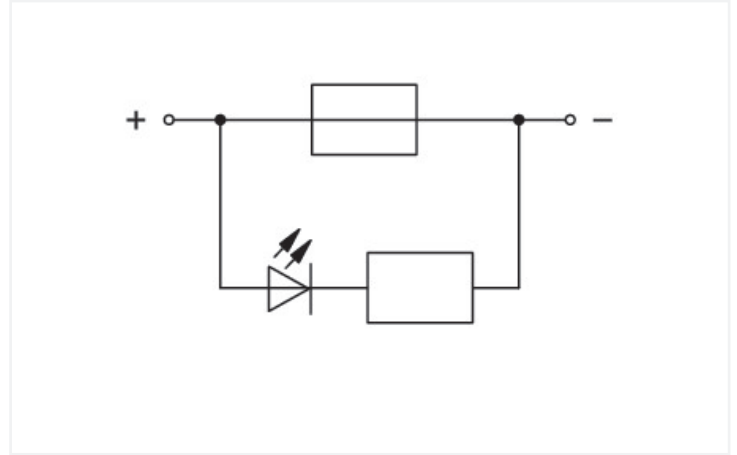
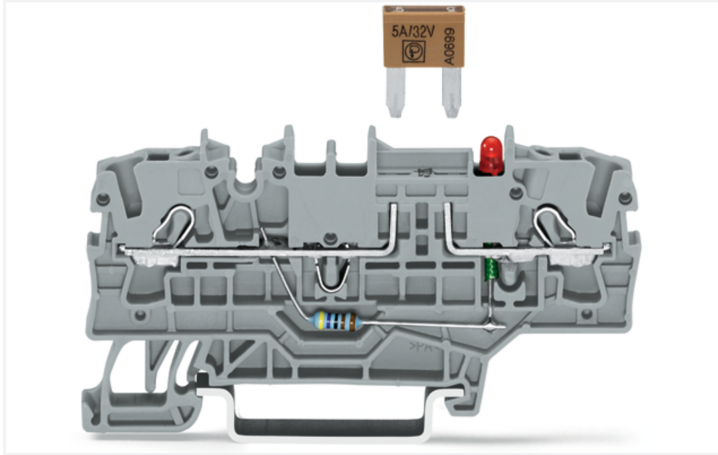


Data Sheet | Item Number: 2002-1981/1000-449

2-conductor fuse terminal block; for mini-automotive blade-style fuses; with test option; with blown fuse indication by LED; 12 V; for DIN-rail 35 x 15 and 35 x 7.5; 2.5 mm²; Push-in CAGE CLAMP®; gray

<https://www.wago.com/2002-1981/1000-449>



Color: ■ gray

Similar to illustration

Fuse terminal block, 2002 Series, operating tool

Our fuse terminal block (item number 2002-1981/1000-449) is designed for seamless electrical installations. Strip lengths must be between 10 and 12 mm when connecting conductors to this fuse terminal block. This product features conductor terminals and utilizes Push-in CAGE CLAMP®. Push-in CAGE CLAMP® connection technology is ideal for connecting all conductor types. It allows direct insertion of both solid and fine-stranded conductors with ferrules without needing to use any tools—all thanks to its pluggable design. Depending on the conductor type, this fuse terminal block is ideal for conductor cross sections ranging from 0.25 mm² to 4 mm².

Notes

Safety Information

The 2 mm test slot is only approved for high impedance measurement up to max. 100 mA.

Electrical data

Ratings per	IEC/EN 60947-7-3		
Overvoltage category	III	III	II
Pollution degree	3	2	2
Nominal voltage	400 V	-	-
Rated impulse withstand voltage	6 kV	-	-
Rated current	10 A	-	-

Ratings per IEC/EN – Notes

Ratings (note) Electrical ratings are given by the fuse and blown fuse indication.

Ratings per IEC/EN 2

Ratings (note) Blade-style fuses: Observe touch-proof protection for 42 V and higher voltages!

