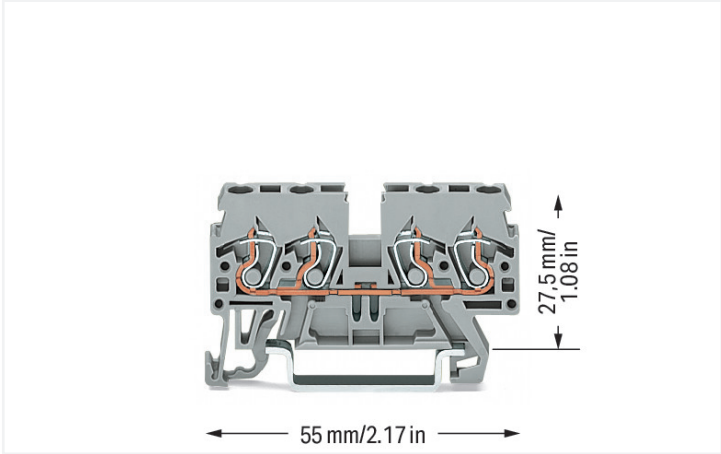


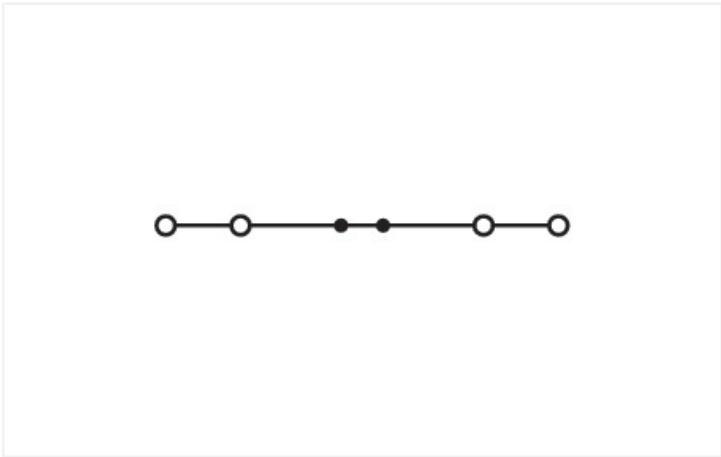
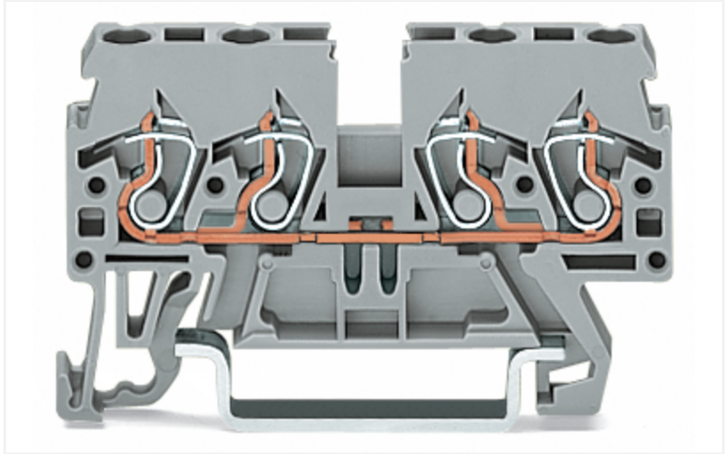
**Data Sheet | Item Number: 870-831**

4-conductor through terminal block; 2.5 mm²; side and center marking; for DIN-rail 35 x 15 and 35 x 7.5; CAGE CLAMP®; 2,50 mm²; gray

<https://www.wago.com/870-831>



Color: ■ gray



Similar to illustration

**Through terminal block, 870 Series, gray**

This through terminal block (item number 870-831) is designed for easy and secure connections. 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. Rated current and voltage are key factors to consider when choosing a mini rail-mount terminal block, as they indicate possible applications and uses. This product has a rated voltage of 500 V and a rated current of 24 A. Conductors should only be connected to this through terminal block if their strip length is between 6 mm and 7 mm. Featuring conductor terminals along with CAGE CLAMP®, this product outperforms the competition. Our CAGE CLAMP® connection offers a proven and maintenance-free way to connect all types of conductors. You do not need to prepare the conductor in any way, such as crimping ferrules. Depending on the conductor type, this through terminal block is ideal for conductor cross sections ranging from 0.08 mm² to 2.5 mm². It comes with one level and four clamping points that you can use to connect a single potential. The gray housing is made of polyamide (PA66) for insulation. An operating tool is used to operate this mini rail-mount terminal block. These mini rail-mount terminal blocks are mounted using DIN-35 rails.. Conductors made of copper can be connected thanks to front-entry wiring.

