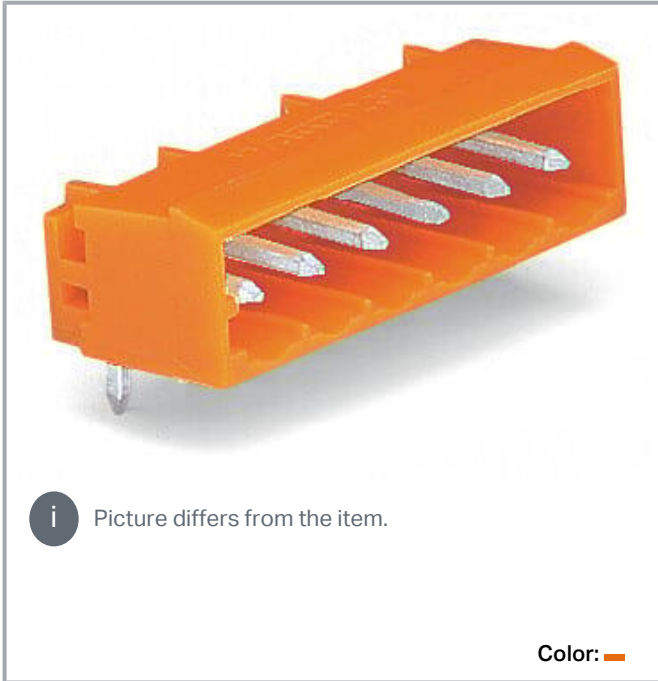


**Data sheet | Item number: 231-539/001-000**

THT male header; 1.0 x 1.0 mm solder pin; angled; Pin spacing 5.08 mm; 9-pole; orange



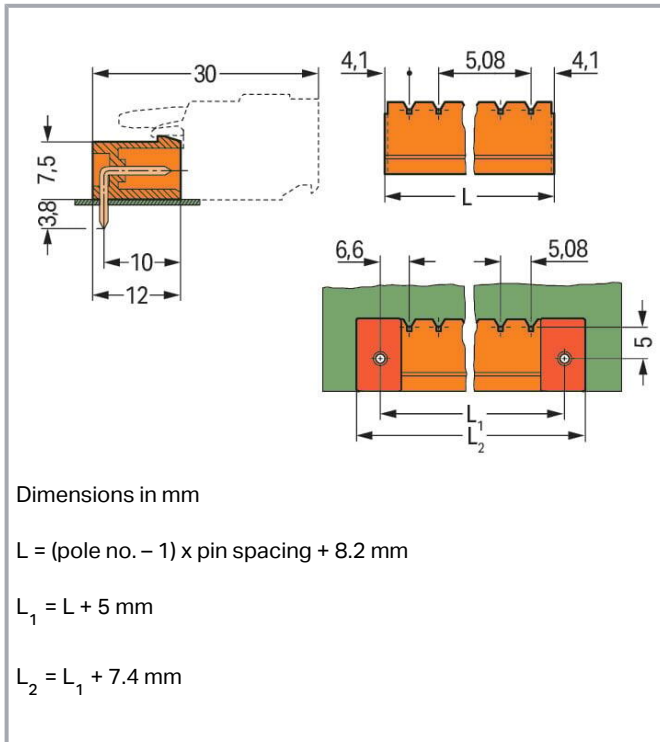
[www.wago.com/231-539/001-000](http://www.wago.com/231-539/001-000)



Subject to changes. Please also observe the further product documentation!

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We are always happy to take your call at +49 (571) 887-44222.



## Item description

- Horizontal or vertical PCB mounting via straight or angled solder pins
- Pin cross-section: 1 x 1 mm
- With coding fingers

## Data

### 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/>.

Subject to changes. Please also observe the further product documentation!

