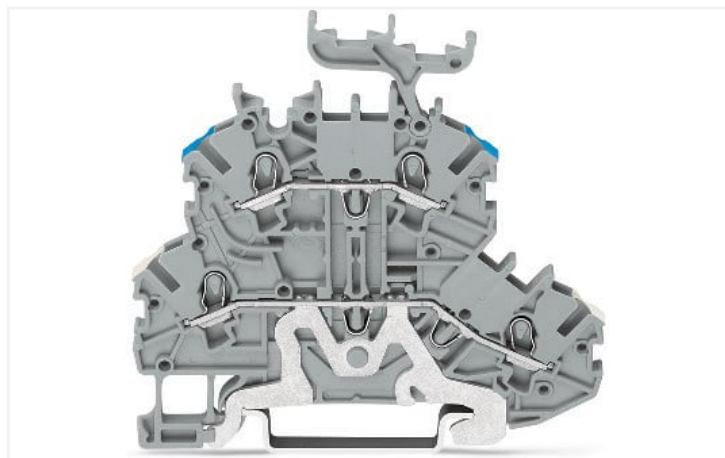


## Data Sheet | Item Number: 2000-2228

Double-deck terminal block; Shield/through terminal block; 1 mm<sup>2</sup>; Shielding/L; without marker carrier; for DIN-rail 35 x 15 and 35 x 7.5; Push-in CAGE CLAMP®; 1,00 mm<sup>2</sup>; gray

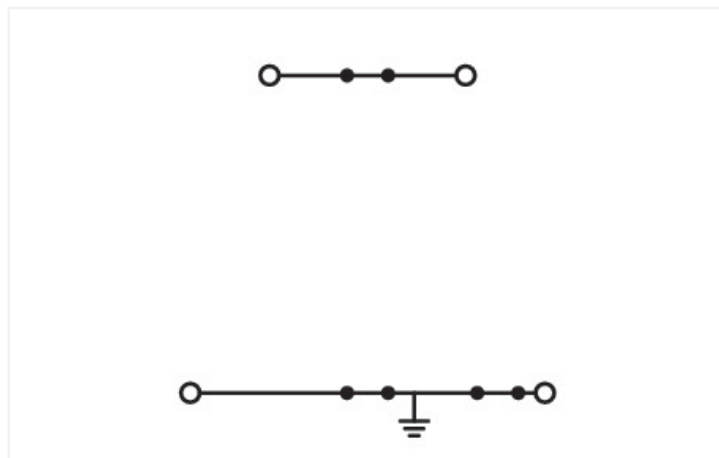


<https://www.wago.com/2000-2228>



Color: ■ gray

Similar to illustration



Similar to illustration

### Electrical data

Ratings per	IEC/EN 60947-7-1		
Overvoltage category	III	III	II
Pollution degree	3	2	2
Nominal voltage	500 V	-	-
Rated surge voltage	6 kV	-	-
Rated current	13.5 A	-	-
Current at conductor cross-section (max.) mm <sup>2</sup>	18 A	-	-

Approvals per	UL 1059		
Use group	B	C	D
Rated voltage	300 V	300 V	-
Rated current	15 A	15 A	-

Approvals per	CSA 22.2 No 158		
Use group	B	C	D
Rated voltage	600 V	600 V	-
Rated current	10 A	10 A	-

Ex information	
Ratings per	ATEX: PTB 11 ATEX 1041 U / IECEx: PTB 11.0093U (Ex eb IIC Gb)
Rated voltage EN (Ex e II)	350 V
Rated current (Ex e II)	13 A
Rated current (Ex e II) with jumper	12 A

### Power Loss

Power loss, per pole (potential)	0.8675 W
Rated current I <sub>N</sub> for specified power loss	13.5 A
Resistance value for specified, current-dependent power loss	0.00238 Ω

## Connection data

Connection points	4
Total number of potentials	2
Number of levels	2
Number of jumper slots	4
Number of jumper slots (rank)	1

## Connection 1

Connection technology	Push-in CAGE CLAMP®
Number of connection points	2
Actuation type	Operating tool
Connectable conductor materials	Copper
Nominal cross-section	1 mm <sup>2</sup>
Solid conductor	0.14 ... 1.5 mm <sup>2</sup> / 24 ... 16 AWG
Solid conductor; push-in termination	0.5 ... 1.5 mm <sup>2</sup> / 20 ... 16 AWG
Fine-stranded conductor	0.14 ... 1.5 mm <sup>2</sup> / 24 ... 16 AWG
Fine-stranded conductor; with insulated ferrule	0.14 ... 0.75 mm <sup>2</sup> / 24 ... 18 AWG
Fine-stranded conductor; with ferrule; push-in termination	0.5 ... 0.75 mm <sup>2</sup> / 20 ... 18 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	9 ... 11 mm / 0.35 ... 0.43 inches
Wiring direction	Front-entry wiring