Notes	
Safety Information	Max. insulation diameter: 4.4 mm



Electrical data				
Ratings per		IEC/EN 60947-7-1		
Overvoltage category		III	III	II
Pollution degree		3	2	2
Nominal voltage		500 V	-	-
Rated surge voltage		6 kV	-	-
Rated current		24 A	-	-
		Power Loss		
		Power loss, per pole (potential)	0.7661 W	
		Rated current I <sub>N</sub> for specified power loss	24 A	
		Resistance value for specified, current-dependent power loss	0.00133 Ω	
Connection data				
Clamping units		4		
Total number of potentials		1		
Number of levels		1		
		Connection 1		
		Connection technology	CAGE CLAMP®	
		Actuation type	Operating tool	
		Connectable conductor materials	Copper	
		Solid conductor	0.08 ... 2.5 mm² / 28 ... 12 AWG	
		Fine-stranded conductor	0.08 ... 4 mm² / 28 ... 12 AWG	
		Fine-stranded conductor; with insulated ferrule	0.08 ... 1.5 mm² / 28 ... 14 AWG	
		Strip length	6 ... 7 mm / 0.24 ... 0.28 inches	
		Wiring direction	Front-entry wiring	
Physical data				
Width		5 mm / 0.197 inches		
Height		55 mm / 2.165 inches		
Depth from upper-edge of DIN-rail		27.5 mm / 1.083 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		gray		
Material group		I		
Insulation material (main housing)		Polyamide (PA66)		
Flammability class per UL94		V0		
Fire load		0.118 MJ		
Weight		7.3 g		
Environmental requirements				
Processing temperature		-35 ... +85 °C		
Continuous operating temperature		-60 ... +105 °C		
		Environmental Testing (Environmental Conditions)		
		Test specification Railway applications – Rolling stock – Electronic equipment	DIN EN 50155 (VDE 0115-200):2022-06	
		Test procedure Railway applications – Rolling stock equipment – Shock and vibration tests	DIN EN 61373 (VDE 0115-0106):2011-04	
		Spectrum/Installation location	Service life test, Category 1, Class A/B	



Environmental Testing (Environmental Conditions)	
Function test with noise-like vibration	Test passed according to Section 8 of the standard
Frequency	f <sub>1</sub> = 5 Hz to f <sub>2</sub> = 150 Hz f <sub>1</sub> = 5 Hz to f <sub>2</sub> = 150 Hz
Acceleration	0.101g (highest test level used for all axes) 0.572g (highest test level used for all axes) 5g (highest test level used for all axes)
Test duration per axis	10 min. 5 h
Test directions	X, Y and Z axes X, Y and Z axes X, Y and Z axes
Monitoring for contact faults/interruptions	Passed
Voltage drop measurement before and after each axis	Passed
Simulated service life test through increased levels of noise-like vibration	Test passed according to Section 9 of the standard
Extended test scope: Monitoring for contact faults/interruptions	Passed Passed
Extended test scope: Voltage drop measurement before and after each axis	Passed Passed
Shock test	Test passed according to Section 10 of the standard
Shock form	Half sine
Shock duration	30 ms
Number of shocks per axis	3 pos. und 3 neg.
Vibration and shock stress for rolling stock equipment	Passed



Commercial data	
Product Group	16 (Rail Mounted Terminal Blocks with CCC)
PU (SPU)	100 pcs
Packaging type	Box
Country of origin	DE
GTIN	4045454094621
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 8.0	EC000897
ECCN	NO US CLASSIFICATION




