

## Data Sheet | Item Number: 280-946

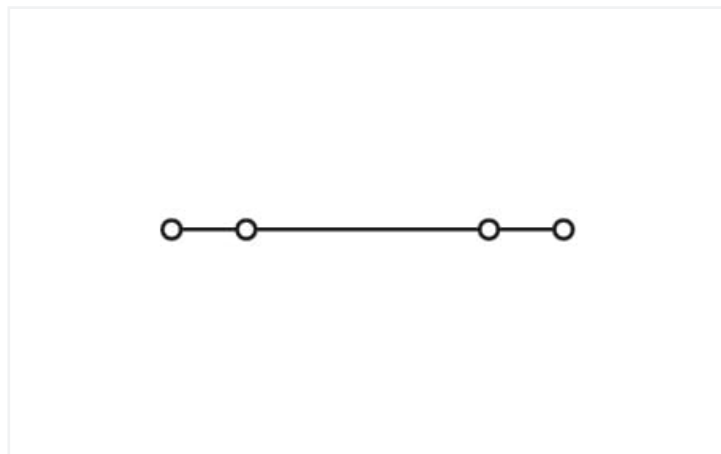
4-conductor through terminal block; 2.5 mm<sup>2</sup>; center marking; for DIN-rail 35 x 15 and 35 x 7.5; CAGE CLAMP®; 2,50 mm<sup>2</sup>; orange

<https://www.wago.com/280-946>



Color: ■ orange

Similar to illustration



Similar to illustration

### Notes

Safety Information

Notice: This terminal block cannot be commoned with adjacent jumpers.

### Electrical data

| Ratings per          | IEC/EN 60947-7-1 |     |    |
|----------------------|------------------|-----|----|
| Overvoltage category | III              | III | II |
| Pollution degree     | 3                | 2   | 2  |
| Nominal voltage      | 800 V            | -   | -  |
| Rated surge voltage  | 8 kV             | -   | -  |
| Rated current        | 24 A             | -   | -  |

### Power Loss

|  |                  |
|--|------------------|
| Power loss, per pole (potential)                             | 0.7661 W         |
| Rated current $I_N$ for specified power loss                 | 24 A             |
| Resistance value for specified, current-dependent power loss | 0.00133 $\Omega$ |

### Connection data

|                            |   |
|----------------------------|---|
| Clamping units             | 4 |
| Total number of potentials | 1 |
| Number of levels           | 1 |

### Connection 1

|                                 |                    |
|---------------------------------|--------------------|
| Connection technology           | CAGE CLAMP®        |
| Actuation type                  | Operating tool     |
| Connectable conductor materials | Copper<br>Aluminum |

## Connection 1

Connectable conductor materials (note)

### Terminating Aluminum Conductors

WAGO spring clamp terminal blocks are suitable for solid aluminum conductors up to 4 mm<sup>2</sup>/12 AWG if WAGO "Alu-Plus" Contact Paste [249-130](#) is used for termination.

"Alu-Plus" Contact Paste Advantages:

- Automatically destroys the oxide film during clamping.
- Prevents fresh oxidation at the clamping point.
- Prevents electrolytic corrosion between aluminum and copper conductors (in the same terminal block).
- Provides long-term protection against corrosion.

Using terminal blocks with CAGE CLAMP® Spring Pressure Connection Technology, **aluminum conductors must first be cleaned with a blade** and then immediately be inserted into the clamping units filled with "Alu-Plus" Contact Paste.

It is also possible to apply WAGO "Alu-Plus" **additionally** on the whole surface of the aluminum conductor before termination.

Please note that the nominal currents must be adapted to the reduced conductivity of the aluminum conductors::

2.5 mm<sup>2</sup> = 16 A

4 mm<sup>2</sup> = 22 A

|                                |  |
|--------------------------------|--|
| Solid conductor                | 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG |
| Fine-stranded conductor        | 0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG |
| Note (conductor cross-section) | 12 AWG: THHN, THWN                           |
| Strip length                   | 8 ... 9 mm / 0.31 ... 0.35 inches            |
| Wiring direction               | Front-entry wiring, angled                   |

