

**Data sheet | Item number: 232-180/031-000**

THT female header; 0.6 x 1.0 mm solder pin; straight; clamping collar; Pin spacing 5.08 mm; 20-pole; orange

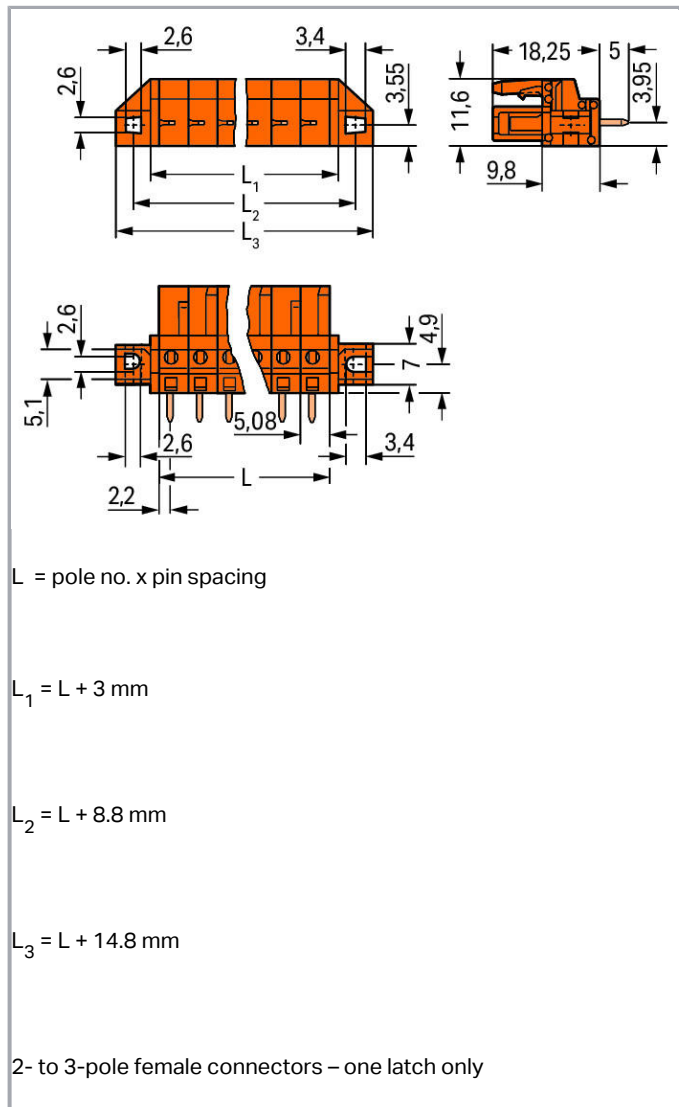
[www.wago.com/232-180/031-000](http://www.wago.com/232-180/031-000)



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:

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



The *MULTI CONNECTION SYSTEM (MCS)* is designed without breaking capacity for compliance with DIN EN 61984. When used as intended, MCS Connectors shall 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 60664-1

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

#### 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    |
| Approvals per                  | UL 1059 |

#### Approvals per UL 1977

|   |       |
|---|-------|
| Rated voltage per UL 1977 (factory wiring only) | 600 V |
| Rated current per UL 1977 (factory wiring only) | 15 A  |

#### 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  |

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



### Connection data

|                                   |    |
|-----------------------------------|----|
| No. of poles                      | 20 |
| Total number of connection points | 20 |
| Total number of potentials        | 20 |
| Number of connection types        | 1  |
| Number of levels                  | 1  |

### Geometrical Data

|                                   |                          |
|-----------------------------------|--------------------------|
| Pin spacing                       | 5.08 mm / 0.2 inch       |
| Width                             | 116.4 mm / 4.583 inch    |
| Height                            | 23.25 mm / 0.915 inch    |
| Height from the surface           | 18.25 mm / 0.719 inch    |
| Depth                             | 11.6 mm / 0.457 inch     |
| Solder pin length                 | 5 mm                     |
| Solder pin dimensions             | 0.6 x 1 mm               |
| Drilled hole diameter (tolerance) | 1.3 <sup>(+0.1)</sup> mm |

### Mechanical data

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

### Plug connection

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

### PCB contact

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

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

## Material Data

|                             |                      |
|-----------------------------|----------------------|
| Color                       | orange               |
| Material group              | I                    |
| Insulating material         | Polyamide 66 (PA 66) |
| Flammability class per UL94 | V0                   |
| Contact material            | Copper alloy         |
| Contact plating             | tin-plated           |
| Fire load                   | 0.302 MJ             |
| Weight                      | 17.9 g               |

## Environmental Requirements


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

## Commercial data


|                    |                        |
|--------------------|------------------------|
| Product Group      | 3 (Multi Conn. System) |
| Packaging type     | BOX                    |
| Country of origin  | DE                     |
| GTIN               | 4044918624411          |
| Customs Tariff No. | 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 |

### UL-Approvals

| Logo   | Approval                                    | Additional Approval Text | Certificate name  |
|--|---|--------------------------|-------------------|
|  | <b>UL</b><br>UL International Germany GmbH  | UL 1977                  | E45171            |
|  | <b>UR</b><br>Underwriters Laboratories Inc. | UL 1059                  | E45172<br>sec. 18 |

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## Counterpart



Item no. 231-650

1-conductor male connector; 2.5 mm<sup>2</sup>; Pin spacing 5.08 mm; 20-pole; 2,50 mm<sup>2</sup>; orange

[www.wago.com/231-650](http://www.wago.com/231-650)

## Compatible products

### Test Accessories



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)



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)

### 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)

## Downloads

### Documentation

#### Additional Information

Technical explanations

Apr 3, 2019

pdf  
3.6 MB

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## CAD/CAE-Data

### CAD data

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2D/3D Models 232-180/031-000

[URL](#)

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#### CAE data

EPLAN Data Portal 232-180/031-000

[URL](#)

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#### PCB Design

Symbol and Footprint 232-180/031-000

[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
- 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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## Installation Notes

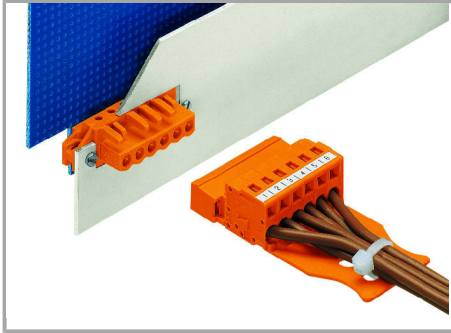
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## Application



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 mount applications.

## Product family

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

[Learn more about the product family.](#)

[Show all products from the family](#)

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