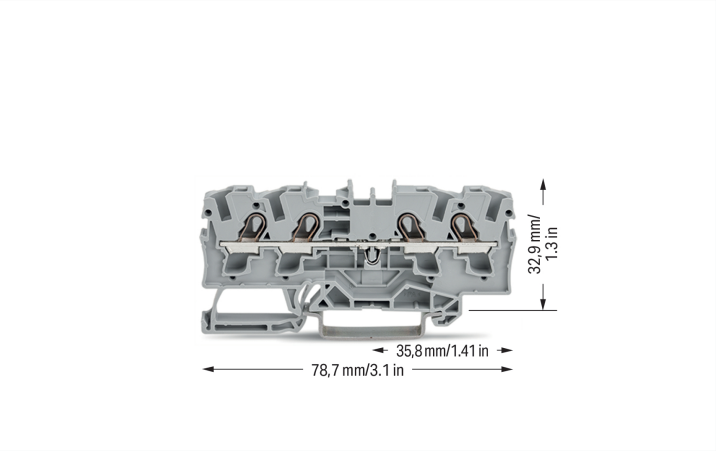
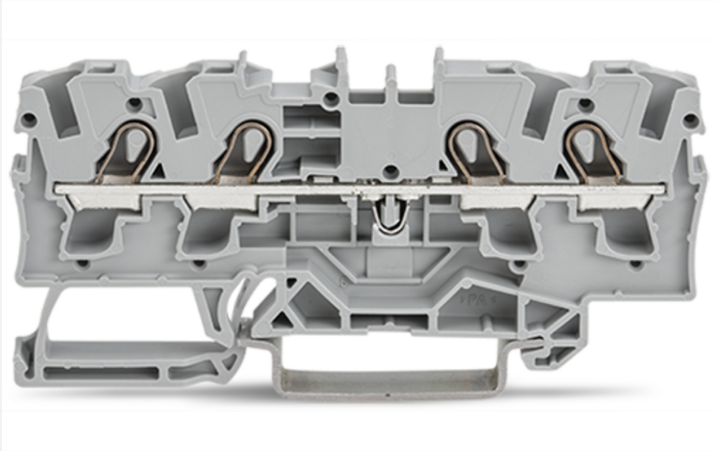
# Data Sheet | Item Number: 2004-1401

4-conductor through terminal block; 4 mm²; suitable for Ex e II applications; side and center marking; for DIN-rail 35 x 15 and 35 x 7.5; Push-in CAGE CLAMP®; 4,00 mm²; gray

https://www.wago.com/2004-1401



Color: gray



Similar to illustration

Through terminal block, 2004 Series, operating tool

Our through terminal block (item number 2004-1401) simplifies electrical installations. Strip lengths must be between 11 and 13 mm when connecting conductors to this through terminal block. 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. This product features conductor terminals and utilizes Push-in CAGE CLAMP®. Push-in CAGE CLAMP® connection technology is ideal for connecting all conductor types. Both solid and fine-stranded conductors with ferrules can be plugged in without the need for tools—all thanks to its pluggable design. The dimensions are (6.2 x 78.7 x 39.5) mm (width x height x depth). Depending on the conductor type, this through terminal block is suitable for conductor cross sections ranging from 0.5 mm² to 6 mm².

The universal connection for all conductor types – Push-in CAGE CLAMP®

This through rail-mount terminal block is operated with an operating tool. Our TOPJOB® S rail-mount terminal blocks offer more than just secure electrical connections in a range of different industrial applications and modern building installations. They also offer the perfect actuation option for every application: lever, push-button, or operating slot. This product is designed for specific Ex applications (please refer to the product datasheet).