- 10 A (individual arrangement)
- 5 A (block arrangement)

Approvals per

UL 1059

	B	C	D
Use group	B	C	D
Rated voltage	12 V	12 V	-
Rated current	10 A	10 A	-

General information

Fuse receptacle	pluggable
Fuse type	Mini flat plug-in fuse; 10.9 x 3.6 x 16.3 mm
Number/type of diode/LED	Red LED
Wiring direction	Front-entry wiring

Connection Data

Clamping units	2
Total number of potentials	2
Number of levels	1
Number of jumper slots	2

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	72.9 mm / 2.87 inches
Depth from upper-edge of DIN-rail	32.9 mm / 1.295 inches

Mechanical data

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	0.177 MJ
Weight	8.1 g

Environmental requirements

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

Environmental Testing

Test specification: Railway applications – Rolling stock – Electronic equipment	DIN EN 50155 (VDE 0115-200):2022-06
Test procedure: Railway applications – Rolling stock equipment – Vibration and shock tests	DIN EN 61373 (VDE 0115-0106):2011-04
Spectrum/Mounting location	Service life test, Category 1, Class A/B
Functional test with noise-like oscillations	Test passed according to Section 8 of the standard
Frequency	$f_1 = 5 \text{ Hz}$ to $f_2 = 150 \text{ Hz}$
Acceleration	0.101g (highest test level used for all axes)
Test duration per axis	10 min.
Test directions	X, Y and Z axes
Monitoring of contact faults and interruptions	Passed
Voltage drop measurement before and after each axis	Passed
Simulated service life test through increased levels of noise-like oscillations	Test passed according to Section 9 of the standard
Frequency	$f_1 = 5 \text{ Hz}$ to $f_2 = 150 \text{ Hz}$
Acceleration	0.572g (highest test level used for all axes)
Test duration per axis	5 h
Test directions	X, Y and Z axes
Extended testing: Monitoring of contact faults and interruptions	Passed
Extended testing: Voltage drop measurement before and after each axis	Passed
Shock test	Test passed according to Section 10 of the standard
Shock pulse form	Half sine
Acceleration	5g (highest test level used for all axes)
Shock duration	30 ms
Number of shocks (per axis)	3 pos. und 3 neg.
Test directions	X, Y and Z axes
Extended testing: Monitoring of contact faults and interruptions	Passed
Extended testing: Voltage drop measurement before and after each axis	Passed
Vibration and shock stress for rolling stock equipment	Passed

Commercial data

Product Group	22 (TOPJOB S)
PU (SPU)	50 pcs
Packaging type	Box
Country of origin	CN
GTIN	4050821089360
Customs tariff number	85369095000

Product Classification

UNSPSC	39121410
eCl@ss 10.0	27-14-11-16
eCl@ss 9.0	27-14-11-16
ETIM 9.0	EC000899
ETIM 10.0	EC000899
ECCN	NO US CLASSIFICATION

Environmental Product Compliance

RoHS Compliance Status	Compliant,With Exemption
RoHS Exemption	7(c)-I

Approvals / Certificates

General approvals



Approval	Standard	Certificate Name
CCA DEKRA Certification B.V.	EN 60947	NTR NL-8054
DEKRA DEKRA Certification B.V.	EN 60947	71-149763
KEMA/KEUR DEKRA Certification B.V.	EN 60947	71-124163
UL Underwriters Laboratories Inc.	UL 1059	E45172

Declarations of conformity and manufacturer's declarations



Approval	Standard	Certificate Name
EU-Declaration of Conformity WAGO GmbH & Co. KG	-	-
Railway WAGO GmbH & Co. KG	-	Railway Ready
UK-Declaration of Conformity WAGO GmbH & Co. KG	-	-

Approvals for marine applications



Approval	Standard	Certificate Name
ABS American Bureau of Shipping	EN 60947	24-0152298-PDA
DNV GL Det Norske Veritas, Germanischer Lloyd	-	TAE00001V2
PRS Polski Rejestr Statków	-	TE/1094/880590/23