## Physical data

|                                   |                        |
|-----------------------------------|------------------------|
| Width                             | 5 mm / 0.197 inches    |
| Height                            | 50.5 mm / 1.988 inches |
| Depth from upper-edge of DIN-rail | 36.5 mm / 1.437 inches |

## Mechanical data

|               |                |
|---------------|----------------|
| Design        | angled         |
| Mounting type | DIN-35 rail    |
| Marking level | Center marking |

## Material data

|                                    |  |
|------------------------------------|--|
| Note (material data)               | <a href="#">Information on material specifications can be found here</a> |
| Color                              | orange   |
| Material group                     | I  |
| Insulation material (main housing) | Polyamide (PA66)   |
| Flammability class per UL94        | V0   |
| Fire load                          | 0.124 MJ   |
| Weight                             | 7.4 g  |

### Environmental requirements

|                                  |                 |
|----------------------------------|-----------------|
| Processing temperature           | -35 ... +85 °C  |
| Continuous operating temperature | -60 ... +105 °C |

### Commercial data

|                       |               |
|-----------------------|---------------|
| eCl@ss 10.0           | 27-14-11-20   |
| eCl@ss 9.0            | 27-14-11-20   |
| ETIM 9.0              | EC000897      |
| ETIM 8.0              | EC000897      |
| PU (SPU)              | 100 pcs       |
| Packaging type        | Box           |
| Country of origin     | DE            |
| GTIN                  | 4044918457132 |
| Customs tariff number | 85369010000   |

### Environmental Product Compliance

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

### Approvals / Certificates

#### General approvals



| Approval                                | Standard | Certificate Name |
|---|----------|------------------|
| CCA<br>DEKRA Certification B.V.         | EN 60947 | 2157201.01       |
| CSA<br>DEKRA Certification B.V.         | C22.2    | 1536071          |
| UL<br>Underwriters Laboratories<br>Inc. | UL 1059  | E45172           |

#### Declarations of conformity and manufacturer's declarations

| Approval  | Standard | Certificate Name |
|---|----------|------------------|
| EU-Declaration of Confor-<br>mity<br>WAGO GmbH & Co. KG | -        | -                |
| UK-Declaration of Confor-<br>mity<br>WAGO GmbH & Co. KG | -        | -                |

#### Approvals for marine applications



| Approval  | Standard | Certificate Name |
|---|----------|------------------|
| ABS<br>American Bureau of Ship-<br>ping               | EN 60947 | 20-HG1941090-PDA |
| BV<br>Bureau Veritas S.A.                             | EN 60947 | 07436/F0 BV      |
| DNV GL<br>Det Norske Veritas, Ger-<br>manischer Lloyd | -        | TAE00001V2       |
| LR<br>Lloyds Register                                 | EN 60947 | 91/20112 (E9)    |

Downloads

Environmental Product Compliance

Compliance Search

Environmental Product Compliance 280-946



Documentation

Additional Information

Technical Section

pdf  
2246.92 KB



Bid Text

280-946

19.02.2019

xml  
3.39 KB



280-946

28.02.2017

doc  
24.50 KB



CAD/CAE-Data

CAD data

2D/3D Models 280-946



CAE data

EPLAN Data Portal  
280-946



WSCAD Universe  
280-946



ZUKEN Portal 280-946



1 Compatible Products

1.1 Required Accessories

1.1.1 End plate

1.1.1.1 End plate



[Item No.: 280-312](#)

End and intermediate plate; 2.5 mm thick; gray



[Item No.: 280-313](#)

End and intermediate plate; 2.5 mm thick; orange



[Item No.: 280-348](#)

Separator plate; 2.5 mm thick; oversized; gray



[Item No.: 280-318](#)

Separator plate; 2.5 mm thick; oversized; orange

1.2 Optional Accessories

1.2.1 DIN-rail

1.2.1.1 Mounting accessories



[Item No.: 210-196](#)

Aluminum carrier rail; 35 x 8.2 mm; 1.6 mm thick; 2 m long; unslotted; similar to EN 60715; silver-colored



[Item No.: 210-198](#)

Copper carrier rail; 35 x 15 mm; 2.3 mm thick; 2 m long; unslotted; according to EN 60715; copper-colored



[Item No.: 210-508](#)

Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; slotted; galvanized; similar to EN 60715; silver-colored



[Item No.: 210-197](#)

Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; slotted; similar to EN 60715; silver-colored



[Item No.: 210-506](#)

Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; unslotted; galvanized; similar to EN 60715; silver-colored



[Item No.: 210-114](#)

Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; unslotted; similar to EN 60715; silver-colored



[Item No.: 210-118](#)

Steel carrier rail; 35 x 15 mm; 2.3 mm thick; 2 m long; unslotted; according to EN 60715; silver-colored



[Item No.: 210-115](#)

Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; according to EN 60715; "Hole width 18 mm; silver-colored

1.2.1.1 Mounting accessories



**Item No.: 210-112**  
Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; according to EN 60715; "Hole width 25 mm; silver-colored



**Item No.: 210-504**  
Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; galvanized; according to EN 60715; silver-colored



**Item No.: 210-113**  
Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; unslotted; according to EN 60715; silver-colored



**Item No.: 210-505**  
Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; unslotted; galvanized; according to EN 60715; silver-colored

1.2.2 Ferrule

1.2.2.1 Ferrule



**Item No.: 216-301**  
Ferrule; Sleeve for 0.25 mm<sup>2</sup> / AWG 24; insulated; electro-tin plated; yellow



**Item No.: 216-302**  
Ferrule; Sleeve for 0.34 mm<sup>2</sup> / 22 AWG; insulated; electro-tin plated; light turquoise



**Item No.: 216-201**  
Ferrule; Sleeve for 0.5 mm<sup>2</sup> / 20 AWG; insulated; electro-tin plated; white



**Item No.: 216-101**  
Ferrule; Sleeve for 0.5 mm<sup>2</sup> / AWG 22; un-insulated; 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; un-insulated; 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; un-insulated; electro-tin plated



**Item No.: 216-204**  
Ferrule; Sleeve for 1.5 mm<sup>2</sup> / AWG 16; insulated; electro-tin plated; black



**Item No.: 216-104**  
Ferrule; Sleeve for 1.5 mm<sup>2</sup> / AWG 16; un-insulated; electro-tin plated; silver-colored

1.2.3 Installation

1.2.3.1 Cover



**Item No.: 709-153**  
Cover; Type 1; suitable for cover carrier, type 1; 1 m long; transparent

1.2.3.2 Cover carrier



**Item No.: 709-167**  
Cover carrier; Type 1; incl. fixing/retaining screws and knurled nut; suitable for 279 to 282 and 880 Series rail-mounted terminal blocks; suitable for 264 Series miniature rail-mounted terminal blocks; suitable for 270 Series sensor and actuator terminal blocks; gray

1.2.3.3 Mounting accessories



**Item No.: 209-106**

Mounting carrier; for isolated mounting on DIN 35 rails; gray

**Item No.: 249-116**

Screwless end stop; 6 mm wide; for DIN-rail 35 x 15 and 35 x 7.5; gray

1.2.4 Insulation stop

1.2.4.1 Insulation stop



**Item No.: 280-470**

Insulation stop; 0.08 - 0.2 mm<sup>2</sup> "s" (0.14 mm<sup>2</sup> "f-st"); 5 pieces/strip; white

**Item No.: 280-471**

Insulation stop; 0.25 - 0.5 mm<sup>2</sup>; 5 pieces/strip; light gray

**Item No.: 280-472**

Insulation stop; 0.75 - 1 mm<sup>2</sup>; 5 pieces/strip; black

1.2.5 Jumper

1.2.5.1 Jumper



**Item No.: 280-490**

Jumper; 10-way; insulated; gray

**Item No.: 280-482**

Jumper; 2-way; insulated; gray

**Item No.: 280-492**

Jumper; 2-way; insulated; gray

**Item No.: 280-483**

Jumper; 3-way; insulated; gray



**Item No.: 280-484**

Jumper; 4-way; insulated; gray

**Item No.: 280-485**

Jumper; 5-way; insulated; gray

**Item No.: 709-110**

Wire commoning chain; 2.5 mm<sup>2</sup>; insulated; black

**Item No.: 709-111**

Wire commoning chain; 2.5 mm<sup>2</sup>; insulated; black



**Item No.: 709-112**

Wire commoning chain; 2.5 mm<sup>2</sup>; insulated; black

**Item No.: 210-103**

Wire commoning chain; insulated; black

**Item No.: 210-123**

Wire commoning chain; insulated; blue

1.2.6 Marking

1.2.6.1 Double marker carrier



**Item No.: 209-128**

Adaptor; gray

1.2.6.2 Group marker carrier



**Item No.: 249-105**

Group marker carrier; gray

### 1.2.6.3 Marker



**Item No.: 793-5501**

WMB marking card; as card; for terminal block width 5 - 17.5 mm; stretchable 5 - 5.2 mm; plain; snap-on type; white



