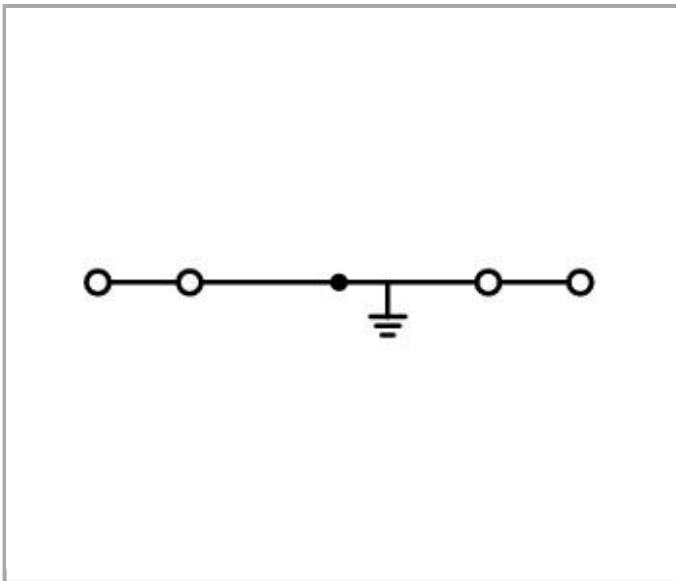
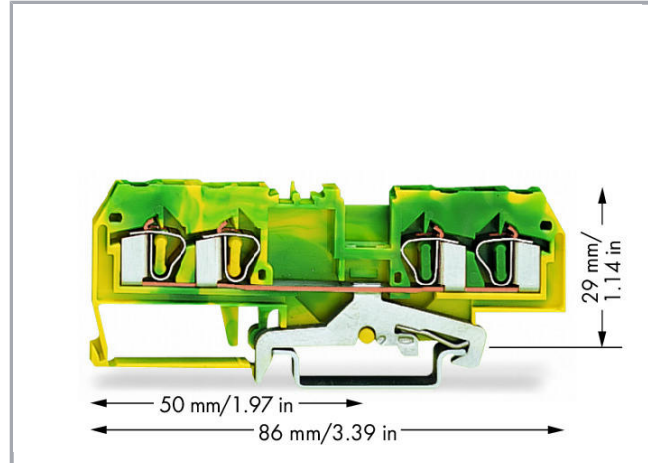
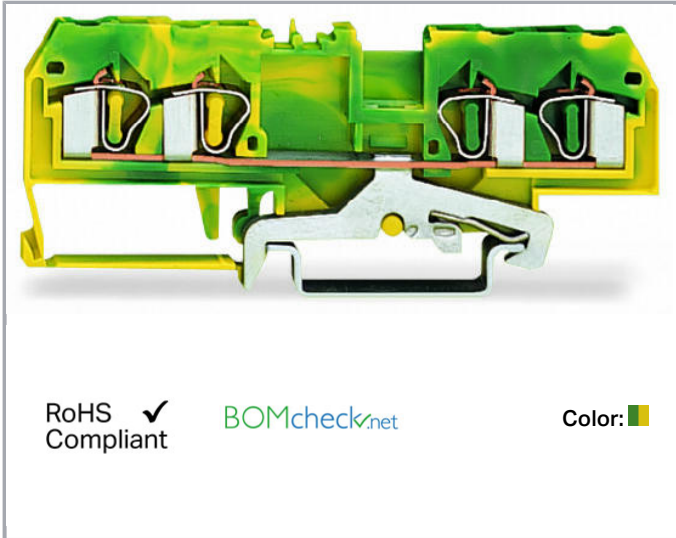


Data sheet | Item number: 281-657

4-conductor ground terminal block; 4 mm²; center marking; for DIN-rail 35 x 15 and 35 x 7.5; CAGE CLAMP®; 4,00 mm²; green-yellow



www.wago.com/281-657



Item description

Note:

Terminating Aluminum Conductors

WAGO spring clamp terminal blocks are suitable for solid aluminum conductors up to 4 mm²/12 AWG if WAGO "Alu-Plus" Contact Paste is used for termination.

