

Data sheet | Item number: 232-248/031-000

THT female header; 0.6 x 1.0 mm solder pin; angled; clamping collar; 2.5 mm<sup>2</sup>; Pin spacing 5 mm; 18-pole; gray



[www.wago.com/232-248/031-000](http://www.wago.com/232-248/031-000)

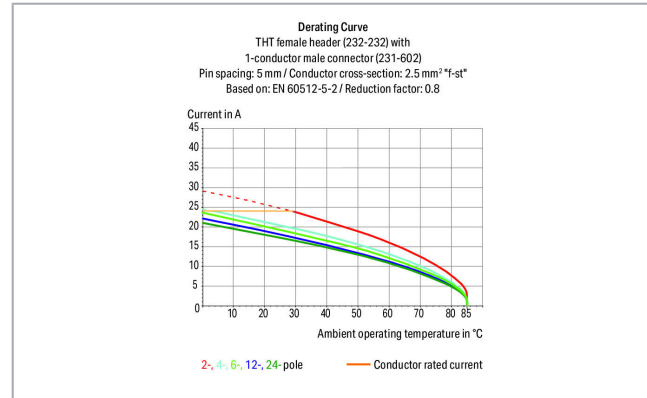


 Picture differs from the item.

RoHS   
Compliant



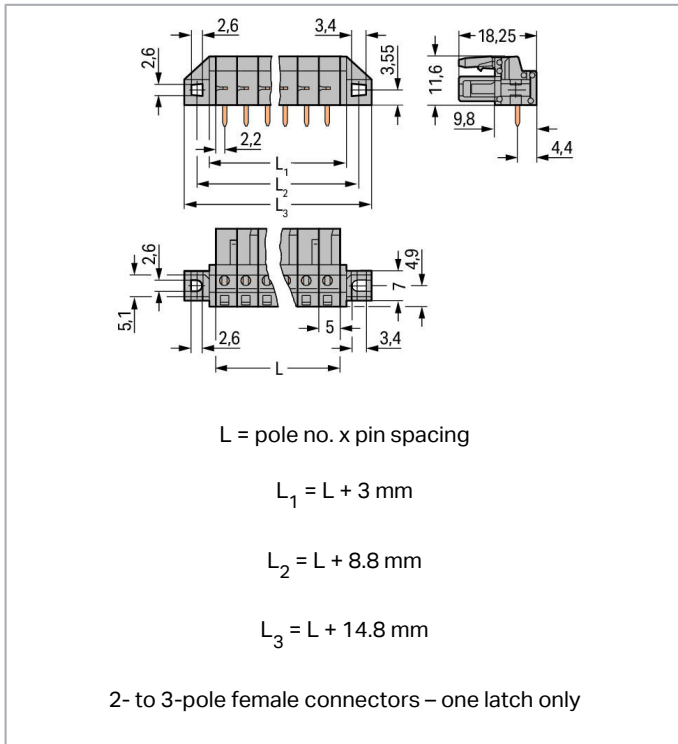
Color: 



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

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### Item description

- Horizontal or vertical PCB mounting via straight or angled solder pins
- For board-to-board and board-to-wire connections
- Touch-proof PCB outputs
- Easy-to-identify PCB inputs and outputs
- With coding fingers

### Safety information 1:

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. The circuit design should ensure header pins, which can be touched, are not live when unmated.

### Data

#### Electrical data

#### Ratings per IEC/EN

| Ratings per                 | IEC/EN 60664-1 |
|-----------------------------|----------------|
| Nominal voltage (III/3)     | 320 V          |
| Rated surge voltage (III/3) | 4 kV           |

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|                             |   |
|-----------------------------|---|
| Rated voltage (III/2)       | 320 V   |
| Rated surge 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) ≙ Overvoltage category III / Pollution degree 2 |

### Ratings per UL

|                                |         |
|--------------------------------|---------|
| Approvals per                  | UL 1059 |
| Rated voltage UL (Use Group B) | 300 V   |
| Rated current UL (Use Group B) | 15 A    |
| Rated voltage UL (Use Group D) | 300 V   |
| Rated current UL (Use Group D) | 10 A    |

### Ratings per UL

|                       |       |
|-----------------------|-------|
| Rated voltage UL 1977 | 600 V |
| Rated current UL 1977 | 15 A  |

### Ratings per CSA

|                                 |       |
|---------------------------------|-------|
| Approvals per                   | CSA   |
| Rated voltage CSA (Use Group B) | 300 V |
| Rated current CSA (Use Group B) | 15 A  |
| Rated voltage CSA (Use Group D) | 300 V |
| Rated current CSA (Use Group D) | 10 A  |

### Connection data

|                            |    |
|----------------------------|----|
| Pole No.                   | 18 |
| Total number of potentials | 18 |
| Number of connection types | 1  |
| Number of levels           | 1  |

### Physical data

|                         |                       |
|-------------------------|-----------------------|
| Pin spacing             | 5 mm / 0.197 inch     |
| Width                   | 104.8 mm / 4.126 inch |
| Height                  | 16.6 mm / 0.654 inch  |
| Height from the surface | 11.6 mm / 0.457 inch  |

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|                                      |                          |
|--------------------------------------|--------------------------|
| Depth                                | 18.25 mm / 0.719 inch    |
| Solder pin length                    | 5 mm                     |
| Solder pin dimensions                | 0.6 x 1 mm               |
| Drilled hole diameter with tolerance | 1.3 <sup>(+0.1)</sup> mm |

