------------------------------------|----------------------------------------------|-----------------------------------------------------------------------------------------------|----------------------------|
|                            |                                       |                                                                | mV max.                               | mW                                           | A <sup>2</sup> s                                                                              |                            |
| 7018509.0,4                | 400 mA                                | 30 kA @ DC 1500 V                                              | 780                                   | <sup>1)</sup>                                | 0,06                                                                                          |                            |
| 7018509.0,5                | 500 mA                                | 30 kA @ DC 1500 V                                              | 700                                   | <sup>1)</sup>                                | 0,12                                                                                          |                            |
| 7018509.2                  | 2 A                                   | 30 kA @ DC 1500 V                                              | 690                                   | <sup>1)</sup>                                | 1,6                                                                                           |                            |
| 7018509.2,5                | 2,5 A                                 | 30 kA @ DC 1500 V                                              | 690                                   | <sup>1)</sup>                                | 2,6                                                                                           |                            |
| 7018509.3,15               | 3,15 A                                | 30 kA @ DC 1500 V                                              | 690                                   | <sup>1)</sup>                                | 4,9                                                                                           |                            |

<sup>1)</sup> auf Anfrage / On request

| Type | Abk.<br>Abbr. | Beschreibung<br>Description |
|------|---------------|-----------------------------|
|      | -             | 25 Stück / Pieces           |

**Type  
184000**

**Type  
185000**

**Zeit/Strom-Kennlinien  
Time-Current Characteristics**

**Abmessungen  
Dimensions**
**184000**

**185000**

**Aufbau / Construction**

 Keramikrohr / ceramic tube <sup>2)</sup>

undurchsichtig / non-transparent

Kontaktkappen / end caps

Messing, vernickelt / brass, nickel-plated

**Zubehör / Related Products**

Halter / holder

siehe Seite 89 / see page 89

**Schmelzeitgrenzwerte / Fusing time limits**

| Bemessungsstrom<br>Rated Current | 1,5 I <sub>n</sub> |      | 2,1 I <sub>n</sub> |        | 4 I <sub>n</sub> |        | 10 I <sub>n</sub> |       |
|----------------------------------|--------------------|------|--------------------|--------|------------------|--------|-------------------|-------|
|                                  | min.               | max. | min.               | max.   | min.             | max.   | min.              | max.  |
| 32 mA - 100 mA                   | 1 h                | -    | -                  | 30 min | -                | 500 ms | -                 | 30 ms |
| 125 mA - 6,3 A (Type 184000)     | 1 h                | -    | -                  | 30 min | -                | 300 ms | -                 | 20 ms |
| 125 mA - 4 A (Type 185000)       | 1 h                | -    | -                  | 30 min | -                | 300 ms | -                 | 20 ms |

|                        |                                      |                |                                                         |
|------------------------|--------------------------------------|----------------|---------------------------------------------------------|
| DIN 41570<br>DIN 41569 | <b>8 x 50 mm</b><br><b>8 x 85 mm</b> | 1,2 kV<br>3 kV | M mittelträge / med. time-lag<br>F flink / quick acting |
|------------------------|--------------------------------------|----------------|---------------------------------------------------------|

| Artikel-Nr.<br>Article-no. | Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking Capacity | Spannungsfall<br>184000<br>Voltage Drop | Spannungsfall<br>185000<br>Voltage Drop | Charakte-<br>ristik<br>Characte-<br>ristic |
|----------------------------|----------------------------|---------------------------------------|-------------------------------------------------------------|-----------------------------------------|-----------------------------------------|--------------------------------------------|
| 8 x 50 mm                  | 8 x 85 mm                  |                                       |                                                             | mV max.                                 | mV max.                                 |                                            |
| 184000.0,032               | 185000.0,032               | 32 mA                                 | <sup>1)</sup>                                               | 2300                                    | 4500                                    | M                                          |
| 184000.0,05                | 185000.0,05                | 50 mA                                 | <sup>1)</sup>                                               | 1900                                    | 3000                                    | M                                          |
| 184000.0,063               | 185000.0,063               | 63 mA                                 | <sup>1)</sup>                                               | 1700                                    | 2400                                    | M                                          |
| 184000.0,08                | 185000.0,08                | 80 mA                                 | <sup>1)</sup>                                               | 1500                                    | 1900                                    | M                                          |
| 184000.0,1                 | 185000.0,1                 | 100 mA                                | <sup>1)</sup>                                               | 1300                                    | 1500                                    | M                                          |
| 184000.0,125               | 185000.0,125               | 125 mA                                | <sup>1)</sup>                                               | 9500                                    | 17000                                   | F                                          |
| 184000.0,16                | 185000.0,16                | 160 mA                                | <sup>1)</sup>                                               | 8000                                    | 14000                                   | F                                          |
| 184000.0,2                 | 185000.0,2                 | 200 mA                                | <sup>1)</sup>                                               | 7000                                    | 12000                                   | F                                          |
| 184000.0,25                | 185000.0,25                | 250 mA                                | <sup>1)</sup>                                               | 6000                                    | 10500                                   | F                                          |
| 184000.0,315               | 185000.0,315               | 315 mA                                | <sup>1)</sup>                                               | 5000                                    | 9000                                    | F                                          |
| 184000.0,4                 | 185000.0,4                 | 400 mA                                | <sup>1)</sup>                                               | 2000                                    | 3500                                    | F                                          |
| 184000.0,5                 | 185000.0,5                 | 500 mA                                | <sup>1)</sup>                                               | 950                                     | 1600                                    | F                                          |
| 184000.0,63                | 185000.0,63                | 630 mA                                | <sup>1)</sup>                                               | 860                                     | 1500                                    | F                                          |
| 184000.0,8                 | 185000.0,8                 | 800 mA                                | <sup>1)</sup>                                               | 760                                     | 1300                                    | F                                          |
| 184000.1                   | 185000.1                   | 1 A                                   | <sup>1)</sup>                                               | 640                                     | 1200                                    | F                                          |
| 184000.1,25                | 185000.1,25                | 1,25 A                                | <sup>1)</sup>                                               | 540                                     | 1000                                    | F                                          |
| 184000.1,6                 | 185000.1,6                 | 1,6 A                                 | <sup>1)</sup>                                               | 500                                     | 900                                     | F                                          |
| 184000.2                   | 185000.2                   | 2 A                                   | <sup>1)</sup>                                               | 460                                     | 800                                     | F                                          |
| 184000.2,5                 | 185000.2,5                 | 2,5 A <sup>2)</sup>                   | <sup>1)</sup>                                               | <sup>3)</sup>                           | <sup>3)</sup>                           | F                                          |
| 184000.3,15                | 185000.3,15                | 3,15 A <sup>2)</sup>                  | <sup>1)</sup>                                               | <sup>3)</sup>                           | <sup>3)</sup>                           | F                                          |
| 184000.4                   | 185000.4                   | 4 A <sup>2)</sup>                     | <sup>1)</sup>                                               | <sup>3)</sup>                           | <sup>3)</sup>                           | F                                          |
| 184000.5                   | -                          | 5 A <sup>2)</sup>                     | <sup>1)</sup>                                               | <sup>3)</sup>                           |                                         | F                                          |
| 184000.6,3                 | -                          | 6,3 A <sup>2)</sup>                   | <sup>1)</sup>                                               | <sup>3)</sup>                           |                                         | F                                          |

<sup>1)</sup> 184000: 35 A @ AC 1,2 kV;  
 185000: 35 A @ AC 3 kV

| Type | Abk.<br>Abbr. | Beschreibung<br>Description |
|------|---------------|-----------------------------|
|      | -             | 25 Stück / Pieces           |

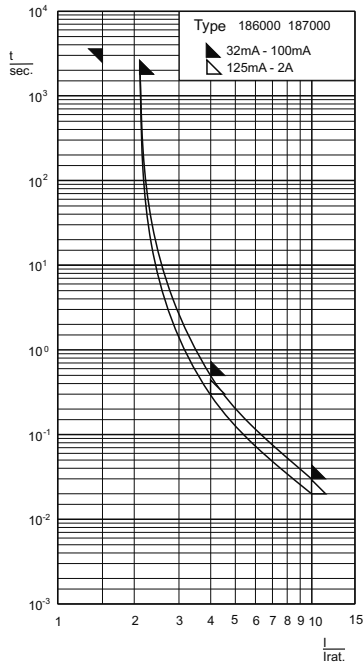
Type  
**186000**



Type  
**187000**

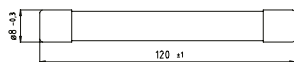


Zeit/Strom-Kennlinien  
Time-Current Characteristics



Abmessungen  
Dimensions

186000



187000



**Aufbau / Construction**

Keramikrohr / ceramic tube

undurchsichtig / non-transparent

Kontaktkappen / end caps

Messing, vernickelt / brass, nickel-plated

**Zubehör / Related Products**

Halter / holder

siehe Seite 89 / see page 89

**Schmelzeitgrenzwerte / Fusing time limits**

| Bemessungsstrom<br>Rated Current | 1,5 I <sub>n</sub> |      | 2,1 I <sub>n</sub> |        | 4 I <sub>n</sub> |        | 10 I <sub>n</sub> |       |
|----------------------------------|--------------------|------|--------------------|--------|------------------|--------|-------------------|-------|
|                                  | min.               | max. | min.               | max.   | min.             | max.   | min.              | max.  |
| 32 mA - 100 mA                   | 1 h                | -    | -                  | 30 min | -                | 500 ms | -                 | 30 ms |
| 125 mA - 4 A (Type 186000)       | 1 h                | -    | -                  | 30 min | -                | 300 ms | -                 | 20 ms |
| 125 mA - 2 A (Type 187000)       | 1 h                | -    | -                  | 30 min | -                | 300 ms | -                 | 20 ms |