## Connection 2

Number of connection points	2
-----------------------------	---

## Physical data

Width	3.5 mm / 0.138 inches
Height	69.7 mm / 2.744 inches
Depth from upper-edge of DIN-rail	51.7 mm / 2.035 inches

## Mechanical data

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

## Material data

Note (material data)	<a href="https://www.wago.com/us/material-specifications">Information on material specifications can be found here</a>
Color	gray
Material group	I
Insulation material	Polyamide (PA66)
Flammability class per UL94	V0
Fire load	0 MJ
Weight	9.5 g

### Environmental requirements

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

### Commercial data

Product Group	22 (TOPJOB S)
eCl@ss 10.0	27-14-11-41
eCl@ss 9.0	27-14-11-41
ETIM 8.0	EC000901
ETIM 7.0	EC000901
PU (SPU)	50 pcs
Packaging type	Box
Country of origin	DE
GTIN	4055143869225
Customs tariff number	85369010000

### 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 7962
CSA DEKRA Certification B.V.	C22.2	2130762
KEMA/KEUR DEKRA Certification B.V.	EN 60947	71-125928
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 hazardous areas



Approval	Standard	Certificate Name
AEx Underwriters Laboratories Inc.	UL 60079	E185892 (AEx eb IIC resp. Ex eb IIC)
EAC Brjansker Zertifizierungsstelle	TP TC 012/2011	RU C-DE.AM02. B.00127/19 (Ex e IIC Gb U)

Downloads

Environmental Product Compliance

Compliance Search

Environmental Product Compliance 2000-2228



Documentation

Additional Information

Technical Section

pdf  
2240.62 KB



Bid Text

2000-2228

19.02.2019

xml  
3.81 KB



2000-2228

07.08.2018

docx  
14.62 KB



CAD/CAE-Data

CAD data

2D/3D Models  
2000-2228



CAE data

EPLAN Data Portal  
2000-2228



WSCAD Universe  
2000-2228



ZUKEN Portal  
2000-2228



1 Compatible Products

1.1 Required Accessories

1.1.1 End plate

1.1.1.1 End plate



[Item No.: 2000-2291](#)

End plate; 0.7 mm thick; gray

[Item No.: 2000-2292](#)

End plate; 0.7 mm thick; orange

1.2 Optional Accessories

1.2.1 DIN-rail

1.2.1.1 Mounting accessories



[Item No.: 210-196](#)

Aluminum carrier rail; 35 x 8.2 mm; 1.6 mm thick; 2 m long; unslotted; similar to EN 60715; silver-colored



[Item No.: 210-198](#)

Copper carrier rail; 35 x 15 mm; 2.3 mm thick; 2 m long; unslotted; according to EN 60715; copper-colored



[Item No.: 210-197](#)

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



[Item No.: 210-114](#)

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



[Item No.: 210-118](#)

Steel carrier rail; 35 x 15 mm; 2.3 mm thick; 2 m long; unslotted; according to EN 60715; silver-colored



[Item No.: 210-115](#)

Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; according to EN 60715; "Hole width 18 mm; silver-colored



[Item No.: 210-112](#)

Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; according to EN 60715; "Hole width 25 mm; silver-colored



[Item No.: 210-113](#)

Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; unslotted; according to EN 60715; silver-colored

## 1.2.2 Ferrule

### 1.2.2.1 Ferrule



**Item No.: 216-241**

Ferrule; Sleeve for 0.5 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.: 216-243**

