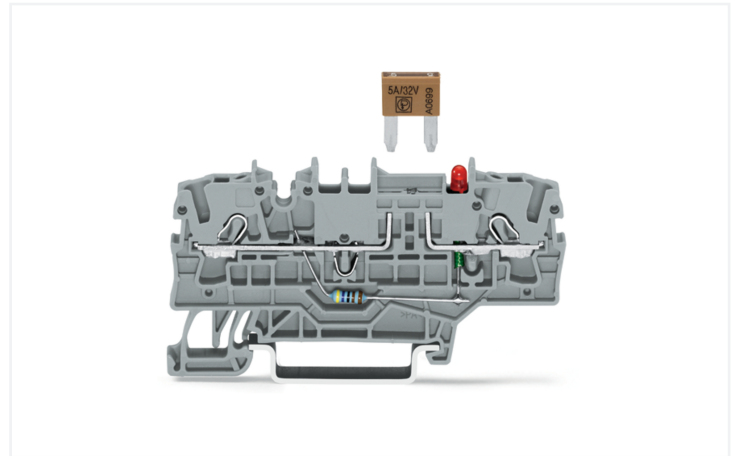
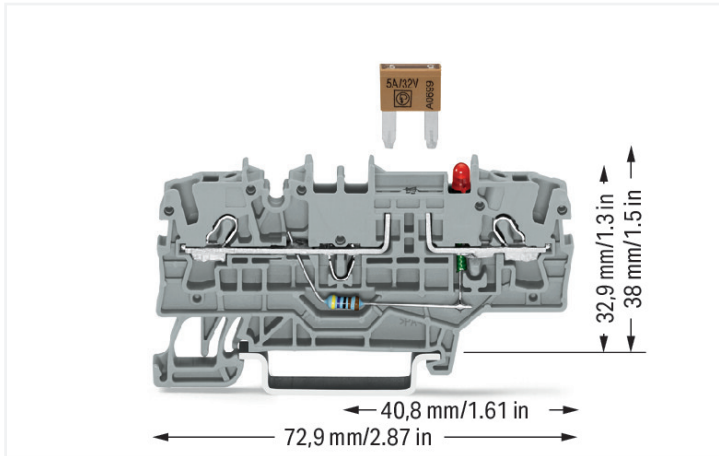


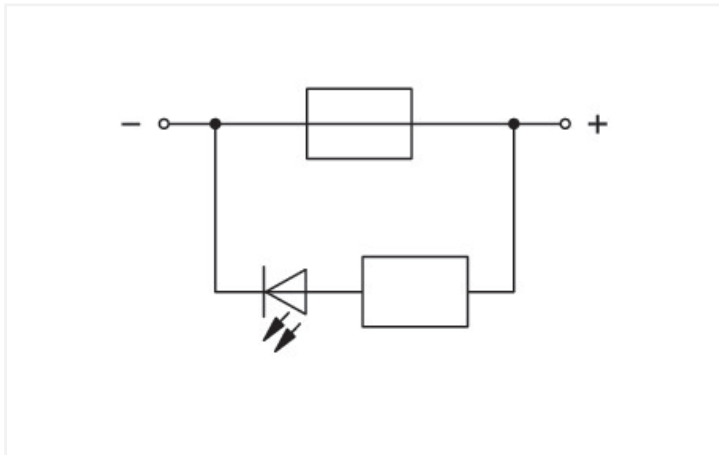
## Data Sheet | Item Number: 2002-1981/1000-413

2-conductor fuse terminal block; for mini-automotive blade-style fuses; with test option; with blown fuse indication by LED; 24 V; for DIN-rail 35 x 15 and 35 x 7.5; 2.5 mm<sup>2</sup>; Push-in CAGE CLAMP®; gray

<https://www.wago.com/2002-1981/1000-413>



Color: ■ gray



### Fuse terminal block, 2002 Series, operating tool

Connect conductors quickly and securely with this fuse terminal block (item number 2002-1981/1000-413). 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® 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 fuse terminal block is suitable for conductor cross sections ranging from 0.25 mm<sup>2</sup> to 4 mm<sup>2</sup>.

