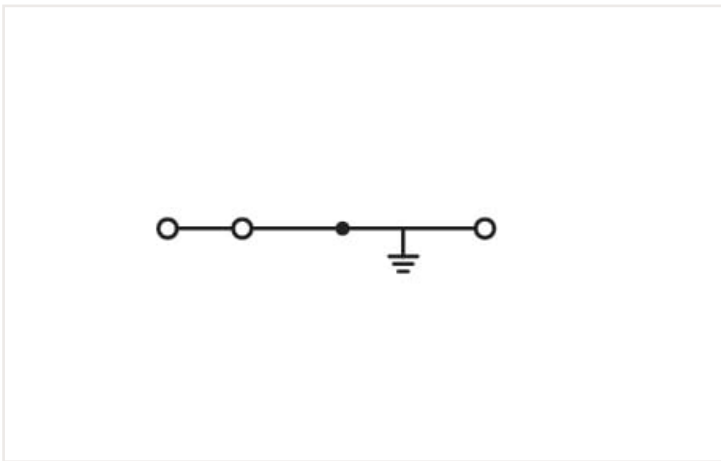
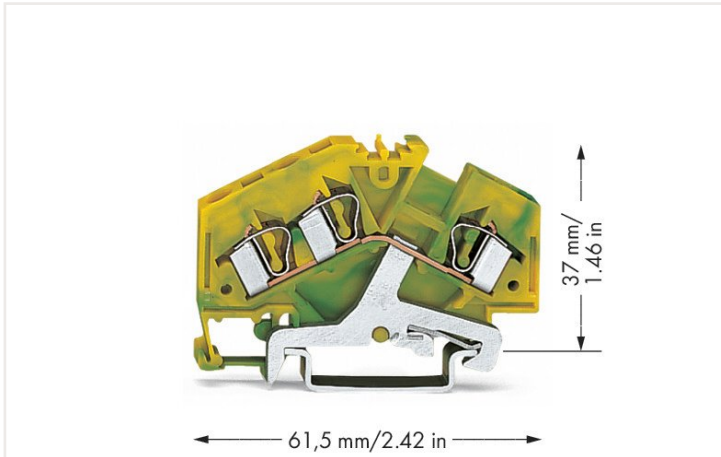


**Data sheet | Item number: 281-637**

3-conductor ground terminal block; 4 mm<sup>2</sup>; center marking; for DIN-rail 35 x 15 and 35 x 7.5; CAGE CLAMP®; 4,00 mm<sup>2</sup>; green-yellow

<https://www.wago.com/281-637>



**Electrical data**

**Ratings per IEC/EN**

Ratings per IEC/EN 60947-7-2

**Connection data**

Connection points	3
Total number of potentials	1
Number of levels	1

**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 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 ... 4 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor	0.08 ... 4 mm <sup>2</sup> / 28 ... 12 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inches
Wiring direction	Front-entry wiring, angled

## Physical data

Width	6 mm / 0.236 inches
Height	61.5 mm / 2.421 inches
Depth from upper-edge of DIN-rail	37 mm / 1.457 inches

## Mechanical data

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

## Material data

Note (material data)	<a href="#">Information on material data can be found here</a>
Color	green-yellow
Material group	I
Insulation material	Polyamide (PA66)
Flammability class per UL94	V0
Fire load	0.182 MJ
Weight	16.1 g

### Environmental requirements

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

### Commercial data

eCl@ss 10.0	27-14-11-41
eCl@ss 9.0	27-14-11-41
ETIM 8.0	EC000901
ETIM 7.0	EC000901
PU (SPU)	100 Stück
Packaging type	Box
Country of origin VKOrg Germany	DE
GTIN	4045454084516
Customs tariff number VKOrg Germany	85369010000

### Approvals and certificates

#### General approvals



Approval	Standard	Certificate name
CCA DEKRA Certification B.V.	EN 60947, IEC 60947	NTR NL-7454/A1
CSA DEKRA Certification B.V.	C22.2 No. 158	1505034
KEMA/KEUR DEKRA Certification B.V.	EN 60947	71-107288
UL UL International Germany GmbH	UL 1059	E45172

#### Approvals for marine applications



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

### Downloads

#### Environmental Product Compliance

##### Compliance Search

Environmental Product  
Compliance 281-637



### Documentation

#### Additional Information

Technical Section pdf  
2142.18 KB

#### Bid Text

281-637	19.02.2019	xml 3.03 KB	
281-637	28.02.2017	doc 24.00 KB	

CAD/CAE-Data

CAD data	CAE data
2D/3D Models 281-637	EPLAN Data Portal 281-637
	WSCAD Universe 281-637
	ZUKEN Portal 281-637