|                        |                                        |               |                                                         |
|------------------------|----------------------------------------|---------------|---------------------------------------------------------|
| DIN 41683<br>DIN 41684 | <b>8 x 120 mm</b><br><b>8 x 150 mm</b> | 6 kV<br>10 kV | M mittelträge / med. time-lag<br>F flink / quick acting |
|------------------------|----------------------------------------|---------------|---------------------------------------------------------|

| Artikel-Nr.<br>Article-no. | Artikel-Nr.<br>Article-no. | Bemessungs-<br>strom<br>Rated Current | Bemessungs-<br>Ausschaltvermögen<br>Rated Breaking<br>Capacity | Spannungsfall<br>186000<br>Voltage Drop | Spannungs-<br>fall 187000<br>Voltage Drop | Charakte-<br>ristik<br>Characte-<br>ristics |
|----------------------------|----------------------------|---------------------------------------|----------------------------------------------------------------|-----------------------------------------|-------------------------------------------|---------------------------------------------|
| 8 x 120 mm                 | 8 x 150 mm                 |                                       |                                                                | mV max.                                 | mV max.                                   |                                             |
| 186000.0,032               | 187000.0,032               | 32 mA                                 | 1)                                                             | 6000                                    | 14000                                     | M                                           |
| 186000.0,05                | 187000.0,05                | 50 mA                                 | 1)                                                             | 4400                                    | 8500                                      | M                                           |
| 186000.0,063               | 187000.0,063               | 63 mA                                 | 1)                                                             | 3800                                    | 6500                                      | M                                           |
| 186000.0,08                | 187000.0,08                | 80 mA                                 | 1)                                                             | 3200                                    | 5000                                      | M                                           |
| 186000.0,1                 | 187000.0,1                 | 100 mA                                | 1)                                                             | 2900                                    | 4000                                      | M                                           |
| 186000.0,125               | 187000.0,125               | 125 mA                                | 1)                                                             | 22000                                   | 27000                                     | F                                           |
| 186000.0,16                | 187000.0,16                | 160 mA                                | 1)                                                             | 19000                                   | 24000                                     | F                                           |
| 186000.0,2                 | 187000.0,2                 | 200 mA                                | 1)                                                             | 16000                                   | 21000                                     | F                                           |
| 186000.0,25                | 187000.0,25                | 250 mA                                | 1)                                                             | 14000                                   | 18500                                     | F                                           |
| 186000.0,315               | 187000.0,315               | 315 mA                                | 1)                                                             | 12000                                   | 17000                                     | F                                           |
| 186000.0,4                 | 187000.0,4                 | 400 mA                                | 1)                                                             | 5000                                    | 6000                                      | F                                           |
| 186000.0,5                 | 187000.0,5                 | 500 mA                                | 1)                                                             | 2300                                    | 2900                                      | F                                           |
| 186000.0,63                | 187000.0,63                | 630 mA                                | 1)                                                             | 2000                                    | 2700                                      | F                                           |
| 186000.0,8                 | 187000.0,8                 | 800 mA                                | 1)                                                             | 1900                                    | 2400                                      | F                                           |
| 186000.1                   | 187000.1                   | 1 A                                   | 1)                                                             | 1800                                    | 2100                                      | F                                           |
| 186000.1,25                | 187000.1,25                | 1,25 A                                | 1)                                                             | 1400                                    | 1800                                      | F                                           |
| 186000.1,6                 | 187000.1,6                 | 1,6 A                                 | 1)                                                             | 1300                                    | 1600                                      | F                                           |
| 186000.2                   | 187000.2                   | 2 A                                   | 1)                                                             | 1100                                    | 1400                                      | F                                           |
| 186000.2,5                 | -                          | 2,5 A <sup>2)</sup>                   | 1)                                                             | 3)                                      | -                                         | F                                           |
| 186000.3,15                | -                          | 3,15 A <sup>2)</sup>                  | 1)                                                             | 3)                                      | -                                         | F                                           |
| 186000.4                   | -                          | 4 A <sup>2)</sup>                     | 1)                                                             | 3)                                      | -                                         | F                                           |

<sup>1)</sup> 186000: 35 A @ AC 6 kV  
187000: 35 A @ AC 10 kV

| Type | Abk.<br>Abbr. | Beschreibung<br>Description |
|------|---------------|-----------------------------|
|      | -             | 25 Stück / Pieces           |



### Weitere G-Hochspannungstypen / G-high voltage fuses

| Artikel-Nr. | Abmessung | Bemessungsspannung  | Bemessungsstrom | Charakteristik  |
|-------------|-----------|---------------------|-----------------|-----------------|
| Article-no. | Dimension | Rated Voltage       | Rated current   | Characteristics |
| 7011509     | 10x85 mm  | AC 3 kV             | 0,125 - 4 A     | F               |
| 7011527     | 10x85 mm  | AC 1,5 kV / DC 1 kV | 0,63 - 12,5 A   | T               |
| 7011552     | 10x85 mm  | AC 1,5 kV / DC 1 kV | 1 - 20 A        | F               |
| 7012927     | 11x79 mm  | AC 1 kV             | 2 - 16 A        | T               |
| 7012952     | 11x79 mm  | AC 1 kV             | 1 - 10 A        | F               |
| 7017182     | 10x85 mm  | AC 1 kV             | 2 - 16 A        | aM              |
| 7002924     | 12x100 mm | AC 3 kV             | 0,5 - 10 A      | F               |
| 7002927     | 12x100 mm | AC 3 kV             | 2,5 - 6,3 A     | T               |
| 7003024     | 12x150 mm | AC 6 kV             | 0,5 - 4         | F               |
| 7003124     | 12x200 mm | AC 10 kV            | 0,5 - 2         | F               |

Datenblätter auf Anfrage - Data sheets on request



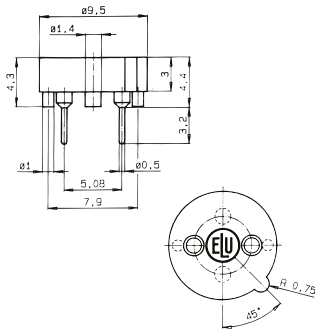
# G-Sicherungshalter / Fuse-Holder

G-Sicherungshalter für Kleinstsicherungen /  
Fuse-Holders for Sub-miniature Fuses

G-Sicherungshalter für G-Sicherungseinsätze /  
Fuse-Holders for miniature Fuse-Links

G-Sicherungshalter für Hochspannungs-  
Sicherungseinsätze /  
Fuse-Holders for High-Voltage  
miniature Fuse-Links

Type  
**166602**



**G-Sicherungshalter für Kleinstsicherungen 8,4 x 7,6 mm /**

**Fuse-Holders for Sub-miniature Fuses 8.4 x 7.6 mm**

für Kleinstsicherungen mit kurzen Anschlussstiften / for sub-miniature fuses with short pins

Bemessungsstrom / rated current

6,3 A

Montage / mounting

Leiterplatte / printed circuit board

Stiftabstand / pin distance

5,08 mm

Bohrungen / hole

Ø 1 mm

Anschlüsse / connections

lötbar / solderable



Type  
**199073**

5 mm

Type  
**199207**

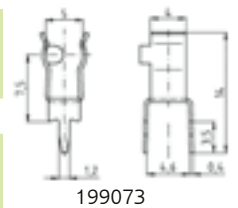
5 mm

Type  
**199487**

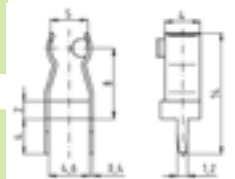
5 mm

Type  
**199429**

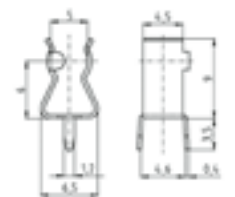
6,3 mm



199073



199207



199487

**G-Sicherungshalter für G-Sicherungseinsätze mit 5 + 6,3 mm Kappen-Ø /**

**Fuse-clips for miniature Fuse-Links with 5 + 6.3 mm cap Ø**

Bemessungsstrom / rated current

6,3 A Ø 5 mm

10 A Ø 6,3 mm

Montage / mounting

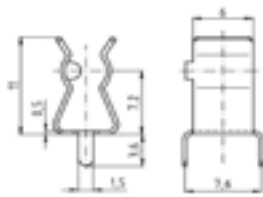
Leiterplatte /  
printed circuit board

Material / material

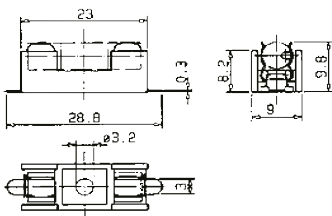
Messing, verzinkt /  
brass, tinned

Anschlüsse / connections

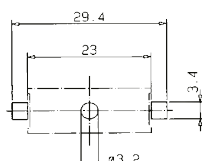
lötbar / solderable



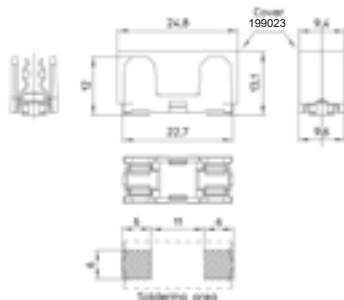
199429



lötbar / solderable



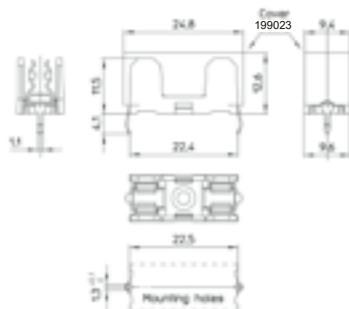
**New / New**



Reflow lötbar / reflow solderable



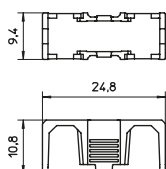
**Neu / New**



lötbar / solderable

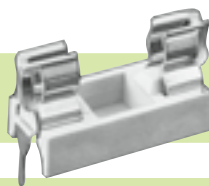


**Neu / New**



199013 und/and 199014

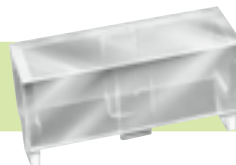
Type  
**199015**



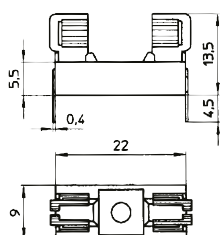
Type



Type  
**199016**



199015



**G-Sicherungshalter für G-Sicherungseinsätze 5 x 20 mm /  
Fuse-Holders (Fuse-Blocks) for miniature Fuse-Links 5 x 20 mm**