## Electrical data

### Ratings per IEC/EN

| Ratings per                   | IEC/EN 60664-1  |
|-------------------------------|---|
| Nominal voltage (III/3)       | 320 V   |
| Rated impulse voltage (III/3) | 4 kV  |
| Rated voltage (III/2)         | 320 V   |
| Rated impulse voltage (III/2) | 4 kV  |
| Nominal voltage (II/2)        | 630 V   |
| Rated surge voltage (II/2)    | 4 kV  |
| Rated current                 | 12 A  |
| Legend (ratings)              | (III / 2) $\hat{=}$ Overvoltage category III / Pollution degree 2 |

### Ratings per UL 1059

| Approvals per                  | UL 1059 |
|--------------------------------|---------|
| Rated voltage UL (Use Group B) | 300 V   |
| Rated current UL (Use Group B) | 10 A    |
| Rated voltage UL (Use Group D) | 300 V   |
| Rated current UL (Use Group D) | 10 A    |

### Ratings per UL 1977

|                         |       |
|-------------------------|-------|
| Rated voltage (UL 1977) | 600 V |
| Rated current UL 1977   | 10 A  |

### Ratings per CSA

| Approvals per                   | CSA   |
|---------------------------------|-------|
| Rated voltage CSA (Use Group B) | 300 V |
| Rated current CSA (Use Group B) | 10 A  |
| Rated voltage CSA (Use Group D) | 300 V |
| Rated current CSA (Use Group D) | 10 A  |

### Connection data

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

Subject to changes. Please also observe the further product documentation!

## Connection 1

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

## Physical data

|                                      |                          |
|--------------------------------------|--------------------------|
| Pin spacing                          | 5.08 mm / 0.2 inches     |
| Width                                | 48.84 mm / 1.923 inches  |
| Height                               | 12.2 mm / 0.48 inches    |
| Height from the surface              | 8.4 mm / 0.331 inches    |
| Depth                                | 12 mm / 0.472 inches     |
| Solder pin length                    | 3.8 mm                   |
| Solder pin dimensions                | 1 x 1 mm                 |
| Drilled hole diameter with tolerance | 1.4 <sup>(+0.1)</sup> 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                  |
| Plugging without loss of pin spacing | No                  |
| Mating direction to the PCB          | 0°                  |
| Locking of plug-in connection        | none                |

## 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) | <a href="#">Information on material specifications can be found here</a> |
| Color                | orange   |
| Material group       | I  |

Subject to changes. Please also observe the further product documentation!

|                             |  |
|-----------------------------|--|
| Insulation material         | Polyamide (PA66)                       |
| Flammability class per UL94 | V0                                     |
| Contact material            | Electrolytic copper (E <sub>Cu</sub> ) |
| Contact plating             | Tin                                    |
| Fire load                   | 0.052 MJ                               |
| Weight                      | 2.9 g                                  |

### Environmental requirements

|                         |                 |
|-------------------------|-----------------|
| Limit temperature range | -60 ... +100 °C |
| Processing temperature  | -35 ... +60 °C  |

### Commercial data


|                       |                        |
|-----------------------|------------------------|
| Product Group         | 3 (Multi Conn. System) |
| eCl@ss 10.0           | 27-44-04-02            |
| eCl@ss 9.0            | 27-44-04-02            |
| ETIM 8.0              | EC002637               |
| ETIM 7.0              | EC002637               |
| PU (SPU)              | 100 pcs                |
| Packaging type        | box                    |
| Country of origin     | PL                     |
| GTIN                  | 4044918867146          |
| Customs tariff number | 85366990990            |

### Environmental Product Compliance

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



### Approvals / Certificates

#### General approvals

| Logo   | Approval                              | Additional Approval Text | Certificate name |
|--|---------------------------------------|--------------------------|------------------|
|  | CB<br>DEKRA Certification B.V.        | IEC 61984                | NL-39756<br>/A1  |
|  | CSA<br>DEKRA Certification B.V.       | C22.2                    | 1466354          |
|  | KEMA/KEUR<br>DEKRA Certification B.V. | EN 61984                 | 71-<br>121453    |

Subject to changes. Please also observe the further product documentation!





|  |   |         |        |
|--|---|---------|--------|
|  | <b>UL</b><br>UL International Germany GmbH  | UL 1977 | E45171 |
|  | <b>UR</b><br>Underwriters Laboratories Inc. | UL 1059 | E45172 |