1 Compatible products

1.1 Required accessories

1.1.1 End plate

1.1.1.1 End plate

<b>Item no.: 281-312</b> End and intermediate plate; 2.5 mm thick; gray	<b>Item no.: 281-313</b> End and intermediate plate; 2.5 mm thick; orange	<b>Item no.: 281-348</b> Separator plate; 2 mm thick; oversized; gray	<b>Item no.: 281-318</b> Separator plate; 2 mm thick; oversized; orange

1.2 Optional accessories

1.2.1 DIN-rail

1.2.1.1 Mounting accessories

<b>Item no.: 210-196</b> Aluminum carrier rail; 35 x 8.2 mm; 1.6 mm thick; 2 m long; unslotted; similar to EN 60715; silver-colored	<b>Item no.: 210-198</b> Copper carrier rail; 35 x 15 mm; 2.3 mm thick; 2 m long; unslotted; according to EN 60715; copper-colored	<b>Item no.: 210-508</b> Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; slotted; galvanized; similar to EN 60715; silver-colored	<b>Item no.: 210-197</b> Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; slotted; similar to EN 60715; silver-colored
<b>Item no.: 210-506</b> Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; unslotted; galvanized; similar to EN 60715; silver-colored	<b>Item no.: 210-114</b> Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; unslotted; similar to EN 60715; silver-colored	<b>Item no.: 210-118</b> Steel carrier rail; 35 x 15 mm; 2.3 mm thick; 2 m long; unslotted; according to EN 60715; silver-colored	<b>Item no.: 210-115</b> 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
<b>Item no.: 210-112</b> 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	<b>Item no.: 210-504</b> Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; galvanized; according to EN 60715; silver-colored	<b>Item no.: 210-113</b> Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; unslotted; according to EN 60715; silver-colored	<b>Item no.: 210-505</b> 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.: 216-241**

Ferrule; Sleeve for 0.5 mm<sup>2</sup> / 20 AWG; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; white



**Item no.: 216-201**

Ferrule; Sleeve for 0.5 mm<sup>2</sup> / 20 AWG; insulated; electro-tin plated; white



**Item no.: 216-242**

Ferrule; Sleeve for 0.75 mm<sup>2</sup> / 18 AWG; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; gray



**Item no.: 216-202**

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



**Item no.: 216-243**

Ferrule; Sleeve for 1 mm<sup>2</sup> / AWG 18; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; red



**Item no.: 216-203**

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



**Item no.: 216-204**

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



**Item no.: 216-244**

Ferrule; Sleeve for 1.5 mm<sup>2</sup> / AWG 16; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; black



**Item no.: 216-205**

Ferrule; Sleeve for 2.08 mm<sup>2</sup> / AWG 14; insulated; electro-tin plated; yellow



**Item no.: 216-206**

Ferrule; Sleeve for 2.5 mm<sup>2</sup> / AWG 14; insulated; electro-tin plated; blue



**Item no.: 216-246**

Ferrule; Sleeve for 2.5 mm<sup>2</sup> / AWG 14; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; blue



**Item no.: 216-106**

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

## 1.2.3 Installation

### 1.2.3.1 Mounting accessories



**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



**Item no.: 709-153**

Cover; Type 1; suitable for cover carrier, type 1; 1 m long; transparent



**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.: 281-470**

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.: 281-471**

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



**Item no.: 281-472**

Insulation stop; 0.75 - 1.5 mm<sup>2</sup>; 5 pieces/strip; dark gray

## 1.2.5 Jumper

### 1.2.5.1 Jumper



**Item no.: 281-490**  
Jumper; 10-way; insulated; gray



**Item no.: 281-482**  
Jumper; 2-way; insulated; gray



**Item no.: 281-492**  
Jumper; 2-way; insulated; gray



**Item no.: 281-483**  
Jumper; 3-way; insulated; gray



**Item no.: 281-485**  
Jumper; 5-way; insulated; gray



**Item no.: 281-402**  
Jumper; insulated; gray



**Item no.: 281-409**  
Jumper; insulated; gray



**Item no.: 281-422**  
Jumper; insulated; yellow-green



**Item no.: 781-452**  
Staggered jumper; from 1 to 2; insulated; gray



**Item no.: 781-453**  
Staggered jumper; from 1 to 3; insulated; gray



**Item no.: 781-454**  
Staggered jumper; from 1 to 4; insulated; gray



**Item no.: 781-455**  
Staggered jumper; from 1 to 5; insulated; gray



**Item no.: 781-456**  
Staggered jumper; from 1 to 6; 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 Group marker carrier