Subject to changes. Please also observe the further product documentation!

WAGO Kontakttechnik GmbH & Co. KG
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32423 Minden
Phone: +49571 887-0 | Fax: +49571 887-169
Email: info.de@wago.com | Web: www.wago.com

Do you have any questions about our products?
We are always happy to take your call at +49 (571) 887-44222.



"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 mm² = 16 A

4 mm² = 22 A

Data

Electrical data

Ratings per IEC/EN 60664-1

Ratings per	IEC/EN 60947-7-2
-------------	------------------

Connection data

Connection technology	CAGE CLAMP®
Actuation type	Operating tool
Connectable conductor materials	Copper Aluminum
Solid conductor	0,08 ... 4 mm ² / 28 ... 12 AWG
Fine-stranded conductor	0,08 ... 4 mm ² / 28 ... 12 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch
Total number of connection points	4
Total number of potentials	1
Number of levels	1
Wiring type	Front-entry wiring

Geometrical Data

Width	6 mm / 0.236 inch
-------	-------------------

Subject to changes. Please also observe the further product documentation!

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Height from upper-edge of DIN-rail	29 mm / 1.142 inch
Depth	86 mm / 3.386 inch

Mechanical data

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

Material Data




Color	green-yellow
Insulation material	Polyamide 66 (PA 66)
Fire load	0.193 MJ
Weight	17.6 g

Commercial data

Product Group	1 (Rail Mounted Terminal Blocks)
Packaging type	BOX
Country of origin	DE
GTIN	4044918512008
Customs tariff number	85369010000

Approvals / Certificates





Country specific Approvals

Logo	Approval	Additional Approval Text	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


Ship Approvals

Subject to changes. Please also observe the further product documentation!



Logo	Approval	Additional Approval Text	Certificate name
	ABS American Bureau of Shipping	-	20- HG1941090- PDA
	BV Bureau Veritas S.A.	EN 60947	07436/E0 BV
	DNV GL Det Norske Veritas, Germanischer Lloyd	-	TAE00001V2
	LR Lloyds Register	EN 60947	91/20112 (E9)

UL-Approvals

Logo	Approval	Additional Approval Text	Certificate name
	UL UL International Germany GmbH	UL 1059	20190731- E45172

Counterpart

















Compatible products

ferrule

Subject to changes. Please also observe the further product documentation!


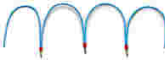
















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	Item no.: 216-106 Ferrule; Sleeve for 2.5 mm ² / AWG 14; uninsulated; electro-tin plated	www.wago.com/216-106
	Item no.: 216-201 Ferrule; Sleeve for 0.5 mm ² / 20 AWG; insulated; electro-tin plated; white	www.wago.com/216-201
	Item no.: 216-202 Ferrule; Sleeve for 0.75 mm ² / 18 AWG; insulated; electro-tin plated; gray	www.wago.com/216-202
	Item no.: 216-203 Ferrule; Sleeve for 1 mm ² / AWG 18; insulated; electro-tin plated; red	www.wago.com/216-203
	Item no.: 216-204 Ferrule; Sleeve for 1.5 mm ² / AWG 16; insulated; electro-tin plated; black	www.wago.com/216-204
	Item no.: 216-205 Ferrule; Sleeve for 2.08 mm ² / AWG 14; insulated; electro-tin plated; yellow	www.wago.com/216-205
	Item no.: 216-206 Ferrule; Sleeve for 2.5 mm ² / AWG 14; insulated; electro-tin plated; blue	www.wago.com/216-206
	Item no.: 216-241 Ferrule; Sleeve for 0.5 mm ² / 20 AWG; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; white	www.wago.com/216-241
	Item no.: 216-242 Ferrule; Sleeve for 0.75 mm ² / 18 AWG; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; gray	www.wago.com/216-242
	Item no.: 216-243 Ferrule; Sleeve for 1 mm ² / AWG 18; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; red	www.wago.com/216-243
	Item no.: 216-244 Ferrule; Sleeve for 1.5 mm ² / AWG 16; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; black	www.wago.com/216-244
	Item no.: 216-246 Ferrule; Sleeve for 2.5 mm ² / AWG 14; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; blue	www.wago.com/216-246
	Item no.: 216-301 Ferrule; Sleeve for 0.25 mm ² / AWG 24; insulated; electro-tin plated; yellow	www.wago.com/216-301
	Item no.: 216-302 Ferrule; Sleeve for 0.34 mm ² / 22 AWG; insulated; electro-tin plated; green	www.wago.com/216-302
tools		
	Item no.: 210-657 Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft; short	www.wago.com/210-657
	Item no.: 210-658 Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft; angled; short	www.wago.com/210-658
	Item no.: 210-720 Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft	www.wago.com/210-720

