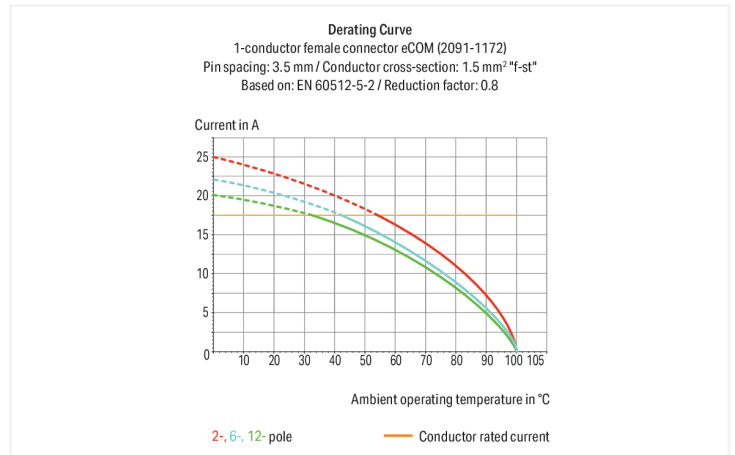


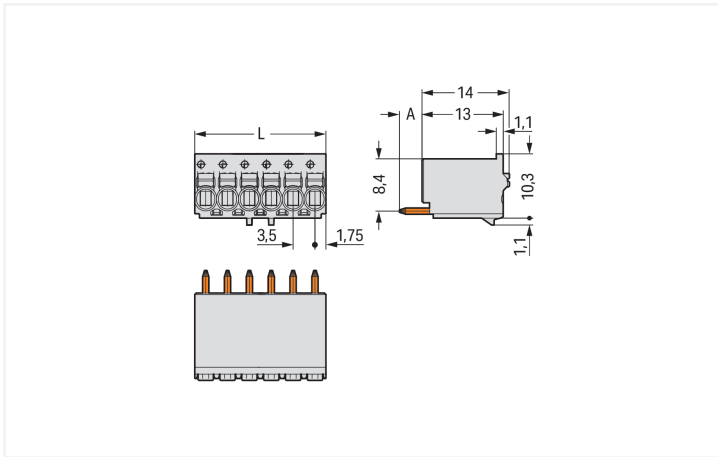
## Data Sheet | Item Number: 2091-1178

1-conductor THT female connector straight; push-button; Push-in CAGE CLAMP®;  
1.5 mm<sup>2</sup>; Pin spacing 3.5 mm; 8-pole; 1.0 mm Ø solder pin; 1,50 mm<sup>2</sup>; light gray

<https://www.wago.com/2091-1178>



Color: ■ light gray



Dimensions in mm

L = pole no. x pin spacing A = 3.6 mm THT solder pin A = 2.4 mm THR solder pin

Female connector, 2091 Series, 90 °conductor entry to board

Error-free electrical installations are guaranteed with this female connector (item number 2091-1178). Conductors should only be connected to this female connector if their strip length is between 8 and 9 mm . This product incorporates one conductor terminal and utilizes Push-in CAGE CLAMP®. Push-in CAGE CLAMP® technology provides a universal connection solution for all conductor types. It allows both solid and fine-stranded conductors with ferrules to be inserted directly into the clamping point without the need for tools. Dimensions: (28 x 14 x 11.4) mm (width x height x depth). This female connector is suitable for conductor cross sections ranging from 0.2 mm<sup>2</sup> to 1.5 mm<sup>2</sup>.

The contact surface is coated with tin. The pcb connector is designed for THT soldering.

## Notes

## Safety Information

The **picoMAX® Pluggable 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 un-mated.

## Safety information 2

The use of ferrules is recommended for applications with higher requirements.

To prevent excessive force on the clamping point, effective cable strain relief must be used.

