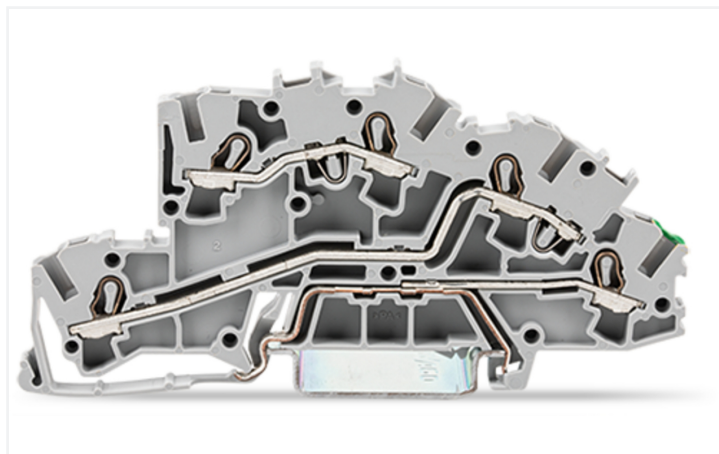
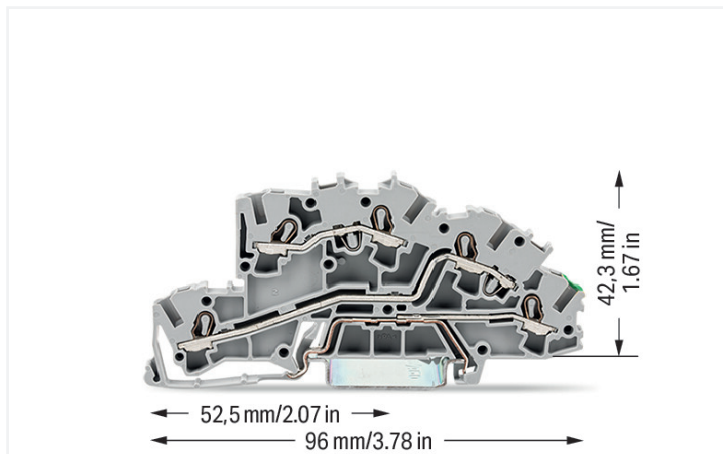


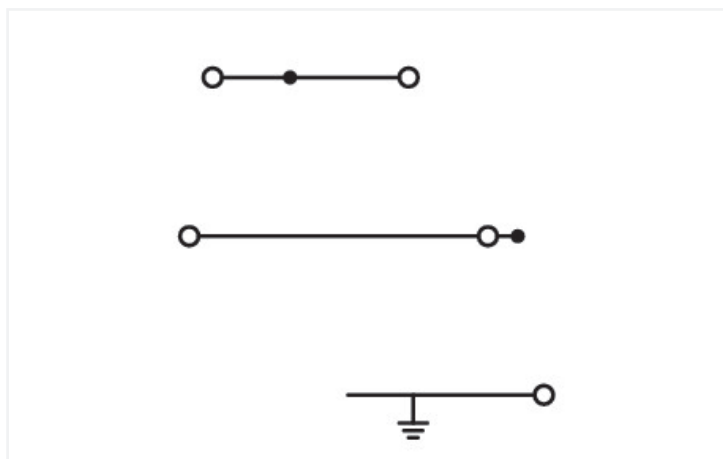
Data Sheet | Item Number: 2003-7645

Multilevel installation terminal block; with operating slots; 2.5 mm²; L/L/PE; Push-in CAGE CLAMP®; 2,50 mm²; gray

<https://www.wago.com/2003-7645>



Color: ■ gray



Similar to illustration

Multilevel installation terminal block, 2003 Series, Push-in CAGE CLAMP®

Our multilevel installation terminal block (item number 2003-7645) ensures effortless electrical installations. Strip lengths must be between 10 and 12 mm when connecting conductors to this multilevel installation terminal block. Featuring conductor terminals along with Push-in CAGE CLAMP®, this product is highly versatile. Push-in CAGE CLAMP® technology provides a universal connection solution for any type of conductor. It allows both solid and fine-stranded conductors with ferrules to be inserted directly into the clamping point without the need for tools. This multilevel installation terminal block is suitable for conductor cross sections ranging from 0.25 mm² to 4 mm².

