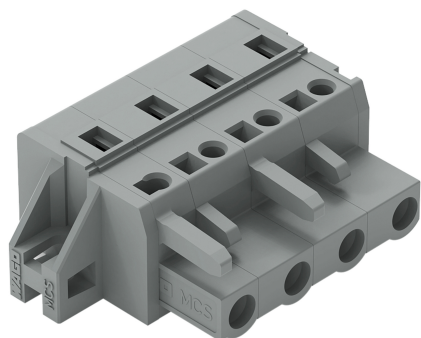


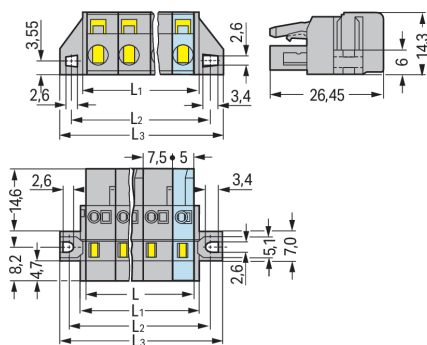
Data Sheet | Item Number: 231-204/031-000

1-conductor female connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 7.5 mm; 4-pole;
clamping collar; gray

<https://www.wago.com/231-204/031-000>

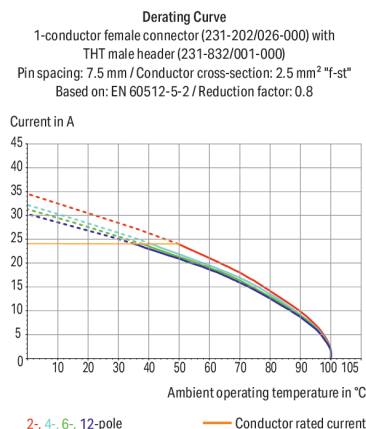


Color: ■ gray



Dimensions in mm

$L = (\text{pole no.} - 1) \times \text{pin spacing} + 5 \text{ mm}$
 $L_1 = L + 3 \text{ mm}$
 $L_2 = L + 8.8 \text{ mm}$
 $L_3 = L + 14.8 \text{ mm}$
2- to 3-pole female connectors – one latch only



Female connector, 231 Series, CAGE CLAMP®

Our female connector (item number 231-204/031-000) ensures effortless electrical installations. Ensure that the strip lengths are between 8 and 9 mm when connecting conductors to this female connector. This product features one conductor terminal and utilizes CAGE CLAMP®. Our celebrated universal connection known as CAGE CLAMP® is industry-leading when it comes to connection technology and electrical interconnections. The item's dimensions are (37.3 x 14.3 x 26.45) mm (width x height x depth). This female connector is suitable for conductor cross sections ranging from 0.08 mm² to 2.5 mm². Tin is used for coating the contact surfaces.

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:	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		
Overvoltage category		III	III	II
Pollution degree		3	2	2
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 1059		
Use group		B	C	D
Rated voltage		300 V	-	300 V
Rated current		15 A	-	10 A
Approvals per		UL 1977		
Rated voltage		600 V		
Rated current		15 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	4	
Total number of potentials	4	
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	4	
Conductor entry direction to mating direction	0 °	

Physical data	
Pin spacing	7.5 mm / 0.295 inches
Width	37.3 mm / 1.469 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	No	

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	
Clamping spring material	Chrome-nickel spring steel (CrNi)	
Contact material	Copper alloy	
Contact Plating	Tin	
Fire load	0.137 MJ	
Weight	9 g	

Environmental requirements		
Limit temperature range	-60 ... +100 °C	Environmental Testing
Processing temperature	-35 ... +60 °C	
		Test specification: DIN EN 50155 (VDE 0115-200):2022-06 Railway applications – Rolling stock – Electronic equipment
		Test procedure: DIN EN 61373 (VDE 0115-0106):2011-04 Railway applications – Rolling stock equipment – Vibration and shock tests
		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)	50 pcs
Packaging type	Box
Country of origin	DE
GTIN	4044918366939
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			
UR Underwriters Laboratories Inc.	UL 1977	E 45171			
UR Underwriters Laboratories Inc.	UL 1059	E45172			



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 231-204/031-000



Documentation

Additional Information
Technical Section
03.04.2019
pdf 2027.26 KB



CAD/CAE-Data

CAD data
2D/3D Models 231-204/031-000



CAE data
EPLAN Data Portal 231-204/031-000
ZUKEN Portal 231-204/031-000



1 Compatible Products

1.1 System counterpart

1.1.1 Male connector/plug



Item No.: 731-604
1-conductor male connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 7.5 mm; 4-pole; 2,50 mm²; gray



Item No.: 231-834/001-000
THT male header; 1.0 x 1.0 mm solder pin; angled; Pin spacing 7.5 mm; 4-pole; gray



Item No.: 231-234/001-000
THT male header; 1.0 x 1.0 mm solder pin; straight; Pin spacing 7.5 mm; 4-pole; 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; un-insulated; 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; un-insulated; 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; un-insulated; 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; un-insulated; electro-tin plated; silver-colored

1.2.3 Installation

1.2.3.1 Mounting accessories



Item No.: 231-295
Screw with nut



Item No.: 231-195
Screw with nut; M2x12; for fixing element



Item No.: 209-147
Self-tapping screw



Item No.: 231-194
Self-tapping screw; B 2.2x13, fixing hole 1.8 mm Ø

1.2.4 Insulation stop

1.2.4.1 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

1.2.5 Marking

1.2.5.1 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

1.2.6 Strain relief

1.2.6.1 Strain relief housing



Item No.: 232-664
Strain relief housing; for female and male connectors; 2 parts; Pin spacing 7.5 mm; 4-pole; gray

1.2.7 Test and measurement

1.2.7.1 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

1.2.8 Tool

1.2.8.1 Operating tool



Item No.: 231-231
Combination operating tool; red



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



Item No.: 210-657
Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft; short; multi-coloured



Item No.: 231-291
Operating tool; made of insulating material; 1-way; loose; red



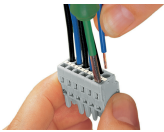
Item No.: 231-131
Operating tool; made of insulating material; 1-way; loose; white



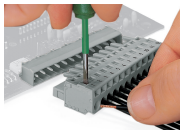
Item No.: 231-159
Operating tool; natural

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 into CAGE CLAMP® unit via operating tool (231-291).



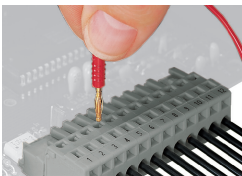
Inserting a conductor via operating tool.

Coding



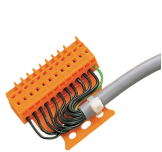
Coding a female connector by removing coding finger(s).

Testing

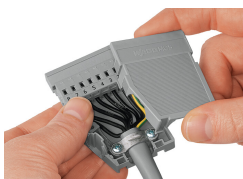


Testing – female connector with CAGE CLAMP®
Integrated test ports for testing perpendicular to conductor entry via 2 or 2.3 mm Ø test plug

Installation



Male connector with strain relief plate



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

Marking



Labeling via direct marking or self-adhesive strips.

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

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