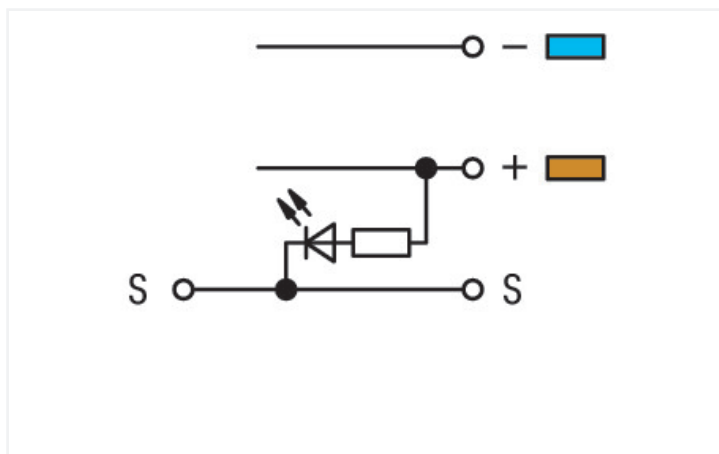
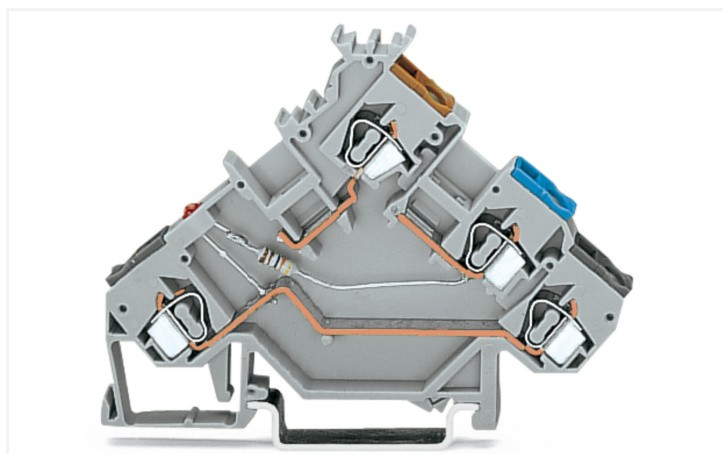


## Data Sheet | Item Number: 280-561/281-413

3-conductor sensor terminal block; LED (red); for NPN-(low-side) switching sensors; with colored conductor entries; 2.5 mm<sup>2</sup>; CAGE CLAMP®; 2,50 mm<sup>2</sup>; gray

<https://www.wago.com/280-561/281-413>



Color: ■ gray

Similar to illustration

Sensor terminal block, 280 Series, gray

Our sensor terminal block (item number 280-561/281-413) simplifies electrical installations. Conductors should only be connected to this sensor terminal block if their strip length is between 8 and 9 mm. This product features conductor terminals and utilizes CAGE CLAMP®. Our CAGE CLAMP® connection provides a proven and maintenance-free way to connect all types of conductors. You do not need to prepare the conductor in any way, such as crimping ferrules. Depending on the conductor type, this sensor terminal block is suitable for conductor cross sections ranging from 0.08 mm<sup>2</sup> to 2.5 mm<sup>2</sup>.

### Electrical data

#### Ratings per IEC/EN

Rated current 20 A

#### Ratings per IEC/EN – Notes

Rated current (note) LED power consumption: 4.8 mA

#### Power Loss

Power loss, per pole (potential) 0.532 W

Rated current  $I_N$  for power loss specification 20 A

Resistance value for specified, current-dependent power loss 0.00133 Ω

#### General information

Voltage type 1 DC

Nominal voltage 24 V

LED (switching) for NPN

Wiring direction Front-entry wiring

### Connection Data

Clamping units 2

Total number of potentials 2

Number of levels 3

#### Connection 1

Connection technology CAGE CLAMP®

Actuation type Operating tool

Connectable conductor materials Copper  
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 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