### 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!  <ul style="list-style-type: none"> <li>• 10 A (individual arrangement)</li> <li>• 5 A (block arrangement)</li> </ul>

Approvals per	UL 1059		
Use group	B	C	D
Rated voltage	24 V	24 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 <sup>2</sup>
Solid conductor	0.25 ... 4 mm <sup>2</sup> / 22 ... 12 AWG
Solid conductor; push-in termination	0.75 ... 4 mm <sup>2</sup> / 18 ... 12 AWG
Fine-stranded conductor	0.25 ... 4 mm <sup>2</sup> / 22 ... 12 AWG
Fine-stranded conductor; with insulated ferrule	0.25 ... 2.5 mm <sup>2</sup> / 22 ... 14 AWG
Fine-stranded conductor; with ferrule; push-in termination	1 ... 2.5 mm <sup>2</sup> / 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)	<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	0.176 MJ
Weight	8.2 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	DE
GTIN	4050821089247
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, No Exemption
------------------------	-------------------------

### 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 Confor- mity WAGO GmbH & Co. KG	-	-
Railway WAGO GmbH & Co. KG	-	Railway Ready
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			↓
2002-1981/1000-413			

## Documentation

Bid Text			
2002-1981/1000-413	23.04.2019	xml 4.53 KB	↓
2002-1981/1000-413	23.04.2019	docx 16.07 KB	↓

## CAD/CAE-Data

CAD data	
2D/3D Models	↓
2002-1981/1000-413	

CAE data	
EPLAN Data Portal	↓
2002-1981/1000-413	
WSCAD Universe	↓
2002-1981/1000-413	
ZUKEN Portal	↓
2002-1981/1000-413	

## 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 mm<sup>2</sup> / 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 mm<sup>2</sup> / 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 mm<sup>2</sup> / 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 mm<sup>2</sup> / 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 mm<sup>2</sup> / 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 mm<sup>2</sup> / 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 mm<sup>2</sup> / 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 mm<sup>2</sup> / 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 mm<sup>2</sup> / 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 mm<sup>2</sup>; 5 pieces/strip; light gray

**Item No.: 2002-172**

Insulation stop; 0.75 - 1 mm<sup>2</sup>; 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





















 <b>Item No.: 2002-439</b> Jumper; from 1 to 9; insulated; light gray	 <b>Item No.: 2002-480</b> Staggered jumper; 10-way; insulated; light gray	 <b>Item No.: 2002-481</b> Staggered jumper; 11-way; insulated; light gray	 <b>Item No.: 2002-482</b> Staggered jumper; 12-way; insulated; light gray
 <b>Item No.: 2002-473/011-000</b> Staggered jumper; 2-way; from 1 to 3; insulated; light gray	 <b>Item No.: 2002-472</b> Staggered jumper; 2-way; insulated; light gray	 <b>Item No.: 2002-473</b> Staggered jumper; 3-way; insulated; light gray	 <b>Item No.: 2002-475/011-000</b> Staggered jumper; 3-way; insulated; light gray
 <b>Item No.: 2002-474</b> Staggered jumper; 4-way; insulated; light gray	 <b>Item No.: 2002-475</b> Staggered jumper; 5-way; insulated; light gray	 <b>Item No.: 2002-476</b> Staggered jumper; 6-way; insulated; light gray	 <b>Item No.: 2002-477</b> Staggered jumper; 7-way; insulated; light gray
 <b>Item No.: 2002-478</b> Staggered jumper; 8-way; insulated; light gray	 <b>Item No.: 2002-479</b> Staggered jumper; 9-way; insulated; light gray	 <b>Item No.: 2002-477/011-000</b> Staggered jumper; insulated; light gray	 <b>Item No.: 2002-479/011-000</b> Staggered jumper; insulated; light gray
 <b>Item No.: 2002-481/011-000</b> Staggered jumper; insulated; light gray	 <b>Item No.: 2002-405/011-000</b> Star point jumper; 3-way; insulated; light gray	 <b>Item No.: 210-103</b> Wire commoning chain; insulated; black	 <b>Item No.: 210-123</b> Wire commoning chain; insulated; blue

1.2.6 Marking

1.2.6.1 Group marker carrier

 <b>Item No.: 2009-191</b> Group marker carrier; gray	 <b>Item No.: 2009-192</b> Group marker carrier; gray	 <b>Item No.: 2009-193</b> Group marker carrier; gray
--	--	--