## Declarations of conformity and manufacturer's declarations

| Logo   | Approval                             | Additional Approval Text | Certificate name |
|--|--------------------------------------|--------------------------|------------------|
|  | <b>Railway</b><br>WAGO GmbH & Co. KG | -                        | Railway Ready    |

## Approvals for marine applications

| Logo   | Approval                                  | Additional Approval Text | Certificate name         |
|--|---|--------------------------|--------------------------|
|  | <b>ABS</b><br>American Bureau of Shipping | -                        | 19-<br>HG1869876-<br>PDA |
|  | <b>BV</b><br>Bureau Veritas S.A.          | IEC 60998                | 11915/DO<br>BV           |











## Counterpart

|  |   |  |
|--|---|--|
|  | <b>Item no.231-309/026-000</b><br>1-conductor female connector; CAGE CLAMP®; 2.5 mm <sup>2</sup> ; Pin spacing 5.08 mm; 9-pole; 2,50 mm <sup>2</sup> ; orange                                     | <a href="http://www.wago.com/231-309/026-000">www.wago.com/231-309/026-000</a>   |
|  | <b>Item no.231-2309/026-000</b><br>2-conductor female connector; Push-in CAGE CLAMP®; 2.5 mm <sup>2</sup> ; Pin spacing 5.08 mm; 9-pole; with integrated end plate; 2,50 mm <sup>2</sup> ; orange | <a href="http://www.wago.com/231-2309/026-000">www.wago.com/231-2309/026-000</a> |
|  | <b>Item no.231-2309/037-000</b>   | <a href="http://www.wago.com/231-2309/037-000">www.wago.com/231-2309/037-000</a> |

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|  |   |  |
|--|---|--|
|  | 2-conductor female connector; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5.08 mm; 9-pole; Lateral locking levers; 2,50 mm²; orange   | 2309/037-000   |
|    | <b>Item no.231-309/026-000</b><br>1-conductor female connector; push-button; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5.08 mm; 9-pole; 2,50 mm²; orange                            | <a href="http://www.wago.com/231-309/026-000">www.wago.com/231-309/026-000</a> |
|    | <b>Item no.231-309/037-000</b><br>1-conductor female connector; push-button; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5.08 mm; 9-pole; Lateral locking levers; 2,50 mm²; orange    | <a href="http://www.wago.com/231-309/037-000">www.wago.com/231-309/037-000</a> |
|    | <b>Item no.231-309/027-000</b><br>1-conductor female connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5.08 mm; 9-pole; clamping collar; 2,50 mm²; orange                                | <a href="http://www.wago.com/231-309/027-000">www.wago.com/231-309/027-000</a> |
|    | <b>Item no.231-309/031-000</b><br>1-conductor female connector; push-button; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5.08 mm; 9-pole; clamping collar; 2,50 mm²; orange           | <a href="http://www.wago.com/231-309/031-000">www.wago.com/231-309/031-000</a> |
|    | <b>Item no.231-309/102-000</b><br>1-conductor female connector; push-button; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5.08 mm; 9-pole; with integrated end plate; 2,50 mm²; orange | <a href="http://www.wago.com/231-309/102-000">www.wago.com/231-309/102-000</a> |
|    | <b>Item no.231-309/031-000</b><br>1-conductor female connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5.08 mm; 9-pole; clamping collar; 2,50 mm²; orange                                | <a href="http://www.wago.com/231-309/031-000">www.wago.com/231-309/031-000</a> |
|  | <b>Item no.231-309/037-000</b><br>1-conductor female connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5.08 mm; 9-pole; Lateral locking levers; 2,50 mm²; orange                         | <a href="http://www.wago.com/231-309/037-000">www.wago.com/231-309/037-000</a> |
|  | <b>Item no.231-309/102-000</b><br>1-conductor female connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5.08 mm; 9-pole; with integrated end plate; 2,50 mm²; orange                      | <a href="http://www.wago.com/231-309/102-000">www.wago.com/231-309/102-000</a> |
|  | <b>Item no.232-309/026-000</b><br>1-conductor female connector, angled; CAGE CLAMP®; 2.5 mm²; Pin spacing 5.08 mm; 9-pole; 2,50 mm²; orange   | <a href="http://www.wago.com/232-309/026-000">www.wago.com/232-309/026-000</a> |
|   | <b>Item no.232-409/026-000</b><br>1-conductor female connector, angled; CAGE CLAMP®; 2.5 mm²; Pin spacing 5.08 mm; 9-pole; 2,50 mm²; orange   | <a href="http://www.wago.com/232-409/026-000">www.wago.com/232-409/026-000</a> |

## Optional accessories

### Mounting

#### Mounting accessories



**Item no.: 231-393**  
Locking device; for male connectors; 1 part; orange

[www.wago.com/231-393](http://www.wago.com/231-393)

### Coding

Subject to changes. Please also observe the further product documentation!



