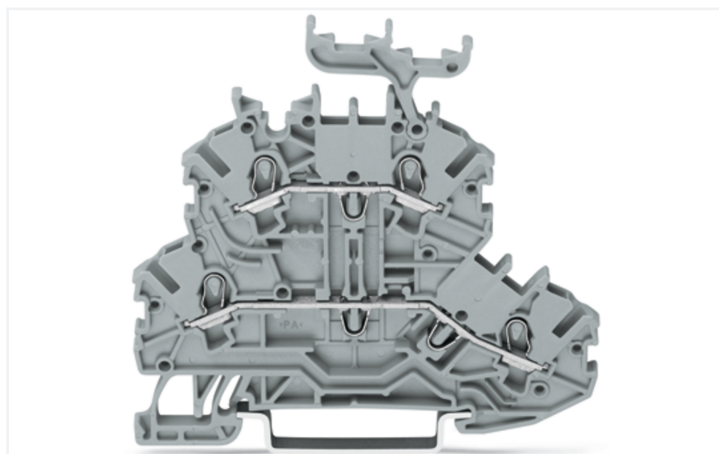
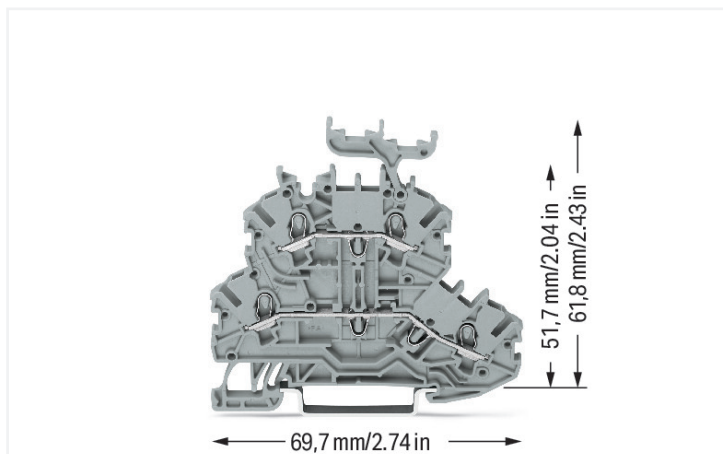


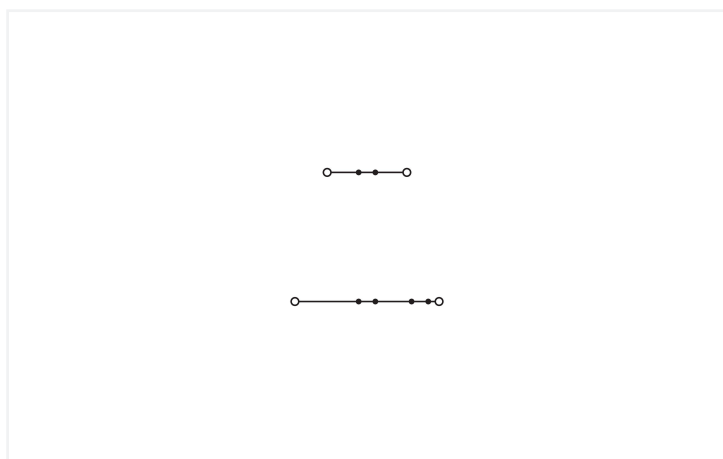
## Data Sheet | Item Number: 2000-2231

Double-deck terminal block; Through/through terminal block; L/L; with 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/2000-2231>



Color: ■ gray



Similar to illustration

### Double-deck terminal block, 2000 Series, Push-in CAGE CLAMP®

Our double-deck terminal block (item number 2000-2231) simplifies electrical installations. Conductors can only be connected to this double-deck terminal block if their strip length is between 9 and 11 mm. The double-deck terminal block also serves as a through terminal block. Featuring conductor terminals along with Push-in CAGE CLAMP®, this connector outperforms the competition. Our Push-in CAGE CLAMP® is a universal, maintenance-free connection solution for all conductor types, featuring a winning design: both solid and fine-stranded conductors with ferrules can be directly inserted without the need for tools or any preparation, such as crimping the ferrule. Depending on the type of conductor, this double-deck terminal block is designed for conductor cross sections ranging from 0.14 mm<sup>2</sup> to 1.5 mm<sup>2</sup>.

This product is designed for specific Ex applications (please refer to the product datasheet).