Electrical data							
Ratings	Potential - ground			Ratings	Potential - ground		
Ratings per	IEC/EN 60947-7-1	IEC/EN 60947-7-1	IEC/EN 60947-7-1	Current at conductor cross-section (max.) mm ²	32 A	-	-
Overvoltage category	III	III	II				
Pollution degree	3	2	2				
Nominal voltage	250 V	-	-				
Rated impulse withstand voltage	4 kV	-	-				
Rated current	24 A	-	-				

Ratings	Potential - potential		
	IEC/EN 60947-7-1	IEC/EN 60947-7-1	IEC/EN 60947-7-1
Ratings per			
Overvoltage category	III	III	II
Pollution degree	3	2	2
Nominal voltage	400 V	-	-
Rated impulse withstand voltage	6 kV	-	-
Rated current	24 A	-	-
Current at conductor cross-section (max.) mm ²	32 A	-	-

Power Loss	
Power loss, per pole (potential)	0.7661 W
Rated current I_N for power loss specification	24 A
Resistance value for specified, current-dependent power loss	0.00133 Ω

General information	
Wiring direction	Front-entry wiring

Connection Data

Clamping units	5
Total number of potentials	3
Number of levels	3

Connection 1	
Connection technology	Push-in CAGE CLAMP®
Actuation type	Operating tool
Connectable conductor materials	Copper
Nominal cross-section	2.5 mm ²
Solid conductor	0.25 ... 4 mm ² / 22 ... 12 AWG
Solid conductor; push-in termination	0.75 ... 4 mm ² / 18 ... 12 AWG
Fine-stranded conductor	0.25 ... 4 mm ² / 22 ... 12 AWG
Fine-stranded conductor; with insulated ferrule	0.25 ... 2.5 mm ² / 22 ... 14 AWG
Fine-stranded conductor; with ferrule; push-in termination	1 ... 2.5 mm ² / 18 ... 14 AWG
Note (conductor cross-section)	Depending on the conductor characteristic, a conductor with a smaller cross-section can also be inserted via push-in termination.
Strip length	10 ... 12 mm / 0.39 ... 0.47 inches
Wiring direction	Front-entry wiring

Physical data

Width	5.2 mm / 0.205 inches
Height	96 mm / 3.78 inches
Depth from upper-edge of DIN-rail	42.3 mm / 1.665 inches

Mechanical data

Potential marking	L/L/PE
Mounting type	DIN-35 rail
Marking level	Center/side marking

Material data

Note (material data)	Information on material specifications can be found here
Color	gray
Material group	I
Insulation material (main housing)	Polyamide (PA66)
Flammability class per UL94	V0
Fire load	0.244 MJ
Weight	16.3 g

Environmental requirements

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

Commercial data

Product Group	22 (TOPJOB S)
PU (SPU)	50 pcs
Packaging type	Box
Country of origin	DE
GTIN	4044918925600
Customs tariff number	85369010000

Product Classification

UNSPSC	39121410
eCl@ss 10.0	27-14-11-25
eCl@ss 9.0	27-14-11-25
ETIM 9.0	EC001329
ETIM 10.0	EC001329
ECCN	NO US CLASSIFICATION

Environmental Product Compliance

RoHS Compliance Status	Compliant, No Exemption
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Approvals / Certificates

General approvals



Approval	Standard	Certificate Name
CCA DEKRA Certification B.V.	EN 60947	71-113530
CCA DEKRA Certification B.V.	EN 60947	NTR NL-7828

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	EN 60947	24-0152298-PDA
DNV GL Det Norske Veritas, Ger- manischer Lloyd	-	TAE00001V2
PRS Polski Rejestr Statków	-	TE/1094/880590/23