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

## 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 Jumper

### 1.2.4.1 Jumper



**Item No.: 2000-406/020-000**

Delta jumper; insulated; light gray



**Item No.: 2000-410/000-006**

Jumper; 10-way; insulated; blue



**Item No.: 2000-410**

Jumper; 10-way; insulated; light gray



**Item No.: 2000-410/000-005**

Jumper; 10-way; insulated; red



**Item No.: 2000-402/000-006**

Jumper; 2-way; insulated; blue



**Item No.: 2000-402**

Jumper; 2-way; insulated; light gray



**Item No.: 2000-402/000-005**

Jumper; 2-way; insulated; red



**Item No.: 2000-402/000-018**

Jumper; 2-way; insulated; yellow-green



**Item No.: 2000-403/000-006**

Jumper; 3-way; insulated; blue



**Item No.: 2000-403**

Jumper; 3-way; insulated; light gray



**Item No.: 2000-403/000-005**

Jumper; 3-way; insulated; red



**Item No.: 2000-404/000-006**

Jumper; 4-way; insulated; blue



**Item No.: 2000-404**

Jumper; 4-way; insulated; light gray



**Item No.: 2000-404/000-005**

Jumper; 4-way; insulated; red



**Item No.: 2000-405/000-006**

Jumper; 5-way; insulated; blue



**Item No.: 2000-405**

Jumper; 5-way; insulated; light gray



**Item No.: 2000-405/000-005**

Jumper; 5-way; insulated; red



**Item No.: 2000-406/000-006**

Jumper; 6-way; insulated; blue



**Item No.: 2000-406**

Jumper; 6-way; insulated; light gray



**Item No.: 2000-406/000-005**

Jumper; 6-way; insulated; red



**Item No.: 2000-407/000-006**

Jumper; 7-way; insulated; blue



**Item No.: 2000-407**

Jumper; 7-way; insulated; light gray



**Item No.: 2000-407/000-005**


Jumper; 7-way; insulated; red



**Item No.: 2000-408/000-006**











Jumper; 8-way; insulated; blue

1.2.4.1 Jumper


 <b>Item No.: 2000-408</b> Jumper; 8-way; insulated; light gray	 <b>Item No.: 2000-408/000-005</b> Jumper; 8-way; insulated; red	 <b>Item No.: 2000-409/000-006</b> Jumper; 9-way; insulated; blue	 <b>Item No.: 2000-409</b> Jumper; 9-way; insulated; light gray
 <b>Item No.: 2000-409/000-005</b> Jumper; 9-way; insulated; red	 <b>Item No.: 2000-440</b> Jumper; from 1 to 10; insulated; light gray	 <b>Item No.: 2000-433/000-006</b> Jumper; from 1 to 3; insulated; blue	 <b>Item No.: 2000-433</b> Jumper; from 1 to 3; insulated; light gray
 <b>Item No.: 2000-433/000-005</b> Jumper; from 1 to 3; insulated; red	 <b>Item No.: 2000-434</b> Jumper; from 1 to 4; insulated; light gray	 <b>Item No.: 2000-435</b> Jumper; from 1 to 5; insulated; light gray	 <b>Item No.: 2000-436</b> Jumper; from 1 to 6; insulated; light gray
 <b>Item No.: 2000-437</b> Jumper; from 1 to 7; insulated; light gray	 <b>Item No.: 2000-438</b> Jumper; from 1 to 8; insulated; light gray	 <b>Item No.: 2000-439</b> Jumper; from 1 to 9; insulated; light gray	 <b>Item No.: 2000-405/011-000</b> Star point jumper; 3-way; insulated; light gray
 <b>Item No.: 2000-492</b> Vertical jumper; 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	

1.2.5 Marking


1.2.5.1 Marker

 <b>Item No.: 793-3501</b> WMB marking card; as card; plain; snap-on type; white	 <b>Item No.: 2009-113/000-006</b> WMB-Inline; for Smart Printer; 2300 pieces on roll; plain; snap-on type; blue	 <b>Item No.: 2009-113/000-007</b> WMB-Inline; for Smart Printer; 2300 pieces on roll; plain; snap-on type; gray	 <b>Item No.: 2009-113/000-023</b> WMB-Inline; for Smart Printer; 2300 pieces on roll; plain; snap-on type; green
 <b>Item No.: 2009-113/000-017</b> WMB-Inline; for Smart Printer; 2300 pieces on roll; plain; snap-on type; light green	 <b>Item No.: 2009-113/000-012</b> WMB-Inline; for Smart Printer; 2300 pieces on roll; plain; snap-on type; orange	 <b>Item No.: 2009-113/000-005</b> WMB-Inline; for Smart Printer; 2300 pieces on roll; plain; snap-on type; red	 <b>Item No.: 2009-113/000-024</b> WMB-Inline; for Smart Printer; 2300 pieces on roll; plain; snap-on type; violet
 <b>Item No.: 2009-113</b> WMB-Inline; for Smart Printer; 2300 pieces on roll; plain; snap-on type; white	 <b>Item No.: 2009-113/000-002</b> WMB-Inline; for Smart Printer; 2300 pieces on roll; plain; snap-on type; yellow		

1.2.5.2 Marker carrier

 <b>Item No.: 2000-121</b> Adaptor; gray
---

1.2.5.3 Marking strip

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

## 1.2.6 Protective warning marker

### 1.2.6.1 Cover



**Item No.: 2000-115**

Protective warning marker; for 5 terminal blocks; with high-voltage symbol, black; yellow

## 1.2.7 Push-in type wire jumper

### 1.2.7.1 Jumper



**Item No.: 2009-404**

Push-in type wire jumper; 0.75 mm<sup>2</sup>; insulated; 110 mm long; gray



**Item No.: 2009-406**

Push-in type wire jumper; 0.75 mm<sup>2</sup>; insulated; 250 mm long; gray



**Item No.: 2009-402**

Push-in type wire jumper; 0.75 mm<sup>2</sup>; insulated; 60 mm long; gray

## 1.2.8 Screwless end stop

### 1.2.8.1 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

## 1.2.9 Test and measurement

### 1.2.9.1 Testing accessories



**Item No.: 2009-174**

Test plug adapter; for 4 mm Ø test plugs; for testing TOPJOB®S rail-mounted terminal blocks; gray