## Electrical data

Ratings per	IEC/EN 60947-7-1		
Overvoltage category	III	III	II
Pollution degree	3	2	2
Nominal voltage	500 V	-	-
Rated impulse withstand voltage	6 kV	-	-
Rated current	13.5 A	-	-
Current at conductor cross-section (max.) mm <sup>2</sup>	16 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	
Reference to hazardous areas	See "Downloads – Documentation – Additional Information: Technical Section; Technical Explanations"
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)	0.4338 W
Rated current I <sub>N</sub> for power loss specification	13.5 A
Resistance value for specified, current-dependent power loss	0.00238 Ω

## General information

Wiring direction	Front-entry wiring
------------------	--------------------

## Connection Data

Clamping units	4
Total number of potentials	2
Number of levels	2
Number of jumper slots	4

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	61.8 mm / 2.433 inches

### Mechanical data

Potential marking	L/L
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	0.141 MJ
Weight	7.7 g

### Environmental requirements

Processing temperature	-35 ... +85 °C	<b>Environmental Testing</b>
Continuous operating temperature	-60 ... +105 °C	
		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

**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	IN
GTIN	4055143874847
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
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**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
ATEX-Attestation of Conformity WAGO GmbH & Co. KG	-	-
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)
ATEX Physikalisch Technische Bundesanstalt	EN 60079	PTB 11 ATEX 1041 U (II 2 G Ex eb IIC Gb bzw. I M 2 Ex eb I Mb)
CCC CNEX	GB/T 3836.3	2020312313000182 (Ex eb IIC Gb, Ex eb I Mb)
IECEX Physikalisch Technische Bundesanstalt	IEC 60079	IECEX PTB 11.0093U (Ex e IIC Gb or Ex e I Mb)

**Downloads**

**Environmental Product Compliance**

Compliance Search	
Environmental Product Compliance 2000-2231	<a href="#">↓</a>

**Documentation**

Bid Text			
2000-2231	19.02.2019	xml 3.80 KB	<a href="#">↓</a>
2000-2231	07.08.2018	docx 14.47 KB	<a href="#">↓</a>

**CAD/CAE-Data**

CAD data	
2D/3D Models 2000-2231	<a href="#">↓</a>

CAE data	
EPLAN Data Portal 2000-2231	<a href="#">↓</a>
WSCAD Universe 2000-2231	<a href="#">↓</a>
ZUKEN Portal 2000-2231	<a href="#">↓</a>