Subject to changes. Please also observe the further product documentation!

Jumper

	Item no.: 210-103 Wire commoning chain; insulated; 50 connections; black	www.wago.com/210-103
	Item no.: 210-123 Wire commoning chain; insulated; 50 connections	www.wago.com/210-123
	Item no.: 249-123 Push-in type wire jumper; insulated; wire length 180 mm; Conductor cross section 0.75 mm ²	www.wago.com/249-123
	Item no.: 249-125 Push-in type wire jumper; insulated; wire length 60 mm; Conductor cross section 0.75 mm ²	www.wago.com/249-125
	Item no.: 249-126 Push-in type wire jumper; insulated; wire length 110 mm; Conductor cross section 0.75 mm ²	www.wago.com/249-126
	Item no.: 249-127 Push-in type wire jumper; insulated; wire length 250 mm; Conductor cross section 0.75 mm ²	www.wago.com/249-127
	Item no.: 281-402 Adjacent jumper; insulated; IN = IN terminal block; gray	www.wago.com/281-402
	Item no.: 281-409 Alternate jumper; insulated; IN = IN terminal block; gray	www.wago.com/281-409
	Item no.: 281-422 Adjacent jumper; insulated; IN = IN terminal block; yellow-green	www.wago.com/281-422
	Item no.: 281-482 Comb-style jumper bar; insulated; 2-way; IN = IN terminal block; gray	www.wago.com/281-482
	Item no.: 281-483 Comb-style jumper bar; insulated; 3-way; IN = IN terminal block; gray	www.wago.com/281-483
	Item no.: 281-485 Comb-style jumper bar; insulated; 5-way; IN = IN terminal block; gray	www.wago.com/281-485
	Item no.: 281-490 Comb-style jumper bar; insulated; 10-way; IN = IN terminal block; gray	www.wago.com/281-490
	Item no.: 281-492 Alternate comb-style jumper bar; insulated; 2-way; IN = IN terminal block; gray	www.wago.com/281-492
	Item no.: 709-110 Wire commoning chain; insulated; 4 connections; 3 x 110 mm; black	www.wago.com/709-110
	Item no.: 709-111 Wire commoning chain; insulated; 3 connections; 2 x 120 mm; black	www.wago.com/709-111
	Item no.: 709-112 Wire commoning chain; insulated; 3 connections; 2 x 170 mm; black	www.wago.com/709-112
	Item no.: 781-452 Staggered jumper; insulated; from 1 to 2; Spacing: 6 mm; gray	www.wago.com/781-452

Subject to changes. Please also observe the further product documentation!

	Item no.: 781-453 Staggered jumper; insulated; from 1 to 3; Spacing: 6 mm; gray	www.wago.com/781-453
	Item no.: 781-454 Staggered jumper; insulated; from 1 to 4; Spacing: 6 mm; gray	www.wago.com/781-454
	Item no.: 781-455 Staggered jumper; insulated; from 1 to 5; Spacing: 6 mm; gray	www.wago.com/781-455
	Item no.: 781-456 Staggered jumper; insulated; from 1 to 6; Spacing: 6 mm; gray	www.wago.com/781-456
Marking accessories		
	Item no.: 2009-115 WMB-Inline; for Smart Printer; 1500 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; white	www.wago.com/2009-115
	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	www.wago.com/2009-115/000-002
	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	www.wago.com/2009-115/000-006
	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	www.wago.com/2009-115/000-007
	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	www.wago.com/2009-115/000-012
	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	www.wago.com/2009-115/000-017
	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	www.wago.com/2009-115/000-023
	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	www.wago.com/2009-115/000-024
	Item no.: 209-140 Group marker carrier; gray	www.wago.com/209-140
	Item no.: 209-141 Group marker carrier; gray	www.wago.com/209-141
	Item no.: 209-142 Group marker carrier; gray	www.wago.com/209-142

Subject to changes. Please also observe the further product documentation!



