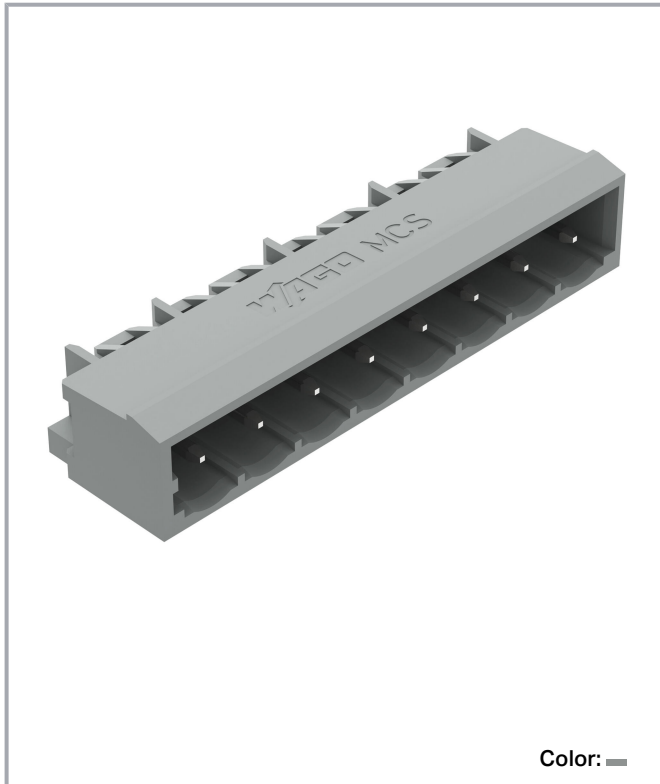


**Data sheet | Item number: 231-438/001-000**

THT male header; 1.0 x 1.0 mm solder pin; angled; Pin spacing 5 mm; 8-pole;  
gray

[www.wago.com/231-438/001-000](http://www.wago.com/231-438/001-000)

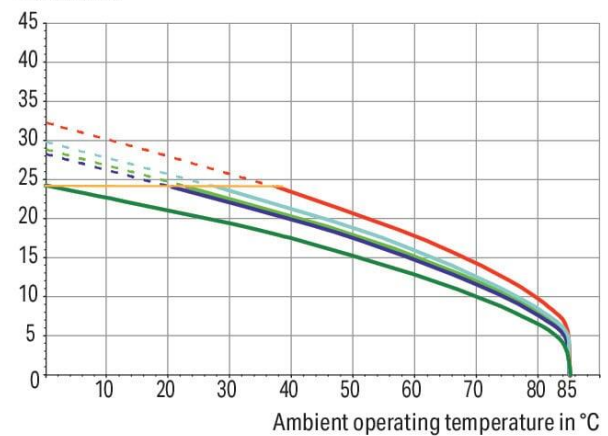


Color: ■

**Derating Curve**

1-conductor female connector (231-102/026-000) with  
THT male header (231-462/001-000)  
Pin spacing: 5 mm / Conductor cross-section: 2.5 mm<sup>2</sup> "f-st"  
Based on: EN 60512-5-2 / Reduction factor: 0.8

Current in A



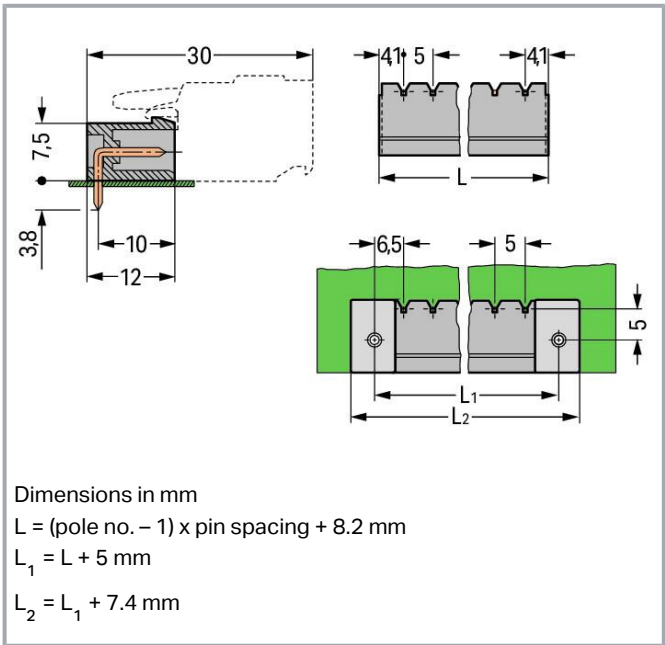
2-, 4-, 6-, 12-, 24- pole

Conductor rated current

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
- 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/>.