Bemessungsspannung / rated voltage

250 V

Bemessungsstrom / rated current

6,3 A (VDE), 10A (UL)

Bemessungsleistung / rated power

1,6 W

Montage / mounting

Leiterplatte / printed circuit board

Stiftabstand / pin distance

22,5 mm

Bohrungen / hole

Ø 1,5 mm

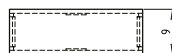
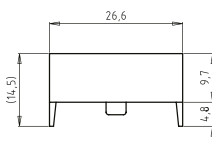
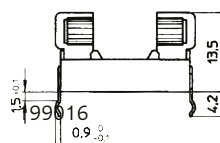
Anschlüsse / connections

lötbar / solderable

Abdeckung / cover 199016

Thermoplast, transparent / thermoplastic, transparent

199015A



Type  
**199060**



**G-Sicherungshalter für G-Sicherungseinsätze 5 x 20 mm /  
Fuse-Holders (Fuse-Blocks) for miniature Fuse-Links 5 x 20 mm**

Bemessungsspannung / rated voltage

250 V

Bemessungsstrom / rated current

6,3 A

Bemessungsleistung / rated power

1,6 W

Montage / mounting

Leiterplatte / printed circuit board

Stiftabstand / pin distance

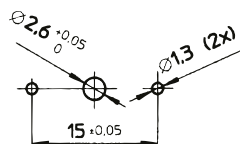
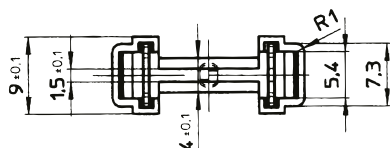
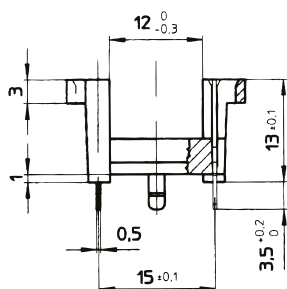
15 mm

Bohrungen / hole

Ø 1,3/2,6 mm

Anschlüsse / connections

lötbar / solderable





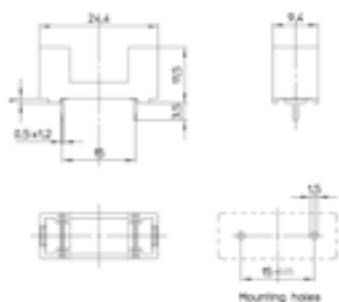
**CV**



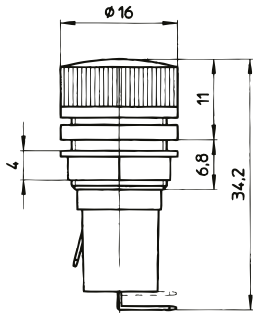
**CRUS**



**New / New**



Type  
**199030**

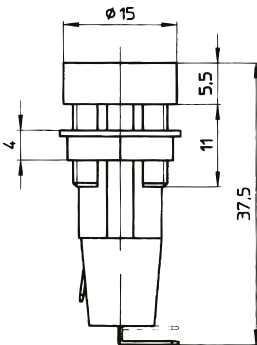


**G-Sicherungshalter für G-Sicherungseinsätze 5 x 20 mm /  
Fuse-Holders for miniature Fuse-Links 5 x 20 mm**

|                                                |                                                                                             |
|------------------------------------------------|---------------------------------------------------------------------------------------------|
| Bemessungsspannung / rated voltage             | 250 V                                                                                       |
| Bemessungsstrom / rated current                | 10 A                                                                                        |
| Bemessungsleistung / rated power               | 2,5 W                                                                                       |
| Spannungsfestigkeit / dielectric strength      | 3 kV                                                                                        |
| Schutzart / protection standard                | IP 40                                                                                       |
| Berührungsschutzkategorie / shocksafe category | PC2                                                                                         |
| Montage / mounting                             | Frontplatte / panel                                                                         |
| Loch / hole                                    | Ø 13 mm                                                                                     |
| Verdrehungsschutz / locating lug               |                                                                                             |
| Gegenmutter / locknut                          | SW14                                                                                        |
| Verschlusskappe / fuse-carrier                 | Schraubverschluss / screw cap                                                               |
| Anschlüsse / connections                       | löt- und steckbar / solderable and pluggable<br>(Steckhülse 2,8mm) / (plug connector 2,8mm) |
| Approbationen / approvals                      | VDE, UL recognized                                                                          |



Type  
**199035**

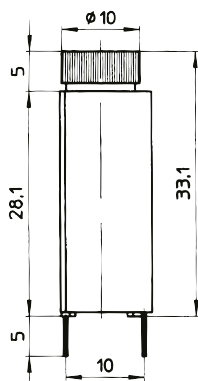


**G-Sicherungshalter für G-Sicherungseinsätze 5 x 20 mm /  
Fuse-Holders for miniature Fuse-Links 5 x 20 mm**

|                                                |                                                                                             |
|------------------------------------------------|---------------------------------------------------------------------------------------------|
| Bemessungsspannung / rated voltage             | 250 V                                                                                       |
| Bemessungsstrom / rated current                | 10 A                                                                                        |
| Bemessungsleistung / rated power               | 2,5 W                                                                                       |
| Spannungsfestigkeit / dielectric strength      | 3 kV                                                                                        |
| Schutzart / protection standard                | IP 40                                                                                       |
| Berührungsschutzkategorie / shocksafe category | PC2                                                                                         |
| Montage / mounting                             | Frontplatte / panel                                                                         |
| Loch / hole                                    | Ø 12,7 mm                                                                                   |
| Verdrehungsschutz / with flat as shown         |                                                                                             |
| Gegenmutter / locknut                          | SW14                                                                                        |
| Verschlusskappe / fuse-carrier                 | Schraubverschluss / screw cap                                                               |
| Anschlüsse / connections                       | löt- und steckbar / solderable and pluggable<br>(Steckhülse 2,8mm) / (plug connector 2,8mm) |
| Approbationen / approvals                      | VDE, UL recognized                                                                          |



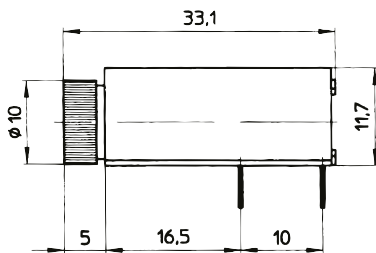
Type  
**199045**



**G-Sicherungshalter für G-Sicherungseinsätze 5 x 20 mm /  
Fuse-Holders for miniature Fuse-Links 5 x 20 mm**

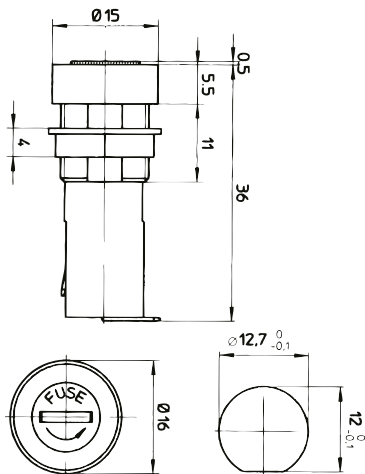
|                                                |                                      |
|------------------------------------------------|--------------------------------------|
| Bemessungsspannung / rated voltage             | 250 V                                |
| Bemessungsstrom / rated current                | 10 A                                 |
| Bemessungsleistung / rated power               | 2,5 W                                |
| Spannungsfestigkeit / dielectric strength      | 3 kV                                 |
| Schutzart / protection standard                | IP 40                                |
| Berührungsschutzkategorie / shocksafe category | PC2                                  |
| Montage / mounting                             | Leiterplatte / printed circuit board |
| Stiftabstand / pin distance                    | 10 mm                                |
| Bohrungen / hole                               | Ø 1,3 +0,1 mm                        |
| Stehende Ausführung / vertical mounting        |                                      |
| Verschlusskappe / fuse-carrier                 | Renkverschluss / bayonet cap         |
| Anschlüsse / connections                       | lötbar / solderable                  |
| Approbationen / approvals                      | VDE, UL recognized                   |