Downloads

Environmental Product Compliance

Compliance Search
Environmental Product Compliance 2003-7645 ↓

Documentation

Bid Text			
2003-7645	29.04.2019	xml 4.16 KB	↓
2003-7645	29.04.2019	docx 14.95 KB	↓

CAD/CAE-Data

CAD data
2D/3D Models 2003-7645 ↓

CAE data
EPLAN Data Portal 2003-7645 ↓
WSCAD Universe 2003-7645 ↓
ZUKEN Portal 2003-7645 ↓

1 Compatible Products

1.1 Required Accessories

1.1.1 End plate

1.1.1.1 End plate



Item No.: 2003-7692

End and intermediate plate; 0.8 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.: 210-197

Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; slotted; similar to EN 60715; silver-colored



Item No.: 210-114

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.: 210-113

Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; unslotted; 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.: 216-262

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.: 216-263

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.: 216-264

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.: 216-266

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

1.2.3 Installation

1.2.3.1 Cover



Item No.: 709-156

Cover; Type 3; suitable for cover carrier, type 3; 1 m long; transparent

1.2.3.2 Cover carrier



Item No.: 709-169

Cover carrier; Type 3; 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.: 2009-304

Busbar carrier; not suitable for use as end stop; for DIN 35 rail; 1.5 mm thick; blue



Item No.: 2009-305

Busbar carrier; with end stop function and detachable separator plate; for DIN 35 rail; 7.5 mm thick; blue

