

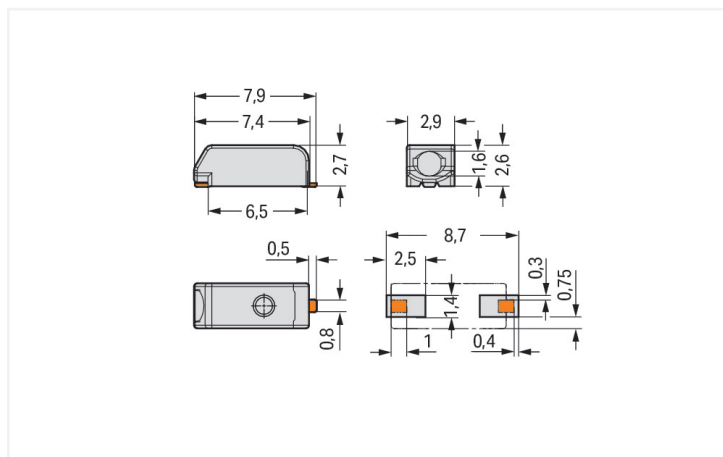
Data Sheet | Item Number: 2059-301/998-403

SMD PCB terminal block; 0.5 mm²; Pin spacing 3 mm; 1-pole; PUSH WIRE®; in tape-and-reel packaging; white

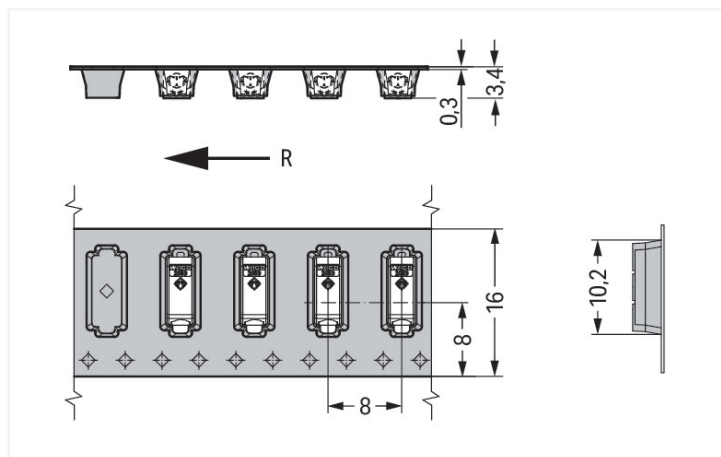
<https://www.wago.com/2059-301/998-403>



Color: ■ white



Dimensions in mm



Dimensions in mm

R = feed direction

PCB terminal block, 2059 Series, with 3 mm pin spacing

Connect conductors quickly and easily with this PCB terminal block (item number 2059-301/998-403). It offers the flexibility needed for different mounting types. Our PCB terminal block is rated for 160 V and is designed for use with a rated current of up to 3 A. Strip lengths must be between 4 mm and 5.5 mm when connecting conductors to this PCB terminal block. Featuring one conductor terminal along with PUSH WIRE®, this connector is highly versatile. Our PUSH WIRE® connection uses the stiffness of the conductor to overcome the clamping spring's contact force, allowing faster and easier conductor clamping. The dimensions are 2.9 x 2.7 x 7.9 mm (width x height x depth). This PCB terminal block is suitable for conductor cross sections ranging from 0.14 mm² to 0.34 mm² on one side and for conductor cross sections ranging from 0.5 mm² to 0.5 mm² on the other side. It comes with one level and a clamping point that you can use to connect a single potential / 1 pole. The white housing is made of polyphthalamide (PPA GF) for insulation and the contacts are made of copper alloy. The contact surface is coated with tin. An operating tool is used to operate this PCB terminal block. SMD is used to solder the PCB terminal block. The conductor is designed to be inserted into the board at a 0° angle..



