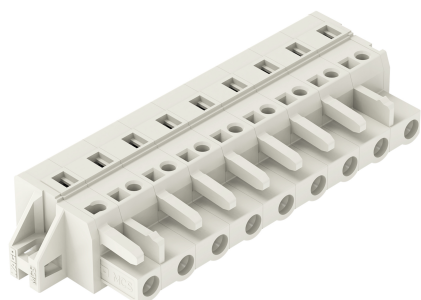


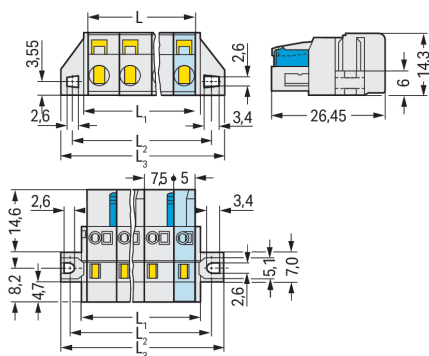
Data Sheet | Item Number: 721-209/031-000

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

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

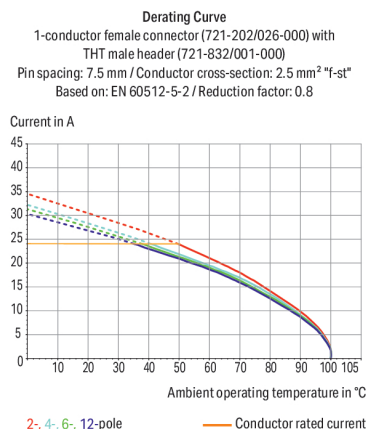


Color: ■ light gray



Dimensions in mm

$L = (\text{pole no.} - 1) \times \text{pin spacing} + 5 \text{ mm}$
 $L1 = L + 3 \text{ mm}$
 $L2 = L + 8.8 \text{ mm}$
 $L3 = L + 14.8 \text{ mm}$



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 – <i>MULTI CONNECTION SYSTEM</i> 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	
Overvoltage category	III	III	II		Use group	B	C	D
Pollution degree	3	2	2		Rated voltage	300 V	-	300 V
Nominal voltage	500 V	630 V	1000 V		Rated current	15 A	-	10 A
Rated impulse withstand voltage	6 kV	6 kV	6 kV					
Rated current	16 A	16 A	16 A					
Approvals per		CSA						
Use group	B	C	D					
Rated voltage	300 V	-	300 V					
Rated current	15 A	-	10 A					

Connection Data	
Clamping units	9
Total number of potentials	9
Number of connection types	1
Number of levels	1

Connection 1	
Connection technology	CAGE CLAMP®
Actuation type	Operating tool
Actuation direction 1	Operation parallel to conductor entry
Actuation direction 2	Operation perpendicular to conductor entry
Solid conductor	0.08 ... 2.5 mm² / 28 ... 12 AWG
Fine-stranded conductor	0.08 ... 2.5 mm² / 28 ... 12 AWG
Fine-stranded conductor; with insulated ferrule	0.25 ... 1.5 mm²
Fine-stranded conductor; with uninsulated ferrule	0.25 ... 2.5 mm²
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		0.304 MJ
Weight		19.6 g

Environmental requirements																																						
Limit temperature range	-60 ... +100 °C	<table><tr><th colspan="2">Environmental Testing</th></tr><tr><td>Test specification: Railway applications – Rolling stock – Electronic equipment</td><td>DIN EN 50155 (VDE 0115-200):2022-06</td></tr><tr><td>Test procedure: Railway applications – Rolling stock equipment – Vibration and shock tests</td><td>DIN EN 61373 (VDE 0115-0106):2011-04</td></tr><tr><td>Spectrum/Mounting location</td><td>Service life test, Category 1, Class A/B</td></tr><tr><td>Functional test with noise-like oscillations</td><td>Test passed according to Section 8 of the standard</td></tr><tr><td>Frequency</td><td>f₁ = 5 Hz to f₂ = 150 Hz</td></tr><tr><td>Acceleration</td><td>0.101g (highest test level used for all axes)</td></tr><tr><td>Test duration per axis</td><td>10 min.</td></tr><tr><td>Test directions</td><td>X, Y and Z axes</td></tr><tr><td>Monitoring of contact faults and interruptions</td><td>Passed</td></tr><tr><td>Voltage drop measurement before and after each axis</td><td>Passed</td></tr><tr><td>Simulated service life test through increased levels of noise-like oscillations</td><td>Test passed according to Section 9 of the standard</td></tr><tr><td>Frequency</td><td>f₁ = 5 Hz to f₂ = 150 Hz</td></tr><tr><td>Acceleration</td><td>0.572g (highest test level used for all axes)</td></tr><tr><td>Test duration per axis</td><td>5 h</td></tr><tr><td>Test directions</td><td>X, Y and Z axes</td></tr><tr><td>Extended testing: Monitoring of contact faults and interruptions</td><td>Passed</td></tr><tr><td>Extended testing: Voltage drop measurement before and after each axis</td><td>Passed</td></tr></table>	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
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Extended testing: Monitoring of contact faults and interruptions	Passed																																					
Extended testing: Voltage drop measurement before and after each axis	Passed																																					
Processing temperature	-35 ... +60 °C																																					



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

Approvals / Certificates

General approvals			Declarations of conformity and manufacturer's declarations		
   					
Approval	Standard	Certificate Name	Approval	Standard	Certificate Name
CB DEKRA Certification B.V.	IEC 61984	NL-113351	Railway WAGO GmbH & Co. KG	-	Railway Ready
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			



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.: 216-101
Ferrule; Sleeve for 0.5 mm² / AWG 22; uninsulated; electro-tin plated; silver-colored



Item No.: 216-202
Ferrule; Sleeve for 0.75 mm² / 18 AWG; insulated; electro-tin plated; gray



Item No.: 216-102
Ferrule; Sleeve for 0.75 mm² / 18 AWG; uninsulated; electro-tin plated; silver-colored



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; uninsulated; electro-tin plated



Item No.: 216-204
Ferrule; Sleeve for 1.5 mm² / AWG 16; insulated; electro-tin plated; black



Item No.: 216-104
Ferrule; Sleeve for 1.5 mm² / AWG 16; uninsulated; 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



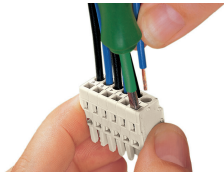
Item No.: 231-131
Operating tool; made of insulating material; 1-way; loose; white



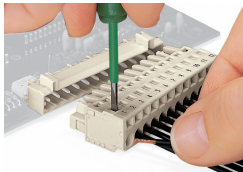
Item No.: 231-159
Operating tool; natural

Installation Notes

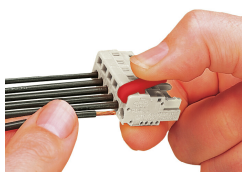
Conductor termination



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.



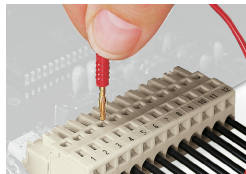
Inserting a conductor via operating tool.

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®