Item no.: 209-185
Adaptor; gray

www.wago.com/209-185



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

www.wago.com/249-105



Item no.: 793-501
WMB marking card; as card; not stretchable; plain; snap-on type; white

www.wago.com/793-501



Item no.: 793-501/000-002
WMB marking card; as card; not stretchable; plain; snap-on type; yellow

www.wago.com/793-501/000-002



Item no.: 793-501/000-005
WMB marking card; as card; not stretchable; plain; snap-on type; red

www.wago.com/793-501/000-005



Item no.: 793-501/000-006
WMB marking card; as card; not stretchable; plain; snap-on type; blue

www.wago.com/793-501/000-006



Item no.: 793-501/000-007
WMB marking card; as card; not stretchable; plain; snap-on type; gray

www.wago.com/793-501/000-007



Item no.: 793-501/000-012
WMB marking card; as card; not stretchable; plain; snap-on type; orange

www.wago.com/793-501/000-012



Item no.: 793-501/000-017
WMB marking card; as card; not stretchable; plain; snap-on type; light green

www.wago.com/793-501/000-017



Item no.: 793-501/000-023
WMB marking card; as card; not stretchable; plain; snap-on type; green

www.wago.com/793-501/000-023



Item no.: 793-501/000-024
WMB marking card; as card; not stretchable; plain; snap-on type; violet

www.wago.com/793-501/000-024



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

www.wago.com/793-5501



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

www.wago.com/793-5501/000-002



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

www.wago.com/793-5501/000-005

Item no.: 793-5501/000-006

Subject to changes. Please also observe the further product documentation!



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

www.wago.com/793-5501/000-006



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

www.wago.com/793-5501/000-007



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

www.wago.com/793-5501/000-012



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; green

www.wago.com/793-5501/000-017



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; light green

www.wago.com/793-5501/000-023



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

www.wago.com/793-5501/000-024

End plate



Item no.: 281-338

Separator plate; 2 mm thick; oversized; gray

www.wago.com/281-338



Item no.: 281-339

Separator plate; 2 mm thick; oversized; orange

www.wago.com/281-339

General accessories



Item no.: 281-407

Test plug; 6 mm wide; Nominal current 24 A; for 0.08 mm² - 2.5 mm²; 2,50 mm²; gray

www.wago.com/281-407

check



Item no.: 209-170

Test plug adapter; 8.3 mm wide; for 4 mm Ø test plugs; suitable for 1.5 mm² - 10 mm² tbs; gray

www.wago.com/209-170



Item no.: 249-144

L-type test plug module; modular; with spring-loaded contact pin; Center module; 2,50 mm²; gray

www.wago.com/249-144



Item no.: 249-145

L-type end module; modular; with rigid contact pin; End module; 2,50 mm²; gray

www.wago.com/249-145



Item no.: 249-146

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

www.wago.com/249-146



Item no.: 249-147

B-type test plug module; modular; 2,50 mm²; gray

www.wago.com/249-147



















Item no.: 249-148

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

www.wago.com/249-148

Subject to changes. Please also observe the further product documentation!