Downloads

Environmental Product Compliance

Compliance Search			
Environmental Product Compliance			↓
2002-1981/1000-449			

Documentation

Bid Text			
2002-1981/1000-449	23.04.2019	xml 4.53 KB	↓
2002-1981/1000-449	23.04.2019	docx 16.07 KB	↓

CAD/CAE-Data

CAD data	
2D/3D Models	↓
2002-1981/1000-449	

CAE data	
EPLAN Data Portal	↓
2002-1981/1000-449	
WSCAD Universe	↓
2002-1981/1000-449	
ZUKEN Portal	↓
2002-1981/1000-449	

1 Compatible Products

1.1 Required Accessories

1.1.1 End plate

1.1.1.1 End plate



Item No.: 2002-1991
End and intermediate plate; 1 mm thick; gray

Item No.: 2002-1992
End and intermediate plate; 1 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



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.: 216-262
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

1.2.4 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



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

1.2.5.1 Jumper





















 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 Marking

1.2.6.1 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
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1.2.6.2 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

1.2.6.2 Marker



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



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

1.2.6.3 Marker carrier



Item No.: 2002-121

Adaptor; gray



Item No.: 2002-161

Adaptor; gray



Item No.: 2009-198

Adaptor; gray

1.2.6.4 Marking strip



Item No.: 2009-110

Marking strips; for Smart Printer; on reel; not stretchable; plain; snap-on type; white

1.2.7 Protective warning marker

1.2.7.1 Cover



Item No.: 2002-115

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.: 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 Screwless end stop

1.2.9.1 Mounting accessories



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

1.2.10 Test and measurement

1.2.10.1 Testing accessories



Item No.: 2002-560

Modular TOPJOB®S connector; modular; for jumper contact slot; 10-pole; gray



Item No.: 2002-511

Modular TOPJOB®S connector; modular; for jumper contact slot; 1-pole; gray



Item No.: 2002-552

Modular TOPJOB®S connector; modular; for jumper contact slot; 2-pole; gray



Item No.: 2002-553

Modular TOPJOB®S connector; modular; for jumper contact slot; 3-pole; gray



Item No.: 2002-554

Modular TOPJOB®S connector; modular; for jumper contact slot; 4-pole; gray



Item No.: 2002-555

Modular TOPJOB®S connector; modular; for jumper contact slot; 5-pole; gray



Item No.: 2002-556

Modular TOPJOB®S connector; modular; for jumper contact slot; 6-pole; gray



Item No.: 2002-557

Modular TOPJOB®S connector; modular; for jumper contact slot; 7-pole; gray



Item No.: 2002-558

Modular TOPJOB®S connector; modular; for jumper contact slot; 8-pole; gray



Item No.: 2002-559

Modular TOPJOB®S connector; modular; for jumper contact slot; 9-pole; gray



Item No.: 2002-549

Spacer module; modular; e.g., for bridging commoned terminal blocks; gray



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



Item No.: 2002-649

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



Item No.: 2002-611

TOPJOB®S L-type test plug module; modular; 1-pole; 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

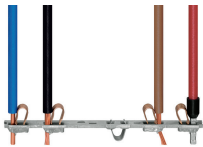


Item No.: 210-720

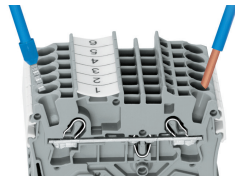
Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft; multicoloured

Installation Notes

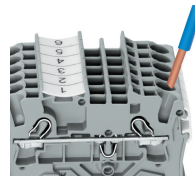
Conductor termination



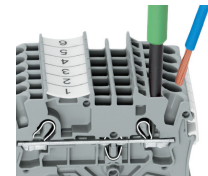
All conductor types at a glance



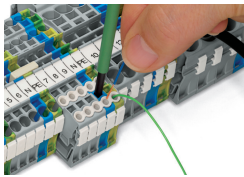
Push-in termination of solid and ferruled conductors



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.