Electrical data

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

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## 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) ≙ 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) | 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 | 8 |
| Number of connection types | 1 |
| Number of levels           | 1 |

## Connection 1

|             |   |
|-------------|---|
| Pole number | 8 |
|-------------|---|

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



## Physical data

|                                      |                          |
|--------------------------------------|--------------------------|
| Pin spacing                          | 5 mm / 0.197 inches      |
| Width                                | 43.2 mm / 1.701 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)        | Information on material specifications can be found here |
| Color                       | gray                                                     |
| Material group              | I                                                        |
| Insulation material         | Polyamide (PA66)                                         |
| Flammability class per UL94 | V0                                                       |

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

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|                  |                                        |
|------------------|----------------------------------------|
| Contact material | Electrolytic copper (E <sub>Cu</sub> ) |
| Contact plating  | Tin                                    |
| Fire load        | 0.089 MJ                               |
| Weight           | 2.5 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                  | 4044918866262          |
| Customs tariff number | 85366930000            |

## Environmental Product Compliance

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

## Approvals / Certificates

### General approvals

| Logo                                                                               | Approval                                     | Additional Approval Text | Certificate name |
|------------------------------------------------------------------------------------|----------------------------------------------|--------------------------|------------------|
|                                                                                    | <b>CB</b><br>DEKRA Certification B.V.        | IEC 61984                | NL-39756 /A1     |
|  | <b>CSA</b><br>DEKRA Certification B.V.       | C22.2                    | LR 18677-25      |
|  | <b>KEMA/KEUR</b><br>DEKRA Certification B.V. | EN 61984                 | 71-121453        |

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

|                                                                                  |                                |         |        |
|----------------------------------------------------------------------------------|--------------------------------|---------|--------|
|  | UL                             | UL 1059 | E45172 |
|                                                                                  | Underwriters Laboratories Inc. |         |        |
|  | UR                             | UL 1977 | E45171 |
|                                                                                  | Underwriters Laboratories Inc. |         |        |

## Declarations of conformity and manufacturer's declarations

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

## Approvals for marine applications

| Logo                                                                               | Approval                           | Additional Approval Text | Certificate name         |
|------------------------------------------------------------------------------------|------------------------------------|--------------------------|--------------------------|
|   | ABS<br>American Bureau of Shipping | -                        | 19-<br>HG1869876-<br>PDA |
|  | BV<br>Bureau Veritas S.A.          | IEC 60998                | 11915/D0<br>BV           |
|  | DNV<br>DNV GL SE                   | -                        | TAE000016Z               |

## Counterpart

|                                                                                    |                                                                                                                                                             |                                                                                  |
|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
|  | Item no.231-108/026-000<br>1-conductor female connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 8-pole; 2,50 mm²; gray                                     | <a href="http://www.wago.com/231-108/026-000">www.wago.com/231-108/026-000</a>   |
|  | Item no.231-2108/026-000<br>2-conductor female connector; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 8-pole; with integrated end plate; 2,50 mm²; gray | <a href="http://www.wago.com/231-2108/026-000">www.wago.com/231-2108/026-000</a> |
|  | Item no.231-2108/037-000                                                                                                                                    | <a href="http://www.wago.com/231-2108">www.wago.com/231-2108</a>                 |