1.2.6.2 Marker

 <b>Item No.: 2009-145/000-006</b> Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; blue	 <b>Item No.: 2009-145/000-007</b> Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; gray	 <b>Item No.: 2009-145/000-023</b> Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; green	 <b>Item No.: 2009-145/000-012</b> Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; orange
 <b>Item No.: 2009-145/000-005</b> Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; red	 <b>Item No.: 2009-145/000-024</b> Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; violet	 <b>Item No.: 2009-145</b> Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; white	 <b>Item No.: 2009-145/000-002</b> Mini-WSB Inline; for Smart Printer; 1700 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; yellow
 <b>Item No.: 248-501/000-006</b> Mini-WSB marking card; as card; not stretchable; plain; snap-on type; blue	 <b>Item No.: 248-501/000-007</b> Mini-WSB marking card; as card; not stretchable; plain; snap-on type; gray	 <b>Item No.: 248-501/000-023</b> Mini-WSB marking card; as card; not stretchable; plain; snap-on type; green	 <b>Item No.: 248-501/000-017</b> Mini-WSB marking card; as card; not stretchable; plain; snap-on type; light green
 <b>Item No.: 248-501/000-012</b> Mini-WSB marking card; as card; not stretchable; plain; snap-on type; orange	 <b>Item No.: 248-501/000-005</b> Mini-WSB marking card; as card; not stretchable; plain; snap-on type; red	 <b>Item No.: 248-501/000-024</b> Mini-WSB marking card; as card; not stretchable; plain; snap-on type; violet	 <b>Item No.: 248-501</b> Mini-WSB marking card; as card; not stretchable; plain; snap-on type; white
 <b>Item No.: 248-501/000-002</b> Mini-WSB marking card; as card; not stretchable; plain; snap-on type; yellow	 <b>Item No.: 793-5501/000-006</b> WMB marking card; as card; for terminal block width 5 - 17.5 mm; stretchable 5 - 5.2 mm; plain; snap-on type; blue	 <b>Item No.: 793-5501/000-014</b> WMB marking card; as card; for terminal block width 5 - 17.5 mm; stretchable 5 - 5.2 mm; plain; snap-on type; brown	 <b>Item No.: 793-5501/000-007</b> 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

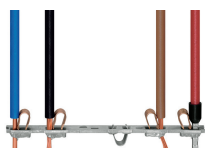


**Item No.: 210-720**

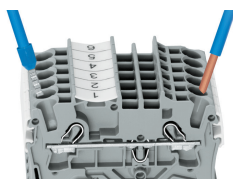
Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft; multicoloured

## Installation Notes

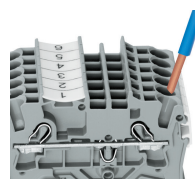
### Conductor termination



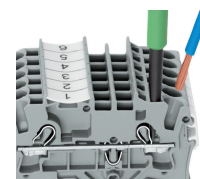
**All conductor types at a glance**



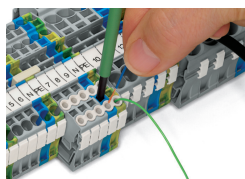
Push-in termination of solid and ferruled conductors



**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.

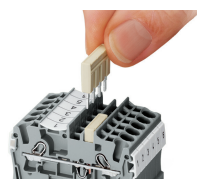


**Inserting a conductor via operating tool:**  
Connecting fine-stranded conductors without ferrules, or small cross-sectional conductors that cannot be pushed in, is performed similarly to the original CAGE CLAMP® – just use an operating tool.  
**Advantage:**  
To open the clamp, the operating tool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

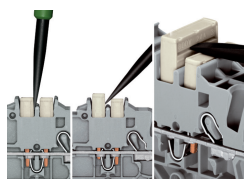


Conductor termination – insulation stop

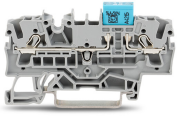
### Commoning



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



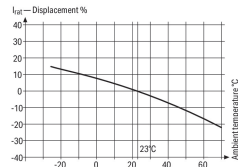
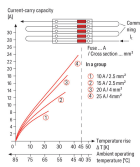
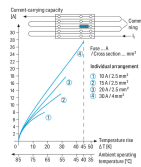
**Removing a push-in type jumper bar:**  
Insert the operating tool between the jumper and partition wall of the dual jumper slots, then lift up the jumper. Place the operating tool in the center of jumpers for up to five contacts (see above), or alternately on both sides for jumpers with more than five 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 <sub>1</sub>
-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
23	6	0.983
25	5	0.997
30	4	1.011
35	3	1.025
40	2	1.039
45	1	1.053
50	0	1.067
55	-1	1.081
60	-2	1.095
65	-3	1.109
70	-4	1.123
75	-5	1.137
80	-6	1.151
85	-7	1.165

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

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

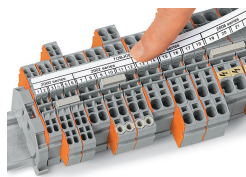
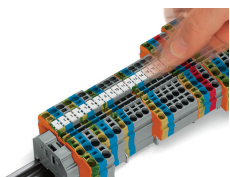
**Application Notes on Terminal Blocks for Glass Cartridge Fuses**

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.