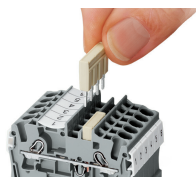


Inserting a conductor via operating tool:
Connecting fine-stranded conductors without ferrules, or small cross-sectional conductors that cannot be pushed in, is performed similarly to the original CAGE CLAMP® – just use an operating tool.
Advantage:
To open the clamp, the operating tool is inserted vertically. The conductor entry is less than 15 degrees for easier wiring.

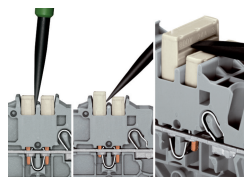


Conductor termination – insulation stop

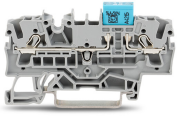
Commoning



Insert push-in type jumper bar and push down until it hits backstop.



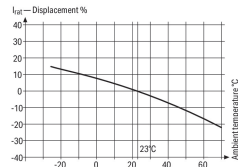
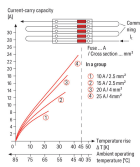
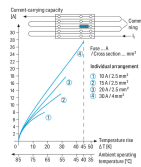
Removing a push-in type jumper bar:
Insert the operating tool between the jumper and partition wall of the dual jumper slots, then lift up the jumper. Place the operating tool in the center of jumpers for up to five contacts (see above), or alternately on both sides for jumpers with more than five contacts.



Selecting the correct fuse cartridge is important for product safety within applications, as well as for fuse cartridge service life and reliability. Fuse cartridges can operate perfectly as protection (break-off point) if they are properly selected and used according to manufacturer specifications.

Nominal current ratings for fuse cartridges are defined differently in international standards. This is why the recommended continuous current-carrying capacity of the fuses is a max. 80% of their nominal current according to DIN 72581/Part 3 (for a surrounding air temperature of 23°C).

Concerning product safety, fuse cartridges must generally be tested under both normal and faulty operating conditions within your application.



Information from the mini-automotive, blade-type fuse manufacturers

Operating Temp/°C	%	F ₁
-15	14	0.871
-10	13	0.885
-5	12	0.899
0	11	0.913
5	10	0.927
10	9	0.941
15	8	0.955
20	7	0.969
25	6	0.983
30	5	0.997
35	4	1.011
40	3	1.025
45	2	1.039
50	1	1.053
55	0	1.067
60	-1	1.081
65	-2	1.095
70	-3	1.109
75	-4	1.123
80	-5	1.137
85	-6	1.151

Application Notes on Terminal Blocks for Glass Cartridge Fuses
Diagram: "Individual Arrangement"

Application Notes on Terminal Blocks for Glass Cartridge Fuses
Diagram: "Block Arrangement"

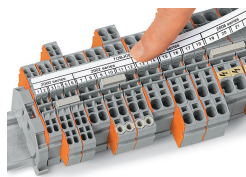
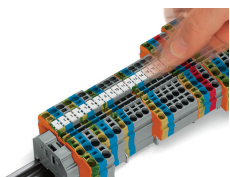
Application Notes on Terminal Blocks for Glass Cartridge Fuses

Nominal current ratings for fuse cartridges are defined differently in international standards. This is why the recommended continuous current-carrying capacity of the fuses is a max. 80% of their nominal current according to DIN 72581/Part 3 (for a surrounding air temperature of 23°C).

Selecting the correct fuse cartridge is important for product safety within applications, as well as for fuse cartridge service life and reliability. Fuse cartridges will only operate perfectly as protection components (break-off point) if they are properly selected and used as intended (i.e., according to the state of the technology and valid specifications, as well as data sheet characteristics), according to basic safety requirements (i.e., persons, animals and property must be protected against hazards).

Concerning product safety, fuse cartridges must generally be tested under both normal and faulty operating conditions within your application.

Marking



Snapping WMB Inline markers into marker slots.