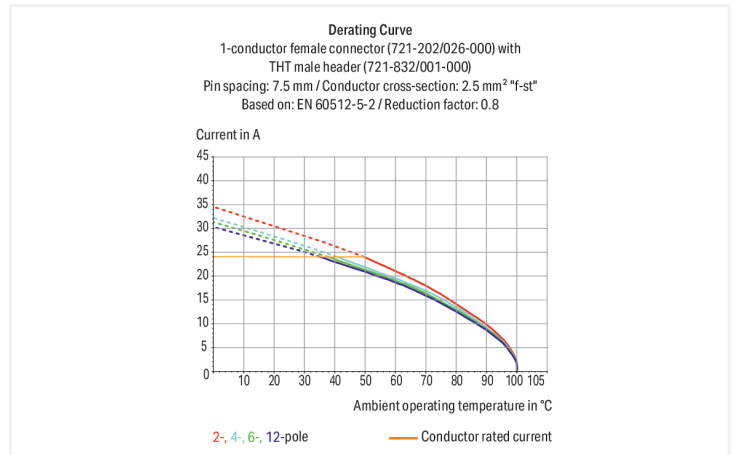


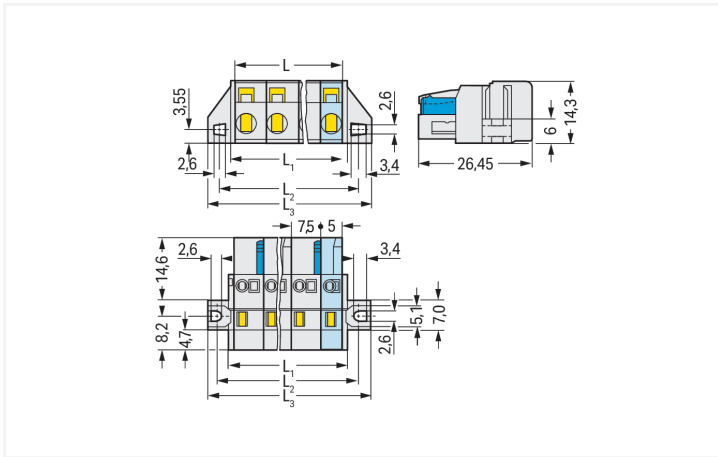
Data Sheet | Item Number: 721-209/031-000

1-conductor female connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 7.5 mm; 9-pole; 100% protected against mismatching; clamping collar; 2,50 mm²; light gray

<https://www.wago.com/721-209/031-000>



Color: ■ light gray



Dimensions in mm

$L = (\text{pole no.} - 1) \times \text{pin spacing} + 5 \text{ mm}$
 $L_1 = L + 3 \text{ mm}$
 $L_2 = L + 8.8 \text{ mm}$
 $L_3 = L + 14.8 \text{ mm}$

Female connector, 721 Series, operating tool

Enjoy error-free electrical installations with this female connector (item number 721-209/031-000). Ensure that the strip lengths are between 8 and 9 mm when connecting conductors to this female connector. Featuring one conductor terminal along with CAGE CLAMP®, this product is highly versatile. Our CAGE CLAMP® connection provides a convenient and maintenance-free way to connect all types of conductors. You do not need to prepare the conductor in any way, such as crimping ferrules. The item's dimensions are (79.8 x 14.3 x 26.45) mm (width x height x depth). Depending on the conductor type, this female connector is ideal for conductor cross sections ranging from 0.08 mm² to 2.5 mm².

The contact surface is coated with tin.

Notes

Safety Information

The MCS – MULTI CONNECTION SYSTEM includes connectors without breaking capacity in accordance with DIN EN 61984. When used as intended, these connectors must not be connected/disconnected when live or under load. When used as intended, these connectors must not be connected/disconnected when live or under load. The circuit design should ensure header pins, which can be touched, are not live when unmated.

Variants:

Other pole numbers
Gold-plated or partially gold-plated contact surfaces
Other versions (or variants) can be requested from WAGO Sales or configured at <https://configurator.wago.com/>.