Environmental Product Compliance	
RoHS Compliance Status	Compliant, No Exemption


Approvals / Certificates

General approvals			Declarations of conformity and manufacturer's declarations		
					
Approval	Standard	Certificate Name	Approval	Standard	Certificate Name
CCA DEKRA Certification B.V.	EN 60947	NTR NL 7468	EU-Declaration of Confor- mity WAGO GmbH & Co. KG	-	-
CCA DEKRA Certification B.V.	EN 60947	2189801.01	Railway WAGO GmbH & Co. KG	-	Z00004430.000
			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
DNV GL Det Norske Veritas, Ger- manischer Lloyd	-	TAE00001V2

Downloads

Environmental Product Compliance	
Compliance Search	
Environmental Product Compliance 870-831	

Documentation

Bid Text			
870-831	19.02.2019	xml 3.26 KB	
870-831	31.05.2017	doc 24.50 KB	



CAD/CAE-Data	
CAD data	CAE data
2D/3D Models 870-831	EPLAN Data Portal 870-831
	WSCAD Universe 870-831
	ZUKEN Portal 870-831

1 Compatible Products
1.1 Required Accessories
1.1.1 End plate
1.1.1.1 End plate



<a href="#">Item No.: 870-943</a> End and intermediate plate; 1 mm thick; gray	<a href="#">Item No.: 870-944</a> End and intermediate plate; 1 mm thick; orange
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1.2 Optional Accessories
1.2.1 DIN-rail
1.2.1.1 Mounting accessories



<a href="#">Item No.: 210-196</a> Aluminum carrier rail; 35 x 8.2 mm; 1.6 mm thick; 2 m long; unslopped; similar to EN 60715; silver-colored	<a href="#">Item No.: 210-198</a> Copper carrier rail; 35 x 15 mm; 2.3 mm thick; 2 m long; unslopped; according to EN 60715; copper-colored	<a href="#">Item No.: 210-508</a> Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; slopped; galvanized; similar to EN 60715; silver-colored	<a href="#">Item No.: 210-197</a> Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; slopped; similar to EN 60715; silver-colored
<a href="#">Item No.: 210-506</a> Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; unslopped; galvanized; similar to EN 60715; silver-colored	<a href="#">Item No.: 210-114</a> Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; unslopped; similar to EN 60715; silver-colored	<a href="#">Item No.: 210-118</a> Steel carrier rail; 35 x 15 mm; 2.3 mm thick; 2 m long; unslopped; according to EN 60715; silver-colored	<a href="#">Item No.: 210-115</a> Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slopped; according to EN 60715; "Hole width 18 mm; silver-colored
<a href="#">Item No.: 210-112</a> Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slopped; according to EN 60715; "Hole width 25 mm; silver-colored	<a href="#">Item No.: 210-504</a> Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slopped; galvanized; according to EN 60715; silver-colored	<a href="#">Item No.: 210-113</a> Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; unslopped; according to EN 60715; silver-colored	<a href="#">Item No.: 210-505</a> Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; unslopped; galvanized; according to EN 60715; silver-colored