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|                                                                                    |                                                                                                                                                                                 |                                                                                    |
|------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|                                                                                    | 2-conductor female connector; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 8-pole; Lateral locking levers; 2,50 mm²; gray                                                    | /037-000                                                                           |
|    | <b>Item no.2231-108/026-000</b><br>1-conductor female connector; push-button; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 8-pole; 2,50 mm²; gray                            | <a href="http://www.wago.com/2231-108/026-000">www.wago.com/2231-108/026-000</a>   |
|    | <b>Item no.2231-108/031-000</b><br>1-conductor female connector; push-button; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 8-pole; clamping collar; 2,50 mm²; gray           | <a href="http://www.wago.com/2231-108/031-000">www.wago.com/2231-108/031-000</a>   |
|    | <b>Item no.2231-108/037-000</b><br>1-conductor female connector; push-button; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 8-pole; Lateral locking levers; 2,50 mm²; gray    | <a href="http://www.wago.com/2231-108/037-000">www.wago.com/2231-108/037-000</a>   |
|    | <b>Item no.2231-108/102-000</b><br>1-conductor female connector; push-button; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 8-pole; with integrated end plate; 2,50 mm²; gray | <a href="http://www.wago.com/2231-108/102-000">www.wago.com/2231-108/102-000</a>   |
|    | <b>Item no.231-108/027-000</b><br>1-conductor female connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 8-pole; clamping collar; 2,50 mm²; gray                                 | <a href="http://www.wago.com/231-108/027-000">www.wago.com/231-108/027-000</a>     |
|    | <b>Item no.231-108/031-000</b><br>1-conductor female connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 8-pole; clamping collar; 2,50 mm²; gray                                 | <a href="http://www.wago.com/231-108/031-000">www.wago.com/231-108/031-000</a>     |
|  | <b>Item no.231-108/037-000</b><br>1-conductor female connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 8-pole; Lateral locking levers; 2,50 mm²; gray                          | <a href="http://www.wago.com/231-108/037-000">www.wago.com/231-108/037-000</a>     |
|  | <b>Item no.231-108/102-000</b><br>1-conductor female connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 8-pole; with integrated end plate; 2,50 mm²; gray                       | <a href="http://www.wago.com/231-108/102-000">www.wago.com/231-108/102-000</a>     |
|  | <b>Item no.232-108/026-000</b><br>1-conductor female connector, angled; CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 8-pole; 2,50 mm²; gray                                          | <a href="http://www.wago.com/232-108/026-000">www.wago.com/232-108/026-000</a>     |
|  | <b>Item no.232-208/026-000</b><br>1-conductor female connector, angled; CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 8-pole; 2,50 mm²; gray                                          | <a href="http://www.wago.com/232-208/026-000">www.wago.com/232-208/026-000</a>     |
|  | <b>Item no.2231-1108/327-000</b><br>1-conductor female connector; lever; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 8-pole; 2,50 mm²; gray                                 | <a href="http://www.wago.com/2231-1108/327-000">www.wago.com/2231-1108/327-000</a> |

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



## Optional accessories

### Coding

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)

### Mounting

Mounting accessories

**Item no.: 231-193**

Locking device; for male connectors; 1 part; gray

[www.wago.com/231-193](http://www.wago.com/231-193)

## Downloads

### Documentation

#### Additional Information

2019 Apr 3

pdf  
2.1 MB

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## CAD/CAE-Data

### CAD data

2D/3D Models 231-438/001-000

URL

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### CAE data

EPLAN Data Portal 231-438/001-000

URL

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ZUKEN Portal 231-438/001-000

URL

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EPLAN Data Portal 231-438/001-000

URL

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### PCB Design

Symbol and Footprint via Ultra Librarian 231-438/001-000

URL

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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

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- Altair
- Altium 6 to current version
- Autodesk Fusion 360
- 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
- Zuken eCADSTAR 2020 and 2021Zuken CR-5000 and CR-8000

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

Symbol and Footprint via SamacSys 231-438/001-000

URL

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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:

- 3D (stp)
- Altium
- CADSTAR
- Capture
- CircuitStudio

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- DesignSpark PCB PRO
- DipTrace
- EAGLE
- Easy-PC
- EasyEDA
- eCADSTAR
- KiCad
- OrCAD\_Allegro16
- PADS
- Proteus
- Pulsonix
- Quadcept
- SOLIDWORKS PCB
- TARGET 3001!
- xDX Designer
- Xpedition

PCB Component Libraries (EDA), PCB CAD Library SamacSys Electronic Component Search Engine

Asset Administration Shell

|                                            |     |          |
|--------------------------------------------|-----|----------|
| Asset Administration Shell 231-438/001-000 | URL | Download |
|--------------------------------------------|-----|----------|

Environmental Product Compliance

Compliance Search

|                                                                                  |     |          |
|----------------------------------------------------------------------------------|-----|----------|
| Environmental Product Compliance 231-438/001-000                                 | URL | Download |
| THT male header; 1.0 x 1.0 mm solder pin; angled; Pin spacing 5 mm; 8-pole; gray |     |          |

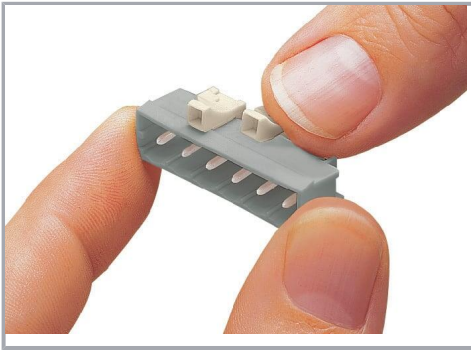
Installation Notes

Coding

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

## Product family

**MCS MIDI Classic**

[Show all products from the family](#)

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