### Mechanical data

|               |   |
|---------------|---|
| Mounting type | Mounting flange                         |
| Mounting type | Feed-through mounting<br>Panel mounting |

### Plug-in connection

|                                    |                         |
|------------------------------------|-------------------------|
| Contact type (pluggable connector) | Female connector/socket |
| Connector (connection type)        | for PCB                 |
| Mismating protection               | No                      |
| Mating direction to the PCB        | 0°                      |

### PCB contact

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

### Material data

|                             |                  |
|-----------------------------|------------------|
| Color                       | gray             |
| Material group              | I                |
| Insulation material         | Polyamide (PA66) |
| Flammability class per UL94 | V0               |
| Contact material            | Copper alloy     |
| Contact plating             | tin-plated       |
| Weight                      | 17.2 g           |

### Environmental requirements

|                         |                |
|-------------------------|----------------|
| Limit temperature range | -60 ... +85 °C |
|-------------------------|----------------|

### Commercial data

|                   |     |
|-------------------|-----|
| Packaging type    | BOX |
| Country of origin | DE  |

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|                       |               |
|-----------------------|---------------|
| GTIN                  | 4055143577335 |
| Customs tariff number | 85366990990   |

## Approvals / Certificates

### Ship Approvals

| Logo  | Approval  | Additional Approval Text | Certificate name          |
|---|---|--------------------------|---------------------------|
|   | <b>ABS</b><br>American Bureau of Shipping               | -                        | 19-<br>HG15869876-<br>PDA |
|  | <b>BV</b><br>Bureau Veritas S.A.                        | IEC 60998                | 11915/D0 BV               |
|   | <b>DNV GL</b><br>Det Norske Veritas, Germanischer Lloyd | -                        | TAE 000016Z               |

### UL-Approvals

| Logo   | Approval                                    | Additional Approval Text | Certificate name |
|--|---|--------------------------|------------------|
|  | <b>UL</b><br>Underwriters Laboratories Inc. | UL 1977                  | E45171           |

## Counterpart



Item no.231-618

1-conductor male connector; 2.5 mm<sup>2</sup>; Pin spacing 5 mm; 18-pole; 2,50 mm<sup>2</sup>; gray

[www.wago.com/231-618](http://www.wago.com/231-618)

## Compatible products

### check



Item no.: 210-136

Test plug; 2 mm Ø; with 500 mm cable; red

[www.wago.com/210-136](http://www.wago.com/210-136)



Item no.: 210-137

Test plug; 2.3 mm Ø; with 500 mm cable; yellow

[www.wago.com/210-137](http://www.wago.com/210-137)

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Item no.: 231-661

Test plugs for female connectors; for 5 mm and 5.08 mm pin spacing; 2,50 mm<sup>2</sup>; light gray

[www.wago.com/231-661](http://www.wago.com/231-661)

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assembling



Item no.: 231-194

Self-tapping screw; B 2.2x13, fixing hole 1.8 mm Ø

[www.wago.com/231-194](http://www.wago.com/231-194)



Item no.: 231-195

Screw with nut; M2x12; for fixing element

[www.wago.com/231-195](http://www.wago.com/231-195)



Item no.: 231-295

Screw with nut

[www.wago.com/231-295](http://www.wago.com/231-295)

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## Downloads

### Documentation

#### Additional Information

Technical explanations

3. 4. 2019

pdf  
2.0 MB

Download

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## CAD/CAE-Data

### CAD data

2D/3D Models 232-248/031-000

URL

Download

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### PCB Design

Symbol and Footprint 232-248/031-000

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
- KiCad
- Mentor Graphics BoardStation
- Mentor Graphics Design Architect
- Mentor Graphics Design Expedition 99 and 2000
- OrCAD 9.X PCB and Capture

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- 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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#### CAE data

|                              |                     |                          |
|------------------------------|---------------------|--------------------------|
| ZUKEN Portal 232-248/031-000 | <a href="#">URL</a> | <a href="#">Download</a> |
|------------------------------|---------------------|--------------------------|

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### Environmental Product Compliance

#### Compliance Search

|  |                     |                          |
|--|---------------------|--------------------------|
| Environmental Product Compliance 232-248/031-000<br>THT female header; 0.6 x 1.0 mm solder pin; angled; clamping collar; 2.5 mm <sup>2</sup> ; Pin spacing 5 mm; 18-pole; gray | <a href="#">URL</a> | <a href="#">Download</a> |
|--|---------------------|--------------------------|

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### Installation Notes

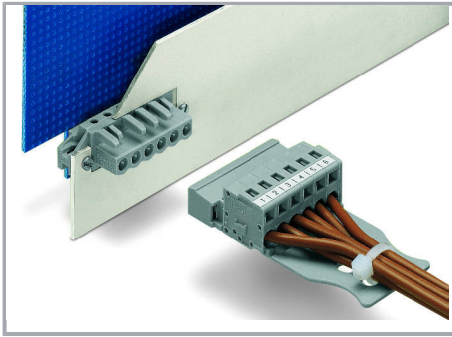
#### Application

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The innovative flange design provides standard panel mounting options or various through-panel mounting configurations. Depending on the type of application and flange, female headers can be used either for through-panel or flush mounted applications.

## Product family

[\*MCS\* MIDI Classic](#)

[Show all products from the family](#)

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