	Item no.: 280-404 Test plug adapter; 5 mm wide; for test plug 210-137 (2.3 mm Ø); suitable for 1.5 mm ² - 4 mm ² tbs; gray	www.wago.com/280-404
	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	www.wago.com/281-418
	Item no.: 281-419 Spacer module; modular; bridging commoned terminal blocks; gray	www.wago.com/281-419
Carrier rail		
	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	www.wago.com/210-112
	Item no.: 210-113 Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; unslotted; according to EN 60715	www.wago.com/210-113
	Item no.: 210-114 Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; unslotted; similar to EN 60715	www.wago.com/210-114
	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	www.wago.com/210-115
	Item no.: 210-118 Steel carrier rail; 35 x 15 mm; 2.3 mm thick; 2 m long; unslotted; according to EN 60715	www.wago.com/210-118
	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	www.wago.com/210-196
	Item no.: 210-197 Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; slotted; similar to EN 60715	www.wago.com/210-197
	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	www.wago.com/210-198
	Item no.: 210-504 Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; galvanized; according to EN 60715	www.wago.com/210-504
	Item no.: 210-505 Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; unslotted; galvanized; according to EN 60715	www.wago.com/210-505
	Item no.: 210-506 Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; unslotted; galvanized; similar to EN 60715	www.wago.com/210-506
	Item no.: 210-508 Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; slotted; galvanized; similar to EN 60715	www.wago.com/210-508
Protective Warning Marker		
	Item no.: 281-415 Protective warning marker; with high-voltage symbol, black; for 5 terminal blocks; yellow	www.wago.com/281-415

assembling

Subject to changes. Please also observe the further product documentation!



Item no.: 209-106
Mounting carrier; for isolated mounting on DIN 35 rails; gray

www.wago.com/209-106



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

www.wago.com/709-153

Insulation stop



Item no.: 281-470
Insulation stop; 0.08 - 0.2 mm² "s" (0.14 mm² "f-st"); 5 pieces/strip; white

www.wago.com/281-470



Item no.: 281-471
Insulation stop; 0.25 - 0.5 mm²; 5 pieces/strip; light gray

www.wago.com/281-471



Item no.: 281-472
Insulation stop; 0.75 - 1.5 mm²; 5 pieces/strip; dark gray

www.wago.com/281-472

Downloads

Documentation

Bid Text

281-657 doc - Datei	Feb 28, 2017	doc 24.6 kB	Download
281-657 GAEB X81 - Datei	Feb 19, 2019	xml 3.1 kB	Download

Additional Information

Technical explanations	Apr 3, 2019	pdf 2.1 MB	Download
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CAD/CAE-Data

CAD data

2D/3D Models 281-657	URL	Download
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CAE data

EPLAN Data Portal 281-657	URL	Download
WSCAD Universe 281-657	URL	Download

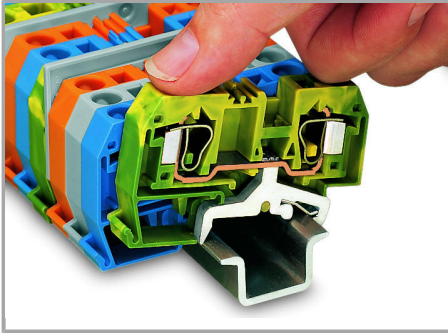
Handling Instructions

Subject to changes. Please also observe the further product documentation!

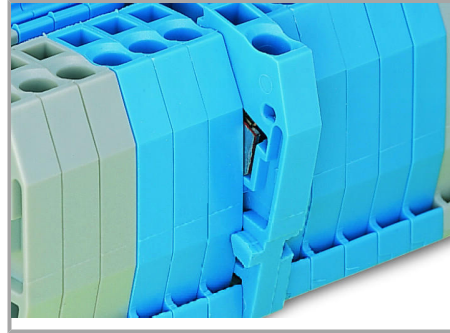
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Email: info.de@wago.com | Web: www.wago.com

Do you have any questions about our products?
We are always happy to take your call at +49 (571) 887-44222.

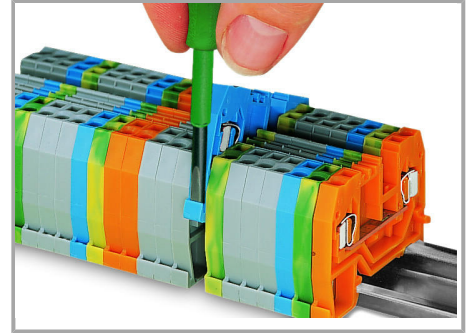
Assembly



By snapping a ground conductor terminal block onto the carrier rail, a direct electrical connection is automatically made to the rail.