## Electrical data

| Ratings per                     | IEC/EN 60664-1 |        |        | Approvals per | UL 1059   |   |       |
|---------------------------------|----------------|--------|--------|---------------|-----------|---|-------|
|                                 | III            | III    | II     |               | Use group | B | C     |
| Overvoltage category            | III            | III    | II     | Use group     | B         | C | D     |
| Pollution degree                | 3              | 2      | 2      | Rated voltage | 300 V     | - | 300 V |
| Nominal voltage                 | 160 V          | 160 V  | 320 V  | Rated current | 10 A      | - | 10 A  |
| Rated impulse withstand voltage | 2.5 kV         | 2.5 kV | 2.5 kV |               |           |   |       |
| Rated current                   | 10 A           | 10 A   | 10 A   |               |           |   |       |

## Connection Data

|                            |   |   |   |
|----------------------------|---|---|---|
| Clamping units             | 8 | <b>Connection 1</b>                               |   |
| Total number of potentials | 8 | Connection technology                             | Push-in CAGE CLAMP®                         |
| Number of connection types | 1 | Actuation type                                    | Push-button                                 |
| Number of levels           | 1 | Actuation direction 1                             | Operation parallel to conductor entry       |
|                            |   | Solid conductor                                   | 0.2 ... 1.5 mm <sup>2</sup> / 24 ... 14 AWG |
|                            |   | Fine-stranded conductor                           | 0.2 ... 1.5 mm <sup>2</sup> / 24 ... 14 AWG |
|                            |   | Fine-stranded conductor; with insulated ferrule   | 0.25 ... 0.75 mm <sup>2</sup>               |
|                            |   | Fine-stranded conductor; with uninsulated ferrule | 0.25 ... 1.5 mm <sup>2</sup>                |
|                            |   | Strip length                                      | 8 ... 9 mm / 0.31 ... 0.35 inches           |
|                            |   | Conductor connection direction to PCB             | 90°   |
|                            |   | Pole number                                       | 8   |

## Physical data

|                                      |                        |
|--------------------------------------|------------------------|
| Pin spacing                          | 3.5 mm / 0.138 inches  |
| Width                                | 28 mm / 1.102 inches   |
| Height                               | 14 mm / 0.551 inches   |
| Depth                                | 11.4 mm / 0.449 inches |
| Solder pin length                    | 3.6 mm                 |
| Solder pin diameter                  | 1 mm                   |
| Drilled hole diameter with tolerance | 1.2 (+0.1) mm          |

### Mechanical data

|                          |     |
|--------------------------|-----|
| Variable coding          | No  |
| 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 | Yes                     |
| Mating direction to the PCB          | 90 °                    |

### PCB contact

|             |     |
|-------------|-----|
| PCB contact | THT |
|-------------|-----|

### Material data

|                                    |  |
|------------------------------------|--|
| Note (material data)               | <a href="#">Information on material specifications can be found here</a> |
| Color                              | light gray   |
| Material group                     | I  |
| Insulation material (main housing) | Polyphthalamide (PPA GF)   |
| Flammability class per UL94        | V0   |
| Clamping spring material           | Chrome-nickel spring steel (CrNi)  |
| Contact material                   | Electrolytic copper (E <sub>Cu</sub> )                                   |
| Contact Plating                    | Tin  |
| Fire load                          | 0.012 MJ   |
| Weight                             | 4.4 g  |

### Environmental requirements

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

### Commercial data

|                       |                         |
|-----------------------|-------------------------|
| Product Group         | 26 (picoMAX Connectors) |
| PU (SPU)              | 100 pcs                 |
| Packaging type        | Box                     |
| Country of origin     | DE                      |
| GTIN                  | 4050821162452           |
| Customs tariff number | 85366990990             |

### Product Classification

|             |                      |
|-------------|----------------------|
| UNSPSC      | 39121409             |
| eCl@ss 10.0 | 27-44-04-02          |
| eCl@ss 9.0  | 27-44-04-02          |
| ETIM 9.0    | EC002637             |
| ETIM 10.0   | EC002637             |
| ECCN        | NO US CLASSIFICATION |

**Environmental Product Compliance**

RoHS Compliance Status Compliant, No Exemption

**Approvals / Certificates**

**General approvals**



| Approval                              | Standard      | Certificate Name |
|---------------------------------------|---------------|------------------|
| CB<br>DEKRA Certification B.V.        | IEC 61984     | NL-89884         |
| CSA<br>CSA Group                      | C22.2         | 2362521          |
| CSA<br>DEKRA Certification B.V.       | C22.2 No. 158 | 2362521          |
| KEMA/KEUR<br>DEKRA Certification B.V. | EN 61984      | 71-129873        |
| UR<br>Underwriters Laboratories Inc.  | UL 1059       | E45172           |