## Physical data

Width	5 mm / 0.197 inches
Height	80 mm / 3.15 inches
Depth from upper-edge of DIN-rail	55.5 mm / 2.185 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	gray
Material group	I
Insulation material (main housing)	Polyamide (PA66)
Flammability class per UL94	V0
Fire load	0.178 MJ
Weight	10.5 g

### Environmental requirements

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

### Commercial data

Product Group	1 (Rail Mounted Terminal Blocks)
PU (SPU)	50 pcs
Packaging type	Box
Country of origin	DE
GTIN	4045454299262
Customs tariff number	85369010000

### Product Classification

UNSPSC	39121410
eCl@ss 10.0	27-14-11-28
eCl@ss 9.0	27-14-11-28
ETIM 9.0	EC000900
ETIM 10.0	EC000900
ECCN	NO US CLASSIFICATION

### Environmental Product Compliance

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

### Approvals / Certificates

#### General approvals



Approval	Standard	Certificate Name
CCA DEKRA Certification B.V.	EN 60947	2160584.53
UR Underwriters Laboratories Inc.	UL 1059	E45172

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

Approval	Standard	Certificate Name
EU-Declaration of Conformity WAGO GmbH & Co. KG	-	-
UK-Declaration of Conformity WAGO GmbH & Co. KG	-	-

### Approvals for marine applications



Approval	Standard	Certificate Name
ABS American Bureau of Shipping	EN 60947	24-0152298-PDA
DNV GL Det Norske Veritas, Germanischer Lloyd	-	TAE00001V2

## Downloads

### Environmental Product Compliance

Compliance Search			
Environmental Product Compliance			<a href="#">↓</a>
280-561/281-413			

## Documentation

Bid Text			
280-561/281-413	19.02.2019	xml 3.37 KB	<a href="#">↓</a>
280-561/281-413	14.03.2017	doc 25.00 KB	<a href="#">↓</a>

## CAD/CAE-Data

CAD data	
2D/3D Models	<a href="#">↓</a>
280-561/281-413	

CAE data	
EPLAN Data Portal	<a href="#">↓</a>
280-561/281-413	
WSCAD Universe	<a href="#">↓</a>
280-561/281-413	
ZUKEN Portal	<a href="#">↓</a>
280-561/281-413	

## 1 Compatible Products

### 1.1 Required Accessories

#### 1.1.1 End plate

##### 1.1.1.1 End plate



**Item No.: 280-319**  
End and intermediate plate; 1 mm thick; for triple-deck terminal blocks; gray



**Item No.: 280-321**  
End and intermediate plate; 1 mm thick; for triple-deck terminal blocks; 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

1.2.1.1 Mounting accessories



**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



**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; electrolytic copper; acc. to DIN 46228, Part 4/09.90; 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.: 709-154**  
Cover; Type 2; suitable for cover carrier, type 2; 1 m long; transparent

1.2.3.2 Cover carrier



**Item No.: 709-168**  
Cover carrier; Type 2; incl. fixing/retaining screws and knurled nut; suitable for 283 to 285 Series rail-mounted terminal blocks; suitable for 279 to 281 Series double- and triple-deck terminal blocks; suitable for 780 to 785, 775, 776 and 777 Series TOP-JOB® rail-mounted terminal blocks; suitable for 280 Series sensor and actuator terminal blocks; suitable for 282 Series disconnect/test terminal blocks for transformer circuits; gray

### 1.2.3.3 Mounting accessories



**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.: 280-402**

Jumper; insulated; gray



**Item No.: 780-452**

Staggered jumper; from 1 to 2; insulated; gray



**Item No.: 780-453**

Staggered jumper; from 1 to 3; insulated; gray



**Item No.: 780-454**

Staggered jumper; from 1 to 4; insulated; gray



**Item No.: 780-455**

Staggered jumper; from 1 to 5; insulated; gray



**Item No.: 780-456**

Staggered jumper; from 1 to 6; insulated; gray



**Item No.: 780-457**

Staggered jumper; from 1 to 7; insulated; gray



**Item No.: 780-458**

Staggered jumper; from 1 to 8; 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 Marker