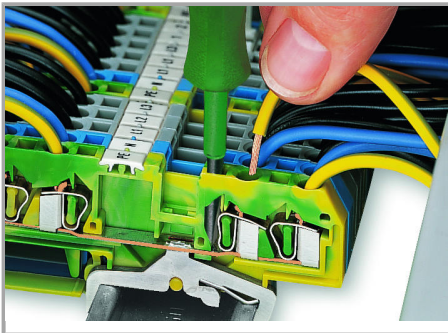


Quick assembly keys prevent reverse mounting.



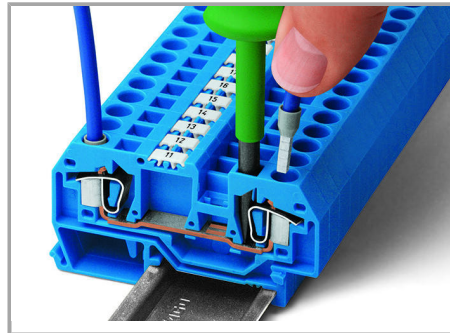
Removing a terminal block from the assembly.

Inserting a conductor



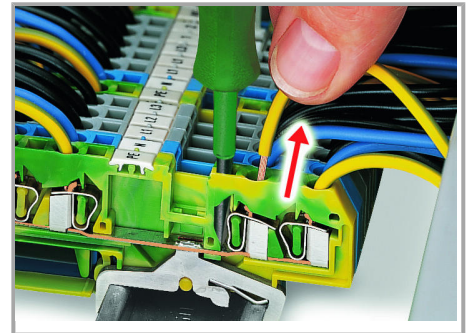
CAGE CLAMP® connection

Inserting a conductor.



CAGE CLAMP® connection

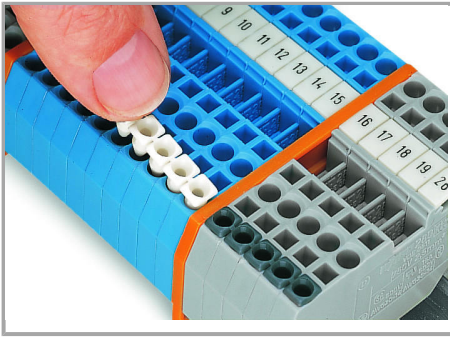
Inserting a conductor.



CAGE CLAMP® connection
Removing a conductor.

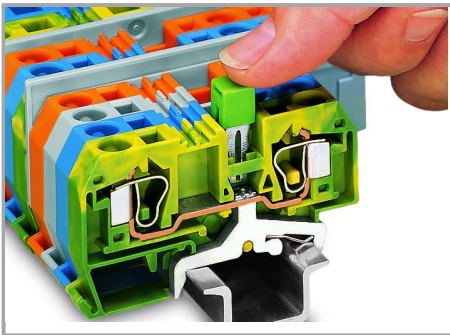
With ferruled conductors, it is necessary to use a terminal block one size larger than the conductor's nominal cross-section.

Subject to changes. Please also observe the further product documentation!

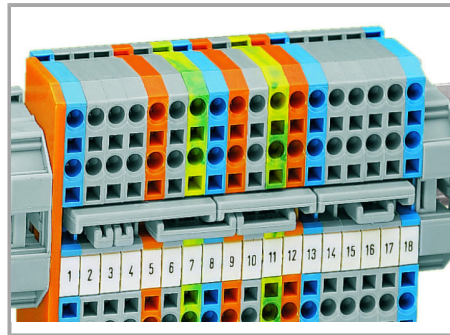


Inserting insulation stops.

