

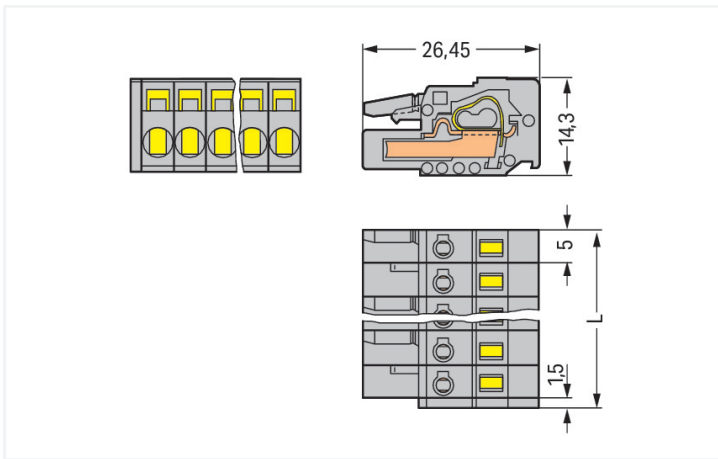
Data Sheet | Item Number: 231-110/026-000

1-conductor female connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 10-pole; gray

<https://www.wago.com/231-110/026-000>



Color: ■ gray



Dimensions in mm

L = (pole no. x pin spacing) + 1.5 mm 2- to 3-pole female connectors – one latch only

Female connector, 231 Series, with 5 mm pin spacing

Error-free electrical installations are guaranteed with this female connector (item number 231-110/026-000). Conductors can only be connected to this female connector if their strip length is between 8 and 9 mm. Featuring one conductor terminal along with CAGE CLAMP®, this product delivers reliable performance. Our CAGE CLAMP® connection offers 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 dimensions are (51.5 x 14.3 x 26.45) mm (width x height x depth). Depending on the conductor type, this female connector is suitable 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:

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	320 V	320 V	630 V
Rated impulse withstand voltage	4 kV	4 kV	4 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	10
Total number of potentials	10
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 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	10
Conductor entry direction to mating direction	0°

Physical data

Pin spacing	5 mm / 0.197 inches
Width	51.5 mm / 2.028 inches
Height	14.3 mm / 0.563 inches
Depth	26.45 mm / 1.041 inches

Mechanical data

Variable coding	Yes
Anti-rotation protection	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	0.242 MJ
Weight	17.7 g

Environmental requirements

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

Environmental Testing

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	4044918340809
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	LR 18677-25
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	E45171

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
231-110/026-000



Documentation

Additional Information

Technical Section

03.04.2019

pdf

2027.26 KB



CAD/CAE-Data

CAD data

2D/3D Models
231-110/026-000



CAE data

EPLAN Data Portal
231-110/026-000



ZUKEN Portal
231-110/026-000



1 Compatible Products

1.1 System counterpart

1.1.1 Male connector/plug



[Item No.: 231-610/019-000](#)

1-conductor male connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 10-pole; clamping collar; gray



[Item No.: 231-610/019-000/035-000](#)

1-conductor male connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 10-pole; clamping collar; Strain relief plate; gray



[Item No.: 231-610/018-000](#)

1-conductor male connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 10-pole; DIN-35 rail/panel mounting; Snap-in mounting feet; gray



[Item No.: 231-610](#)

1-conductor male connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 10-pole; gray



[Item No.: 231-610/114-000](#)

1-conductor male connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 10-pole; Snap-in flange; gray



[Item No.: 232-510/007-000](#)

Double pin header; DIN-35 rail mounting; 10-pole; Pin spacing 5 mm; gray



[Item No.: 231-170/003-000](#)













Male connector for rail-mount terminal blocks; 1.2 x 1.2 mm pins; straight; Pin spacing 5 mm; 10-pole; gray



[Item No.: 231-440/001-000/105-604/997-409](#)

THR male header; 1.0 x 1.0 mm solder pin; angled; in tape-and-reel packaging; Pin spacing 5 mm; 10-pole; black


