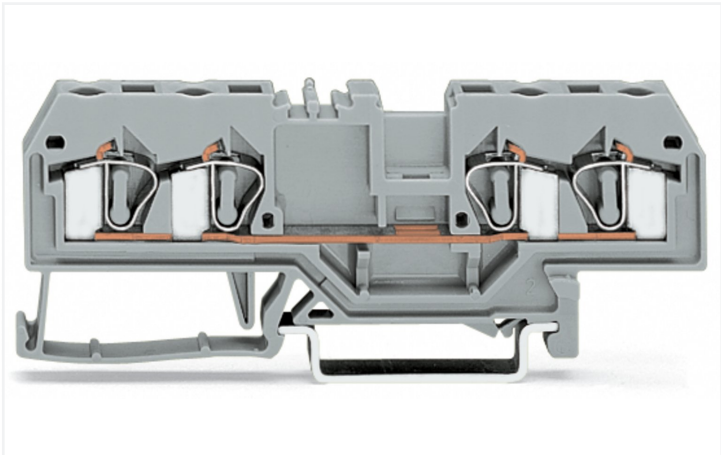
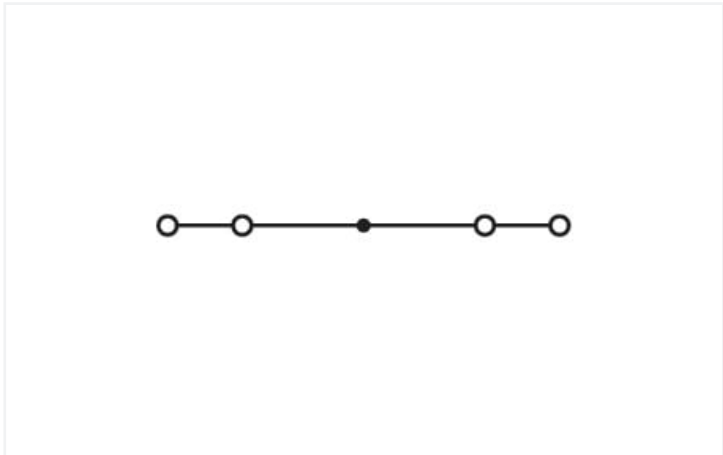




Color: ■ yellow

Similar to illustration



Similar to illustration

Through terminal block, 281 Series, CAGE CLAMP®

This through terminal block (item number 281-668) streamlines wire connections, making them both quick and easy. Whether for industrial or building applications, you can use our through terminal blocks to connect electrical conductors quickly and safely. We offer variants for both classic through-wiring and potential distribution. This through rail-mount terminal block has a rated voltage of 800 V and can handle currents up to 26 A. Ensure that the strip lengths are between 9 mm and 10 mm when connecting conductors to this through terminal block. This product features conductor terminals and utilizes CAGE CLAMP®. Our reliable and maintenance-free CAGE CLAMP® connection makes it easy to connect all conductor types without having to prepare the conductor. For example, you don't need to crimp ferrules. Depending on the type of conductor, this through terminal block is designed for conductor cross sections ranging from 0.08 mm² to 4 mm². It comes with one level and four clamping points for connecting a single potential. The yellow housing is made of polyamide (PA66) for insulation. An operating tool is used to operate this through rail-mount terminal block. These through rail-mount terminal blocks are mounted using DIN-35 rails.. You can connect copper, aluminum conductors via front-entry wiring.

Electrical data				
Ratings per		IEC/EN 60947-7-1		
Overvoltage category	III	III	II	Power Loss Power loss, per pole (potential)0.676 W Rated current I_N for specified power loss26 A Resistance value for specified, current-dependent power loss0.001 Ω
Pollution degree	3	2	2	
Nominal voltage	800 V	-	-	
Rated surge voltage	8 kV	-	-	
Rated current	26 A	-	-	
Connection data				
Clamping units	4	Connection 1		
Total number of potentials	1	Connection technology		CAGE CLAMP®
Number of levels	1	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 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 mm² / 28 ... 12 AWG
Fine-stranded conductor	0.08 ... 4 mm² / 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	86 mm / 3.386 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 specifications can be found here
Color	yellow
Material group	I
Insulation material (main housing)	Polyamide (PA66)
Flammability class per UL94	V0
Fire load	0.205 MJ
Weight	12.7 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 9.0		EC000897
ETIM 8.0		EC000897
PU (SPU)		50 pcs
Packaging type		Box
Country of origin		DE
GTIN		4044918486637
Customs tariff number		85369010000

Environmental Product Compliance		
RoHS Compliance Status		Compliant, No Exemption

Approvals / Certificates

General approvals



Approval	Standard	Certificate Name
CCA DEKRA Certification B.V.	IEC 60947	NTR NL-7454/A1
CSA CSA Group	C22.2	1505034
KEMA/KEUR DEKRA Certification B.V.	EN 60947	71-107288
UL Underwriters Laboratories Inc.	UL 1059	E45172

