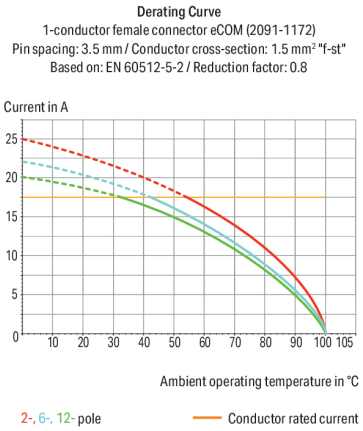
# Data Sheet | Item Number: 2091-1178

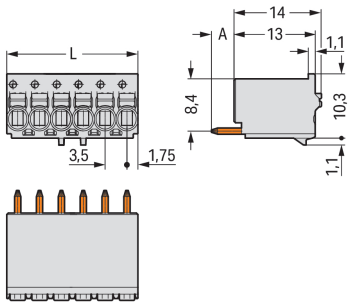
1-conductor THT female connector straight; push-button; Push-in CAGE CLAMP®; 1.5 mm²; Pin spacing 3.5 mm; 8-pole; 1.0 mm Ø solder pin; 1,50 mm²; light gray

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






Color: light gray




Dimensions in mm
L = pole no. x pin spacingA = 3.6 mm THT solder pinA = 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 mm² to 1.5 mm².

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 unmated. |
| Safety information 2 | The use of ferrules is recommended for applications with higher requirements.<br><br>To prevent excessive force on the clamping point, effective cable strain relief must be used. |

## Electrical data

| Ratings per | IEC/EN 60664-1 | | |
|---|---|---|---|
| Overvoltage category | III | III | II |
| Pollution degree | 3 | 2 | 2 |
| Nominal voltage | 160 V | 160 V | 320 V |
| Rated impulse withstand voltage | 2.5 kV | 2.5 kV | 2.5 kV |
| Rated current | 10 A | 10 A | 10 A |

| Approvals per | UL 1059 | | |
|---|---|---|---|
| Use group | B | C | D |
| Rated voltage | 300 V | - | 300 V |
| Rated current | 10 A | - | 10 A |

## Connection Data

| | |
|---|---|
| Clamping units | 8 |
| Total number of potentials | 8 |
| Number of connection types | 1 |
| Number of levels | 1 |

### Connection 1

| | |
|---|---|
| Connection technology | Push-in CAGE CLAMP® |
| Actuation type | Push-button |
| Actuation direction 1 | Operation parallel to conductor entry |
| Solid conductor | 0.2 … 1.5 mm² / 24 … 14 AWG |
| Fine-stranded conductor | 0.2 … 1.5 mm² / 24 … 14 AWG |
| Fine-stranded conductor; with insulated ferrule | 0.25 … 0.75 mm² |
| Fine-stranded conductor; with uninsulated ferrule | 0.25 … 1.5 mm² |
| 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 | 1.2 $^{(+0.1)}$ mm |

## Mechanical data

| | |
|---|---|
| Variable coding | No |
| Anti-rotation protection | Yes |


Continued on next page

## 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) | Information on material specifications can be found here |
| 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 ($E_{Cu}$) |
| Contact Plating | Tin |
| Fire load | 0.043 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 |


Continued on next page

## 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

### Documentation

**Additional Information**

| | | |
|---|---|---|
| Technical Section | 03.04.2019 | pdf<br>2027.26 KB |

### CAD/CAE-Data

**CAD data**

2D/3D Models 2091-1178

**CAE data**

ZUKEN Portal 2091-1178

**PCB Design**

Symbol and Footprint via SamacSys 2091-1178

Symbol and Footprint via Ultra Librarian 2091-1178


Continued on next page

# 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 mm² / AWG 24; insulated; electro-tin plated; yellow



Item No.: 216-131
Ferrule; Sleeve for 0.25 mm² / AWG 24; uninsulated; electro-tin plated; silver-colored



Item No.: 216-302
Ferrule; Sleeve for 0.34 mm² / 22 AWG; insulated; electro-tin plated; light turquoise



Item No.: 216-132
Ferrule; Sleeve for 0.34 mm² / 22 AWG; uninsulated; electro-tin plated



Item No.: 216-101
Ferrule; Sleeve for 0.5 mm² / AWG 22; uninsulated; electro-tin plated; silver-colored



Item No.: 216-202
Ferrule; Sleeve for 0.75 mm² / 18 AWG; insulated; electro-tin plated; gray



Item No.: 216-102
Ferrule; Sleeve for 0.75 mm² / 18 AWG; uninsulated; electro-tin plated; silver-colored



Item No.: 216-122
Ferrule; Sleeve for 0.75 mm² / 18 AWG; uninsulated; electro-tin plated; silver-colored



Item No.: 216-203
Ferrule; Sleeve for 1 mm² / AWG 18; insulated; electro-tin plated; red



Item No.: 216-103
Ferrule; Sleeve for 1 mm² / AWG 18; uninsulated; electro-tin plated



Item No.: 216-204
Ferrule; Sleeve for 1.5 mm² / AWG 16; insulated; electro-tin plated; black



Item No.: 216-104
Ferrule; Sleeve for 1.5 mm² / AWG 16; 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 0,5mm²

### 1.1.3 Tool

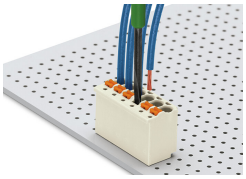
#### 1.1.3.1 Operating tool



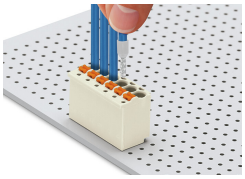
Item No.: 210-719
Operating tool; Blade: 2.5 x 0.4 mm; with a partially insulated shaft

# 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.