1.1.1 Male connector/plug

 <p>Item No.: 231-440/001-000/105-604 THR male header; 1.0 x 1.0 mm solder pin; angled; Pin spacing 5 mm; 10-pole; black</p>	 <p>Item No.: 231-140/001-000/105-604/997-409 THR male header; 1.0 x 1.0 mm solder pin; straight; in tape-and-reel packaging; Pin spacing 5 mm; 10-pole; black</p>	 <p>Item No.: 231-140/001-000/105-604 THR male header; 1.0 x 1.0 mm solder pin; straight; Pin spacing 5 mm; 10-pole; black</p>	 <p>Item No.: 231-470/001-000/105-604/997-409 THR male header; 1.2 x 1.2 mm solder pin; angled; in tape-and-reel packaging; Pin spacing 5 mm; 10-pole; black</p>
 <p>Item No.: 231-470/001-000/105-604 THR male header; 1.2 x 1.2 mm solder pin; angled; Pin spacing 5 mm; 10-pole; black</p>	 <p>Item No.: 231-170/001-000/105-604/997-409 THR male header; 1.2 x 1.2 mm solder pin; straight; in tape-and-reel packaging; Pin spacing 5 mm; 10-pole; black</p>	 <p>Item No.: 231-170/001-000/105-604 THR male header; 1.2 x 1.2 mm solder pin; straight; Pin spacing 5 mm; 10-pole; black</p>	 <p>Item No.: 232-340 THT male header for double-deck assembly; 1.0 x 1.0 mm solder pin; angled; Pin spacing 5 mm; 10-pole; gray</p>
 <p>Item No.: 231-440/001-000 THT male header; 1.0 x 1.0 mm solder pin; angled; Pin spacing 5 mm; 10-pole; gray</p>	 <p>Item No.: 231-140/001-000 THT male header; 1.0 x 1.0 mm solder pin; straight; Pin spacing 5 mm; 10-pole; gray</p>	 <p>Item No.: 231-470/001-000 THT male header; 1.2 x 1.2 mm solder pin; angled; Pin spacing 5 mm; 10-pole; gray</p>	 <p>Item No.: 231-170/001-000 THT male header; 1.2 x 1.2 mm solder pin; straight; Pin spacing 5 mm; 10-pole; gray</p>

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

 <p>Item No.: 216-301 Ferrule; Sleeve for 0.25 mm² / AWG 24; un-insulated; electro-tin plated; yellow</p>	 <p>Item No.: 216-302 Ferrule; Sleeve for 0.34 mm² / 22 AWG; un-insulated; electro-tin plated; light turquoise</p>	 <p>Item No.: 216-201 Ferrule; Sleeve for 0.5 mm² / 20 AWG; un-insulated; electro-tin plated; electrolytic copper; acc. to DIN 46228, Part 4/09.90; white</p>	 <p>Item No.: 216-241 Ferrule; Sleeve for 0.5 mm² / 20 AWG; un-insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; white</p>
 <p>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</p>	 <p>Item No.: 216-101 Ferrule; Sleeve for 0.5 mm² / AWG 22; un-insulated; electro-tin plated; silver-colored</p>	 <p>Item No.: 216-242 Ferrule; Sleeve for 0.75 mm² / 18 AWG; un-insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; gray</p>	 <p>Item No.: 216-262 Ferrule; Sleeve for 0.75 mm² / 18 AWG; un-insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; gray</p>
 <p>Item No.: 216-202 Ferrule; Sleeve for 0.75 mm² / 18 AWG; un-insulated; electro-tin plated; gray</p>	 <p>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</p>	 <p>Item No.: 216-102 Ferrule; Sleeve for 0.75 mm² / AWG 20; un-insulated; electro-tin plated; silver-colored</p>	 <p>Item No.: 216-243 Ferrule; Sleeve for 1 mm² / AWG 18; un-insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; red</p>
 <p>Item No.: 216-263 Ferrule; Sleeve for 1 mm² / AWG 18; un-insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; red</p>	 <p>Item No.: 216-203 Ferrule; Sleeve for 1 mm² / AWG 18; un-insulated; electro-tin plated; red</p>	 <p>Item No.: 216-103 Ferrule; Sleeve for 1 mm² / AWG 18; un-insulated; electro-tin plated</p>	 <p>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</p>