| Notes | |
|----------------|--|
| Note | <p>Application notes: Suitable for lead-free, reflow-soldering profiles per DIN EN 61760-1 and IEC 60068-2-58 up to max. 260°C peak temperature. Due to application-specific variables (component configuration and orientation, type of soldering machine, solder paste), trial runs are recommended to ensure product and process compatibility under actual manufacturing conditions.</p> <p>Depending on reflow soldering temperatures and times, color deviations may occur. These deviations will have no impact on functionality.</p> |
| Recommendation | <p>Recommendation for stencil: 150 µm material thickness; Pattern layout identical to solder pad layout</p> |

| Electrical data | | | | |
|----------------------|--------|----------------|--------|--|
| Ratings per | | IEC/EN 60664-1 | | |
| Overvoltage category | III | III | II | |
| Pollution degree | 3 | 2 | 2 | |
| Nominal voltage | 63 V | 160 V | 320 V | |
| Rated surge voltage | 2.5 kV | 2.5 kV | 2.5 kV | |
| Rated current | 3 A | 3 A | 3 A | |

| Approvals per | | UL 1977 |
|---------------|--|---------|
| Rated voltage | | 600 V |
| Rated current | | 3 A |

| Connection data | |
|----------------------------|---|
| Clamping units | 1 |
| Total number of potentials | 1 |
| Number of connection types | 1 |
| Number of levels | 1 |

| Connection 1 | |
|---------------------------------------|--|
| Connection technology | PUSH WIRE® |
| Actuation type | Operating tool |
| Solid conductor | 0.14 ... 0.34 mm² / 26 ... 22 AWG |
| Note (conductor cross-section) | For conductors (26 AWG) that are not rigid enough, the clamping unit must be opened using an operating tool. |
| Strip length | 4 ... 5.5 mm / 0.16 ... 0.22 inches |
| Conductor connection direction to PCB | 0 ° |
| Pole number | 1 |

| Connection 2 | |
|--------------------------------|--|
| Solid conductor | 0.5 mm² / 20 AWG |
| Note (conductor cross-section) | No reconnection of smaller conductor cross-sections (0.5 mm²/20 AWG) |
| Strip length | 6 ... 7.5 mm / 0.24 ... 0.3 inches |

| Physical data | |
|--|-----------------------|
| Pin spacing | 3 mm / 0.118 inches |
| Width | 2.9 mm / 0.114 inches |
| Height | 2.7 mm / 0.106 inches |
| Depth | 7.9 mm / 0.311 inches |
| Reel diameter of tape-and-reel packaging | 330 mm |
| Tape width | 16 mm |



| PCB contact | | |
|-------------------------------------|--|--|
| PCB contact | | SMD |
| Solder pin arrangement | | over the entire terminal strip (in-line) |
| Number of solder pins per potential | | 2 |

| Material data | | |
|------------------------------------|--|--|
| Note (material data) | | Information on material specifications can be found here |
| Color | | white |
| Material group | | I |
| Insulation material (main housing) | | Polyphthalamide (PPA GF) |
| Flammability class per UL94 | | V0 |
| Contact material | | Copper alloy |
| Contact Plating | | Tin |
| Fire load | | 0.002 MJ |
| Weight | | 0.1 g |

| Environmental requirements | | |
|----------------------------|-----------------|---|
| Limit temperature range | -60 ... +105 °C | |
| | | Environmental Testing |
| | | Test specification: Railway applications – Rolling stock – Electronic equipment |
| | | DIN EN 50155 (VDE 0115-200):2022-06 |
| | | Test procedure: Railway applications – Rolling stock equipment – Vibration and shock tests |
| | | DIN EN 61373 (VDE 0115-0106):2011-04 |
| | | Spectrum/Mounting location |
| | | Service life test, Category 1, Class A/B |
| | | Functional test with noise-like oscillations |
| | | Test passed according to Section 8 of the standard |
| | | Frequency |
| | | f ₁ = 5 Hz to f ₂ = 150 Hz |
| | | Acceleration |
| | | 0.101g (highest test level used for all axes) |
| | | Test duration per axis |
| | | 10 min. |
| | | Test directions |
| | | X, Y and Z axes |
| | | Monitoring of contact faults and interruptions |
| | | Passed |
| | | Voltage drop measurement before and after each axis |
| | | Passed |
| | | Simulated service life test through increased levels of noise-like oscillations |
| | | Test passed according to Section 9 of the standard |
| | | Frequency |
| | | f ₁ = 5 Hz to f ₂ = 150 Hz |
| | | Acceleration |
| | | 0.572g (highest test level used for all axes) |
| | | Test duration per axis |
| | | 5 h |
| | | Test directions |
| | | X, Y and Z axes |
| | | Extended testing: Monitoring of contact faults and interruptions |
| | | Passed |
| | | Extended testing: Voltage drop measurement before and after each axis |
| | | Passed |
| | | Shock test |
| | | Test passed according to Section 10 of the standard |
| | | Shock pulse form |
| | | Half sine |
| | | Acceleration |
| | | 5g (highest test level used for all axes) |
| | | Shock duration |
| | | 30 ms |
| | | Number of shocks (per axis) |
| | | 3 pos. und 3 neg. |
| | | Test directions |
| | | X, Y and Z axes |
| | | Extended testing: Monitoring of contact faults and interruptions |
| | | Passed |



