

Data Sheet | Item Number: 231-139/001-000

THT male header; 1.0 x 1.0 mm solder pin; straight; Pin spacing 5 mm; 9-pole; gray

<https://www.wago.com/231-139/001-000>



Color: ■ gray



Dimensions in mm

$L = (\text{pole no.} - 1) \times \text{pin spacing} + 8.2 \text{ mm}$

Male connector, 231 Series, with 5 mm pin spacing

Effortless electrical installations are guaranteed with this male connector (item number 231-139/001-000). The item's dimensions are (48.2 x 17 x 8.4) mm (width x height x depth).

The contact surface is coated with tin. The pcb connector is designed for THT soldering.

Notes

Safety Information

The MCS – MULTI CONNECTION SYSTEM includes connectors without breaking capacity in accordance with DIN EN 61984. When used as intended, these connectors must not be connected/disconnected when live or under load. When used as intended, these connectors must not be connected/disconnected when live or under load. The circuit design should ensure header pins, which can be touched, are not live when unmated.

Variants:

Other pole numbers
3.8 mm pin projection for male headers with straight solder pins
Gold-plated or partially gold-plated contact surfaces
Other versions (or variants) can be requested from WAGO Sales or configured at <https://configurator.wago.com/>.

Electrical data

| Ratings per | IEC/EN 60664-1 | | |
|---------------------------------|----------------|-------|-------|
| Overvoltage category | III | III | II |
| Pollution degree | 3 | 2 | 2 |
| Nominal voltage | 320 V | 320 V | 630 V |
| Rated impulse withstand voltage | 4 kV | 4 kV | 4 kV |
| Rated current | 12 A | 12 A | 12 A |

| Approvals per | UL 1059 | | |
|---------------|---------|---|-------|
| Use group | B | C | D |
| Rated voltage | 300 V | - | 300 V |
| Rated current | 10 A | - | 10 A |

Ratings per UL 1977

| | |
|-----------------------|------|
| Rated current UL 1977 | 10 A |
|-----------------------|------|

Approvals per CSA

| Approvals per | CSA | | |
|---------------|-------|---|-------|
| Use group | B | C | D |
| Rated voltage | 300 V | - | 300 V |
| Rated current | 10 A | - | 10 A |

Connection Data

| | |
|----------------------------|---|
| Total number of potentials | 9 |
| Number of connection types | 1 |
| Number of levels | 1 |

Connection 1

| | |
|-------------|---|
| Pole number | 9 |
|-------------|---|

Physical data

| | |
|--------------------------------------|------------------------|
| Pin spacing | 5 mm / 0.197 inches |
| Width | 48.2 mm / 1.898 inches |
| Height | 17 mm / 0.669 inches |
| Height from the surface | 12 mm / 0.472 inches |
| Depth | 8.4 mm / 0.331 inches |
| Solder pin length | 5 mm |
| Solder pin dimensions | 1 x 1 mm |
| Drilled hole diameter with tolerance | 1.4 (+0.1) mm |

Mechanical data

| | |
|--------------------------|-----|
| Variable coding | Yes |
| Anti-rotation protection | Yes |

Plug-in connection

| | |
|------------------------------------|---------------------|
| Contact type (pluggable connector) | Male connector/plug |
| Connector (connection type) | for PCB |
| Mismating protection | No |
| Mating direction to the PCB | 90 ° |

PCB contact

| | |
|-------------------------------------|--|
| PCB contact | THT |
| Solder pin arrangement | over the entire male connector (in-line) |
| Number of solder pins per potential | 1 |

Material data

| | |
|------------------------------------|--|
| Note (material data) | Information on material specifications can be found here |
| Color | gray |
| Material group | I |
| Insulation material (main housing) | Polyamide (PA66) |
| Flammability class per UL94 | V0 |
| Contact material | Electrolytic copper (E _{Cu}) |
| Contact Plating | Tin |
| Fire load | 0.055 MJ |
| Weight | 3 g |

Environmental requirements

| | | | |
|-------------------------|-----------------|--|---|
| Limit temperature range | -60 ... +100 °C | Environmental Testing | |
| Processing temperature | -35 ... +60 °C | Test specification: | DIN EN 50155 (VDE 0115-200):2022-06 |
| | | Railway applications – Rolling stock – Electronic equipment | |
| | | Test procedure: | DIN EN 61373 (VDE 0115-0106):2011-04 |
| | | Railway applications – Rolling stock equipment – Vibration and shock tests | |
| | | 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 |
| | | Extended testing: Voltage drop measurement before and after each axis | Passed |
| | | Vibration and shock stress for rolling stock equipment | Passed |

