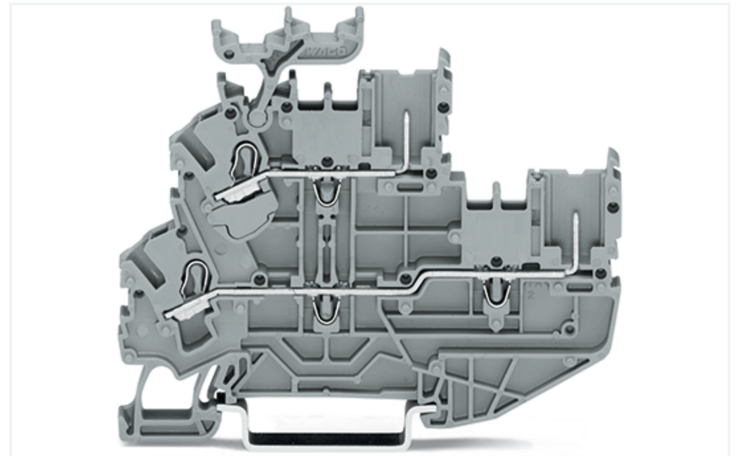
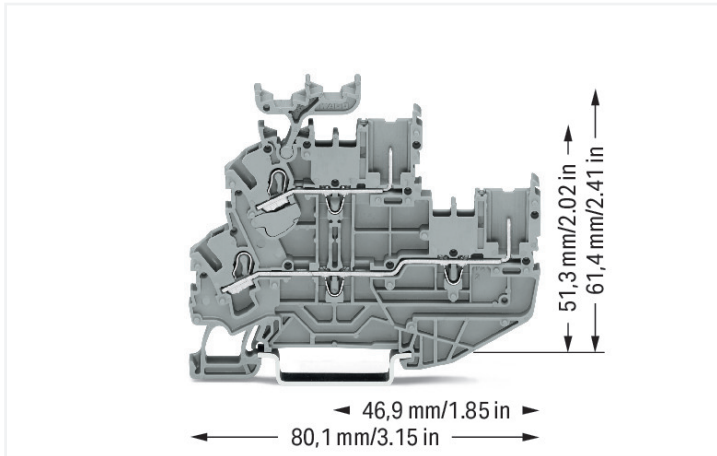


Data Sheet | Item Number: 2022-2231

1-conductor/1-pin double deck receptacle terminal block; Through/through terminal block; 2.5 mm²; L/L; with marker carrier; for DIN-rail 35 x 15 and 35 x 7.5; Push-in CAGE CLAMP®; 2,50 mm²; gray

<https://www.wago.com/2022-2231>



Color: ■ gray

1-conductor/1-pin double-deck carrier terminal block, 2022 Series, gray

1-conductor/1-pin double-deck carrier terminal block (item number 2022-2231) simplifies electrical installations. Strip lengths must be between 10 and 12 mm when connecting conductors to 1-conductor/1-pin double-deck carrier terminal block. Pluggable rail-mount terminal blocks are primarily found in switchgear units and control systems, most notably in railroad technology. These innovative systems combine the benefits of rail-mount terminal blocks and connectors for a flexible and reliable wiring system. You also have the option of pre-assembling installations, which not only makes production but also installation, operation, and maintenance more efficient and cost-effective. This product features conductor terminals and utilizes Push-in CAGE CLAMP®. Push-in CAGE CLAMP® technology provides a universal connection solution for all conductor types. It allows both solid and fine-stranded conductors with ferrules to be inserted directly into the clamping point without the need for tools. 1-conductor/1-pin double-deck carrier terminal block is suitable for conductor cross sections ranging from 0.25 mm² to 4 mm².

This pluggable rail-mount terminal block is operated with an operating tool.

Notes

Safety Information

A separator plate (Item No. 209-191) or a 10 mm end stop (Item No. 249-117) must be placed at the end of a WAGO X-COM®S-SYSTEM terminal strip.

Electrical data

Ratings per	IEC/EN 60947-7-1			Approvals per	UL 1059		
Overvoltage category	III	III	II	Use group	B	C	D
Pollution degree	3	2	2	Rated voltage	600 V	600 V	-
Nominal voltage	690 V	-	-	Rated current	20 A	20 A	-
Rated impulse withstand voltage	6 kV	-	-				
Rated current	24 A	-	-				
Current at conductor cross-section (max.) mm ²	28 A	-	-				

Approvals per	CSA 22.2 No 158		
Use group	B	C	D
Rated voltage	-	600 V	-
Rated current	-	20 A	-

Power Loss	
Power loss, per pole (potential)	0.7661 W
Rated current I_N for power loss specification	24 A
Resistance value for specified, current-dependent power loss	0.00133 Ω

