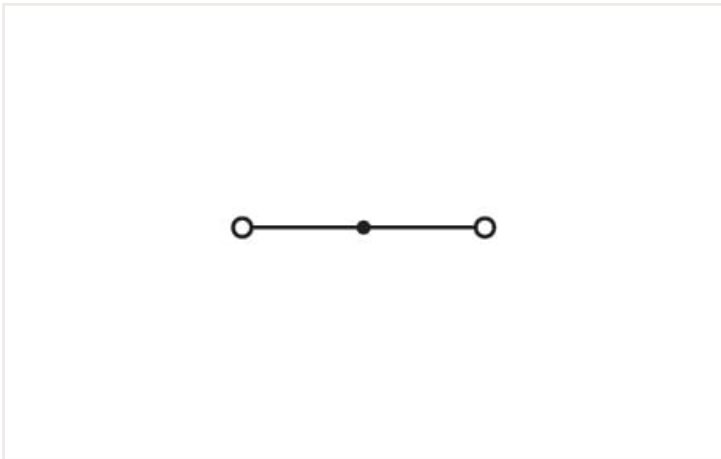
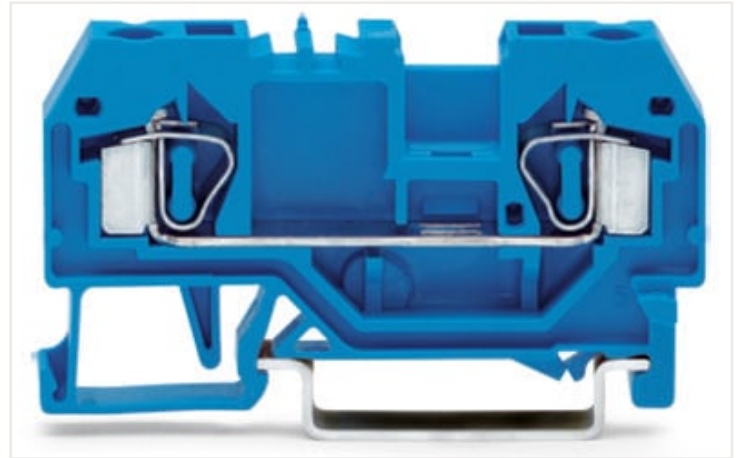
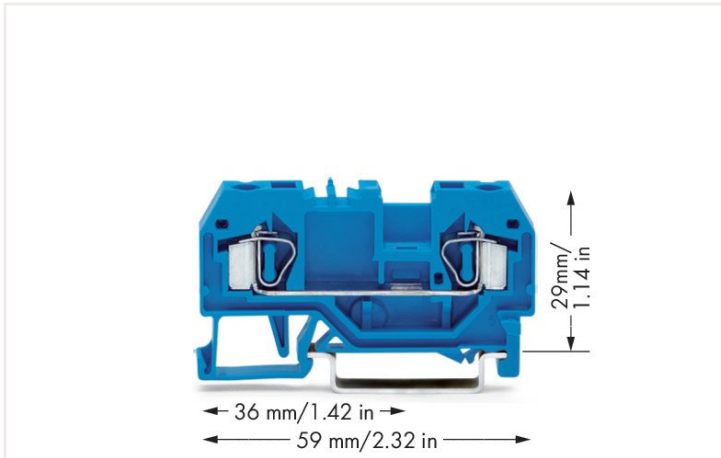


Data sheet | Item number: 281-904

2-conductor through terminal block; 4 mm²; suitable for Ex i applications; center marking; for DIN-rail 35 x 15 and 35 x 7.5; CAGE CLAMP®; 4,00 mm²; blue



<https://www.wago.com/281-904>



Electrical data

Ratings per IEC/EN	
Ratings per	IEC/EN 60947-7-1
Nominal voltage (III/3)	800 V
Rated impulse voltage (III/3)	8 kV
Rated current	32 A
Legend (ratings)	(III / 3) ≙ Overvoltage category III / Pollution degree 3

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

Connection data

Total number of connection points	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

Connection 1

Connectable conductor materials (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 [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 mm² = 16 A

4 mm² = 22 A

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 inches
Wiring direction	Front-entry wiring

Physical data

Width	6 mm / 0.236 inches
Height	59 mm / 2.323 inches
Depth from upper-edge of DIN-rail	29 mm / 1.142 inches

Mechanical data

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

Material data

Note (material data)	Information on material data can be found here
Color	blue
Material group	I
Insulation material	Polyamide (PA66)
Flammability class per UL94	V0
Fire load	0.141 MJ
Weight	6.7 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 8.0	EC000897
ETIM 7.0	EC000897
PU (SPU)	50 Stück
Packaging type	Box
Country of origin VKOrg Germany	DE
GTIN	4044918485111
Customs tariff number VKOrg Germany	85369010000

Approvals and certificates

Country specific 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

Ship Approvals



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)

UL-Approvals



Approval	Standard	Certificate name
UR UL International Germany GmbH	UL 1059	E45172