- Suitable for specific Ex applications
- Actuation via operating tool
- The right solution for every wiring task
- Ready to install, immediately usable

 Continued on next page

## Electrical data

| Ratings per | IEC/EN 60947-7-1 | | |
|---|---|---|---|
| Overvoltage category | III | III | II |
| Pollution degree | 3 | 2 | 2 |
| Nominal voltage | 800 V | - | - |
| Rated impulse withstand voltage | 8 kV | - | - |
| Rated current | 32 A | - | - |
| Current at conductor cross-section (max.) mm² | 41 A | - | - |

| Approvals per | UL 1059 | | |
|---|---|---|---|
| Use group | B | C | D |
| Rated voltage | 600 V | 600 V | - |
| Rated current | 30 A | 30 A | - |

| Approvals per | CSA 22.2 No 158 | | |
|---|---|---|---|
| Use group | B | C | D |
| Rated voltage | 600 V | 600 V | - |
| Rated current | 30 A | 30 A | - |

| Ex information | |
|---|---|
| Reference to hazardous areas | See application instructions in section "Knowledge and Downloads – Documentation – Additional Information: Technical Section; Technical Explications" |
| Ratings per | ATEX: PTB 05 ATEX 1095 U / IECEx: PTB 05.0033U (Ex eb IIC Gb) |
| Rated voltage EN (Ex e II) | 550 V |
| Rated current (Ex e II) | 30 A |

| Power Loss | |
|---|---|
| Power loss, per pole (potential) | 1.024 W |
| Rated current $I_N$ for power loss specification | 32 A |
| Resistance value for specified, current-dependent power loss | 0.001 Ω |

| General information | |
|---|---|
| Wiring direction | Front-entry wiring |

## Connection Data

| | |
|---|---|
| Clamping units | 4 |
| Total number of potentials | 1 |
| 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 | 4 mm² |
| Solid conductor | 0.5 … 6 mm² / 20 … 10 AWG |
| Solid conductor; push-in termination | 1.5 … 6 mm² / 14 … 10 AWG |
| Stranded conductor | 0.5 … 6 mm² / 20 … 10 AWG |
| Fine-stranded conductor | 0.5 … 6 mm² / 20 … 10 AWG |
| Fine-stranded conductor; with insulated ferrule | 0.5 … 4 mm² / 20 … 12 AWG |
| Fine-stranded conductor; with ferrule; push-in termination | 1.5 … 4 mm² / 18 … 12 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 | 11 … 13 mm / 0.43 … 0.51 inches |
| Wiring direction | Front-entry wiring |

 Continued on next page

## Physical data

| | |
|---|---|
| Width | 6.2 mm / 0.244 inches |
| Height | 78.7 mm / 3.098 inches |
| Depth from upper-edge of DIN-rail | 32.9 mm / 1.295 inches |
| Depth | 39.5 mm / 1.555 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 | 10.5 g |

## Environmental requirements

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

### Environmental Testing

| | |
|---|---|
| Test specification:<br>Railway applications –<br>Rolling stock –<br>Electronic equipment | DIN EN 50155 (VDE 0115-200):2022-06 |
| Test procedure:<br>Railway applications –<br>Rolling stock equipment –<br>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 Hz to $f_2$ = 150 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 Hz to $f_2$ = 150 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 |

 Continued on next page

## Environmental Testing

| | |
|---|---|
| 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 | 4017332071758 |
| 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 10.0 | EC000897 |
| ECCN | NO US CLASSIFICATION |

## Environmental Product Compliance

| | |
|---|---|
| RoHS Compliance Status | Compliant,No Exemption |

## Approvals / Certificates

### General approvals

| Approval | Standard | Certificate Name |
|---|---|---|
| CCA<br>DEKRA Certification B.V. | EN 60947 | 71-125978 |
| CCA<br>DEKRA Certification B.V. | EN 60947 | NTR NL-7964 |
| DEKRA<br>DEKRA Certification B.V. | EN 60947 | 71-155655 |
| UL<br>Underwriters Laboratories Inc. | UL 1059 | E45172 |

### Declarations of conformity and manufacturer's declarations

| Approval | Standard | Certificate Name |
|---|---|---|
| ATEX-Attestation of Conformity<br>WAGO GmbH & Co. KG | - | - |
| EU-Declaration of Conformity<br>WAGO GmbH & Co. KG | - | - |
| Railway<br>WAGO GmbH & Co. KG | - | Railway Ready |
| UK-Declaration of Conformity<br>WAGO GmbH & Co. KG | - | - |