Commercial data

| | |
|-----------------------|------------------------|
| Product Group | 3 (Multi Conn. System) |
| PU (SPU) | 100 pcs |
| Packaging type | Box |
| Country of origin | DE |
| GTIN | 4044918863438 |
| Customs tariff number | 85366930000 |

Product Classification

| | |
|-------------|----------------------|
| UNSPSC | 39121409 |
| eCl@ss 10.0 | 27-44-04-02 |
| eCl@ss 9.0 | 27-44-04-02 |
| ETIM 9.0 | EC002637 |
| ETIM 10.0 | EC002637 |
| ECCN | NO US CLASSIFICATION |

Environmental Product Compliance

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

Approvals / Certificates

General approvals



| Approval | Standard | Certificate Name |
|---------------------------------------|-----------|------------------|
| CB DEKRA Certification B.V. | IEC 61984 | NL-113351 |
| CSA DEKRA Certification B.V. | C22.2 | LR 18677-25 |
| KEMA/KEUR DEKRA Certification B.V. | EN 61984 | 71-130478 REV.1 |
| UL Underwriters Laboratories Inc. | UL 1059 | E45172 |
| UR Underwriters Laboratories Inc. | UL 1977 | E45171 |

Declarations of conformity and manufacturer's declarations



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

Approvals for marine applications



| Approval | Standard | Certificate Name |
|---|-----------|-------------------|
| ABS American Bureau of Ship- ping | - | 24-0095975-PDA |
| BV Bureau Veritas S.A. | IEC 60998 | 11915/E0 BV |
| DNV DNV GL SE | - | TAE000016Z |
| PRS Polski Rejestr Statków | - | TE/1095/880590/23 |

Downloads

Environmental Product Compliance

Compliance Search

Environmental Product Compliance
231-139/001-000



Documentation

Additional Information

Technical Section

03.04.2019

pdf

2027.26 KB



CAD/CAE-Data

CAD data

2D/3D Models
231-139/001-000



CAE data

EPLAN Data Portal
231-139/001-000



ZUKEN Portal
231-139/001-000



PCB Design

Symbol and Footprint
via SamacSys
231-139/001-000



Symbol and Footprint
via Ultra Librarian
231-139/001-000



1 Compatible Products

1.1 System counterpart

1.1.1 Female connector/socket



[Item No.: 232-109/026-000](#)

1-conductor female connector, angled; CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 9-pole; 2,50 mm²; gray



[Item No.: 232-209/026-000](#)

1-conductor female connector, angled; CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 9-pole; 2,50 mm²; gray



[Item No.: 231-109/027-000](#)

1-conductor female connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 9-pole; clamping collar; gray



[Item No.: 231-109/031-000](#)

1-conductor female connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 9-pole; clamping collar; gray



[Item No.: 231-109/026-000](#)

1-conductor female connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 9-pole; gray



[Item No.: 231-109/037-000](#)

1-conductor female connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 9-pole; Lateral locking levers; gray



[Item No.: 231-109/125-000](#)

1-conductor female connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 9-pole; Snap-in flange; gray



[Item No.: 231-109/102-000](#)

1-conductor female connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 9-pole; with integrated end plate; gray



[Item No.: 2231-109/026-000](#)

1-conductor female connector; push-button; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 9-pole; 2,50 mm²; gray



[Item No.: 2231-109/031-000](#)

1-conductor female connector; push-button; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 9-pole; clamping collar; 2,50 mm²; gray



[Item No.: 2231-109/037-000](#)

1-conductor female connector; push-button; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 9-pole; Lateral locking levers; 2,50 mm²; gray



[Item No.: 2231-109/102-000](#)

1-conductor female connector; push-button; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 9-pole; with integrated end plate; 2,50 mm²; gray

1.1.1 Female connector/socket



Item No.: 231-2109/037-000

2-conductor female connector; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 9-pole; Lateral locking levers; gray

Item No.: 231-2109/026-000

2-conductor female connector; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 9-pole; with integrated end plate; gray

1.2 Optional Accessories

1.2.1 Coding

1.2.1.1 Coding



Item No.: 231-129

Coding key; snap-on type; light gray

1.2.1.2 Intermediate plate

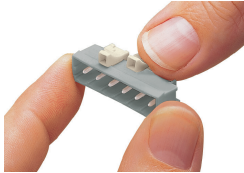


Item No.: 231-500

Spacer; for formation of groups; light gray

Installation Notes

Coding



Coding a male header – fitting coding key(s).