1.2.4 Insulation stop

1.2.4.1 Insulation stop



Item No.: 2002-171

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



Item No.: 2002-172

Insulation stop; 0.75 - 1 mm²; 5 pieces/strip; dark gray

1.2.5 Jumper

1.2.5.1 Jumper



Item No.: 2002-400

Continuous jumper; 2-way; insulated; light gray



Item No.: 2002-413

Continuous jumper; 3-way; insulated; light gray



Item No.: 2002-415

Continuous jumper; 5-way; insulated; light gray



Item No.: 2002-423/000-006

Continuous jumper; from 1 to 3; insulated; blue



Item No.: 2002-423

Continuous jumper; from 1 to 3; insulated; light gray



Item No.: 2002-423/000-005

Continuous jumper; from 1 to 3; insulated; red



Item No.: 2002-424/000-006

Continuous jumper; from 1 to 4; insulated; blue



Item No.: 2002-424

Continuous jumper; from 1 to 4; insulated; light gray



Item No.: 2002-424/000-005

Continuous jumper; from 1 to 4; insulated; red



Item No.: 2002-406/020-000

Delta jumper; insulated; light gray



Item No.: 2002-410/000-006

Jumper; 10-way; insulated; blue



Item No.: 2002-410

Jumper; 10-way; insulated; light gray



Item No.: 2002-410/000-005

Jumper; 10-way; insulated; red



Item No.: 2002-402/000-006

Jumper; 2-way; insulated; blue



Item No.: 2002-402

















































Jumper; 2-way; insulated; light gray



Item No.: 2002-402/000-005

Jumper; 2-way; insulated; red

1.2.5.1 Jumper

 Item No.: 2002-403/000-006 Jumper; 3-way; insulated; blue	 Item No.: 2002-403 Jumper; 3-way; insulated; light gray	 Item No.: 2002-403/000-005 Jumper; 3-way; insulated; red	 Item No.: 2002-404/000-006 Jumper; 4-way; insulated; blue
 Item No.: 2002-404 Jumper; 4-way; insulated; light gray	 Item No.: 2002-404/000-005 Jumper; 4-way; insulated; red	 Item No.: 2002-405/000-006 Jumper; 5-way; insulated; blue	 Item No.: 2002-405 Jumper; 5-way; insulated; light gray
 Item No.: 2002-405/000-005 Jumper; 5-way; insulated; red	 Item No.: 2002-406/000-006 Jumper; 6-way; insulated; blue	 Item No.: 2002-406 Jumper; 6-way; insulated; light gray	 Item No.: 2002-406/000-005 Jumper; 6-way; insulated; red
 Item No.: 2002-407/000-006 Jumper; 7-way; insulated; blue	 Item No.: 2002-407 Jumper; 7-way; insulated; light gray	 Item No.: 2002-407/000-005 Jumper; 7-way; insulated; red	 Item No.: 2002-408/000-006 Jumper; 8-way; insulated; blue
 Item No.: 2002-408 Jumper; 8-way; insulated; light gray	 Item No.: 2002-408/000-005 Jumper; 8-way; insulated; red	 Item No.: 2002-409/000-006 Jumper; 9-way; insulated; blue	 Item No.: 2002-409 Jumper; 9-way; insulated; light gray
 Item No.: 2002-409/000-005 Jumper; 9-way; insulated; red	 Item No.: 2002-440 Jumper; from 1 to 10; insulated; light gray	 Item No.: 2002-433 Jumper; from 1 to 3; insulated; light gray	 Item No.: 2002-434 Jumper; from 1 to 4; insulated; light gray
 Item No.: 2002-435 Jumper; from 1 to 5; insulated; light gray	 Item No.: 2002-436 Jumper; from 1 to 6; insulated; light gray	 Item No.: 2002-437 Jumper; from 1 to 7; insulated; light gray	 Item No.: 2002-438 Jumper; from 1 to 8; insulated; light gray
 Item No.: 2002-439 Jumper; from 1 to 9; insulated; light gray	 Item No.: 2002-480 Staggered jumper; 10-way; insulated; light gray	 Item No.: 2002-481 Staggered jumper; 11-way; insulated; light gray	 Item No.: 2002-482 Staggered jumper; 12-way; insulated; light gray
 Item No.: 2002-473/011-000 Staggered jumper; 2-way; from 1 to 3; insulated; light gray	 Item No.: 2002-472 Staggered jumper; 2-way; insulated; light gray	 Item No.: 2002-473 Staggered jumper; 3-way; insulated; light gray	 Item No.: 2002-475/011-000 Staggered jumper; 3-way; insulated; light gray
 Item No.: 2002-474 Staggered jumper; 4-way; insulated; light gray	 Item No.: 2002-475 Staggered jumper; 5-way; insulated; light gray	 Item No.: 2002-476 Staggered jumper; 6-way; insulated; light gray	 Item No.: 2002-477 Staggered jumper; 7-way; insulated; light gray
 Item No.: 2002-478 Staggered jumper; 8-way; insulated; light gray	 Item No.: 2002-479 Staggered jumper; 9-way; insulated; light gray	 Item No.: 2002-477/011-000 Staggered jumper; insulated; light gray	 Item No.: 2002-479/011-000 Staggered jumper; insulated; light gray
 Item No.: 2002-481/011-000 Staggered jumper; insulated; light gray	 Item No.: 2002-405/011-000 Star point jumper; 3-way; insulated; light gray	 Item No.: 210-103 Wire commoning chain; insulated; black	 Item No.: 210-123 Wire commoning chain; insulated; blue

1.2.6 Lock-out

1.2.6.1 Locking system



Item No.: 2003-7300

Lock-out; prevents reclosing of slide link; Snap-in type; for 2003 Series; orange

1.2.7 Marking

1.2.7.1 Group marker carrier



Item No.: 2009-191

Group marker carrier; gray

Item No.: 2009-192

Group marker carrier; gray

Item No.: 2009-193

Group marker carrier; 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



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.: 793-5501/000-014

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

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.: 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

1.2.7.2 Marker



Item No.: 2009-115/000-005
WMB-Inline; for Smart Printer; 1500 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; red



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 Marker carrier



Item No.: 2009-198
Adaptor; gray

1.2.7.4 Marking strip



Item No.: 2009-110
Marking strips; for Smart Printer; on reel; not stretchable; plain; snap-on type; white

1.2.8 Push-in type wire jumper

1.2.8.1 Jumper



Item No.: 2009-414
Push-in type wire jumper; 1.5 mm²; insulated; 110 mm long; black