 Continued on next page

## Approvals for marine applications

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

## Approvals for hazardous areas

| Approval | Standard | Certificate Name |
|---|---|---|
| ATEX<br>Physikalisch Technische Bundesanstalt (PTB) | EN 60079 | PTB 05 ATEX 1095 U (II 2 G Ex eb IIC Gb bzw. I M 2 Ex eb I Mb) |
| CCCEx<br>CQST/CNEx | GB/T 3836.3 | 2020312313000160 (Ex eb IIC Gb, Ex eb I Mb) |
| IECEx<br>Physikalisch Technische Bundesanstalt (PTB) | IEC 60079 | IECEx PTB 05.0033 U (Ex eb IIC Gb resp. Ex eb I Mb) |
| INMETRO<br>TÜV Rheinland do Brasil Ltda. | IEC 60079 | TÜV 12.1309 U |

## Downloads

### Environmental Product Compliance

#### Compliance Search

Environmental Product Compliance 2004-1401

### Documentation

#### Bid Text

| | | | |
|---|---|---|---|
| 2004-1401 | 19.02.2019 | xml<br>3.85 KB | |
| 2004-1401 | 07.08.2018 | docx<br>14.74 KB | |

### CAD/CAE-Data

#### CAD data

2D/3D Models 2004-1401

#### CAE data

EPLAN Data Portal 2004-1401

WSCAD Universe 2004-1401

ZUKEN Portal 2004-1401


Continued on next page

# 1 Compatible Products

## 1.1 Required Accessories

### 1.1.1 End plate

#### 1.1.1.1 End plate

Item No.: 2004-1491
End and intermediate plate; 1 mm thick; gray

Item No.: 2004-1492
End and intermediate plate; 1 mm thick; orange

Item No.: 209-191
Separator for Ex e/Ex i applications; 3 mm thick; 120 mm wide; orange

## 1.2 Optional Accessories

### 1.2.1 DIN-rail

#### 1.2.1.1 Mounting accessories

Item No.: 210-196
Aluminum carrier rail; 35 x 8.2 mm; 1.6 mm thick; 2 m long; unslotted; similar to EN 60715; silver-colored

Item No.: 210-198
Copper carrier rail; 35 x 15 mm; 2.3 mm thick; 2 m long; unslotted; according to EN 60715; copper-colored

Item No.: 210-508
Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; slotted; galvanized; similar to EN 60715; silver-colored

Item No.: 210-197
Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; slotted; similar to EN 60715; silver-colored

Item No.: 210-506
Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; unslotted; galvanized; similar to EN 60715; silver-colored

Item No.: 210-114
Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; unslotted; similar to EN 60715; silver-colored

Item No.: 210-118
Steel carrier rail; 35 x 15 mm; 2.3 mm thick; 2 m long; unslotted; according to EN 60715; silver-colored

Item No.: 210-115
Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; according to EN 60715; "Hole width 18 mm; silver-colored

Item No.: 210-112
Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; according to EN 60715; "Hole width 25 mm; silver-colored

Item No.: 210-504
Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; galvanized; according to EN 60715; silver-colored

Item No.: 210-113
Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; unslotted; according to EN 60715; silver-colored

Item No.: 210-505
Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; unslotted; galvanized; according to EN 60715; silver-colored

### 1.2.2 End plate

#### 1.2.2.1 End plate

Item No.: 2004-1493
Seperator plate; 2 mm thick; oversized; gray

Item No.: 2004-1494
Seperator plate; 2 mm thick; oversized; orange

### 1.2.3 Ferrule

#### 1.2.3.1 Ferrule



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.: 216-263
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.: 216-264
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.: 216-266
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


Continued on next page

### 1.2.3.1 Ferrule

Item No.: 216-267
Ferrule; Sleeve for 4 mm² / AWG 12; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; gray

## 1.2.4 Installation

### 1.2.4.1 Cover



Item No.: 709-156
Cover; Type 3; suitable for cover carrier, type 3; 1 m long; transparent