Downloads

Environmental Product Compliance

Compliance Search

Environmental Product Compliance 281-904



Documentation

Additional Information

Technical Section

pdf
2142.18 KB



Bid Text

281-904

19.02.2019

xml
3.23 KB



281-904

28.02.2017

doc
24.00 KB



CAD/CAE-Data

CAD data

2D/3D Models 281-904



CAE data

EPLAN Data Portal
281-904



WSCAD Universe
281-904



ZUKEN Portal 281-904



1 Compatible products

1.1 Required accessories

1.1.1 End plate

1.1.1.1 End plate



[Item no.: 281-328](#)

End and intermediate plate; 2.5 mm thick; gray

[Item no.: 281-329](#)

End and intermediate plate; 2.5 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

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

1.2.2 End plate

1.2.2.1 End plate



Item no.: 209-191
Separator for Ex e/Ex i applications; 3 mm thick; 120 mm wide; orange



Item no.: 209-192
Separator for Ex e/Ex i applications; 3 mm thick; 125.5 mm wide; orange



Item no.: 209-190
Separator for Ex e/Ex i applications; 3 mm thick; 90 mm wide; orange



Item no.: 281-330
Separator plate; 2 mm thick; oversized; gray



Item no.: 281-331
Separator plate; 2 mm thick; oversized; orange



Item no.: 284-334
Step-down cover plate; 1 mm thick; for 2-, 3- and 4-conductor terminal blocks; gray



Item no.: 284-344
Step-down cover plate; 1 mm thick; for 2-, 3- and 4-conductor terminal blocks; orange

1.2.3 Ferrule

1.2.3.1 Ferrule



Item no.: 216-301
Ferrule; Sleeve for 0.25 mm² / AWG 24; insulated; electro-tin plated; yellow



Item no.: 216-302
Ferrule; Sleeve for 0.34 mm² / 22 AWG; insulated; electro-tin plated; light turquoise



Item no.: 216-241
Ferrule; Sleeve for 0.5 mm² / 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 mm² / 20 AWG; insulated; electro-tin plated; white



Item no.: 216-242
Ferrule; Sleeve for 0.75 mm² / 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 mm² / 18 AWG; insulated; electro-tin plated; gray



Item no.: 216-243
Ferrule; Sleeve for 1 mm² / 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 mm² / AWG 18; insulated; electro-tin plated; red



Item no.: 216-204
Ferrule; Sleeve for 1.5 mm² / AWG 16; insulated; electro-tin plated; black



Item no.: 216-244
Ferrule; Sleeve for 1.5 mm² / 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 mm² / AWG 14; insulated; electro-tin plated; yellow



Item no.: 216-206
Ferrule; Sleeve for 2.5 mm² / AWG 14; insulated; electro-tin plated; blue



Item no.: 216-246
Ferrule; Sleeve for 2.5 mm² / 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 mm² / AWG 14; un-insulated; electro-tin plated; silver-colored

1.2.4 Installation

1.2.4.1 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

1.2.5 Insulation stop

1.2.5.1 Insulation stop



Item no.: 281-470

Insulation stop; 0.08 - 0.2 mm² "s" (0.14 mm² "f-st"); 5 pieces/strip; white



Item no.: 281-471

Insulation stop; 0.25 - 0.5 mm²; 5 pieces/strip; light gray



Item no.: 281-472

Insulation stop; 0.75 - 1.5 mm²; 5 pieces/strip; dark gray

1.2.6 Jumper

1.2.6.1 Jumper



Item no.: 281-490

Jumper; 10-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.: 281-482

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 mm²; insulated; black



Item no.: 709-111

Wire commoning chain; 2.5 mm²; insulated; black



Item no.: 709-112

Wire commoning chain; 2.5 mm²; insulated; black



Item no.: 210-103

Wire commoning chain; insulated; black



Item no.: 210-123

Wire commoning chain; insulated; blue

1.2.7 Marking

1.2.7.1 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

1.2.7.2 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



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

1.2.8 Protective warning marker

1.2.8.1 Cover



Item no.: 281-415
Protective warning marker; for 5 terminal blocks; with high-voltage symbol, black; yellow

1.2.9 Push-in type wire jumper

1.2.9.1 Jumper



Item no.: 249-126

Push-in type wire jumper; 0.75 mm²; insulated; 110 mm long; black



Item no.: 249-123

Push-in type wire jumper; 0.75 mm²; insulated; 180 mm long; black



Item no.: 249-127

Push-in type wire jumper; 0.75 mm²; insulated; 250 mm long; black



Item no.: 249-125

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

1.2.10 Test and measurement

1.2.10.1 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 mm²; gray



Item no.: 249-145

L-type end module; modular; with rigid contact pin; End module; 2,50 mm²; 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 mm²; 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 mm² - 4 mm² tbs; gray



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



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 mm² - 2.5 mm²; 2,50 mm²; gray

1.2.11 Tool

1.2.11.1 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

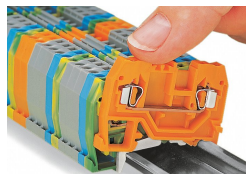


Item no.: 210-657

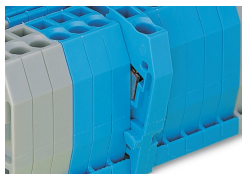
Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft; short; multicoloured

Installation notes

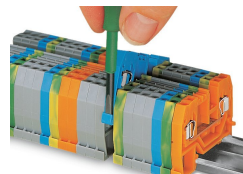
Installation



Snapping a terminal block onto the DIN-rail.