**Type**  
**199050**

**G-Sicherungshalter für G-Sicherungseinsätze 5 x 20 mm /**
**Fuse-Holders for miniature Fuse-Links 5 x 20 mm**

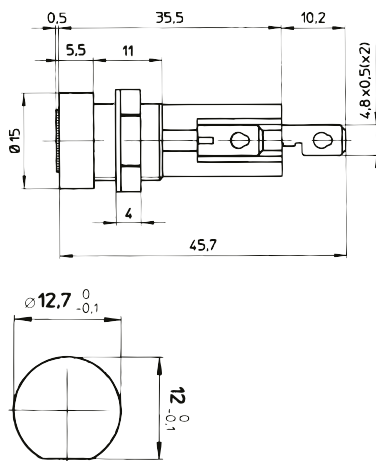
|                                                |       |
|------------------------------------------------|-------|
| Bemessungsspannung / rated voltage             | 250 V |
| Bemessungsstrom / rated current                | 10 A  |
| Bemessungsleistung / rated power               | 2,5 W |
| Spannungsfestigkeit / dielectric strength      | 3 kV  |
| Schutzart / protection standard                | IP 40 |
| Berührungsschutzkategorie / shocksafe category | PC2   |

|                                           |                                      |
|-------------------------------------------|--------------------------------------|
| Montage / mounting                        | Leiterplatte / printed circuit board |
| Stiftabstand / pin distance               | 10 mm                                |
| Bohrungen / hole                          | Ø 1,3 +0,1 mm                        |
| Liegende Ausführung / horizontal mounting |                                      |
| Verschlusskappe / fuse-carrier            | Renkverschluss / bayonet cap         |
| Anschlüsse / connections                  | lötbar / solderable                  |
| Approbationen / approvals                 | VDE, UL recognized                   |

**Type**  
**199055**

**G-Sicherungshalter für G-Sicherungseinsätze 5 x 20 mm /**
**Fuse-Holders for miniature Fuse-Links 5 x 20 mm**

|                                                |       |
|------------------------------------------------|-------|
| Bemessungsspannung / rated voltage             | 250 V |
| Bemessungsstrom / rated current                | 10 A  |
| Bemessungsleistung / rated power               | 2,5 W |
| Spannungsfestigkeit / dielectric strength      | 3 kV  |
| Schutzart / protection standard                | IP 40 |
| Berührungsschutzkategorie / shocksafe category | PC2   |

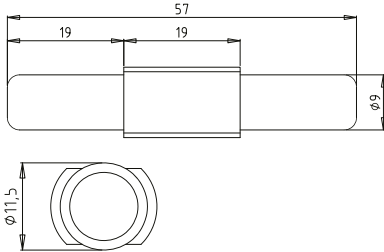
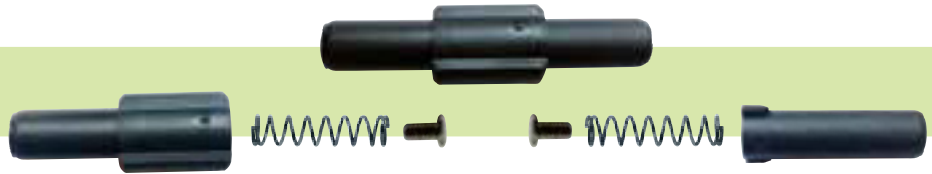
|                                        |                              |
|----------------------------------------|------------------------------|
| Montage / mounting                     | Frontplatte / panel          |
| Loch / hole                            | Ø 12,7 mm                    |
| Verdrehungsschutz / with flat as shown |                              |
| Gegenmutter / locknut                  | SW14                         |
| Verschlusskappe / fuse-carrier         | Renkverschluss / bayonet cap |
| Anschlüsse / connections               | lötbar / solderable          |
| Approbationen / approvals              | VDE, UL recognized           |

**Type**  
**199070**

**G-Sicherungshalter für G-Sicherungseinsätze 5 x 20 mm /**
**Fuse-Holders for miniature Fuse-Links 5 x 20 mm**

|                                                |                            |
|------------------------------------------------|----------------------------|
| Bemessungsspannung / rated voltage             | 250 V                      |
| Bemessungsstrom / rated current                | 6,3A (VDE) / 10 A (UL/CSA) |
| Bemessungsleistung / rated power               | 2,5 W                      |
| Spannungsfestigkeit / dielectric strength      | 3 kV                       |
| Schutzart / protection standard                | IP 40                      |
| Berührungsschutzkategorie / shocksafe category | PC2                        |

|                                        |                                                                                      |
|----------------------------------------|--------------------------------------------------------------------------------------|
| Montage / mounting                     | Frontplatte / panel                                                                  |
| Loch / hole                            | Ø 12,7 mm                                                                            |
| Verdrehungsschutz / with flat as shown |                                                                                      |
| Gegenmutter / locknut                  | SW14                                                                                 |
| Verschlusskappe / fuse-carrier         | Renkverschluss / bayonet cap                                                         |
| Anschlüsse / connections               | löt- oder steckbar / solderable or pluggable<br>(Steckhülse / plug connector 4,8 mm) |
| Approbationen / approvals              | VDE, UL recognized                                                                   |

Type  
**199080**



**G-Sicherungshalter für G-Sicherungseinsätze 5 x 20 mm und 6,3 x 32 mm /  
Fuse-Holders for miniature Fuse-Links 5 x 20 mm and 6,3 x 32 mm**

Bemessungsspannung / rated voltage 250 V  
Bemessungsstrom / rated current 6,3 A  
Bemessungsleistung / rated power 1,6 W

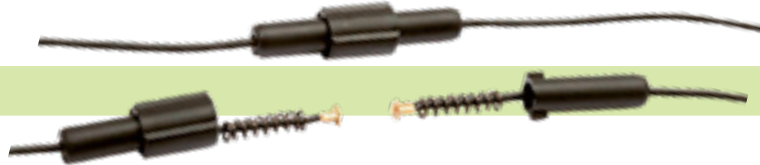
Montage / mounting

Verschluss / locking

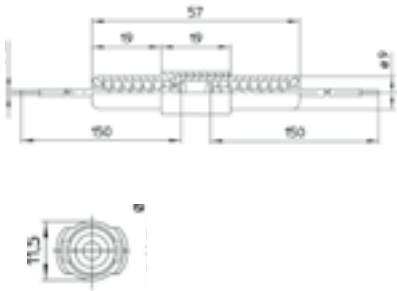
Anschlüsse / connections

Leitungszugsicherungshalter, Kabelverbinder /  
in-line fuse-holder  
Renkverschluss / bayonet type  
lötbar / solderable

Type



**Neu / New**



**G-Sicherungshalter für G-Sicherungseinsätze 5 x 20 mm und 6,3 x 32 mm /  
Fuse-Holders for miniature Fuse-Links 5 x 20 mm and 6,3 x 32 mm**

Bemessungsspannung / rated voltage 250 V  
Bemessungsstrom / rated current 6,3 A  
Bemessungsleistung / rated power 1,6 W

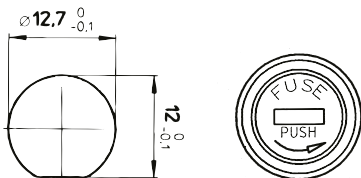
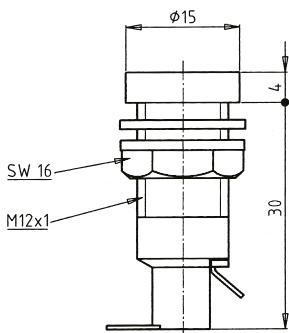
Montage / mounting

Verschluss / locking

Anschlüsse / connections

Leitungszugsicherungshalter, Kabelverbinder /  
in-line fuse-holder  
Renkverschluss / bayonet type  
lötbar / solderable

Type  
**199090**



**G-Sicherungshalter für G-Sicherungseinsätze 5 x 20 mm /  
Fuse-Holders for miniature Fuse-Links 5 x 20 mm**

Bemessungsspannung / rated voltage 250 V  
Bemessungsstrom / rated current 6,3 / 10 A  
Spannungsfestigkeit / dielectric strength 3 kV  
Schutzart / protection standard IP 40

Montage / mounting

Loch / hole

Verdrehungsschutz / with flat as shown

Gegenmutter / locknut

Verschlusskappe / fuse-carrier

Anschlüsse / connections

Approbationen / approvals

Frontplatte / panel

Ø 12,7 mm

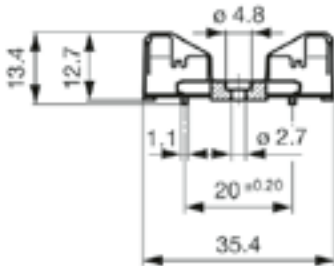
SW16

Renkverschluss / bayonet cap

lötbar / solderable

VDE SEMKO (6,3 A), UL CSA (10 A)



**Type**  
**199511**

**SMD-Sicherungshalter für G-Sicherungseinsätze 5 x 20 mm oder 6,3 x 32 mm /**  
**Fuse-Holders (Fuse-Blocks) for miniature Fuse-Links 5 x 20 mm or 6,3 x 32 mm**

Bemessungsspannung / rated voltage

AC 500 V (VDE), AC/DC 600V (UL/CSA)

Bemessungsstrom / rated current

10 A (VDE) / 16 A (UL/CSA)

Bemessungsleistung / rated power

4 W @ 10 A

Spannungsfestigkeit / dielectric strength

3 kV

Montage / mounting

Leiterplatte / printed circuit board

Befestigung / fixing

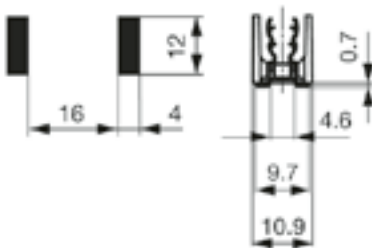
Schraube oder Niet / screw or rivet

Anschlüsse / connections

lötfähig / solderable

Approbationen / approvals

VDE, UL recognized

**Empfohlene Anschlussflächen:**  
 Recommended pad layout:

**Type**  
**199530**

**Type**  
**199531**


199530

**G-Sicherungshalter für G-Sicherungseinsätze 6,3 x 32 mm /**  
**Fuse-Holders for miniature Fuse-Links 6,3 x 32 mm**

Bemessungsspannung / rated voltage

AC 500 V (VDE), AC/DC 600 V (UL/CSA)