**Item No.: 793-5501/000-006**

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



**Item No.: 793-5501/000-007**

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



**Item No.: 793-5501/000-023**

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



**Item No.: 793-5501/000-017**

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



**Item No.: 793-5501/000-012**

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



**Item No.: 793-5501/000-005**

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



**Item No.: 793-5501/000-024**

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



**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

1.2.6.1 Marker



**Item No.: 793-5501/000-002**

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

**Item No.: 793-501/000-006**

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

**Item No.: 793-501/000-007**

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

**Item No.: 793-501/000-023**

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



**Item No.: 793-501/000-017**

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

**Item No.: 793-501/000-012**

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

**Item No.: 793-501/000-005**

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

**Item No.: 793-501/000-024**

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



**Item No.: 793-501**

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

**Item No.: 793-501/000-002**

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

**Item No.: 2009-115/000-006**

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

**Item No.: 2009-115/000-007**

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



**Item No.: 2009-115/000-023**

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

**Item No.: 2009-115/000-017**

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

**Item No.: 2009-115/000-012**

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

**Item No.: 2009-115/000-024**

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



**Item No.: 2009-115**

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

**Item No.: 2009-115/000-002**

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

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 Push-in type wire jumper

1.2.8.1 Jumper



**Item No.: 249-126**

Push-in type wire jumper; 0.75 mm<sup>2</sup>; insulated; 110 mm long; black

**Item No.: 249-123**

Push-in type wire jumper; 0.75 mm<sup>2</sup>; insulated; 180 mm long; black

**Item No.: 249-127**

Push-in type wire jumper; 0.75 mm<sup>2</sup>; insulated; 250 mm long; black

**Item No.: 249-125**

Push-in type wire jumper; insulated; 60 mm long; black

## 1.2.9 Test and measurement

### 1.2.9.1 Testing accessories



**Item No.: 209-170**

Test plug adapter; 8.3 mm wide; for 4 mm Ø test plugs; suitable for 1.5 mm<sup>2</sup> - 10 mm<sup>2</sup> tbs; gray

## 1.2.10 Tool

### 1.2.10.1 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

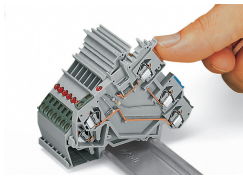


**Item No.: 210-657**

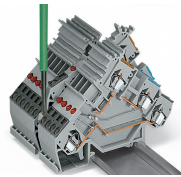
Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft; short; multicoloured

## Installation Notes

### Installation

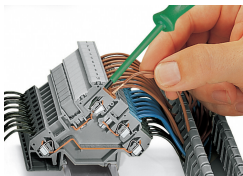


Snapping a terminal block onto the DIN-rail.  
Terminal blocks with a grounding foot automatically establish a direct contact to the rail.



Removing the terminal block from DIN-rail.  
Notice: Remove jumper contacts first!

## Conductor termination



**CAGE CLAMP® connection**

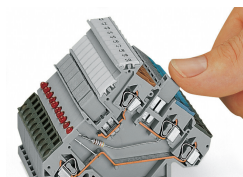
Inserting a conductor via straight operating tool (210-720).



**CAGE CLAMP® connection**

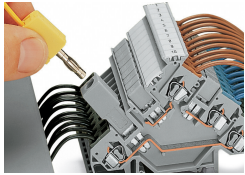
Inserting a conductor via angled operating tool (210-658).

## Commoning

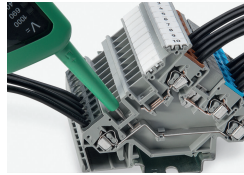


Commoning using an adjacent jumper (280-402).  
Push jumper down until fully inserted.

## Testing

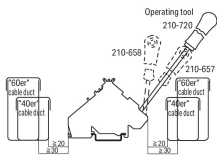


Testing via banana plug and test plug adapter (209-170).



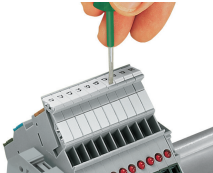
Testing via voltage tester directly on the current bar.

## Installation



Min. mounting distance – terminal blocks to cable duct

## Marking



Labeling via WMB Multi Marking System.