Quick assembly keys prevent reverse mounting.

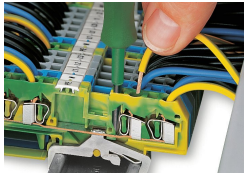


Removing a terminal block from the assembly.

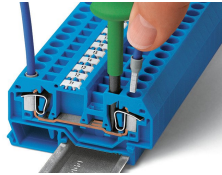


Steel DIN-rails are not suited for PEN (ground and N-conductor) applications per EN 60947-7-2 (VDE 0611, Part 3).

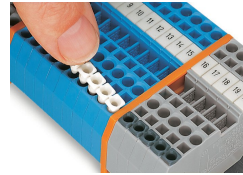
Conductor termination



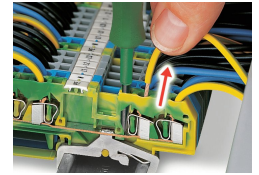
CAGE CLAMP® connection
Inserting a conductor.



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.

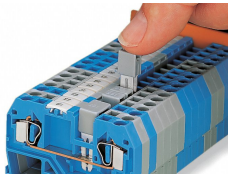


Inserting insulation stops.

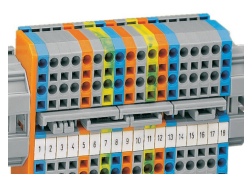


CAGE CLAMP® connection
Removing a solid conductor.

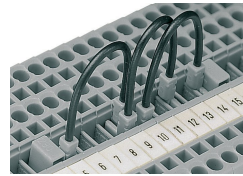
Commoning



Commoning using an adjacent jumper.
Push jumper down until fully inserted!



Staggered jumpers are suitable for sophisticated circuit requirements. Push jumpers down until fully inserted!

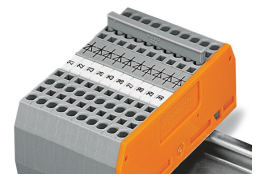


Push-In Type Wire Jumpers
When installing machines or control systems, it is often necessary to make an additional connection between two terminal blocks that are not next to each other on the rail. In such cases, WAGO's touch-proof, push-in type wire jumpers are the ideal solution.

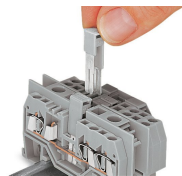
These jumpers are compatible with the following rail-mount terminal blocks:
- 279 Series (1.5 mm²/16 AWG),
- 280/775/780 Series (2.5 mm²/14 AWG)
- 281/769/776/777/781 and 880 Series (4 mm²/12 AWG)

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).

The 280/775/780 and 281/776/777/781 Series Terminal Blocks accept 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.

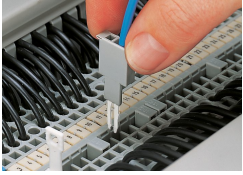


Commoning using comb-style jumper bars:
Push comb-style jumper bars down until fully inserted.

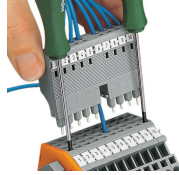


Commoning terminal blocks of different sizes via step-down jumpers.

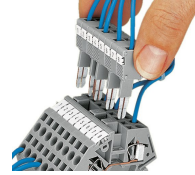
Testing



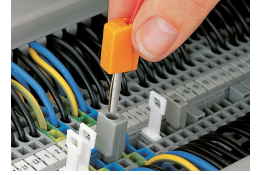
Testing with a test plug. Picture shows a test plug fitted with CAGE CLAMP®.



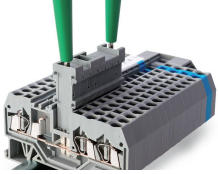
L-type test plug modules fitted with CAGE CLAMP®



B-type test plug modules fitted with CAGE CLAMP®

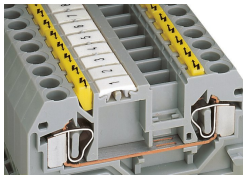


Testing with a test plug. Picture shows a test plug adapter (209-170).



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

Cover

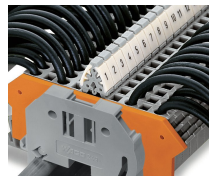


Protective warning markers inserted into the operating slots

Marking



Labeling via WMB Multi Marking System.



Terminal block marking with double marker carriers (209-128) Terminal blocks with side marking