Bemessungsstrom / rated current

10 A (VDE), 20 A (UL/CSA)

Bemessungsleistung / rated power

4 W @ 10 A

Spannungsfestigkeit / dielectric strength

3 kV

Schutzart / protection standard

IP 40

Berührungsschutzkategorie / shocksafe category

PC2

Montage / mounting

Frontplatte / front-panel

Loch / hole

Ø 16,5 mm

Verschlusskappe / fuse-carrier

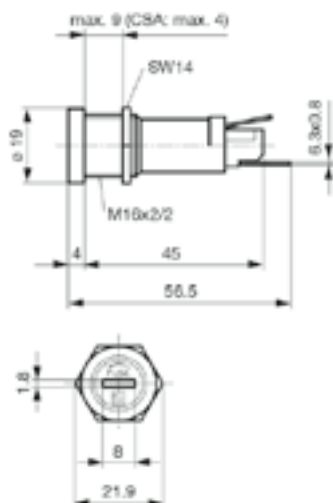
Renkverschluss / bayonet cap

Anschlüsse / connections

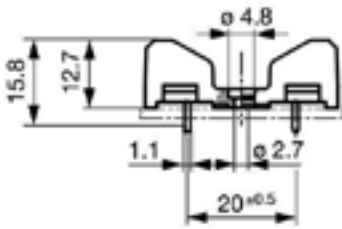
Steck / Quick-connect 6,3x8mm

Approbationen / approvals

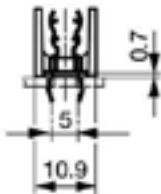
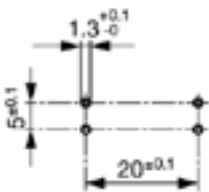
VDE, UL recognized


**Durchbrüche der Montageplatte:**  
 Mounting holes:


Type  
**199537**



**Bohrplan:**  
Drilling holes:



**G-Sicherungshalter für G-Sicherungseinsätze 5 x 20 mm oder 6,3 x 32 mm /  
Fuse-Holders (Fuse-Blocks) for miniature Fuse-Links 5 x 20 mm or 6,3 x 32 mm**

Bemessungsspannung / rated voltage  
Bemessungsstrom / rated current  
Bemessungsleistung / rated power  
Spannungsfestigkeit / dielectric strength

AC 500 V (VDE), AC/DC 600 V (UL/CSA)  
10 A (VDE) / 16 A (UL/CSA)  
4 W @ 10 A  
3 kV

Montage / mounting  
Befestigung / fixing  
Bohrungen / hole  
Anschlüsse / connections  
Approbationen / approvals

Leiterplatte / printed circuit board  
Schraube oder Niet / screw or rivet  
Ø 1,3 +0,1 mm  
lötbar THT / solderable THT  
VDE, UL recognized

Type  
**199550**



Type  
**199552**



199550

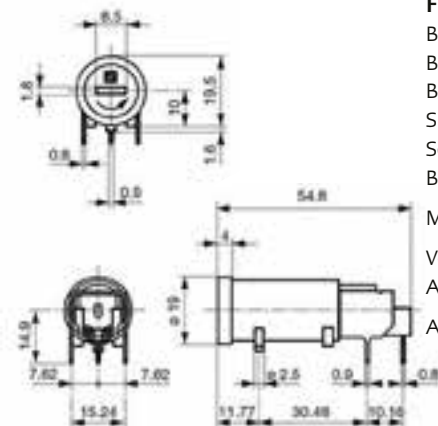
**G-Sicherungshalter für G-Sicherungseinsätze 6,3 x 32 mm /  
Fuse-Holders for miniature Fuse-Links 6,3 x 32 mm**

Bemessungsspannung / rated voltage  
Bemessungsstrom / rated current  
Bemessungsleistung / rated power  
Spannungsfestigkeit / dielectric strength  
Schutzart / protection standard  
Berührungsschutzkategorie / shocksafe category

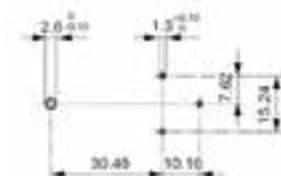
AC 500 V (VDE), AC/DC 600 V (UL/CSA)  
16 A (VDE), 30 A (UL/CSA)  
4 W @ 16 A  
3 kV  
IP 40  
PC2

Montage / mounting  
Verschlusskappe / fuse-carrier  
Anschlüsse / connections  
Approbationen / approvals

Leiterplatte / printed circuit board  
Schraubverschluss / screw cap  
lötbar THT / solderable THT  
VDE, UL recognized



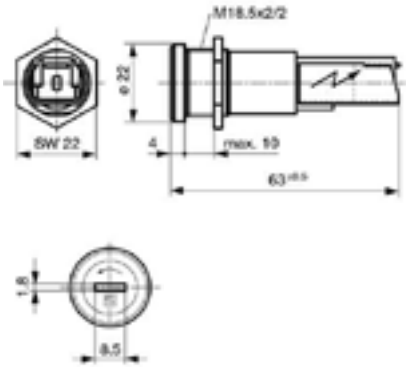
**Bohrplan:**  
Drilling holes:



Type  
**199555**

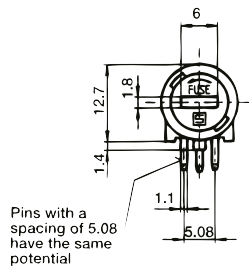
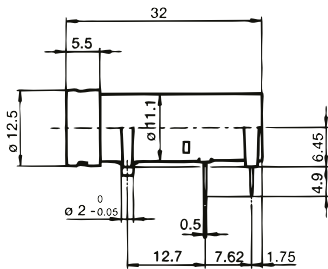
 C **UL** US

 Type  
**199552**

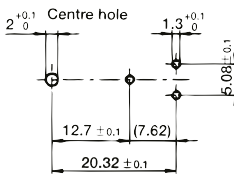
 C **UL** US

**G-Sicherungshalter für G-Sicherungseinsätze 6,3 x 32 mm /  
 Fuse-Holders for miniature Fuse-Links 6,3 x 32 mm**

|                                                |                                    |
|------------------------------------------------|------------------------------------|
| Bemessungsspannung / rated voltage             | AC 500 V (VDE), AC 600V (UL/CSA)   |
| Bemessungsstrom / rated current                | 16 A (VDE) / 30 A (UL/CSA)         |
| Bemessungsleistung / rated power               | 4 W @ 16 A                         |
| Spannungsfestigkeit / dielectric strength      | 3 kV                               |
| Schutzart / protection standard                | IP 40                              |
| Berührungsschutzkategorie / shocksafe category | PC2                                |
| Montage / mounting                             | Frontplatte / front-panel          |
| Befestigung / fixing                           | Schraubmutter / fixing nut         |
| Verschlusskappe / fuse-carrier                 | Schraubverschluss / screw cap      |
| Anschlüsse / connections                       | Steck / Quick-connect 6,3 x 0,8 mm |
| Approbationen / approvals                      | VDE, UL recognized                 |

## Type



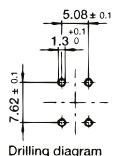
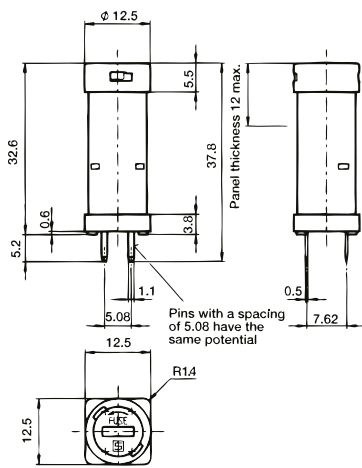
Pins with a spacing of 5.08 have the same potential



**G-Sicherungshalter für G-Sicherungseinsätze 5 x 20 mm /  
Fuse-Holders for miniature Fuse-Links 5 x 20 mm**

|                                                |                                      |
|------------------------------------------------|--------------------------------------|
| Bemessungsspannung / rated voltage             | AC / 250 V                           |
| Bemessungsstrom / rated current                | 10 A (VDE) / 16 A (UL/CSA)           |
| Bemessungsleistung / rated power               | 2,5 W @ 10 A                         |
| Spannungsfestigkeit / dielectric strength      | 3 kV                                 |
| Schutzart / protection standard                | IP 40                                |
| Berührungsschutzkategorie / shocksafe category | PC2                                  |
| Montage / mounting                             | Leiterplatte / printed circuit board |
| Stiftabstand / pin distance                    | 7,62 mm                              |
| Bohrungen / holes                              | Ø 1,3 mm + 0,1 mm                    |
| Verschlusskappe / fuse-carrier                 | Renkverschluss / bayonet cap         |
| Anschlüsse / connections                       | lötbar / solderable                  |
| Approbationen / approvals                      | VDE, UL rec.                         |