1.2.2 End plate

1.2.2.1 End plate



**Item No.: 870-948**  
Separator plate; 1 mm thick; gray

**Item No.: 870-949**  
Separator plate; 1 mm thick; orange

1.2.3 Ferrule

1.2.3.1 Ferrule



**Item No.: 216-321**  
Ferrule; Sleeve for 0.25 mm² / AWG 24; insulated; electro-tin plated; yellow



**Item No.: 216-131**  
Ferrule; Sleeve for 0.25 mm² / AWG 24; uninsulated; electro-tin plated; silver-colored



**Item No.: 216-322**  
Ferrule; Sleeve for 0.34 mm² / 22 AWG; insulated; electro-tin plated; light turquoise



**Item No.: 216-132**  
Ferrule; Sleeve for 0.34 mm² / AWG 24; uninsulated; electro-tin plated



**Item No.: 216-221**  
Ferrule; Sleeve for 0.5 mm² / 20 AWG; insulated; electro-tin plated; white



**Item No.: 216-121**  
Ferrule; Sleeve for 0.5 mm² / AWG 22; uninsulated; electro-tin plated; silver-colored



**Item No.: 216-222**  
Ferrule; Sleeve for 0.75 mm² / 18 AWG; insulated; electro-tin plated; gray



**Item No.: 216-122**  
Ferrule; Sleeve for 0.75 mm² / AWG 20; uninsulated; electro-tin plated; silver-colored



**Item No.: 216-223**  
Ferrule; Sleeve for 1 mm² / AWG 18; insulated; electro-tin plated; red



**Item No.: 216-123**  
Ferrule; Sleeve for 1 mm² / AWG 18; uninsulated; electro-tin plated; silver-colored



**Item No.: 216-224**  
Ferrule; Sleeve for 1.5 mm² / AWG 16; insulated; electro-tin plated; black



**Item No.: 216-124**  
Ferrule; Sleeve for 1.5 mm² / AWG 16; uninsulated; electro-tin plated

1.2.4 Installation

1.2.4.1 Mounting accessories



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



**Item No.: 249-117**  
Screwless end stop; 10 mm wide; for DIN-rail 35 x 15 and 35 x 7.5; 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.: 280-470**  
Insulation stop; 0.08 - 0.2 mm² "s" (0.14 mm² "f-st"); 5 pieces/strip; white



**Item No.: 280-471**  
Insulation stop; 0.25 - 0.5 mm²; 5 pieces/strip; light gray



**Item No.: 280-472**  
Insulation stop; 0.75 - 1 mm²; 5 pieces/strip; black



1.2.6 Jumper

1.2.6.1 Jumper



[Item No.: 870-405/011-000](#)



[Item No.: 870-407/011-000](#)



[Item No.: 870-409/011-000](#)



[Item No.: 870-406/020-000](#)  
Delta jumper; insulated; light gray



[Item No.: 870-410](#)  
Jumper; 10-way; insulated; light gray



[Item No.: 870-402](#)  
Jumper; 2-way; insulated; light gray



[Item No.: 870-403](#)  
Jumper; 3-way; insulated; light gray



[Item No.: 870-404](#)  
Jumper; 4-way; insulated; light gray



[Item No.: 870-405](#)  
Jumper; 5-way; insulated; light gray



[Item No.: 870-406](#)  
Jumper; 6-way; insulated; light gray



[Item No.: 870-407](#)  
Jumper; 7-way; insulated; light gray



[Item No.: 870-408](#)  
Jumper; 8-way; insulated; light gray



[Item No.: 870-409](#)  
Jumper; 9-way; insulated; light gray



[Item No.: 870-440](#)  
Jumper; from 1 to 10; insulated; light gray



[Item No.: 870-433](#)  
Jumper; from 1 to 3; insulated; light gray



[Item No.: 870-434](#)  
Jumper; from 1 to 4; insulated; light gray



[Item No.: 870-435](#)  
Jumper; from 1 to 5; insulated; light gray



[Item No.: 870-436](#)  
Jumper; from 1 to 6; insulated; light gray



[Item No.: 870-437](#)  
Jumper; from 1 to 7; insulated; light gray



[Item No.: 870-438](#)  
Jumper; from 1 to 8; insulated; light gray



[Item No.: 870-439](#)  
Jumper; from 1 to 9; insulated; light gray

1.2.7 Marking

1.2.7.1 Group marker carrier



[Item No.: 870-182](#)  
Adaptor; gray



[Item No.: 870-183](#)  
Adaptor; gray



[Item No.: 870-184](#)  
Adaptor; gray

1.2.7.2 Marker



[Item No.: 2009-145/000-006](#)  
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; blue



[Item No.: 2009-145/000-007](#)  
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; gray



[Item No.: 2009-145/000-023](#)  
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; green



[Item No.: 2009-145/000-012](#)  
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; orange



[Item No.: 2009-145/000-005](#)  
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; red



[Item No.: 2009-145/000-024](#)  
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; violet



[Item No.: 2009-145](#)  
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; white



[Item No.: 2009-145/000-002](#)  
Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; yellow



[Item No.: 248-501/000-006](#)  
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; blue



[Item No.: 248-501/000-007](#)  
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; gray



[Item No.: 248-501/000-023](#)  
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; green



[Item No.: 248-501/000-017](#)  
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; light green



[Item No.: 248-501/000-012](#)  
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; orange



[Item No.: 248-501/000-005](#)  
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; red



[Item No.: 248-501/000-024](#)  
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; violet



[Item No.: 248-501](#)  
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; white