| Environmental Testing | | |
|---|--------|--|
| Extended testing: Voltage drop measurement before and after each axis | Passed | |
| Vibration and shock stress for rolling stock equipment | Passed | |

| Commercial data | | |
|-----------------------|-------------------|--|
| Product Group | 33 (SMT Terminal) | |
| PU (SPU) | 31800 (2650) pcs | |
| Packaging type | Box | |
| Country of origin | CH | |
| GTIN | 4055143082679 | |
| Customs tariff number | 85369010000 | |

| Product Classification | | |
|------------------------|----------------------|--|
| UNSPSC | 39121409 | |
| eCl@ss 10.0 | 27-14-11-06 | |
| eCl@ss 9.0 | 27-14-11-06 | |
| ETIM 9.0 | EC001284 | |
| ETIM 8.0 | EC001284 | |
| ECCN | NO US CLASSIFICATION | |

| Environmental Product Compliance | | |
|----------------------------------|-------------------------|--|
| RoHS Compliance Status | Compliant, No Exemption | |

Approvals / Certificates

General approvals



| Approval | Standard | Certificate Name |
|---------------------------------------|----------|------------------|
| CCA DEKRA Certification B.V. | EN 60947 | NTR NL-7819 |
| CCA DEKRA Certification B.V. | EN 60947 | 71-111131 |
| CCA DEKRA Certification B.V. | EN 60838 | NTR NL-7720 |
| KEMA/KEUR DEKRA Certification B.V. | EN 60838 | 71-106226 |
| UL Underwriters Laboratories Inc. | UL 1977 | E45171 |

Declarations of conformity and manufacturer's declarations



| Approval | Standard | Certificate Name |
|-------------------------------|----------|------------------|
| Railway WAGO GmbH & Co. KG | - | Z00004395.000 |



Downloads

Environmental Product Compliance

| Compliance Search | | | |
|----------------------------------|------------------|--|--|
| Environmental Product Compliance | 2059-301/998-403 | | |

Documentation

| Additional Information | | | |
|------------------------|------------|-------------------|--|
| Technical Section | 03.04.2019 | pdf 2027.26 KB | |

CAD/CAE-Data

| CAD data | |
|--------------|------------------|
| 2D/3D Models | 2059-301/998-403 |
| | |

| CAE data | |
|--------------|------------------|
| ZUKEN Portal | 2059-301/998-403 |
| | |

| PCB Design | |
|--|------------------|
| Symbol and Footprint via SamacSys | 2059-301/998-403 |
| | |
| Symbol and Footprint via Ultra Librarian | 2059-301/998-403 |
| | |

1 Compatible Products

1.1 Optional Accessories

1.1.1 Board-to-board link

1.1.1.1 Board-to-board link



[Item No.: 2059-901](#)
Board-to-Board Link; Pin spacing 3 mm; 1-pole; Length: 15.3 mm; white



[Item No.: 2059-901/018-000](#)
Board-to-Board Link; Pin spacing 3 mm; 1-pole; Length: 17.5 mm; white



[Item No.: 2059-901/021-000](#)
Board-to-Board Link; Pin spacing 3 mm; 1-pole; Length: 20.5 mm; white

1.1.2 Tool

1.1.2.1 Operating tool



[Item No.: 206-859](#)
Operating tool; for 2059 Series; multicoloured



[Item No.: 2059-189](#)
Operating tool; made of insulating material; for 2059 Series

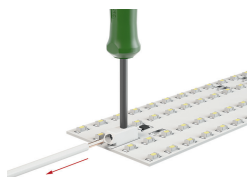
Installation Notes

Conductor termination



Insert solid conductors via push-in termination.

Conductor termination



Easy conductor removal, e.g., via operating tool (Item No. 206-859) or "twist & pull" (max. 10 x, no reconnection of smaller conductors possible)