## Type

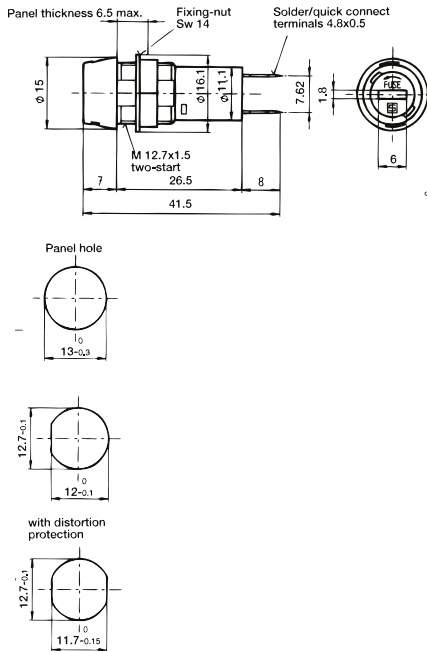


### Drilling diagram

**G-Sicherungshalter für G-Sicherungseinsätze 5 x 20 mm /  
Fuse-Holders for miniature Fuse-Links 5 x 20 mm**

|                                                |                                      |
|------------------------------------------------|--------------------------------------|
| Bemessungsspannung / rated voltage             | AC / 250 V                           |
| Bemessungsstrom / rated current                | 10 A (VDE) / 16 A (UL/CSA)           |
| Bemessungsleistung / rated power               | 2,5 W @ 10 A                         |
| Spannungsfestigkeit / dielectric strength      | 3 kV                                 |
| Schutzart / protection standard                | IP 40                                |
| Berührungsschutzkategorie / shocksafe category | PC2                                  |
| Montage / mounting                             | Leiterplatte / printed circuit board |
| stehende Ausführung / vertikal type            |                                      |
| Stiftabstand / pin distance                    | 7,62 mm                              |
| Bohrungen / holes                              | Ø 1,3 + 0,1 mm                       |
| Verschlusskappe / fuse-carrier                 | Renkverschluss / bayonet cap         |
| Anschlüsse / connections                       | lötbar / solderable                  |
| Approbationen / approvals                      | VDE, ULrec.                          |

## Type


**G-Sicherungshalter für G-Sicherungseinsätze 5 x 20 mm /  
Fuse-Holders for miniature Fuse-Links 5 x 20 mm**

|                                                |                              |
|------------------------------------------------|------------------------------|
| Bemessungsspannung / rated voltage             | AC 250 V                     |
| Bemessungsstrom / rated current                | 10 A (VDE) / 16 A (UL/CSA)   |
| Bemessungsleistung / rated power               | 2,5 W @ 10 A                 |
| Spannungsfestigkeit / dielectric strength      | 3kV                          |
| • Schutzart / protection standard              | IP 40                        |
| Berührungsschutzkategorie / shocksafe category | PC2                          |
| Montage / mounting                             | Frontplatte / front panel    |
| Loch / hole                                    | Ø 13 mm                      |
| Verdrehungsschutz / distortion protection      |                              |
| Gegenmutter / locknut                          | M12,7 x 1,5                  |
| Verschlusskappe / fuse-carrier                 | Renkverschluss / bayonet cap |
| Anschlüsse / connections                       | lötbar / solderable          |
| Approbationen / approvals                      | VDE, UL rec.                 |


**Type  
204000**

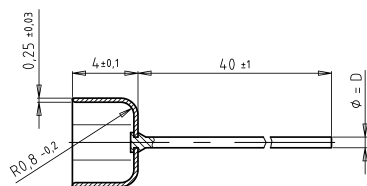

5 mm Ø - D = 0,65 mm

**Type  
204001**


5 mm Ø - D = 0,8mm

**Type  
204002**


5 mm Ø - D = 1 mm

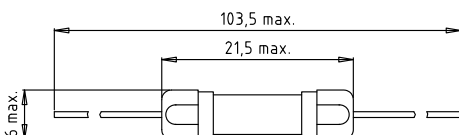
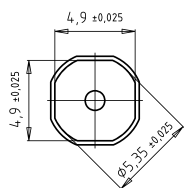

**Aufsteckkappen für G-Sicherungseinsätze mit 5 mm Kappen-Ø/  
Push-on Cap for miniature Fuse-Links with 5 mm cap Ø**

|                                 |                                                           |
|---------------------------------|-----------------------------------------------------------|
| Bemessungsstrom / rated current | 204000: max. 6,3A<br>204001: max. 10A<br>204002: max. 16A |
|---------------------------------|-----------------------------------------------------------|

Montage / mounting  
Anschlüsse / connections

Material Kappen / material contact caps  
Material Drähte / material wire-ends

Leiterplatte / printed circuit board  
Axial angeschweisste Drahtenden  
Drahtenden 40 mm, lötbar /  
axially welded wire-ends of 40 mm, solderable  
Kupferlegierung vernickelt / copper alloy, nickel plated  
Kupfer, verzinkt / copper, tinned



**Type  
204100**

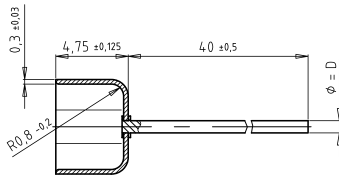


6,3 mm Ø - D = 0,8 mm

**Type  
204101**



6,3 mm Ø - D = 1 mm



**Aufsteckkappen für G-Sicherungseinsätze mit 6,3 mm Kappen-Ø/  
Push-on Cap for miniature Fuse-Links with 6.3 mm cap Ø**

Bemessungsstrom / rated current

**204100:** max. 12,5 A

**204101:** max. 20A

Montage / mounting

Leiterplatte / printed circuit board

Anschlüsse / connections

Axial angeschweisste Drahtenden 40 mm, lötbar

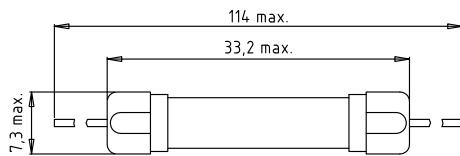
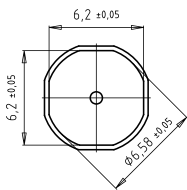
axially welded wire-ends of 40 mm, solderable

Material Kappen / material contact caps

Kupferlegierung vernickelt / copper alloy, nickel plated

Material Drähte / material wire-ends

Kupfer, verzinkt / copper, tinned

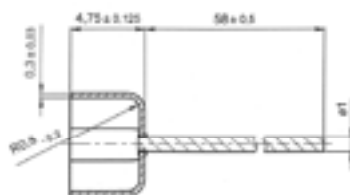


**Type  
204151**



6,3 mm Ø - D = 1 mm

**Neu / New**



**Aufsteckkappen für G-Sicherungseinsätze mit 6,3 mm Kappen-Ø/  
Push-on Cap for miniature Fuse-Links with 6.3 mm cap Ø**

Bemessungsstrom / rated current

max. 20A

Montage / mounting

Leiterplatte / printed circuit board

Anschlüsse / connections

Axial angeschweisste Drahtenden 58 mm, lötbar

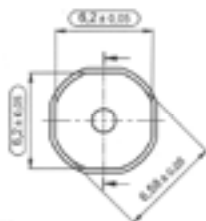
axially welded wire-ends of 58 mm, solderable

Material Kappen / material contact caps

Kupferlegierung vernickelt / copper alloy, nickel plated

Material Drähte / material wire-ends

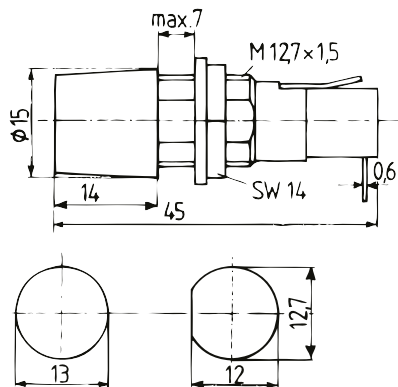
Kupfer, verzinkt / copper, tinned



## Type



7100123



**G-Sicherungshalter mit Berührungsschutz (Verschlusskappe siehe unten)**  
**für G-Sicherungseinsätze 5 x 20 mm und 6,3 x 32 mm /**

**Fuse-Holders with contact protection (Fuse-carrier see below)**  
**for miniature Fuse-Links 5 x 20 mm and 6.3 x 32 mm**

Bemessungsspannung / rated voltage AC 250 V  
 Bemessungsstrom / rated current 10 A (VDE) / 20 A (UL)  
 Bemessungsleistung / rated power 4 W @ 10 A

Spannungsfestigkeit / dielectric strength 3 kV  
 Schutzgrad / protection class IP 40  
 Berührungsschutzkategorie / shocksafe category PC2

Montage / mounting Frontplatte / panel  
 Loch Ø / hole Ø 13 mm

Verdrehungsschutz / distortion protection  
 Gegenmutter / locknut M12,7 x 1,5

Verschlusskappe / fuse-carrier Renkverschlusskappe / bayonet fixing

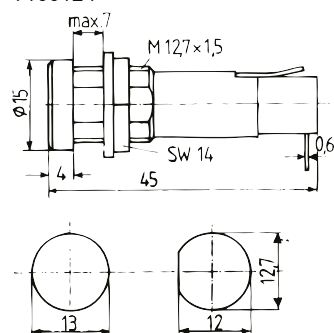
Anschlüsse / connections lötfar / solderable

Approbationen / approvals VDE (10 A), UL rec. (20 A)

## Type



7100124



**G-Sicherungshalter mit Berührungsschutz (Verschlusskappe s. u.)**

**für G-Sicherungseinsätze 5 x 20 mm und 6,3 x 32 mm /**  
**Fuse-Holders with contact protection (Fuse-carrier see below)**

**for miniature Fuse-Links 5 x 20 mm and 6.3 x 32 mm**

Bemessungsspannung / rated voltage 250 V  
 Bemessungsstrom / rated current 10 A (VDE) / 20 A (UL)  
 Bemessungsleistung / rated power 4 W @ 10 A

Spannungsfestigkeit / dielectric strength 3 kV  
 Schutzgrad / protection class IP 40  
 Berührungsschutzkategorie / shocksafe category PC2