### 1.2.4.2 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

## 1.2.5 Insulation stop

### 1.2.5.1 Insulation stop

Item No.: 2004-171
Insulation stop; 0.25 - 0.5 mm²; 5 pieces/strip; light gray

Item No.: 2004-172
Insulation stop; 0.75 - 1 mm²; 5 pieces/strip; dark gray

## 1.2.6 Jumper

### 1.2.6.1 Jumper

Item No.: 2004-406/020-000
Delta jumper; insulated; light gray

Item No.: 2004-410
Jumper; 10-way; insulated; light gray



Item No.: 2004-402
Jumper; 2-way; insulated; light gray

Item No.: 2004-403
Jumper; 3-way; insulated; light gray

Item No.: 2004-404
Jumper; 4-way; insulated; light gray

Item No.: 2004-405
Jumper; 5-way; insulated; light gray

Item No.: 2004-406
Jumper; 6-way; insulated; light gray

Item No.: 2004-407
Jumper; 7-way; insulated; light gray

Item No.: 2004-408
Jumper; 8-way; insulated; light gray

Item No.: 2004-409
Jumper; 9-way; insulated; light gray



Item No.: 2004-440
Jumper; from 1 to 10; insulated; light gray



Item No.: 2004-433
Jumper; from 1 to 3; insulated; light gray



Item No.: 2004-434
Jumper; from 1 to 4; insulated; light gray



Item No.: 2004-435
Jumper; from 1 to 5; insulated; light gray



Item No.: 2004-436
Jumper; from 1 to 6; insulated; light gray



Item No.: 2004-437
Jumper; from 1 to 7; insulated; light gray


Continued on next page

### 1.2.6.1 Jumper



Item No.: 2004-438
Jumper; from 1 to 8; insulated; light gray



Item No.: 2004-439
Jumper; from 1 to 9; insulated; light gray

Item No.: 2004-405/011-000
Star point jumper; 3-way; insulated; light gray

Item No.: 2006-499
Step-down jumper; from 2006/2004 to 2004/2002/2001 series; from 2206/2204 to 2204/2202/2201 series; insulated; light gray

Item No.: 2016-499
Step-down jumper; from 2016/2010 to 2010/2006/2004/2002 series; from 2216/2210 to 2210/2206/2204/2202 series; insulated; light gray

Item No.: 210-103
Wire commoning chain; 0.5 mm²; insulated; black

Item No.: 210-123
Wire commoning chain; insulated; blue

## 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.: 793-501/000-006
WMB marking card; as card; not stretchable; plain; snap-on type; blue


Continued on next page

### 1.2.7.2 Marker

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.: 2009-115/000-005
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; 50 m on roll; not stretchable; plain; snap-on type; white

## 1.2.8 Protective warning marker

### 1.2.8.1 Cover

Item No.: 2004-115
Protective warning marker; for 5 terminal blocks; with high-voltage symbol, black; yellow

 Continued on next page

## 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.: 2004-511
Modular TOPJOB®S connector; modular; for jumper contact slot; 1-pole; gray

Item No.: 2004-552
Modular TOPJOB®S connector; modular; for jumper contact slot; 2-pole; gray

Item No.: 2004-553
Modular TOPJOB®S connector; modular; for jumper contact slot; 3-pole; gray

Item No.: 2004-554
Modular TOPJOB®S connector; modular; for jumper contact slot; 4-pole; gray

Item No.: 2004-555
Modular TOPJOB®S connector; modular; for jumper contact slot; 5-pole; gray

Item No.: 2004-549
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.: 2009-182
Testing tap; for max. 2.5 mm²; tool-free connection for individual test wires 0.08 - 2.5 mm; gray

## 1.2.11 Tool

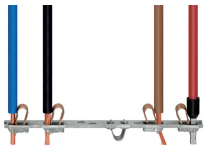
### 1.2.11.1 Operating tool

Item No.: 210-658
Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft; angled; short; multicoloured

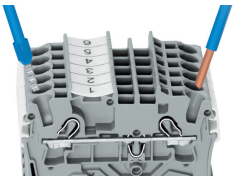
Item No.: 210-720
Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft; multicoloured

