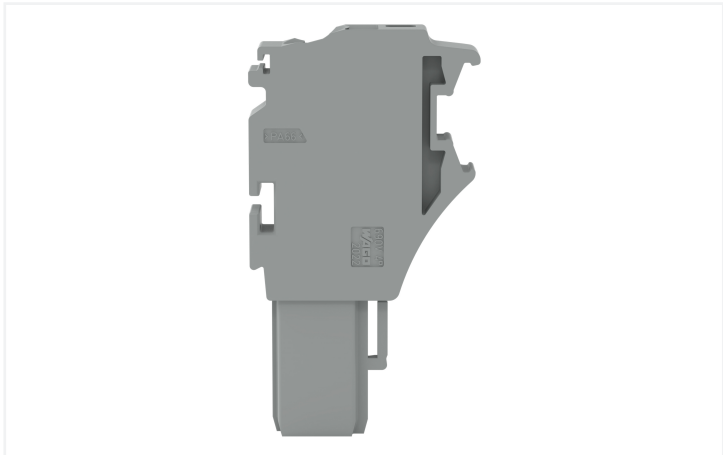
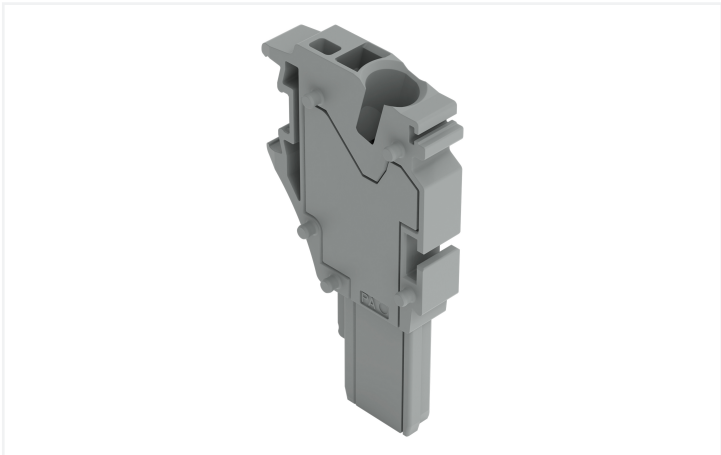


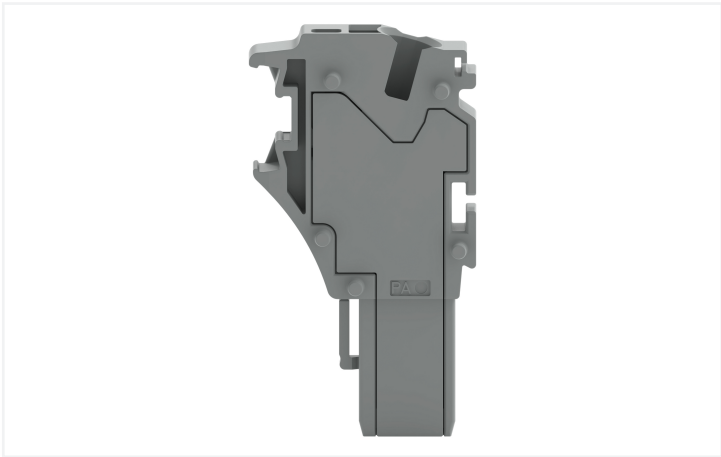
Data Sheet | Item Number: 2022-181

End module for 1-conductor female connector; Push-in CAGE CLAMP®; 4 mm²; Pin spacing 5.2 mm; 1-pole; 4,00 mm²; gray

<https://www.wago.com/2022-181>



Color: ■ gray



Female connector, 2022 Series, operating tool

Error-free electrical installations are guaranteed with this female connector (item number 2022-181). 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 pluggable rail-mount terminal block has a rated voltage of 690 V and can handle currents up to 24 A. Conductors can only be connected to this female connector if their strip length is between 10 mm and 12 mm. This product features conductor terminals and utilizes Push-in CAGE CLAMP®. Our Push-in CAGE CLAMP® is a universal, maintenance-free connection solution for all conductor types, boasting a key feature: It allows direct insertion of both solid and fine-stranded conductors with ferrules without needing tools. No preparation is required; for example, crimping the conductor's ferrule is not necessary. The item's dimensions are 5.2 x 40.5 x 22.4 mm (width x height x depth). This female connector is suitable for conductor cross sections ranging from 0.25 mm² to 4 mm². The single potential can connect one pole using one clamping point. The gray housing is made of polyamide (PA66) for insulation. An operating tool is used to operate this female connector/socket. The front-entry wiring makes it possible to connect copper conductors.

Notes	
Safety Information	According to EN 61984, pluggable connectors without current interrupting capacity must not be mated or unmated when live or under load.