Montage / mounting Frontplatte / panel  
 Loch Ø / hole Ø 13 mm

Verdrehungsschutz / distortion protection  
 Gegenmutter / locknut M12,7 x 1,5

Anschlüsse / connections lötfar / solderable

Verschlusskappe / fuse-carrier Renkverschluss / bayonet fixing

Approbationen / approvals VDE, UL rec., CSA

## Type



5 x 20 mm



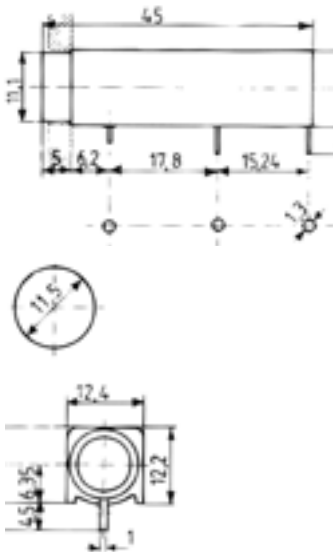
## Type



6,3 x 32 mm



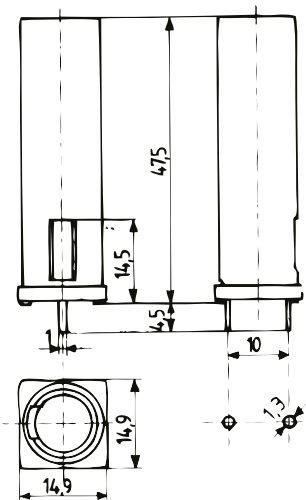
Type



**G-Sicherungshalter mit Berührungsschutz (Verschlusskappe siehe unten)**  
**für G-Sicherungseinsätze 5 x 20 mm und 6,3 x 32 mm /**  
**Fuse-Holders with contact protection (Fuse-Carrier see below)**  
**for miniature Fuse-Links 5 x 20 mm and 6.3 x 32 mm**

|                                                |                                                                               |
|------------------------------------------------|-------------------------------------------------------------------------------|
| Bemessungsspannung / rated voltage             | AC 250 V                                                                      |
| Bemessungsstrom / rated current                | 10 A (VDE) / 16 A (UL/CSA)                                                    |
| Bemessungsleistung / rated power               | 2,5 W (5 x 20 mm) @ 10 A<br>3,2 W (6,3 x 32 mm) @ 10 A                        |
| Spannungsfestigkeit / dielectric strength      | 3 kV                                                                          |
| Schutzgrad / protection class                  | IP 40                                                                         |
| Berührungsschutzkategorie / shocksafe category | PC2                                                                           |
| Montage / mounting                             | Leiterplatte / printed circuit board<br>Liegende Ausführung / horizontal type |
| Stiftabstand / pin distance                    | 15,24 mm                                                                      |
| Bohrungen / hole                               | Ø 1,3+0,1 mm                                                                  |
| Verschlusskappe / fuse-carrier                 | Renkverschlusskappe / bayonet fixing                                          |
| Anschlüsse / connections                       | lötbar / solderable                                                           |
| Approbationen / approvals                      | VDE, UL rec., CSA                                                             |

Type



**G-Sicherungshalter mit Berührungsschutz (Verschlusskappe siehe unten)**  
**für G-Sicherungseinsätze 5 x 20 mm und 6,3 x 32 mm /**  
**Fuse-Holders with contact protection (Fuse-Carrier see below)**  
**for miniature Fuse-Links 5 x 20 mm and 6.3 x 32 mm**

|                                                |                                                                             |
|------------------------------------------------|-----------------------------------------------------------------------------|
| Bemessungsspannung / rated voltage             | 250 V                                                                       |
| Bemessungsstrom / rated current                | 10 A (VDE) / 16 A (UL/CSA)                                                  |
| Bemessungsleistung / rated power               | 2,5 W (5 x 20 mm)<br>3,2 W (6,3 x 32 mm)                                    |
| Spannungsfestigkeit / dielectric strength      | 3 kV                                                                        |
| Schutzgrad / protection class                  | IP 40                                                                       |
| Berührungsschutzkategorie / shocksafe category | PC2                                                                         |
| Montage / mounting                             | Leiterplatte / printed circuit board<br>Stehende Ausführung / vertical type |
| Stiftabstand / pin distance                    | 10 mm                                                                       |
| Bohrungen / hole                               | Ø 1,3+0,1 mm                                                                |
| Verschlusskappe / fuse-carrier                 | Renkverschlusskappe / bayonet fixing                                        |
| Anschlüsse / connections                       | lötbar / solderable                                                         |
| Approbationen / approvals                      | VDE, UL rec., CSA                                                           |

Type



5 x 20 mm



Type



6,3 x 32 mm



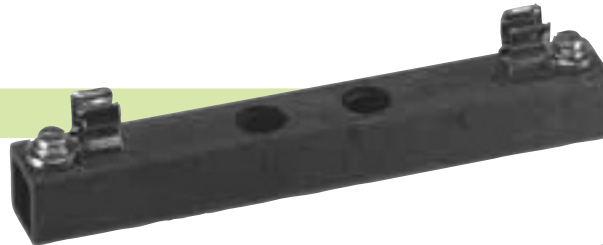
Type

75 mm



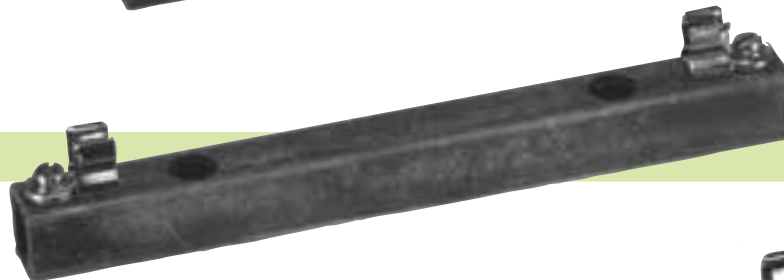
Type

110 mm



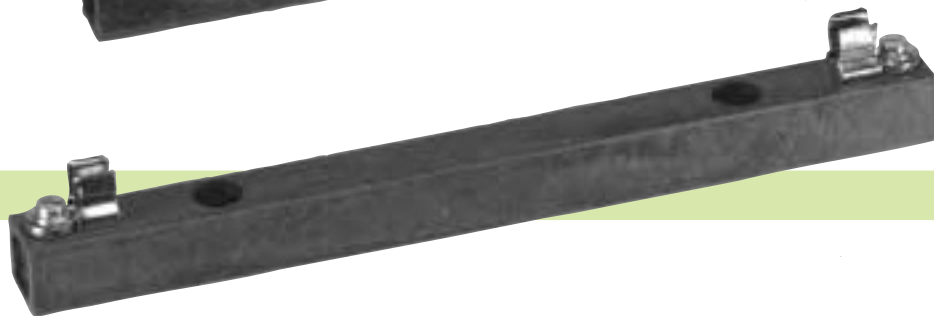
Type

145 mm



Type

175 mm



7103401  
 7103701  
 7104001  
 7104301

### G-Sicherungshalter offene Bauart für Hochspannungs-G-Sicherungseinsätze / Fuse-Holders open type for High-Voltage miniature Fuse-Links

Montage / mounting

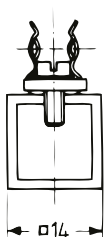
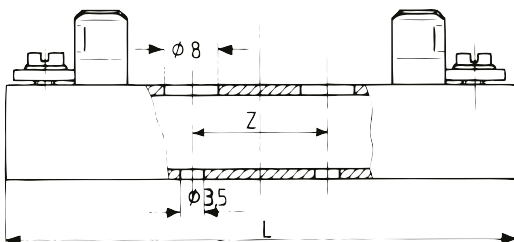
 Leiterplatte oder Isolierplatte /  
 printed circuit board or insulating plate

Anschlüsse / connections

Schraubanschlüsse / screw connections

Approbationen / approvals

-



### Varianten / Variants

| Type    | Bemessungs-Spannung<br>Rated Voltage | Bemessungs-strom<br>Rated current | Bemessungs-leistung<br>Rated Power | L   | Z   | Sicherungseinsatz<br>Fuse-Link | Type   | Seite<br>Page |
|---------|--------------------------------------|-----------------------------------|------------------------------------|-----|-----|--------------------------------|--------|---------------|
| 7103401 | 1,2 kV                               | 6,3 A                             | 4 W                                | 75  | 20  | 8 x 50                         | 184000 | 70            |
| 7103701 | 3 kV                                 | 4 A                               | 4 W                                | 110 | 20  | 8 x 85                         | 185000 | 70            |
| 7104001 | 6 kV                                 | 4 A                               | 4 W                                | 145 | 80  | 8 x 120                        | 186000 | 71            |
| 7104301 | 10 kV                                | 2 A                               | 4 W                                | 175 | 100 | 8 x 150                        | 187000 | 71            |