1.2.2.1 Ferrule



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.: 231-670

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



Item No.: 231-671

Insulation stop; 0.25 - 0.5 mm²; light gray



Item No.: 231-672

Insulation stop; 0.75 - 1 mm²; dark gray

1.2.4 Jumper

1.2.4.1 Jumper



Item No.: 231-910

Jumper; for conductor entry; 10-way; insulated; gray



Item No.: 231-902

Jumper; for conductor entry; 2-way; insulated; gray



Item No.: 231-903

Jumper; for conductor entry; 3-way; insulated; gray



Item No.: 231-905

Jumper; for conductor entry; 5-way; insulated; gray



Item No.: 231-907

Jumper; for conductor entry; 7-way; insulated; gray

1.2.5 Marking

1.2.5.1 Marking strip



Item No.: 210-331/500-103

Marking strips; as a DIN A4 sheet; MARKED; 1-12 (300x); Height of marker strip: 2.3 mm/0.091 in; Strip length 182 mm; Horizontal marking; Self-adhesive; white



Item No.: 210-332/500-202

Marking strips; as a DIN A4 sheet; MARKED; 1-16 (160x); Height of marker strip: 3 mm; Strip length 182 mm; Horizontal marking; Self-adhesive; white



Item No.: 210-332/500-205

Marking strips; as a DIN A4 sheet; MARKED; 1-32 (80x); Height of marker strip: 3 mm; Strip length 182 mm; Horizontal marking; Self-adhesive; white



Item No.: 210-331/500-104

Marking strips; as a DIN A4 sheet; MARKED; 13-24 (300x); Height of marker strip: 2.3 mm/0.091 in; Strip length 182 mm; Horizontal marking; Self-adhesive; white



Item No.: 210-332/500-204

Marking strips; as a DIN A4 sheet; MARKED; 17-32 (160x); Height of marker strip: 3 mm; Strip length 182 mm; Horizontal marking; Self-adhesive; white



Item No.: 210-332/500-206

Marking strips; as a DIN A4 sheet; MARKED; 33-48 (160x); 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.: 232-610

Strain relief housing; for female and male connectors; 2 parts; Pin spacing 5 mm; 10-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.: 231-661

Test plugs for female connectors; for 5 mm and 5.08 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.: 209-132

Operating tool; for connecting comb-style jumper bar; made of insulating material; 2-way; natural



Item No.: 280-440

Operating tool; made of insulating material; 10-way; white



Item No.: 209-130

Operating tool; made of insulating material; 1-way; for 264 Series (1-/2-way), 280, 281 Series (up to 3-way); natural



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.: 280-432

Operating tool; made of insulating material; 2-way; white



Item No.: 280-433

Operating tool; made of insulating material; 3-way; white



Item No.: 280-434

Operating tool; made of insulating material; 4-way; white



Item No.: 280-435

Operating tool; made of insulating material; 5-way; gray



Item No.: 280-436

Operating tool; made of insulating material; 6-way; white



Item No.: 280-437

Operating tool; made of insulating material; 7-way; white



Item No.: 280-438

Operating tool; made of insulating material; 8-way; white

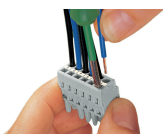


Item No.: 231-159

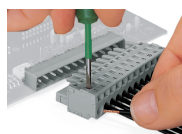
Operating tool; natural

Installation Notes

Conductor termination



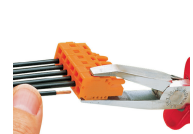
Inserting a conductor via 3.5 mm screwdriver – CAGE CLAMP® actuation parallel to conductor entry.



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.