**Downloads**

**Environmental Product Compliance**

| Compliance Search  |
|--|
| Environmental Product Compliance 2091-1178 <a href="#">↓</a> |

**Documentation**

| Additional Information |            |                   |                   |
|------------------------|------------|-------------------|-------------------|
| Technical Section      | 03.04.2019 | pdf<br>2027.26 KB | <a href="#">↓</a> |

**CAD/CAE-Data**

| CAD data                                    |
|---|
| 2D/3D Models<br>2091-1178 <a href="#">↓</a> |

| CAE data                                    |
|---|
| ZUKEN Portal<br>2091-1178 <a href="#">↓</a> |

| PCB Design   |
|--|
| Symbol and Footprint<br>via SamacSys<br>2091-1178 <a href="#">↓</a>        |
| Symbol and Footprint<br>via Ultra Librarian<br>2091-1178 <a href="#">↓</a> |

**1 Compatible Products**

**1.1 Optional Accessories**

**1.1.1 Ferrule**

**1.1.1.1 Ferrule**



**Item No.: 216-301**

Ferrule; Sleeve for 0.25 mm<sup>2</sup> / AWG 24; insulated; electro-tin plated; yellow

**Item No.: 216-131**

Ferrule; Sleeve for 0.25 mm<sup>2</sup> / AWG 24; uninsulated; electro-tin plated; silver-colored

**Item No.: 216-302**

Ferrule; Sleeve for 0.34 mm<sup>2</sup> / 22 AWG; insulated; electro-tin plated; light turquoise

**Item No.: 216-132**

Ferrule; Sleeve for 0.34 mm<sup>2</sup> / AWG 24; uninsulated; electro-tin plated



**Item No.: 216-101**

Ferrule; Sleeve for 0.5 mm<sup>2</sup> / AWG 22; uninsulated; electro-tin plated; silver-colored

**Item No.: 216-202**

Ferrule; Sleeve for 0.75 mm<sup>2</sup> / 18 AWG; insulated; electro-tin plated; gray

**Item No.: 216-102**

Ferrule; Sleeve for 0.75 mm<sup>2</sup> / AWG 20; uninsulated; electro-tin plated; silver-colored

**Item No.: 216-122**

Ferrule; Sleeve for 0.75 mm<sup>2</sup> / AWG 20; uninsulated; electro-tin plated; silver-colored



**Item No.: 216-203**

Ferrule; Sleeve for 1 mm<sup>2</sup> / AWG 18; insulated; electro-tin plated; red

**Item No.: 216-103**

Ferrule; Sleeve for 1 mm<sup>2</sup> / AWG 18; uninsulated; electro-tin plated

**Item No.: 216-143**

Ferrule; Sleeve for 1 mm<sup>2</sup> / AWG 18; uninsulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 1/08.92

**Item No.: 216-204**

Ferrule; Sleeve for 1.5 mm<sup>2</sup> / AWG 16; insulated; electro-tin plated; black



**Item No.: 216-144**

Ferrule; Sleeve for 1.5 mm<sup>2</sup> / AWG 16; uninsulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 1/08.92; silver-colored

**Item No.: 216-104**

Ferrule; Sleeve for 1.5 mm<sup>2</sup> / AWG 16; uninsulated; electro-tin plated; silver-colored

**Item No.: 216-106**

Ferrule; Sleeve for 2.5 mm<sup>2</sup> / AWG 14; uninsulated; electro-tin plated; silver-colored

**1.1.2 Test and measurement**

**1.1.2.1 Testing accessories**



**Item No.: 735-500**

WAGO Test pin; 1 mm Ø; 30 V AC / 60 V DC; CAT0; 1 A; 6 mm uninsulated; Test lead for soldering up to 0,5mm<sup>2</sup>

**1.1.3 Tool**

**1.1.3.1 Operating tool**



**Item No.: 210-719**

Operating tool; Blade: 2.5 x 0.4 mm; with a partially insulated shaft

## Installation Notes

### Conductor termination



Terminating fine-stranded conductors and removing all conductor types via push-buttons.



Solid and ferruled conductors are terminated by simply pushing them into unit.

### Marking



Pole marking via direct marking perpendicular to conductor entry.



Pole marking via factory direct marking.

### Testing



Testing via 1 mm Ø test pin – touch contact.