# Installation Notes

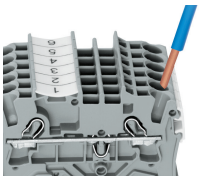
## Conductor termination



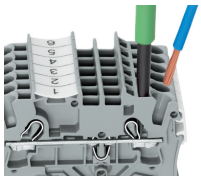
**All conductor types at a glance**



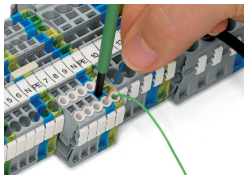
Push-in termination of solid and ferruled conductors



**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.



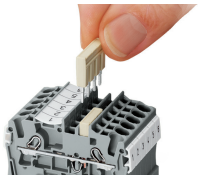
**Inserting a conductor via operating tool:**
Connecting fine-stranded conductors without ferrules, or small cross-sectional conductors that cannot be pushed in, is performed similarly to the original CAGE CLAMP® – just use an operating tool.
**Advantage:**
To open the clamp, the operating tool is inserted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



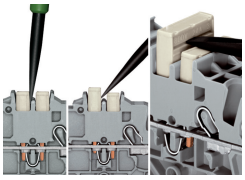
Conductor termination – insulation stop

 Continued on next page

## Commoning

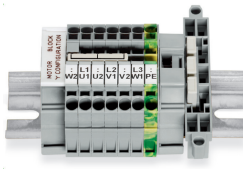


Insert push-in type jumper bar and push down until it hits backstop.

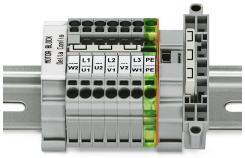


**Removing a push-in type jumper bar:**
Insert the operating tool between the jumper and partition wall of the dual jumper slots, then lift up the jumper.
Place the operating tool in the center of jumpers for up to five contacts (see above), or alternately on both sides for jumpers with more than five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

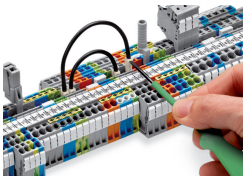
## Commoning



This star point jumper has been specially developed to create a "star point" and is used on motor terminal boards equipped with Rail-Mount Terminal Blocks TOPJOB® S.

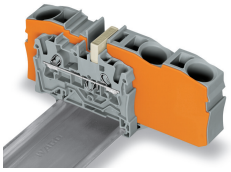


This delta jumper has been specially developed to create a delta configuration and is used on motor terminal boards equipped with rail-mount terminal blocks TOPJOB® S.

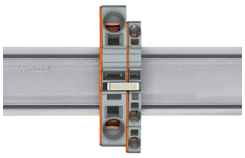


Push down the wire jumper until fully inserted. Lift the jumper with an operating tool for rewiring.

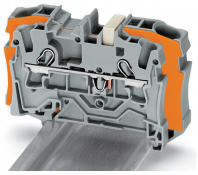
## Commoning



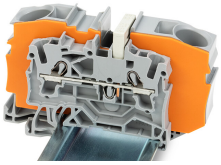
Step-down jumpers common terminal blocks of different sizes, without losing a conductor clamping point. This can be beneficial on long conductor runs where voltage drop can be a problem. A large conductor can be easily connected to smaller conductors at the distribution point.
Commoning may be made in either direction using the special thin end plate to cover the open side. Additional through terminal blocks having a smaller cross-section may be commoned using push-in type jumper bars.



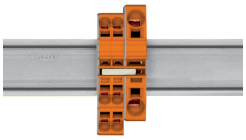
**Using step-down jumpers,** an end plate must be inserted between the terminal blocks to be commoned.



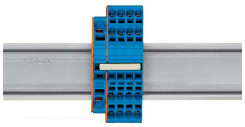
**Step-down jumper (Item No. 2006-499)** commons 6/4 mm² (10/12 AWG) terminal blocks (2006/2004 Series) with 4/2.5/1.5 mm² (AWG 12/14/16) terminal blocks (2004/2002/2001 Series).



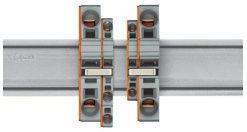
**Step-down jumper (Item No. 2016-499)** commons 16/10 mm² (16/8 AWG) terminal blocks (2016/2010 Series) with 10/6/4/2.5 mm² (8/10/12/14 AWG) terminal blocks (2010/2006/2004/2002 Series).