1.2.7.2 Marker



**Item No.: 248-501/000-002**  
Mini-WSB marking card; as card; not stretchable; plain; snap-on type; yellow



**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

1.2.7.3 Marking strip



**Item No.: 709-196**  
Marking strips; for laser printer; translucent



**Item No.: 709-177**  
Marking strips; on reel; 7.5 mm wide; not stretchable; plain; snap-on type; translucent



**Item No.: 709-178**  
Marking strips; on reel; 7.5 mm wide; not stretchable; plain; snap-on type; white

1.2.8 Protective warning marker

1.2.8.1 Cover



**Item No.: 280-405**  
Protective warning marker; for 5 terminal blocks; with high-voltage symbol, black; yellow



1.2.9 Test and measurement

1.2.9.1 Testing accessories



**Item No.: 870-427**  
Spacer module; modular; bridging commoned terminal blocks; gray



**Item No.: 870-426**  
Tap-off module; modular; suitable for 870 Series terminal blocks with jumper slots in the current bar; gray



**Item No.: 870-425**  
Tap-off module; with anti-rotation protection; modular; suitable for 870 Series terminal blocks with jumper slots in the current bar; 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



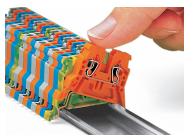
**Item No.: 210-720**  
Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft; multicoloured



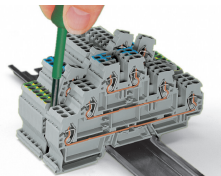
**Item No.: 210-657**  
Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft; short; multicoloured

Installation Notes

Installation

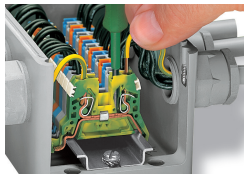


Snapping a rail-mount terminal block onto DIN-35 rail.



Removing a terminal block from the assembly.

Conductor termination

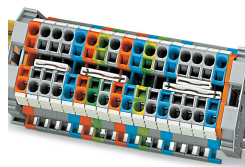


**CAGE CLAMP® connection**  
Inserting a conductor via operating tool (0.08 ... 4 mm² "f-st").  
With ferruled conductors, it is necessary to use a terminal block one size smaller than the conductor's nominal cross-section.



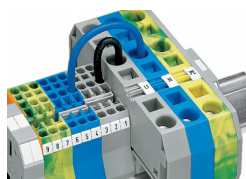
Inserting insulation stops into conductor entry holes of terminal strip.

## Commoning



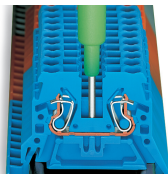
Push jumper bars down firmly until fully inserted. When using multipole bars, push alternately on the right and then left side until installed.  
Push-in type jumper bars 1 – 3 – 5 – 7 or 1 – 4 – 7 upon request

Commoning with push-in type jumper bars:  
Two parallel jumper slots are accommodated in one terminal block.

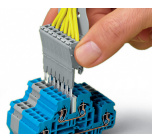


Commoning terminal blocks of different sizes via step-down jumpers.

## Testing

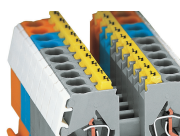


Testing with phase testing device, also possible with single-pole voltage tester.



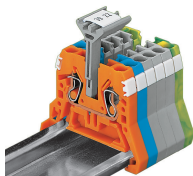
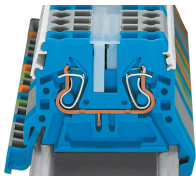
Testing is also possible using a pre-wired tap-off module assembly in the very same way as test plugs.

## Cover



Protective warning markers (280-405), with a black high-voltage symbol

Marking



WMB markers in Mini-WSB marker slots  
Translucent marking strip  
Mini-WSB markers

Translucent marking strip (709-196) – jumpers below may be visible.

In addition to the plastic marker strips, group marker carriers are now available for the WMB and WSB marking systems. They can be mounted in parallel to a push-in type jumper bar via the open jumper contact slot. It is also very useful if the marker slots on the side of the terminal block are hidden. The carriers are available in the following widths: 5 mm (0.197 inch), 10 mm (0.394 inch) and 15 mm (0.591 inch).  
**Notice:**  
Group marker carriers are not suitable for ground conductor terminal blocks and double potential terminal blocks as they have no jumper contact slots.