Electrical data

Ratings per IEC/EN 60664-1				Approvals per UL 1059			
	III	III	II	Use group	B	C	D
Overvoltage category	III	III	II	Rated voltage	300 V	-	300 V
Pollution degree	3	2	2	Rated current	15 A	-	10 A
Nominal voltage	500 V	630 V	1000 V				
Rated impulse withstand voltage	6 kV	6 kV	6 kV				
Rated current	16 A	16 A	16 A				

Approvals per UL 1977		Approvals per CSA			
	600 V	Use group	B	C	D
Rated voltage	600 V	Rated voltage	300 V	-	300 V
Rated current	15 A	Rated current	15 A	-	10 A

Connection Data

Clamping units	9	Connection 1	
Total number of potentials	9	Connection technology	CAGE CLAMP®
Number of connection types	1	Actuation type	Operating tool
Number of levels	1	Actuation direction 1	Operation parallel to conductor entry
		Actuation direction 2	Operation perpendicular to conductor entry
		Solid conductor	0.08 ... 2.5 mm ² / 28 ... 12 AWG
		Fine-stranded conductor	0.08 ... 2.5 mm ² / 28 ... 12 AWG
		Fine-stranded conductor; with insulated ferrule	0.25 ... 1.5 mm ²
		Fine-stranded conductor; with uninsulated ferrule	0.25 ... 2.5 mm ²
		Strip length	8 ... 9 mm / 0.31 ... 0.35 inches
		Pole number	9
		Conductor entry direction to mating direction	0°

Physical data

Pin spacing	7.5 mm / 0.295 inches
Width	79.8 mm / 3.142 inches
Height	14.3 mm / 0.563 inches
Depth	26.45 mm / 1.041 inches

Mechanical data

Variable coding	Yes
Mounting type	Mounting flange
Mounting type	Feed-through mounting Panel mounting
Anti-rotation protection	Yes
Suitable for through-panel applications	Yes

Plug-in connection

Contact type (pluggable connector)	Female connector/socket
Connector (connection type)	for conductor
Mismating protection	Yes

Material data

Note (material data)	Information on material specifications can be found here
Color	light gray
Material group	I
Insulation material (main housing)	Polyamide (PA66)
Flammability class per UL94	V0
Clamping spring material	Chrome-nickel spring steel (CrNi)
Contact material	Copper alloy
Contact Plating	Tin
Fire load	0.335 MJ
Weight	19.6 g

Environmental requirements

Limit temperature range	-60 ... +100 °C	Environmental Testing	
Processing temperature	-35 ... +60 °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

Environmental Testing

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	3 (Multi Conn. System)
PU (SPU)	25 (1) pcs
Packaging type	Box
Country of origin	DE
GTIN	4044918381741
Customs tariff number	85366990990

Product Classification

UNSPSC	39121409
eCl@ss 10.0	27-44-03-09
eCl@ss 9.0	27-44-03-09
ETIM 9.0	EC002638
ETIM 10.0	EC002638
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
CB DEKRA Certification B.V.	IEC 61984	NL-113351
CSA DEKRA Certification B.V.	C22.2	1466354
KEMA/KEUR DEKRA Certification B.V.	EN 61984	71-130478 REV.1
UL Underwriters Laboratories Inc.	UL 1059	E45172
UR Underwriters Laboratories Inc.	UL 1977	E 45171

Declarations of conformity and manufacturer's declarations



Approval	Standard	Certificate Name
Railway WAGO GmbH & Co. KG	-	Railway Ready

Approvals for marine applications



Approval	Standard	Certificate Name
ABS American Bureau of Ship- ping	-	24-0095975-PDA
BV Bureau Veritas S.A.	IEC 60998	11915/E0 BV
DNV DNV GL SE	-	TAE000016Z
PRS Polski Rejestr Statków	-	TE/1095/880590/23

Downloads

Environmental Product Compliance

Compliance Search
Environmental Product Compliance 721-209/031-000

Documentation

Additional Information			
Technical Section	03.04.2019	pdf 2027.26 KB	

CAD/CAE-Data

CAD data
2D/3D Models 721-209/031-000

CAE data
EPLAN Data Portal 721-209/031-000
ZUKEN Portal 721-209/031-000

1 Compatible Products

1.1 System counterpart

1.1.1 Male connector/plug



Item No.: 723-609
1-conductor male connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 7.5 mm; 9-pole; 100% protected against mismatching; 2,50 mm²; light gray



Item No.: 721-839/001-000
THT male header; 1.0 x 1.0 mm solder pin; angled; 100% protected against mismatching; Pin spacing 7.5 mm; 9-pole; light gray



Item No.: 721-239/001-000
THT male header; 1.0 x 1.0 mm solder pin; straight; 100% protected against mismatching; Pin spacing 7.5 mm; 9-pole; light gray

1.2 Optional Accessories

1.2.1 Cover

1.2.1.1 Cover



Item No.: 231-668

Lockout caps; for covering unused clamping units; gray

1.2.2 Ferrule

1.2.2.1 Ferrule



Item No.: 216-301

Ferrule; Sleeve for 0.25 mm² / AWG 24; insulated; electro-tin plated; yellow



Item No.: 216-302

Ferrule; Sleeve for 0.34 mm² / 22 AWG; insulated; electro-tin plated; light turquoise



