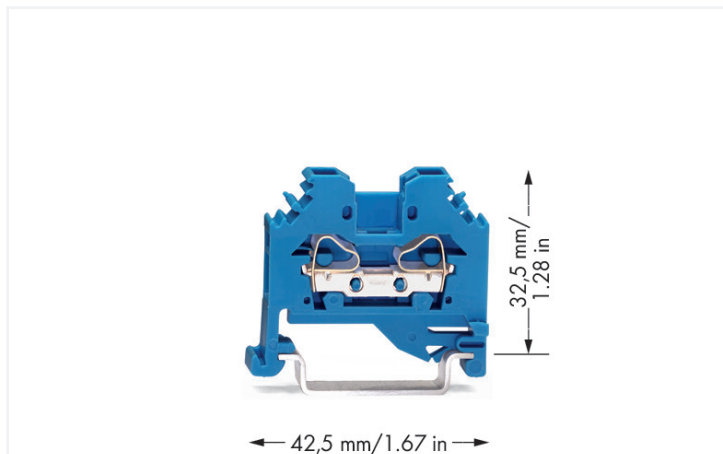


## Data Sheet | Item Number: 281-104

2-conductor through terminal block; 4 mm<sup>2</sup>; suitable for Ex i applications; lateral marker slots; for DIN-rail 35 x 15 and 35 x 7.5; CAGE CLAMP®; 4,00 mm<sup>2</sup>; blue

<https://www.wago.com/281-104>



Color: ■ blue



Similar to illustration

### Through terminal block, 281 Series, CAGE CLAMP®

Easily, quickly and safely connect conductors with this through terminal block (item number 281-104). Conductors can only be connected to this through terminal block if their strip length is between 9 and 10 mm. Whether in industrial or building applications, our rail-mount through terminal blocks are the perfect solution to quickly and securely connect electrical conductors. Depending on the model, you can use them for either typical through-wiring or potential distribution. This product features conductor terminals and utilizes CAGE CLAMP®. Our trusted universal connection known as CAGE CLAMP® is industry-leading when it comes to connection technology and electrical interconnections. Depending on the type of conductor, this through terminal block is designed for conductor cross sections ranging from 0.08 mm<sup>2</sup> to 4 mm<sup>2</sup>.

An operating tool is used to operate this through rail-mount terminal block.

## Electrical data

Ratings per	IEC/EN 60947-7-1		
Overvoltage category	III	III	II
Pollution degree	3	2	2
Nominal voltage	800 V	-	-
Rated impulse withstand voltage	8 kV	-	-
Rated current	32 A	-	-

## Power Loss

Power loss, per pole (potential)	1.024 W
Rated current $I_N$ for power loss specification	32 A
Resistance value for specified, current-dependent power loss	0.001 $\Omega$

## General information

Wiring direction	Side-entry wiring
------------------	-------------------

## Connection Data

Clamping units	2
Total number of potentials	1
Number of levels	1

## Connection 1

Connection technology	CAGE CLAMP®
Actuation type	Operating tool
Connectable conductor materials	Copper Aluminum

### 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 ... 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	Side-entry wiring

### Physical data

Width	6 mm / 0.236 inches
Height	42.5 mm / 1.673 inches
Depth from upper-edge of DIN-rail	32.5 mm / 1.28 inches

### Mechanical data

Design	horizontal type
Mounting type	DIN-35 rail
Marking level	Side marking

### Material data

Note (material data)	<a href="#">Information on material specifications can be found here</a>
Color	blue
Material group	I
Insulation material (main housing)	Polyamide (PA66)
Flammability class per UL94	V0
Fire load	0.105 MJ
Weight	6.1 g

### Environmental requirements

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

### Commercial data

PU (SPU)	100 pcs
Packaging type	Box
Country of origin	IN
GTIN	4045454076054
Customs tariff number	85369010000

### Product Classification

UNSPSC	39121410
eCl@ss 10.0	27-14-11-20
eCl@ss 9.0	27-14-11-20
ETIM 9.0	EC000897
ETIM 10.0	EC000897
ECCN	NO US CLASSIFICATION

### Environmental Product Compliance

RoHS Compliance Status	Compliant, No Exemption
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Approvals / Certificates