General information	
Wiring direction	Front-entry wiring

Connection Data	
Clamping units	2
Female plug slots	2
Total number of potentials	2
Number of levels	2
Number of jumper slots	4

Connection 1	
Connection technology	Push-in CAGE CLAMP®
Actuation type	Operating tool
Connectable conductor materials	Copper
Nominal cross-section	2.5 mm ²
Solid conductor	0.25 ... 4 mm ² / 22 ... 12 AWG
Solid conductor; push-in termination	0.75 ... 4 mm ² / 18 ... 12 AWG
Fine-stranded conductor	0.25 ... 4 mm ² / 22 ... 12 AWG
Fine-stranded conductor; with insulated ferrule	0.25 ... 2.5 mm ² / 22 ... 14 AWG
Fine-stranded conductor; with ferrule; push-in termination	1 ... 2.5 mm ² / 18 ... 14 AWG
Note (conductor cross-section)	Depending on the conductor characteristic, a conductor with a smaller cross-section can also be inserted via push-in termination.
Strip length	10 ... 12 mm / 0.39 ... 0.47 inches
Wiring direction	Front-entry wiring

Physical data	
Width	5.2 mm / 0.205 inches
Height	80.1 mm / 3.154 inches
Depth from upper-edge of DIN-rail	61.4 mm / 2.417 inches

Mechanical data	
Potential marking	L/L
Design	horizontal type
Mounting type	DIN-35 rail
Marking level	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	0.258 MJ
Weight	12 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	18 (X-COM-System)
PU (SPU)	50 pcs
Packaging type	Box
Country of origin	CN
GTIN	4055143089005
Customs tariff number	85366990990

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 **Declarations of conformity and manufacturer's declarations**



Approval	Standard	Certificate Name
CSA CSA Group	C22.2 No. 158	2437422
DEKRA DEKRA Certification B.V.	EN 60947	71-145809
KEMA/KEUR DEKRA Certification B.V.	EN 60947	71-116567
UL Underwriters Laboratories Inc.	UL 1059	E45172



Approval	Standard	Certificate Name
EU-Declaration of Conformity WAGO GmbH & Co. KG	-	-
Railway WAGO GmbH & Co. KG	-	Z00004394.000
UK-Declaration of Conformity WAGO GmbH & Co. KG	-	-

Approvals for marine applications



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

Downloads

Environmental Product Compliance

Compliance Search
Environmental Product Compliance 2022-2231

Documentation

Bid Text			
2022-2231	19.02.2019	xml 4.06 KB	↓
2022-2231	14.05.2019	docx 15.39 KB	↓

CAD/CAE-Data

CAD data	
2D/3D Models 2022-2231	↓

CAE data	
EPLAN Data Portal 2022-2231	↓
WSCAD Universe 2022-2231	↓
ZUKEN Portal 2022-2231	↓

1 Compatible Products

1.1 System counterpart

1.1.1 Female connector/socket



Item No.: 2022-101
 1-conductor female connector; Push-in CAGE CLAMP®; 4 mm²; Pin spacing 5.2 mm; 1-pole; 4,00 mm²; gray

1.2 Required Accessories

1.2.1 End plate

1.2.1.1 End plate



Item No.: 2022-2291
 End and intermediate plate; 1 mm thick; gray



Item No.: 2022-2292
 End and intermediate plate; 1 mm thick; orange

1.3 Optional Accessories

1.3.1 Coding

1.3.1.1 Coding



Item No.: 2022-100

Carrier with 6 coding pins; for coding of female plugs; orange

1.3.2 DIN-rail

1.3.2.1 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 7.5 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

1.3.3 Ferrule

1.3.3.1 Ferrule



Item No.: 216-241

Ferrule; Sleeve for 0.5 mm² / 20 AWG; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; white



Item No.: 216-242

Ferrule; Sleeve for 0.75 mm² / 18 AWG; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; gray



Item No.: 216-262

Ferrule; Sleeve for 0.75 mm² / 18 AWG; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; gray



Item No.: 216-243

Ferrule; Sleeve for 1 mm² / AWG 18; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; red



Item No.: 216-263

Ferrule; Sleeve for 1 mm² / AWG 18; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; red



Item No.: 216-244

Ferrule; Sleeve for 1.5 mm² / AWG 16; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; black



Item No.: 216-264

Ferrule; Sleeve for 1.5 mm² / AWG 16; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; black



Item No.: 216-284

Ferrule; Sleeve for 1.5 mm² / AWG 16; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; black



Item No.: 216-246

Ferrule; Sleeve for 2.5 mm² / AWG 14; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; blue



Item No.: 216-266

Ferrule; Sleeve for 2.5 mm² / AWG 14; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; blue