**Item No.: 793-501**

WMB marking card; as card; not stretchable; plain; snap-on type; white



**Item No.: 2009-115**

WMB-Inline; for Smart Printer; 1500 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; white

### 1.2.7 Protective warning marker

#### 1.2.7.1 Cover



**Item No.: 280-415**

Protective warning marker; for 5 terminal blocks; with high-voltage symbol, black; yellow

### 1.2.8 Test and measurement

#### 1.2.8.1 Testing accessories



**Item No.: 249-142**

L-type end module; modular; with rigid contact pin; End module; 1,50 mm<sup>2</sup>; gray



**Item No.: 249-143**

L-type spacer module; modular; e.g., bridging commoned terminal blocks; gray



**Item No.: 249-141**

L-type test plug module; modular; with spring-loaded contact pin; Center module; 1,50 mm<sup>2</sup>; gray

### 1.2.9 Tool

#### 1.2.9.1 Operating tool



**Item No.: 210-658**

Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft; angled; short; multicoloured



**Item No.: 210-720**

Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft; multicoloured



**Item No.: 210-657**

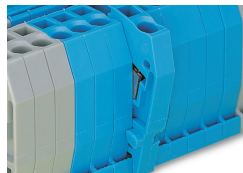
Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft; short; multicoloured

### Installation Notes

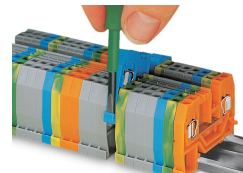
#### Installation



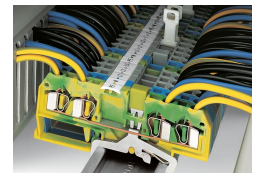
Snapping a terminal block onto the DIN-rail.



Quick assembly keys prevent reverse mounting.

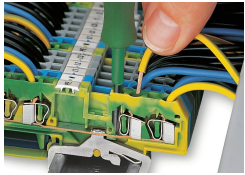


Removing a terminal block from the assembly.

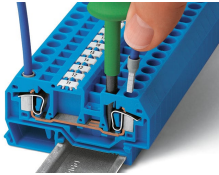


Steel DIN-rails are not suited for PEN (ground and N-conductor) applications per EN 60947-7-2 (VDE 0611, Part 3).

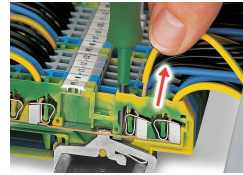
### Conductor termination



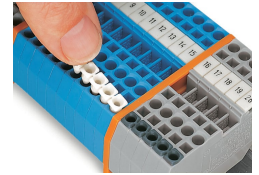
**CAGE CLAMP® connection**  
Inserting a conductor.



**CAGE CLAMP® connection**  
Inserting a conductor.  
With ferruled conductors, it is necessary to use a terminal block one size larger than the conductor's nominal cross-section.



**CAGE CLAMP® connection**  
Removing a solid conductor.



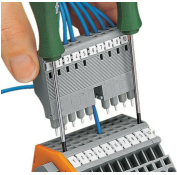
Inserting insulation stops.

### Commoning



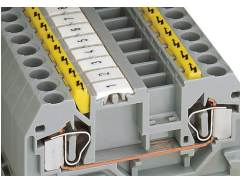
4-conductor through terminal blocks, angled type, formation of groups with 3-way, comb-style jumper bars

### Testing



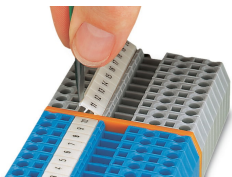
L-type test plug modules fitted with CAGE CLAMP®

### Cover



Protective warning markers inserted into the operating slots

### Marking



Labeling via WMB Multi Marking System.