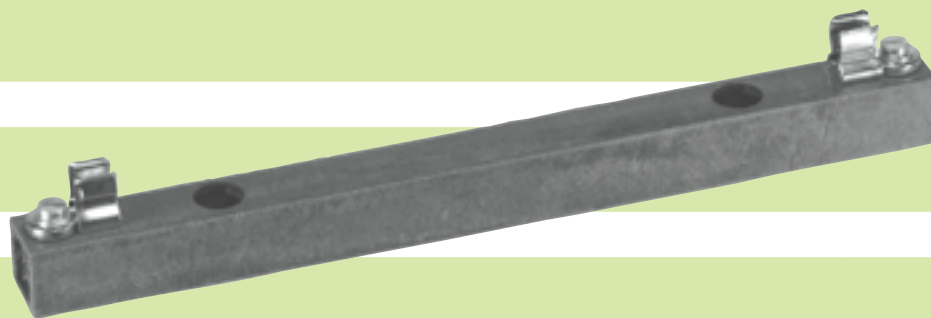
Type



Type

Type

Type



**Weitere Halter für G-Hochspannungssicherungen / Holder for G-high voltage fuses**

| Artikel-Nr.<br>Article-no. | Bemessungsspannung<br>Rated Voltage | Bemessungsstrom<br>Rated Current | Bemessungsleistung<br>Rated Power | Für Sicherungseinsätze<br>For Fuse-Link | Seite<br>Page |
|----------------------------|-------------------------------------|----------------------------------|-----------------------------------|-----------------------------------------|---------------|
| 7103702                    | 3 kV                                | 6,3 A                            | 4 W                               | 10 x 85 mm                              | 72            |
| 7102901                    | 3 kV                                | 6,3 A                            | 4 W                               | 12 x 100 mm                             | 72            |
| 7103001                    | 6 kV                                | 4 A                              | 4 W                               | 12 x 150 mm                             | 72            |
| 7103101                    | 10 kV                               | 2 A                              | 4 W                               | 12 x 200 mm                             | 72            |

# Typenvergleichsliste / Cross Reference List

(aktuelle Artikel-Nummern sind fett gedruckt / vaild article nos. are in bold)

## ELU → SIBA

| ELU           | SIBA    | Seite<br>Page | ELU             | SIBA           | Seite<br>Page |
|---------------|---------|---------------|-----------------|----------------|---------------|
| <b>157000</b> | 7016974 | 22            | <b>184000</b>   | 7003209        | 73            |
| <b>158000</b> | 7016975 | 23            | <b>184000</b>   | 7003409        | 73            |
| <b>160000</b> | 7017373 | 24            | <b>185000</b>   | 7003509        | 73            |
| <b>164000</b> | 7016072 | 31            | <b>185000</b>   | 7003709        | 73            |
| <b>164050</b> | 7015972 | 31            | <b>186000</b>   | 7003810        | 74            |
| <b>164500</b> | 7016371 | 32            | <b>186000</b>   | 7004010        | 74            |
| <b>164550</b> | 7016271 | 32            | <b>187000</b>   | 7004110        | 74            |
| <b>165000</b> | 7016002 | 33            | <b>187000</b>   | 7004310        | 74            |
| <b>165050</b> | 7015902 | 33            | <b>189000</b>   | 7005960        | 64            |
| <b>166000</b> | 7016073 | 34            | <b>189020</b>   | 7006563        | 65            |
| <b>166050</b> | 7015973 | 34            | <b>189100</b>   | 7005961        | 67            |
| <b>166500</b> | 7016376 | 35            | <b>189140</b>   | 7006565        | 68            |
| <b>166550</b> | 7016276 | 35            | <b>189500</b>   | 7005976        | 69            |
| <b>166602</b> | 7115801 | 78            | <b>190000</b>   | 7000181        | 53            |
| <b>171100</b> | 7000401 | 44            | 195000          | <b>7000140</b> | 38            |
| <b>171525</b> | 7000234 | 55            | 195100          | <b>7012540</b> | 61            |
| <b>171526</b> | 7001004 | 57            | <b>199073</b>   | 7400102        | 78            |
| <b>171530</b> | 7000334 | 60            | <b>199207</b>   | 7400103        | 78            |
| <b>172000</b> | 7000102 | 45            | <b>204000</b>   | 7300101        | 89            |
| <b>172100</b> | 7000402 | 45            | <b>204100</b>   | 7300102        | 89            |
| <b>172200</b> | 7000702 | 46            | <b>7000740</b>  | 7000740        | 39            |
| <b>172525</b> | 7000202 | 55            | <b>7001205</b>  | 7001205        | 59            |
| <b>172525</b> | 7000502 | 55            | <b>7001407</b>  | 7001407        | 59            |
| <b>172526</b> | 7001005 | 57            | <b>7001607</b>  | 7001607        | 59            |
| <b>172526</b> | 7001105 | 57            | <b>7001707</b>  | 7001707        | 59            |
| <b>172530</b> | 7000302 | 60            | <b>7008913</b>  | 7008913        | 58            |
| <b>172530</b> | 7000602 | 60            | <b>157000GT</b> | 7017074        | 22            |
| <b>172900</b> | 7500102 | 54            | <b>158000GT</b> | 7017075        | 23            |
| <b>173100</b> | 7000403 | 51            | <b>160000GT</b> | 7017473        | 24            |
| <b>179020</b> | 7000134 | 42            | <b>164000GT</b> | 7016172        | 31            |
| <b>179021</b> | 7000733 | 43            | <b>164500GT</b> | 7016471        | 32            |
| <b>179120</b> | 7000135 | 47            | <b>165000GT</b> | 7016102        | 33            |
| <b>179150</b> | 7000179 | 48            | <b>166000GT</b> | 7016173        | 34            |
| <b>179200</b> | 7000765 | 49            | <b>166500GT</b> | 7016476        | 35            |
| <b>179500</b> | 7000176 | 52            |                 |                |               |
| <b>179900</b> | 7500135 | 54            |                 |                |               |
| <b>179901</b> | 7500134 | 54            |                 |                |               |
| <b>183000</b> | 7014311 | 71            |                 |                |               |

## SIBA → ELU

| SIBA           | ELU            | Seite<br>Page | SIBA           | ELU             | Seite<br>Page |
|----------------|----------------|---------------|----------------|-----------------|---------------|
| 7000102        | <b>172000</b>  | 45            | 7006563        | <b>189020</b>   | 65            |
| 7000134        | <b>179020</b>  | 42            | 7006565        | <b>189140</b>   | 68            |
| 7000135        | <b>179120</b>  | 47            | 7008913        | <b>7008913</b>  | 58            |
| <b>7000140</b> | 195000         | 38            | <b>7012540</b> | 195100          | 61            |
| 7000176        | <b>179500</b>  | 52            | 7014311        | <b>183000</b>   | 71            |
| 7000179        | <b>179150</b>  | 48            | 7015902        | <b>165050</b>   | 33            |
| 7000181        | <b>190000</b>  | 53            | 7015972        | <b>164050</b>   | 31            |
| 7000202        | <b>172525</b>  | 55            | 7015973        | <b>166050</b>   | 34            |
| 7000234        | <b>171525</b>  | 55            | 7016002        | <b>165000</b>   | 33            |
| 7000302        | <b>172530</b>  | 60            | 7016072        | <b>164000</b>   | 31            |
| 7000334        | <b>171530</b>  | 60            | 7016073        | <b>166000</b>   | 34            |
| 7000401        | <b>171100</b>  | 44            | 7016102        | <b>165000GT</b> | 33            |
| 7000402        | <b>172100</b>  | 45            | 7016172        | <b>164000GT</b> | 31            |
| 7000403        | <b>173100</b>  | 51            | 7016173        | <b>166000GT</b> | 34            |
| 7000502        | <b>172525</b>  | 55            | 7016271        | <b>164550</b>   | 32            |
| 7000602        | <b>172530</b>  | 60            | 7016276        | <b>166550</b>   | 35            |
| 7000702        | <b>172200</b>  | 46            | 7016371        | <b>164500</b>   | 32            |
| 7000733        | <b>179021</b>  | 43            | 7016376        | <b>166500</b>   | 35            |
| 7000740        | <b>7000740</b> | 39            | 7016471        | <b>164500GT</b> | 32            |
| 7000765        | <b>179200</b>  | 49            | 7016476        | <b>166500GT</b> | 35            |
| 7001004        | <b>171526</b>  | 56            | 7016974        | <b>157000</b>   | 22            |
| 7001005        | <b>172526</b>  | 57            | 7016975        | <b>158000</b>   | 23            |
| 7001105        | <b>172526</b>  | 56            | 7017074        | <b>157000GT</b> | 22            |
| 7001205        | <b>7001205</b> | 59            | 7017075        | <b>158000GT</b> | 23            |
| 7001407        | <b>7001407</b> | 59            | 7017373        | <b>160000</b>   | 24            |
| 7001607        | <b>7001607</b> | 59            | 7017473        | <b>160000GT</b> | 24            |
| 7001707        | <b>7001707</b> | 59            | 7115801        | <b>166602</b>   | 78            |
| 7003209        | <b>184000</b>  | 73            | 7300101        | <b>204000</b>   | 89            |
| 7003409        | <b>184000</b>  | 73            | 7300102        | <b>204100</b>   | 90            |
| 7003509        | <b>185000</b>  | 73            | 7400102        | <b>199073</b>   | 78            |
| 7003709        | <b>185000</b>  | 73            | 7400103        | <b>199207</b>   | 78            |
| 7003810        | <b>186000</b>  | 74            | 7500102        | <b>172900</b>   | 54            |
| 7004010        | <b>186000</b>  | 74            | 7500134        | <b>179901</b>   | 54            |
| 7004110        | <b>187000</b>  | 74            | 7500135        | <b>179900</b>   | 54            |
| 7004310        | <b>187000</b>  | 74            |                |                 |               |
| 7005960        | <b>189000</b>  | 64            |                |                 |               |
| 7005961        | <b>189100</b>  | 67            |                |                 |               |
| 7005976        | <b>189500</b>  | 69            |                |                 |               |

## Notizen / Notes



## Notizen / Notes

# Sicherungen für fast alle Einsatzzwecke / Fuses for nearly all purposes

## Übersicht über das SIBA Gesamtprogramm / Overview complete portfolio SIBA



## Hauptsitz / Head Office

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