Item No.: 216-286

Ferrule; Sleeve for 2.5 mm² / AWG 14; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; blue

1.3.4 Insulation stop

1.3.4.1 Insulation stop



Item No.: [2002-171](#)

Insulation stop; 0.25 - 0.5 mm²; 5 pieces/strip; light gray

Item No.: [2002-172](#)

Insulation stop; 0.75 - 1 mm²; 5 pieces/strip; dark gray

1.3.5 Jumper

1.3.5.1 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

1.3.5.1 Jumper

 Item No.: 2002-439 Jumper; from 1 to 9; insulated; light gray	 Item No.: 2002-480 Staggered jumper; 10-way; insulated; light gray	 Item No.: 2002-481 Staggered jumper; 11-way; insulated; light gray	 Item No.: 2002-482 Staggered jumper; 12-way; insulated; light gray
 Item No.: 2002-473/011-000 Staggered jumper; 2-way; from 1 to 3; insulated; light gray	 Item No.: 2002-472 Staggered jumper; 2-way; insulated; light gray	 Item No.: 2002-473 Staggered jumper; 3-way; insulated; light gray	 Item No.: 2002-475/011-000 Staggered jumper; 3-way; insulated; light gray
 Item No.: 2002-474 Staggered jumper; 4-way; insulated; light gray	 Item No.: 2002-475 Staggered jumper; 5-way; insulated; light gray	 Item No.: 2002-476 Staggered jumper; 6-way; insulated; light gray	 Item No.: 2002-477 Staggered jumper; 7-way; insulated; light gray
 Item No.: 2002-478 Staggered jumper; 8-way; insulated; light gray	 Item No.: 2002-479 Staggered jumper; 9-way; insulated; light gray	 Item No.: 2002-477/011-000 Staggered jumper; insulated; light gray	 Item No.: 2002-479/011-000 Staggered jumper; insulated; light gray
 Item No.: 2002-481/011-000 Staggered jumper; insulated; light gray	 Item No.: 2002-405/011-000 Star point jumper; 3-way; insulated; light gray	 Item No.: 2002-492 Vertical jumper; insulated; light gray	 Item No.: 2002-492/000-012 Vertical jumper; insulated; orange
 Item No.: 210-103 Wire commoning chain; insulated; black	 Item No.: 210-123 Wire commoning chain; insulated; blue		

1.3.6 Marking


1.3.6.1 Marker

 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.: 248-501 Mini-WSB marking card; as card; not stretchable; plain; snap-on type; white	 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.: 2009-115 WMB-Inline; for Smart Printer; 1500 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; white
---	--	--	--

1.3.6.2 Marker carrier

 Item No.: 2009-198 Adaptor; gray

1.3.6.3 Marking strip

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

1.3.7 Protective warning marker

1.3.7.1 Cover



Item No.: 2002-115

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

1.3.8 Push-in type wire jumper

1.3.8.1 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

1.3.9 Screwless end stop

1.3.9.1 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

1.3.10 Test and measurement

1.3.10.1 Testing accessories



Item No.: 859-500

WAGO Test pin; 1 mm Ø; 30 V AC / 60 V DC; CAT0; 1 A; 10 mm uninsulated; Test lead for soldering up to 0,5mm²

1.3.11 Tool

1.3.11.1 Operating tool

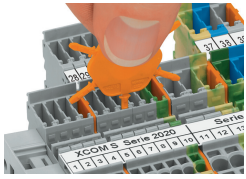


Item No.: 210-720

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

Installation Notes

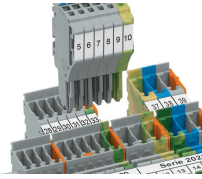
Coding



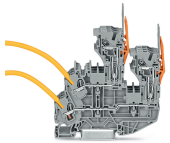
Insert coding pin into the corresponding slot and twist it off.



Coding a female plug: remove coding finger using a suitable tool.

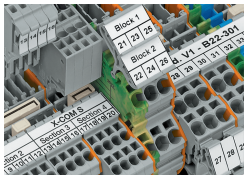


Insert coded female plug into X-COM®S-SYSTEM terminal block assembly.

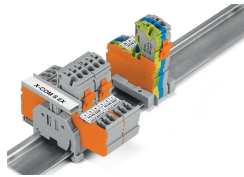


1-conductor female plug
Double-deck carrier terminal blocks can be commoned via 2002 Series Push-In Type Jumper Bars and tested via 859-500 Test Pin.

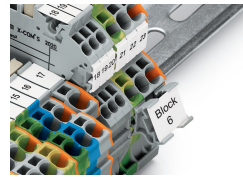
Marking



Clear marking via large marking area



Group marking with height-adjustable group marker carrier (2009-163)



Marking via marker carrier (Item No. 2009-198)