Electrical data

Ratings per IEC/EN 61984				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.) mm²	32 A	-	-				

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

Connection data

Clamping units	1	Connection 1 Connection technologyPush-in CAGE CLAMP® Actuation typeOperating tool Connectable conductor materialsCopper Nominal cross-section2.5 mm² Solid conductor0.25 ... 4 mm² / 22 ... 12 AWG Solid conductor; push-in termination0.75 ... 4 mm² / 18 ... 12 AWG Fine-stranded conductor0.25 ... 4 mm² / 22 ... 12 AWG Fine-stranded conductor; with insulated ferrule0.25 ... 2.5 mm² / 22 ... 14 AWG Fine-stranded conductor; with ferrule; push-in termination1 ... 2.5 mm² / 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 length10 ... 12 mm / 0.39 ... 0.47 inches Pole number1 Wiring directionFront-entry wiring
Total number of potentials	1	

Physical data

Width	5.2 mm / 0.205 inches
Height	40.5 mm / 1.594 inches
Depth	22.4 mm / 0.882 inches

Mechanical data

Variable coding	Yes
Marking level	Side marking
Anti-rotation protection	Yes



Plug-in connection	
Contact type (pluggable connector)	Female connector/socket
Connector (connection type)	for conductor
Mismating protection	No
Plugging without loss of pin spacing	Yes

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	0.065 MJ
Weight	3.6 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 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
Extended testing: Monitoring of contact faults and interruptions	Passed
Extended testing: Voltage drop measurement before and after each axis	Passed



Environmental Testing

Vibration and shock stress for rolling stock equipment Passed

Commercial data

Product Group	18 (X-COM-System)
PU (SPU)	250 pcs
Packaging type	Bag
Country of origin	CN
GTIN	4066966659672
Customs tariff number	85366990990

Product Classification

UNSPSC	39121409
eCl@ss 10.0	27-14-11-06
eCl@ss 9.0	27-14-11-06
ETIM 9.0	EC001284
ETIM 8.0	EC001284
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
CSA DEKRA Certification B.V.	C22.2 No. 158	2437422
KEMA/KEUR DEKRA Certification B.V.	EN 61984	71-101560
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	-	Z00004392.000
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
BV Bureau Veritas S.A.	EN 60947	38586/B0 BV
DNV GL Det Norske Veritas, Germanischer Lloyd	-	TAE00001V2



Downloads

Environmental Product Compliance

Compliance Search

Environmental Product Compliance 2022-181

↓

Documentation				
Bid Text				
2022-181	19.02.2019	xml 4.26 KB	↓	
2022-181	14.05.2019	docx 16.11 KB	↓	

CAD/CAE-Data

CAD data

2D/3D Models
2022-181

↓

CAE data

EPLAN Data Portal
2022-181

↓

WSCAD Universe
2022-181

↓

ZUKEN Portal
2022-181

↓

1 Compatible Products

1.1 Optional Accessories

1.1.1 Ferrule

1.1.1.1 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





1.1.2 Insulation stop

1.1.2.1 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

1.1.3 Locking system

1.1.3.1 Locking system



[Item No.: 2022-141](#)
Locking lever; gray



[Item No.: 2022-151](#)
Locking lever; gray



[Item No.: 2022-142](#)
Locking lever; orange



[Item No.: 2022-152](#)
Locking lever; orange

1.1.4 Marking

1.1.4.1 Marker



[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

1.1.4.2 Marking strip



[Item No.: 210-833](#)
Marking strips; 25 m on roll; 6 mm wide; plain; Self-adhesive; white



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



[Item No.: 210-831](#)
Marking strips; on reel; 2.3 mm wide; plain; Self-adhesive; white



[Item No.: 210-832](#)
Marking strips; on reel; 3 mm wide; plain; Self-adhesive; white



[Item No.: 210-834](#)
Marking strips; on reel; 5 mm wide; plain; Self-adhesive; white

1.1.5 Protective warning marker

1.1.5.1 Cover



[Item No.: 2002-115](#)
Protective warning marker; for 5 terminal blocks; with high-voltage symbol, black; yellow

1.1.6 Screwless end stop

1.1.6.1 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

1.1.7 Strain relief

1.1.7.1 Strain relief plate



Item No.: 734-430
Strain relief plate; for female and male connectors; 1 part; gray



Item No.: 734-328
Strain relief plate; for female and male connectors; 12.5 mm wide; 1 part; gray



Item No.: 734-329
Strain relief plate; for female and male connectors; 25 mm wide; 1 part; gray



Item No.: 734-326
Strain relief plate; for female and male connectors; 35 mm wide; 1 part; gray



Item No.: 734-327
Strain relief plate; for female and male connectors; 6 mm wide; 1 part; gray



Item No.: 734-431
Strain relief plate; for female and male connectors; 75 mm wide; 1 part; gray

1.1.8 Tool

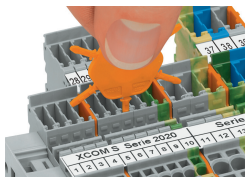
1.1.8.1 Operating tool



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

Installation Notes

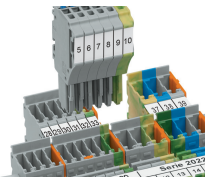
Coding



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

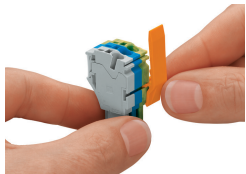


Coding a female plug: remove coding finger using a suitable tool.

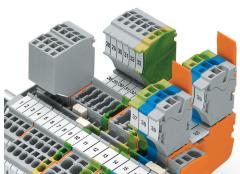


Insert coded female plug into X-COM®S-SYSTEM terminal block assembly.

Locking system



Slide the locking lever into position.



Female plugs can be individually locked.

Subject to changes. Please also observe the further product documentation!

Current addresses can be found at: www.wago.com