**Item No.: 2009-182**

Testing tap; for max. 2.5 mm<sup>2</sup>; tool-free connection for individual test wires 0.08 - 2.5 mm; gray

## 1.2.10 Tool

### 1.2.10.1 Operating tool



**Item No.: 210-719**

Operating tool; Blade: 2.5 x 0.4 mm; with a partially insulated shaft



**Item No.: 210-648**

Operating tool; Blade: 2.5 x 0.4 mm; with a partially insulated shaft; angled; short



**Item No.: 210-647**

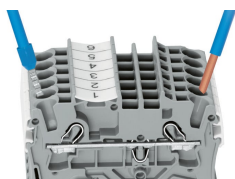
Operating tool; Blade: 2.5 x 0.4 mm; with a partially insulated shaft; multicoloured

## Installation Notes

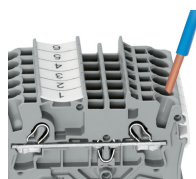
### Conductor termination



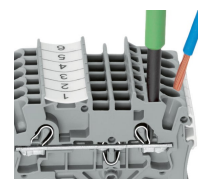
All conductor types at a glance



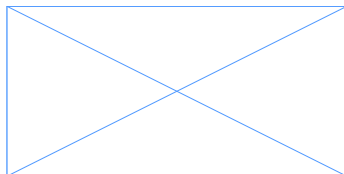
Push-in termination of solid and ferruled conductors



**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.

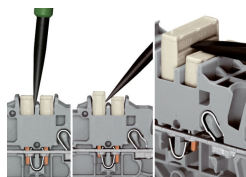


**Inserting a conductor via operating tool:**  
Connecting fine-stranded conductors without ferrules, or small cross-sectional conductors that cannot be pushed in, is performed similarly to the original CAGE CLAMP® – just use an operating tool.  
**Advantage:**  
To open the clamp, the operating tool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

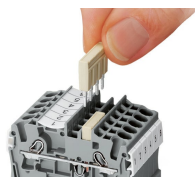


Conductor termination – insulation stop

### Commoning

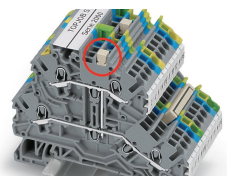


**Removing a push-in type jumper bar:**  
Insert the operating tool between the jumper and partition wall of the dual jumper slots, then lift up the jumper. Place the operating tool in the center of jumpers for up to five contacts (see above), or alternately on both sides for jumpers with more than five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



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

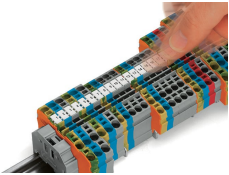
### Commoning



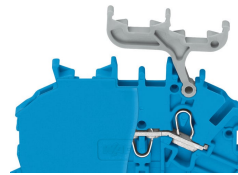
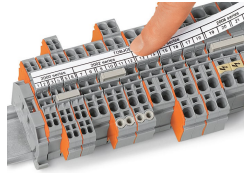
Commoning two levels via double-deck vertical jumper (2000-492).



## Marking

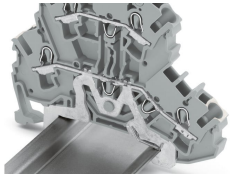


Snapping WMB Inline markers into marker slots.



### Double-Deck Terminal Blocks

A double-deck marker carrier (2000-121) can be retrofitted to double-deck terminal blocks without a marker carrier.



Both ground and shield conductor terminal blocks have a contact foot in the bottom level, automatically establishing direct contact to the DIN-rail or busbar.

The flexible double-deck marker carrier, which is placed above the wiring level, can be pushed aside during wiring. The carrier has two staggered levels for WMB markers that perfectly align with the terminal block decks.

With a terminal block width of just 5.2 mm, an effective width of just 2.6 mm for terminal blocks of same or different potentials can be realized for conductors ranging 0.25 mm<sup>2</sup> ... 4 mm<sup>2</sup> (22 ... 12 AWG).

Shielded control cables are becoming an increasingly common solution to external signal interference.

Front-entry shield conductor terminal blocks are ideal for connecting braided cables. Like front-entry ground conductor terminal blocks, they are equipped with a grounding foot for direct electrical connection to the rail, however they differ significantly by their white insulated housing. Shield conductor terminal blocks for front-entry wiring can be directly mounted beside signal-conductor terminal blocks, providing excellent deflection of interfering signals.