Item No.: 216-201

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



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.: 216-141

Ferrule; Sleeve for 0.5 mm² / 20 AWG; un-insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 1/08.92



Item No.: 216-101

Ferrule; Sleeve for 0.5 mm² / AWG 22; un-insulated; electro-tin plated; silver-colored



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.: 216-202

Ferrule; Sleeve for 0.75 mm² / 18 AWG; insulated; electro-tin plated; gray



Item No.: 216-142

Ferrule; Sleeve for 0.75 mm² / 18 AWG; un-insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 1/08.92



Item No.: 216-102

Ferrule; Sleeve for 0.75 mm² / AWG 20; un-insulated; electro-tin plated; silver-colored



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.: 216-203

Ferrule; Sleeve for 1 mm² / AWG 18; insulated; electro-tin plated; red



Item No.: 216-103

Ferrule; Sleeve for 1 mm² / AWG 18; un-insulated; electro-tin plated



Item No.: 216-143

Ferrule; Sleeve for 1 mm² / AWG 18; un-insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 1/08.92



Item No.: 216-204

Ferrule; Sleeve for 1.5 mm² / AWG 16; insulated; electro-tin plated; black



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.: 216-144

Ferrule; Sleeve for 1.5 mm² / AWG 16; un-insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 1/08.92; silver-colored



Item No.: 216-104

Ferrule; Sleeve for 1.5 mm² / AWG 16; un-insulated; electro-tin plated; silver-colored



Item No.: 216-106

Ferrule; Sleeve for 2.5 mm² / AWG 14; un-insulated; electro-tin plated; silver-colored

1.2.3 Insulation stop

1.2.3.1 Insulation stop



Item No.: 231-673

Insulation stop; 0.08-0.2 mm² / 0.2 mm² "s"; white



Item No.: 231-674

Insulation stop; 0.25 - 0.5 mm²; light gray



Item No.: 231-675

Insulation stop; 0.75 - 1 mm²; dark gray

1.2.4 Marking

1.2.4.1 Marking strip



Item No.: 210-331/750-202

Marking strips; as a DIN A4 sheet; MARKED; 1-16 (100x); Height of marker strip: 2.3 mm/0.091 in; Strip length 182 mm; Horizontal marking; Self-adhesive; white



Item No.: 210-332/750-020

Marking strips; as a DIN A4 sheet; MARKED; 1-20 (80x); Height of marker strip: 3 mm; Strip length 182 mm; Horizontal marking; Self-adhesive; white

1.2.5 Test and measurement

1.2.5.1 Testing accessories



Item No.: 210-136

Test plug; 2 mm Ø; with 500 mm cable; red



Item No.: 231-662

Test plugs for female connectors; for 7.5 mm and 7.62 mm pin spacing; 2,50 mm²; light gray

1.2.6 Tool

1.2.6.1 Operating tool



Item No.: 231-231

Combination operating tool; red



Item No.: 231-291

Operating tool; made of insulating material; 1-way; loose; red



Item No.: 231-131

Operating tool; made of insulating material; 1-way; loose; white

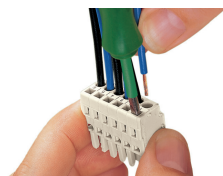


Item No.: 231-159

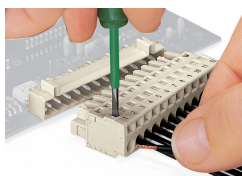
Operating tool; natural

Installation Notes

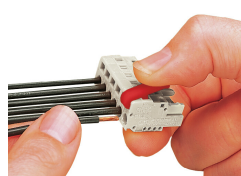
Conductor termination



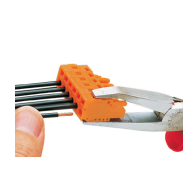
Inserting a conductor via 3.5 mm screwdriver – CAGE CLAMP® actuation parallel to conductor entry.



Inserting a conductor via 3.5 mm screwdriver – CAGE CLAMP® actuation perpendicular to conductor entry.



Inserting a conductor via operating tool.

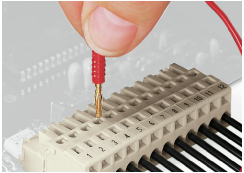


Coding



Coding a female connector by removing coding finger(s).

Testing



Testing perpendicular to conductor entry with 2 or 2.3 mm Ø test plug – female connector with CAGE CLAMP® – via integrated test ports

Installation



Male connector with strain relief plate



Strain relief housing shown with a male connector equipped with CAGE CLAMP®