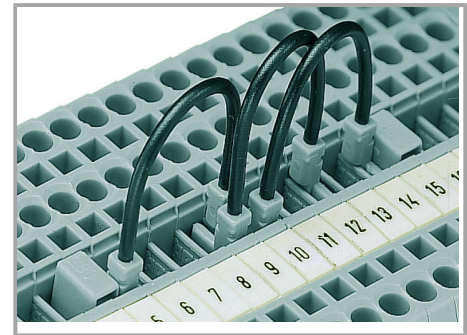
Commoning



Commoning ground conductor terminal blocks with through terminal blocks is possible in one direction only (via rear side of terminal block) using adjacent jumpers. In addition to the required marking of these blocks, use yellow-green adjacent jumpers.



Staggered jumpers for sophisticated circuit requirements – push jumpers down until fully inserted.



Wire jumpers

When installing machines or control systems, it is often necessary to make an additional connection between two terminal blocks that are not next to each other on the rail. In such cases, WAGO's touch-proof, push-in type wire jumpers are the ideal solution.

These jumpers are compatible with the following rail-mount terminal blocks:

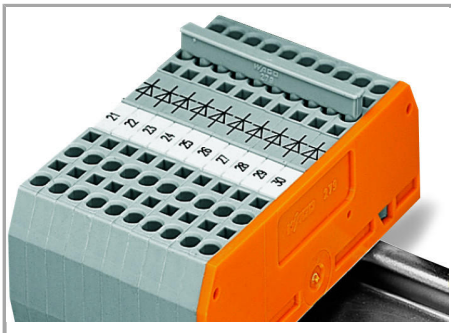
- 279 Series (1.5 mm²/16 AWG),
-
- 280/775/780 Series (2.5 mm²/14 AWG)

Subject to changes. Please also observe the further product documentation!

-
- 281/769/776/777/781 and 880 Series (4 mm²/12 AWG)
-

They are available in three conductor lengths (60, 110 and 250 mm), allowing up to 60 terminal blocks to be commoned depending on their width (see table on the right).

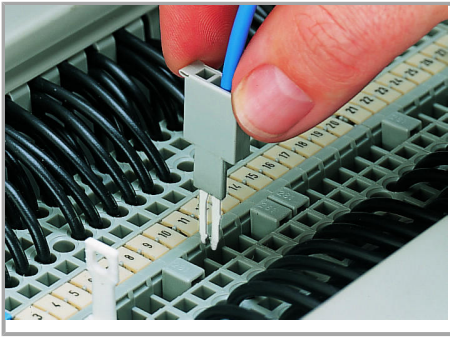
Compared with the 279 Series, the 280/775/780 and 281/776/777/781 Series can also accommodate two wire jumpers, allowing the use of commoning chains. Furthermore, the 280/769/775/780/880 and 281/776/777/781 Series allow both wire jumper and adjacent jumper to be simultaneously plugged into a same terminal block.



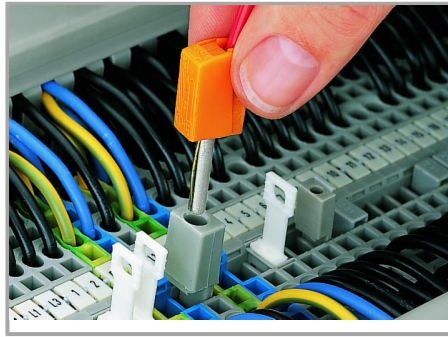
Commoning using comb-style jumper bars.
Push comb-style jumper bars down until fully inserted.

Testing

Subject to changes. Please also observe the further product documentation!



Testing with a test plug

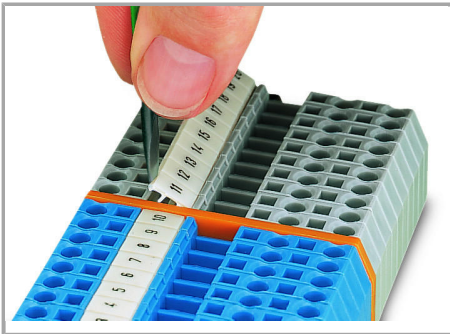


Testing with a test plug

(picture shows a test plug fitted with CAGE CLAMP®).

(picture shows 209-170 Test Plug Adapter).

Marking



Marking via WMB Multi Marking System.

Subject to changes. Please also observe the further product documentation!