**Item no.: 209-140**  
Group marker carrier; gray



**Item no.: 209-141**  
Group marker carrier; gray



**Item no.: 209-142**  
Group marker carrier; gray



**Item no.: 249-105**  
Group marker carrier; gray

### 1.2.6.2 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



**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

1.2.6.2 Marker



**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.: 281-415**  
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.: 249-148**  
B-type spacer module; modular; e.g., for bridging commoned terminal blocks; gray



**Item no.: 249-147**  
B-type test plug module; modular; 2,50 mm<sup>2</sup>; gray



**Item no.: 249-145**  
L-type end module; modular; with rigid contact pin; End module; 2,50 mm<sup>2</sup>; gray



**Item no.: 249-146**  
L-type spacer module; modular; e.g., bridging commoned terminal blocks; gray



**Item no.: 249-144**  
L-type test plug module; modular; with spring-loaded contact pin; Center module; 2,50 mm<sup>2</sup>; gray



**Item no.: 281-419**  
Spacer module; modular; bridging commoned terminal blocks; gray



**Item no.: 280-404**  
Test plug adapter; 5 mm wide; for test plug (2.3 mm Ø); suitable for 1.5 mm<sup>2</sup> - 4 mm<sup>2</sup> tbs; gray



**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



**Item no.: 281-418**  
Test plug module; modular; suitable for all WAGO 281, 776, 777 and 781 series rail-mounted terminal blocks with jumper slots in the current bar; gray



**Item no.: 281-407**  
Test plug; 6 mm wide; Nominal current 24 A; for 0.08 mm<sup>2</sup> - 2.5 mm<sup>2</sup>; 2,50 mm<sup>2</sup>; 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

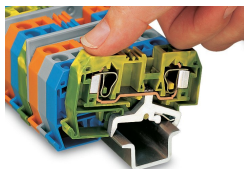


**Item no.: 210-657**

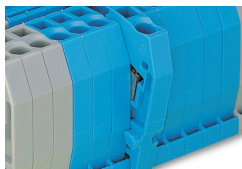
Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft; short; multicoloured

## Installation notes

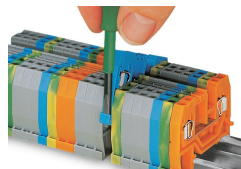
### Installation



Snapping a ground conductor block onto the DIN-rail automatically makes a direct electrical connection to the rail.



Quick assembly keys prevent reverse mounting.

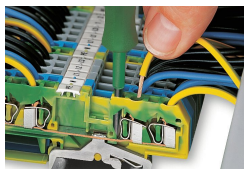


Removing a terminal block from the assembly.

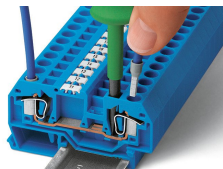


Steel DIN-rails are not suited for PEN (ground and N-conductor) applications per EN 60947-7-2 (VDE 0611, Part 3).

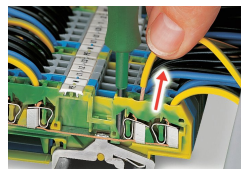
## Conductor termination



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.



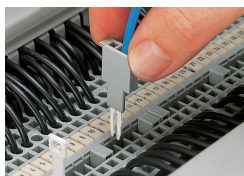
CAGE CLAMP® connection  
Removing a solid conductor.



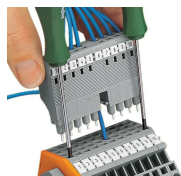
Inserting insulation stops.



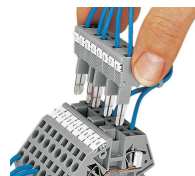
## Testing



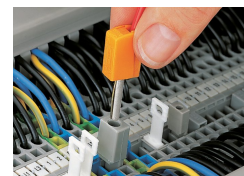
Testing with a test plug.  
Picture shows a test plug fitted with CAGE CLAMP®.



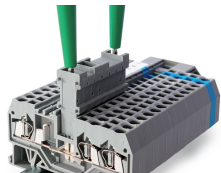
L-type test plug modules fitted with CAGE CLAMP®



B-type test plug modules fitted with CAGE CLAMP®

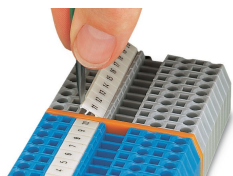


Testing with a test plug.  
Picture shows a test plug adapter (209-170).



Test plugs modules are directly plugged into the jumper contact slot of the current bar.

## Marking



Labeling via WMB Multi Marking System.