

Data sheet | Item number: 232-280

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



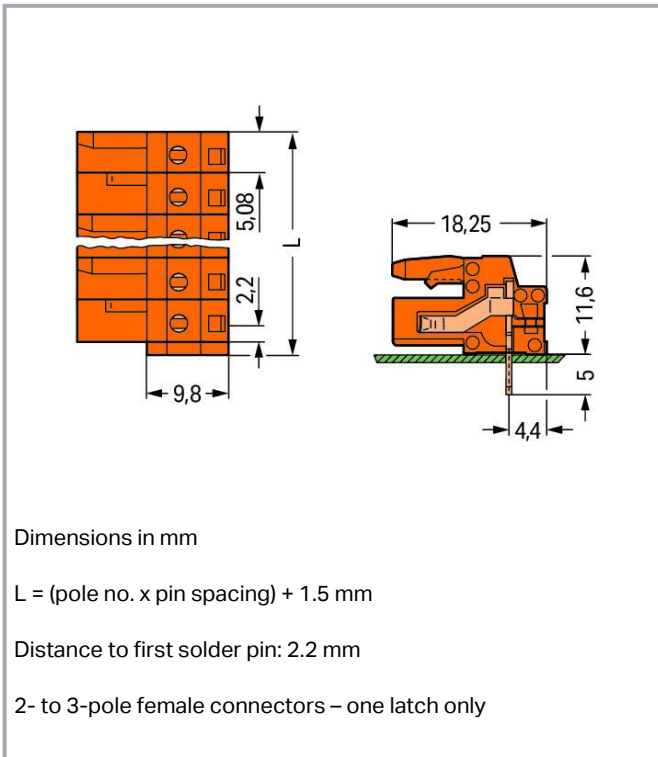
www.wago.com/232-280



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

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Email: info.de@wago.com | Web: www.wago.com

Do you have any questions about our products?
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
- For board-to-board and board-to-wire connections
- Touch-proof PCB outputs
- Easy-to-identify PCB inputs and outputs
- 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

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Other versions (or variants) can be requested from WAGO Sales or configured at <https://configurator.wago.com/>.

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) | 15 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 | 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

| | |
|-------------------|----|
| Connection points | 20 |
|-------------------|----|

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



| | |
|----------------------------|----|
| Total number of potentials | 20 |
| Number of connection types | 1 |
| Number of levels | 1 |

Connection 1

| | |
|-------------|----|
| Pole number | 20 |
|-------------|----|

Physical data

| | |
|--------------------------------------|--------------------------|
| Pin spacing | 5.08 mm / 0.2 inches |
| Width | 103.1 mm / 4.059 inches |
| Height | 16.6 mm / 0.654 inches |
| Height from the surface | 11.6 mm / 0.457 inches |
| Depth | 18.25 mm / 0.719 inches |
| Solder pin length | 5 mm |
| Solder pin dimensions | 0.6 x 1 mm |
| Drilled hole diameter with tolerance | 1.3 ^(+0.1) mm |

Mechanical Data

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

Plug-in connection

| | |
|--------------------------------------|-------------------------|
| Contact type (pluggable connector) | Female connector/socket |
| 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 female connector (in-line) |
| Number of solder pins per potential | 1 |

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



Material Data

Note (material data)

Information on material specifications can be found here

| | |
|-----------------------------|------------------|
| Color | orange |
| Material group | I |
| Insulation material | Polyamide (PA66) |
| Flammability class per UL94 | V0 |
| Contact material | Copper alloy |
| Contact plating | Tin |
| Fire load | 0.305 MJ |
| Weight | 17.3 g |

Environmental requirements

| | |
|-------------------------|----------------|
| Limit temperature range | -60 ... +85 °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) | 10 pcs |
| Packaging type | box |
| Country of origin | DE |
| GTIN | 4044918579650 |
| Customs tariff number | 85366990990 |

Environmental Product Compliance

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

Approvals / Certificates




General approvals

| Logo | Approval | Additional Approval Text | Certificate name |
|------|----------|--------------------------|------------------|
|------|----------|--------------------------|------------------|


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| | | | |
|----------------------------------------------------------------------------------|----------------------------------------------|-----------|--------------|
| | CB DEKRA Certification B.V. | IEC 61984 | NL-39756 /A1 |
|  | KEMA/KEUR DEKRA Certification B.V. | EN 61984 | 71-121453 |
|  | UL UL International Germany GmbH | UL 1977 | E45171 |
|  | UR Underwriters Laboratories Inc. | UL 1059 | E45172 |


Declarations of conformity and manufacturer's declarations

| Logo | Approval | Additional Approval Text | Certificate name |
|----------------------------------------------------------------------------------|--------------------------------------|--------------------------|------------------|
|  | Railway WAGO GmbH & Co. KG | - | Railway Ready |

Approvals for marine applications

| Logo | Approval | Additional Approval Text | Certificate name |
|-------------------------------------------------------------------------------------|-------------------------------------------|--------------------------|-------------------|
|  | ABS American Bureau of Shipping | - | 19-HG15869876-PDA |
|  | LR Lloyds Register | IEC 61984 | 96/20035 (E5) |

Counterpart

| | | |
|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
|  | Item no.231-650 1-conductor male connector; CAGE CLAMP®; 2.5 mm ² ; Pin spacing 5.08 mm; 20-pole; 2,50 mm ² ; orange | www.wago.com/231-650 |
|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|

Item no.231-650/019-000

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

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1-conductor male connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5.08 mm; 20-pole; clamping collar; www.wago.com/231-650
2,50 mm²; orange /019-000

Optional accessories

Testing and measuring

Testing accessories



Item no.: 231-661

Test plugs for female connectors; for 5 mm and 5.08 mm pin spacing; 2,50 mm²; light gray

www.wago.com/231-661

Downloads

Documentation

Additional Information

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

CAD/CAE-Data

CAD data

| | | |
|----------------------|-----|----------|
| 2D/3D Models 232-280 | URL | Download |
|----------------------|-----|----------|

CAE data

| | | |
|---------------------------|-----|----------|
| EPLAN Data Portal 232-280 | URL | Download |
|---------------------------|-----|----------|

| | | |
|----------------------|-----|----------|
| ZUKEN Portal 232-280 | URL | Download |
|----------------------|-----|----------|

PCB Design

| | | |
|------------------------------|-----|----------|
| Symbol and Footprint 232-280 | 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

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



- 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

Environmental Product Compliance

Compliance Search

| Environmental Product Compliance 232-280 | URL | Download |
|------------------------------------------------------------------------------------------|-----|----------|
| THT female header; angled; Pin spacing 5.08 mm; 20-pole; 0.6 x 1.0 mm solder pin; orange | | |

Installation Notes

Product family

MCS MIDI Classic

[Show all products from the family](#)

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