**Stepping down via push-in type jumper bar:**
Commoning via open terminal side with end plate allows jumpering over two cross-section sizes for 16 mm² (6 AWG) and 10 mm² (8 AWG) and one cross-section size for 6/4/2.5 mm² (10/12/14 AWG). An example: from 16 mm² (6 AWG) to 6 mm² (10 AWG) (see illustration above) or from 10 mm² (8 AWG) to 4 mm² (12 AWG).



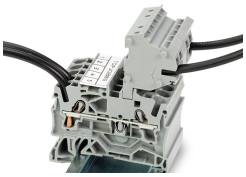
**Stepping down via push-in type jumper bar:**
Commoning via closed terminal side with end plate allows jumpering over two cross-section sizes, e.g., from 16 mm² (6 AWG) to 6 mm² (10 AWG) or from 6 mm² (10 AWG) to 2.5 mm² (14 AWG) (see illustration above).



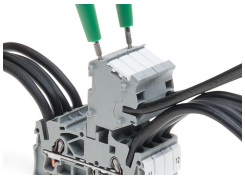
**Note:**
The total current of the outgoing circuits must not exceed the nominal current of the step-down jumper/push-in type jumper bar.


Continued on next page

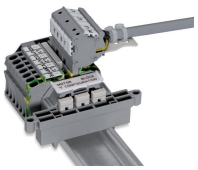
## Testing



The modular TOPJOB® S connectors also connect conductors of the same size as the terminal blocks being used.

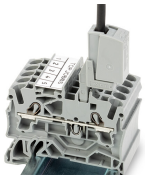


TOPJOB® S Connectors with a 2 mm Ø test socket for testing voltage via 2-pole voltage tester



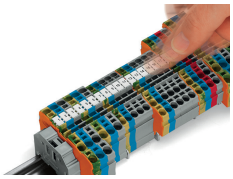
Rail-mount terminal block assembly for electric motor wiring

Test plug adapter (Item No. 2009-174, CAT I) for 4 mm Ø plugs – compatible with 2000 to 2016 Series

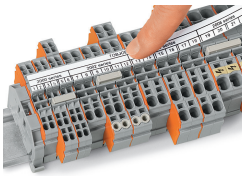


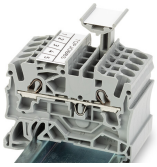
Testing tap (Item No. 2009-182) for tool-free connection of test cables up to 2.5 mm² (12 AWG) – compatible with 2000 to 2016 Series

## Marking



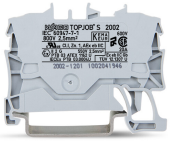
Snapping WMB Inline markers into marker slots.

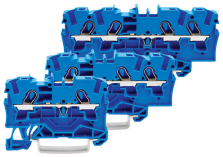




TOPJOB® S 2009-193 Group Marker Carrier (equipped with a marking strip) for all 2001 to 2016 Series TOPJOB® S Rail-Mount Terminal Blocks
Do not use on an end plate!

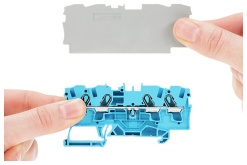
## Ex application





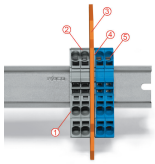
Through terminal blocks with a blue insulated housing are suitable for Ex i applications.

All through and ground conductor terminal blocks are suitable for Ex e II applications.



**Separator plate for Ex e/Ex i applications**
An end plate must be applied to the terminal block located directly behind an Ex e/Ex i separator plate.

**Ex e II/Ex i terminal strip**
**Note:**
The movable feet of terminal blocks and separator plates must face the same direction.



A separator plate is located between the Ex e II and Ex i terminal strip.
End plate
Ex e II terminal blocks
Separator plate for Ex e/Ex i applications
End plate
Ex i terminal blocks
According to EN 50020, a minimum distance of 50 mm must be kept between live parts of Ex e and Ex i circuits. The use of Ex e/Ex i separators is a space-saving solution when Ex e and Ex i terminal blocks are mounted on a common DIN-rail.

 Continued on next page