General approvals



Approval	Standard	Certificate Name
CSA CSA Group	C22.2	1505034
KEMA/KEUR DEKRA Certification B.V.	EN 60947	71-107288
UL UL International Germany GmbH	UL 1059	E45172

Declarations of conformity and manufacturer's declarations

Approval Standard Certificate Name

EU-Declaration of Confor- mity WAGO GmbH & Co. KG	-	-
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Approvals for marine applications



Approval	Standard	Certificate Name
ABS American Bureau of Ship- ping	-	24-0152298-PDA
BV Bureau Veritas S.A.	EN 60947	07436/G0 BV
DNV GL Det Norske Veritas, Ger- manischer Lloyd	-	TAE00001V2
PRS Polski Rejestr Statków	-	TE/1094/880590/23

Downloads

Environmental Product Compliance

Compliance Search

Environmental Product Compliance 281-104	↓
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Documentation

Bid Text

281-104	19.02.2019	xml 3.23 KB	↓
281-104	12.06.2017	doc 24.00 KB	↓

CAD/CAE-Data

CAD data	CAE data
2D/3D Models 281-104	EPLAN Data Portal 281-104
	WSCAD Universe 281-104
	ZUKEN Portal 281-104

1 Compatible Products

1.1 Required Accessories

1.1.1 End plate

1.1.1.1 End plate



**Item No.: 281-301**  
End and intermediate plate; 3 mm thick; gray

**Item No.: 281-302**  
End and intermediate plate; 3 mm thick; 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



**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 End plate

### 1.2.2.1 End plate



**Item No.: 281-332**

Separator plate; 2 mm thick; oversized; gray



**Item No.: 281-322**

Separator plate; 2 mm thick; oversized; orange



**Item No.: 281-333**

Step-down intermediate plate; 1 mm thick; \*only for 4 mm terminal blocks; gray

## 1.2.3 Ferrule

### 1.2.3.1 Ferrule



**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.: 216-242**

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.: 216-243**

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.: 216-244**

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.: 216-246**

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

## 1.2.4 Installation

### 1.2.4.1 Cover



**Item No.: 709-153**

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

### 1.2.4.2 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

### 1.2.4.3 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

1.2.5 Jumper

1.2.5.1 Jumper



**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.: 283-414**  
Step-down jumper; from 283 to 281 series; insulated; gray



**Item No.: 284-414**  
Step-down jumper; from 284/282 to 281/280/279 series; 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.: 281-405**  
Protective warning marker; with high-voltage symbol, black; for 5 terminal blocks; 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.: 249-147**  
B-type test plug module; modular; 2,50 mm<sup>2</sup>; 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.: 281-407**  
Test plug; 6 mm wide; Nominal current 24 A; for 0.08 mm<sup>2</sup> - 2.5 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



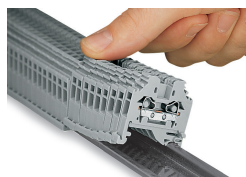
**Item No.: 210-720**  
Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft; multicoloured



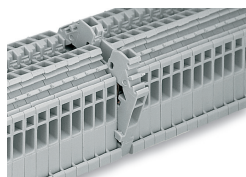
**Item No.: 210-657**  
Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft; short; multicoloured

## Installation Notes

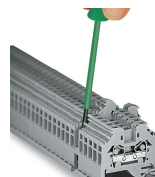
### Installation



Snapping side-entry rail-mount terminal blocks onto the DIN-rail.

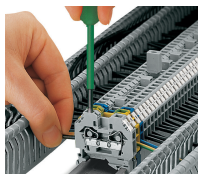


Quick assembly keys prevent reverse mounting.



Removing a terminal block from the assembly.

### Conductor termination



#### CAGE CLAMP® connection

Inserting a conductor.

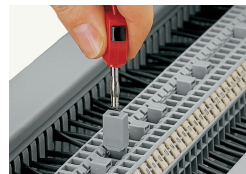
With ferruled conductors, it is necessary to use a terminal block one size larger than the conductor's nominal cross-section.

### Commoning



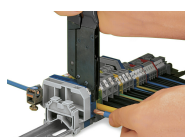
Commoning using an adjacent jumper (280-402). Push jumper down until fully inserted.

### Testing



Testing with a test plug.

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



When operating the handles beyond the locked position, the ratchet allows the tool to open and be removed from the terminal block.

Marking



Labeling via WMB Multi Marking System.