## 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.: 2000-402/000-006**

Jumper; 2-way; insulated; blue



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

Jumper; 3-way; insulated; blue



**Item No.: 2000-404**

Jumper; 4-way; insulated; light gray



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

Jumper; 5-way; insulated; red



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

Jumper; 7-way; insulated; blue



**Item No.: 2000-408**

Jumper; 8-way; insulated; light gray



**Item No.: 2000-409/000-005**

Jumper; 9-way; insulated; red



**Item No.: 2000-433/000-005**

Jumper; from 1 to 3; insulated; red



**Item No.: 2000-437**

Jumper; from 1 to 7; insulated; light gray



**Item No.: 2000-492**

Vertical jumper; insulated; light gray



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

Jumper; 10-way; insulated; blue



**Item No.: 2000-402**

Jumper; 2-way; insulated; light gray



**Item No.: 2000-403**

Jumper; 3-way; insulated; light gray



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

Jumper; 4-way; insulated; red



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

Jumper; 6-way; insulated; blue



**Item No.: 2000-407**

Jumper; 7-way; insulated; light gray



**Item No.: 2000-408/000-005**

Jumper; 8-way; insulated; red



**Item No.: 2000-440**

Jumper; from 1 to 10; insulated; light gray



**Item No.: 2000-434**

Jumper; from 1 to 4; insulated; light gray



**Item No.: 2000-438**

Jumper; from 1 to 8; insulated; light gray



**Item No.: 210-103**

Wire commoning chain; 0.5 mm<sup>2</sup>; insulated; black



**Item No.: 2000-410**

Jumper; 10-way; insulated; light gray



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

Jumper; 2-way; insulated; red



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

Jumper; 3-way; insulated; red



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

Jumper; 5-way; insulated; blue



**Item No.: 2000-406**

Jumper; 6-way; insulated; light gray



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

Jumper; 7-way; insulated; red



**Item No.: 2000-409/000-006**

Jumper; 9-way; insulated; blue



**Item No.: 2000-433/000-006**

Jumper; from 1 to 3; insulated; blue



**Item No.: 2000-435**

Jumper; from 1 to 5; insulated; light gray



**Item No.: 2000-439**

Jumper; from 1 to 9; insulated; light gray



**Item No.: 210-123**

Wire commoning chain; insulated; blue



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

Jumper; 10-way; insulated; red



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

Jumper; 2-way; insulated; yellow-green



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

Jumper; 4-way; insulated; blue



**Item No.: 2000-405**

Jumper; 5-way; insulated; light gray



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

Jumper; 6-way; insulated; red



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

Jumper; 8-way; insulated; blue



**Item No.: 2000-409**

Jumper; 9-way; insulated; light gray



**Item No.: 2000-433**

Jumper; from 1 to 3; insulated; light gray



**Item No.: 2000-436**

Jumper; from 1 to 6; insulated; light gray



**Item No.: 2000-405/011-000**

Star point jumper; 3-way; insulated; light gray

1.2.5 Marking

1.2.5.1 Marker



**Item No.: 793-3501**

WMB marking card; as card; plain; snap-on type; white



**Item No.: 2009-113/000-006**

WMB-Inline; for Smart Printer; 2300 pieces on roll; plain; snap-on type; blue



**Item No.: 2009-113/000-007**

WMB-Inline; for Smart Printer; 2300 pieces on roll; plain; snap-on type; gray



**Item No.: 2009-113/000-023**

WMB-Inline; for Smart Printer; 2300 pieces on roll; plain; snap-on type; green



**Item No.: 2009-113/000-017**

WMB-Inline; for Smart Printer; 2300 pieces on roll; plain; snap-on type; light green



**Item No.: 2009-113/000-012**

WMB-Inline; for Smart Printer; 2300 pieces on roll; plain; snap-on type; orange



**Item No.: 2009-113/000-005**

WMB-Inline; for Smart Printer; 2300 pieces on roll; plain; snap-on type; red



**Item No.: 2009-113/000-024**

WMB-Inline; for Smart Printer; 2300 pieces on roll; plain; snap-on type; violet



**Item No.: 2009-113**

WMB-Inline; for Smart Printer; 2300 pieces on roll; plain; snap-on type; white



**Item No.: 2009-113/000-002**

WMB-Inline; for Smart Printer; 2300 pieces on roll; plain; snap-on type; yellow

1.2.5.2 Marking strip



**Item No.: 2009-110**

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**

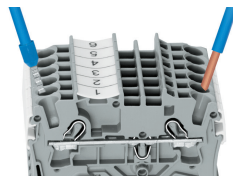
Operating tool; Blade: 2.5 x 0.4 mm; with a partially insulated shaft; multicoloured

## Installation Notes

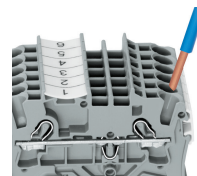
### Conductor termination



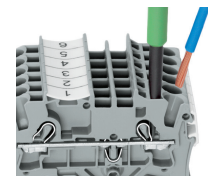
**All conductor types at a glance**



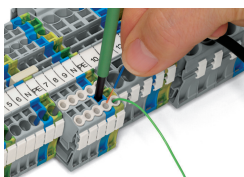
Push-in termination of solid and ferruled conductors



**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.

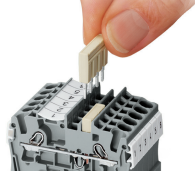
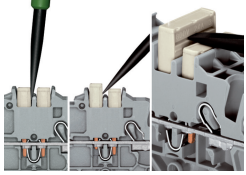


**Inserting a conductor via operating tool:**  
Connecting fine-stranded conductors without ferrules, or small cross-sectional conductors that cannot be pushed in, is performed similarly to the original CAGE CLAMP® – just use an operating tool.  
**Advantage:**  
To open the clamp, the operating tool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



Conductor termination – insulation stop

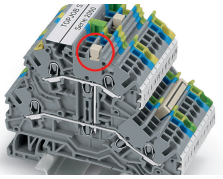
## Commoning



**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.

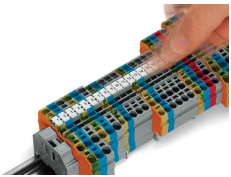
Insert push-in type jumper bar and push down until it hits backstop.

## Commoning

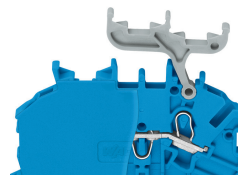
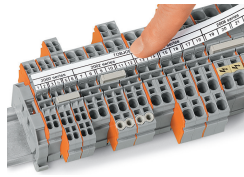


Commoning two levels via double-deck vertical jumper (Item No. 2000-492).

## Marking



Snapping WMB Inline markers into marker slots.



**Double-Deck Terminal Blocks**  
A double-deck marker carrier (Item No. 2000-121) can be retrofitted to double-deck terminal blocks without a marker carrier.