Declarations of conformity and manufacturer's declarations

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

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



Downloads

Environmental Product Compliance

Compliance Search

Environmental Product Compliance 281-668

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Documentation

Additional Information

Technical Section

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19.02.2019

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CAE data

EPLAN Data Portal 281-668

Download icon

WSCAD Universe 281-668

Download icon

ZUKEN Portal 281-668

Download icon

1 Compatible Products

1.1 Required Accessories

1.1.1 End plate

1.1.1.1 End plate

Item No.: 281-334

End and intermediate plate; 2.5 mm thick; gray

Item No.: 281-335

End and intermediate plate; 2.5 mm thick; orange

Item No.: 281-338

Separator plate; 2 mm thick; oversized; gray

Item No.: 281-339

Separator plate; 2 mm thick; oversized; orange

Item No.: 284-336

Step-down cover plate; 1 mm thick; for 4-conductor 279-831, 280-833 and 281-652 terminal blocks; gray

Item No.: 284-346

Step-down cover plate; 1 mm thick; for 4-conductor 279-831, 280-833 and 281-652 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



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.: 216-241
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.: 216-242
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.: 216-243
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.: 216-244
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.: 216-246
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

1.2.3 Installation

1.2.3.1 Cover



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



1.2.3.2 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

1.2.3.3 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

1.2.4 Insulation stop

1.2.4.1 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

1.2.5 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.: 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



1.2.6 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](#)
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.: 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 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

1.2.9 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 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

1.2.10 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



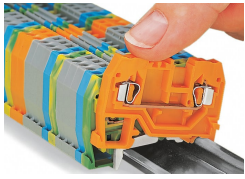
Item No.: 210-720
Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft; multicoloured



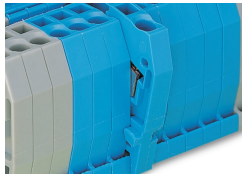
Item No.: 210-657
Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft; short; multicoloured

Installation Notes

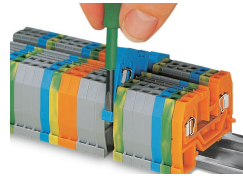
Installation



Snapping a terminal block onto the DIN-rail.



Quick assembly keys prevent reverse mounting.

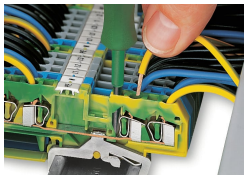


Removing a terminal block from the assembly.

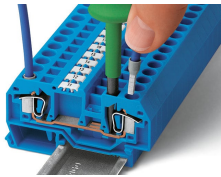


Steel DIN-rails are not suited for PEN (ground and N-conductor) applications per EN 60947-7-2 (VDE 0611, Part 3).

Conductor termination



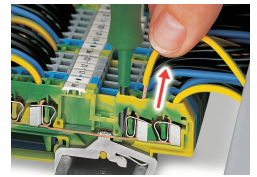
CAGE CLAMP® connection
Inserting a conductor.



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.

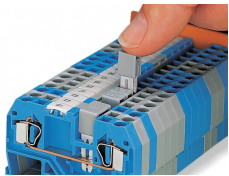


Inserting insulation stops.

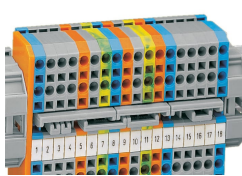


CAGE CLAMP® connection
Removing a solid conductor.

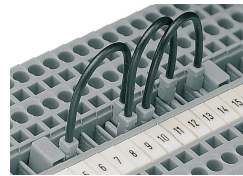
Commoning



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

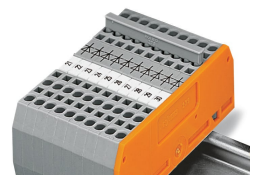
When installing machines or control systems, it is often necessary to make an additional connection between two terminal blocks that are not next to each other on the rail. In such cases, WAGO's touch-proof, push-in type wire jumpers are the ideal solution.

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)

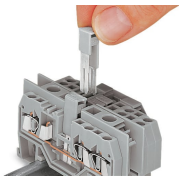
They are available in three conductor lengths (60, 110 and 250 mm), allowing up to 60 terminal blocks to be commoned depending on their width (see table on the right).

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.



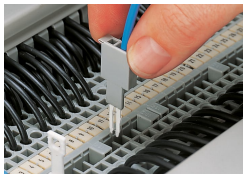
Commoning using comb-style jumper bars:
Push comb-style jumper bars down until fully inserted.

Commoning



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

Testing



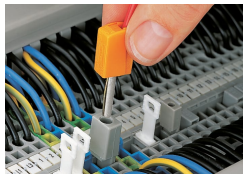
Testing with a test plug. Picture shows a test plug fitted with CAGE CLAMP®.



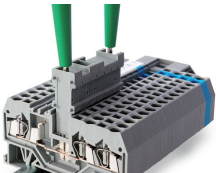
L-type test plug modules fitted with CAGE CLAMP®



B-type test plug modules fitted with CAGE CLAMP®

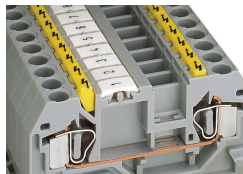


Testing with a test plug. Picture shows a test plug adapter (209-170).



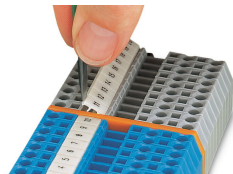
Test plugs modules are directly plugged into the jumper contact slot of the current bar.

Cover

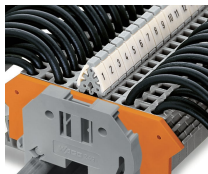


Protective warning markers inserted into the operating slots

Marking



Labeling via WMB Multi Marking System.



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