Intermediate plate



**Item no.: 231-500**  
Spacer; for formation of groups; light gray

[www.wago.com/231-500](http://www.wago.com/231-500)

Coding



**Item no.: 231-129**  
Coding key; snap-on type; light gray

[www.wago.com/231-129](http://www.wago.com/231-129)

**Downloads**

**Documentation**

**Additional Information**

|                        |            |        |          |
|------------------------|------------|--------|----------|
| Technical Section      | 2019 Apr 3 | pdf    | Download |
| Technical explanations |            | 2.0 MB |          |

**CAD/CAE-Data**

**CAD data**

|                              |     |          |
|------------------------------|-----|----------|
| 2D/3D Models 231-539/001-000 | URL | Download |
|------------------------------|-----|----------|

**CAE data**

|                                   |     |          |
|-----------------------------------|-----|----------|
| EPLAN Data Portal 231-539/001-000 | URL | Download |
|-----------------------------------|-----|----------|

|                              |     |          |
|------------------------------|-----|----------|
| ZUKEN Portal 231-539/001-000 | URL | Download |
|------------------------------|-----|----------|

|                                   |     |          |
|-----------------------------------|-----|----------|
| EPLAN Data Portal 231-539/001-000 | URL | Download |
|-----------------------------------|-----|----------|

**PCB Design**

|                                      |     |          |
|--------------------------------------|-----|----------|
| Symbol and Footprint 231-539/001-000 | URL | Download |
|--------------------------------------|-----|----------|

CAx data for your PCB design, consisting of "schematic symbols and PCB footprints", allow easy integration of the WAGO component into your development environment.

**Supported formats:**

- Accel EDA 14 & 15
- Altium 6 to current version
- Cadence Allegro
- DesignSpark
- Eagle Libraries

Subject to changes. Please also observe the further product documentation!





- KiCad
- Mentor Graphics BoardStation
- Mentor Graphics Design Architect
- Mentor Graphics Design Expedition 99 and 2000
- OrCAD 9.X PCB and Capture
- PADS PowerPCB 3, 3.5, 4.X, and 5.X
- PADS PowerPCB and PowerLogic 3.0
- PCAD 2000, 2001, 2002, 2004, and 2006
- Pulsonix 8.5 or newer
- STL
- 3D STEP
- TARGET 3001!
- View Logic ViewDraw
- Quadcept
- Zuken CadStar 3 and 4
- Zuken CR-5000 and CR-8000

PCB Component Libraries (EDA), PCB CAD Library Ultra Librarian

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## Environmental Product Compliance

### Compliance Search

Environmental Product Compliance 231-539/001-000

[URL](#)

[Download](#)

THT male header; 1.0 x 1.0 mm solder pin; angled; Pin spacing 5.08 mm; 9-pole; orange

---

## Installation Notes

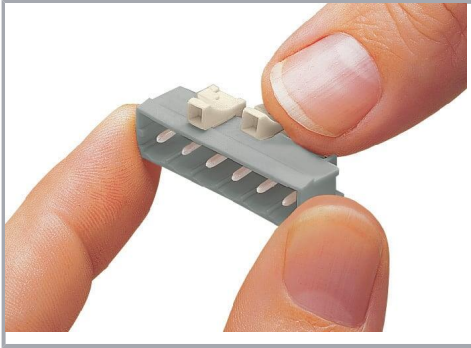
### Coding

Subject to changes. Please also observe the further product documentation!

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

## Product family

**MCS MIDI Classic**

[Show all products from the family](#)

Subject to changes. Please also observe the further product documentation!