Item No.: 2009-414/000-005
Push-in type wire jumper; 1.5 mm²; insulated; 110 mm long; black



Item No.: 2009-416
Push-in type wire jumper; 1.5 mm²; insulated; 250 mm long; black



Item No.: 2009-414/000-006
Push-in type wire jumper; insulated; 110 mm long; black



Item No.: 2009-412
Push-in type wire jumper; insulated; 60 mm long; black

1.2.9 Test and measurement

1.2.9.1 Testing accessories



Item No.: 2009-174
Test plug adapter; for 4 mm Ø test plugs; for testing TOPJOB®S rail-mounted terminal blocks; gray



Item No.: 210-136
Test plug; 2 mm Ø; with 500 mm cable; red



Item No.: 2009-182
Testing tap; for max. 2.5 mm²; tool-free connection for individual test wires 0.08 - 2.5 mm; 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.: 2009-309

Operating tool; Blades: 3.5 x 0.5 mm and 2.5 x 0.4 mm; for TOPJOB®S installation terminal blocks

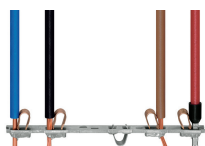


Item No.: 2009-310

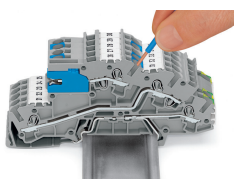
Operating tool; Blades: 3.5 x 0.5 mm and 5.5 x 0.8 mm; for TOPJOB®S installation terminal blocks; green

Installation Notes

Conductor termination

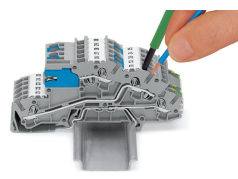


All conductor types at a glance



Inserting a conductor via push-in termination.

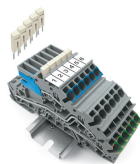
Solid conductors with cross-sections from either one size above, or up to two sizes below, the rated cross-section can be simply pushed in – no tools needed.



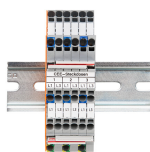
Inserting a conductor via operating tool.

Connecting fine-stranded conductors without ferrules, or small cross-sectional conductors that cannot be pushed in, is performed similarly to the original CAGE CLAMP® – just use an operating tool.

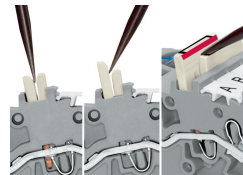
Commoning



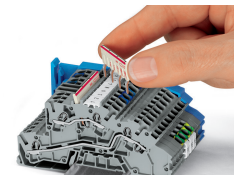
Adjacent Jumpers for Continuous Commoning (2002-400)



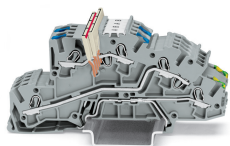
Commoning two potentials in one single jumper slot via extremely slim staggered jumpers.



Removing a staggered jumper:
Insert the operating tool between the staggered jumpers, then lift up the jumper.

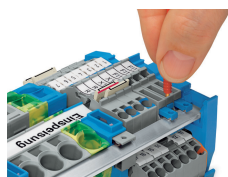


Orient the staggered jumpers' red stripes on the inside.
Insert the staggered jumper and push down until it hits the backstop.

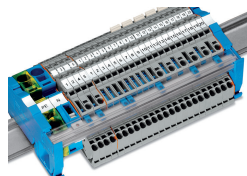
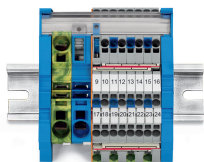


Orient the staggered jumpers' red stripes on the inside.
Insert the staggered jumper and push down until it hits the backstop.

Testing



Busbar



Mounting busbars on busbar carriers: Insert busbar ends onto large busbar carriers (Item No. 2009-305) or onto supply terminal blocks with an integrated busbar carrier.

The busbar transparent cover (Item No. 777-303) protects the busbar against accidental contact and makes it easy to see which terminal blocks are connected to the busbar.