

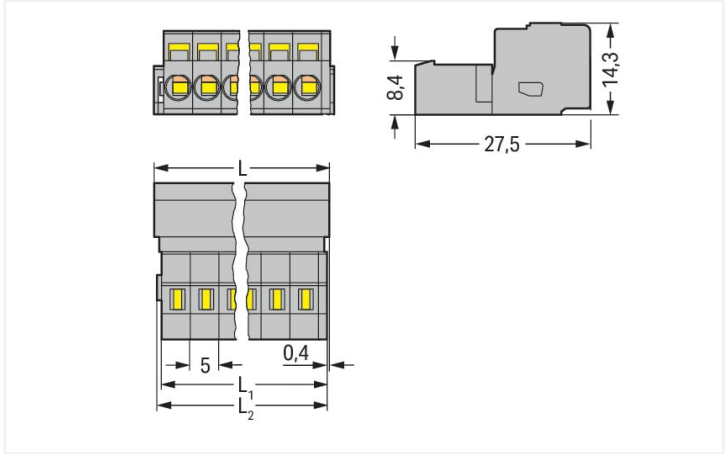
Data Sheet | Item Number: 231-622

1-conductor male connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 22-pole;
2,50 mm²; gray

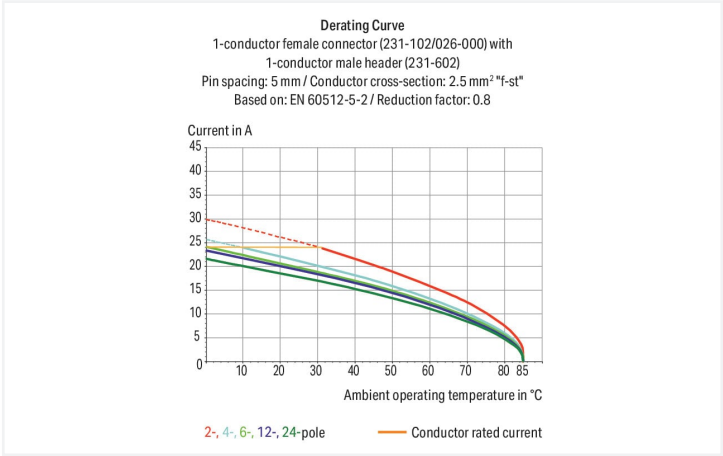
<https://www.wago.com/231-622>



Color: ■ gray



Dimensions in mm
 $L = (\text{pole no.} - 1) \times \text{pin spacing} + 8.2 \text{ mm}$
 $L1 = L - 1.7 \text{ mm}$
 $L2 = L - 1.2 \text{ mm}$



- Universal connection for all conductor types
- Easy cable pre-assembly and on-unit wiring via vertical and horizontal CAGE CLAMP® actuation
- For wire-to-wire and board-to-wire connections
- Versions available with snap-in mounting feet or flanges for panel or through-panel mounting
- With coding fingers

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			
Overvoltage category	III	III	II	Use group	B	C	D
Pollution degree	3	2	2	Rated voltage	300 V	-	300 V
Nominal voltage	320 V	320 V	630 V	Rated current	15 A	-	10 A
Rated surge voltage	4 kV	4 kV	4 kV				
Rated current	12 A	12 A	12 A				

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

Connection data

Connection points	22	Connection 1	
Total number of potentials	22	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 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	22
		Conductor entry direction to mating direction	0°

Physical data

Pin spacing	5 mm / 0.197 inches
Width	113.2 mm / 4.457 inches
Height	14.3 mm / 0.563 inches
Depth	27.5 mm / 1.083 inches

Mechanical data

Variable coding	Yes
Anti-rotation protection	Yes

Plug-in connection

Contact type (pluggable connector)	Male connector/plug
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	Polyamide (PA66)	
Flammability class per UL94	V0	
Clamping spring material	Chrome-nickel spring steel (CrNi)	
Contact material	Electrolytic copper (E _{Cu})	
Contact plating	Tin	
Fire load	0.806 MJ	
Weight	32.6 g	

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

Commercial data		
Product Group	3 (Multi Conn. System)	
eCl@ss 10.0	27-44-03-09	
eCl@ss 9.0	27-44-03-09	
ETIM 8.0	EC002638	
ETIM 7.0	EC002638	
PU (SPU)	10 pcs	
Packaging type	Box	
Country of origin	DE	
GTIN	4044918259262	
Customs tariff number	85366930000	

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-39756/A1	Railway WAGO GmbH & Co. KG	-	Railway Ready
CSA DEKRA Certification B.V.	C22.2	1466354			
KEMA/KEUR DEKRA Certification B.V.	EN 61984	71-121453			
UR Underwriters Laboratories Inc.	UL 1977	E45171			



Approvals for marine applications

  		
Approval	Standard	Certificate Name
ABS American Bureau of Ship- ping	-	19-HG1869876-PDA
DNV DNV GL SE	-	TAE000016Z
LR Lloyds Register	IEC 61984	96/20035 (E5)

Downloads

Environmental Product Compliance	
Compliance Search	
Environmental Product Compliance 231-622	

Documentation

Additional Information			
Technical Section	03.04.2019	pdf 2027.26 KB	

CAD/CAE-Data

CAD data	CAE data
2D/3D Models 231-622	EPLAN Data Portal 231-622
	
	ZUKEN Portal 231-622
	

1 Compatible Products

1.1 System counterpart

1.1.1 Female connector/socket

 Item No.: 232-122/026-000 1-conductor female connector, angled; CAGE CLAMP®; 2,5 mm²; Pin spacing 5 mm; 22-pole; 2,50 mm²; gray	 Item No.: 232-222/026-000 1-conductor female connector, angled; CAGE CLAMP®; 2,5 mm²; Pin spacing 5 mm; 22-pole; 2,50 mm²; gray	 Item No.: 231-122/026-000 1-conductor female connector; CAGE CLAMP®; 2,5 mm²; Pin spacing 5 mm; 22- pole; 2,50 mm²; gray	 Item No.: 231-122/027-000 1-conductor female connector; CAGE CLAMP®; 2,5 mm²; Pin spacing 5 mm; 22- pole; clamping collar; 2,50 mm²; gray
 Item No.: 231-122/031-000 1-conductor female connector; CAGE CLAMP®; 2,5 mm²; Pin spacing 5 mm; 22- pole; clamping collar; 2,50 mm²; gray	 Item No.: 231-122/037-000 1-conductor female connector; CAGE CLAMP®; 2,5 mm²; Pin spacing 5 mm; 22- pole; Lateral locking levers; 2,50 mm²; gray	 Item No.: 231-122/008-000 1-conductor female connector; CAGE CLAMP®; 2,5 mm²; Pin spacing 5 mm; 22- pole; Snap-in mounting feet; 2,50 mm²; gray	 Item No.: 231-122/026-000/035-000 1-conductor female connector; CAGE CLAMP®; 2,5 mm²; Pin spacing 5 mm; 22- pole; Strain relief plate; 2,50 mm²; gray



1.1.1 Female connector/socket



Item No.: 231-122/102-000
1-conductor female connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 22-pole; with integrated end plate; 2,50 mm²; gray



Item No.: 2231-122/026-000
1-conductor female connector; push-button; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 22-pole; 2,50 mm²; gray



Item No.: 2231-122/031-000
1-conductor female connector; push-button; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 22-pole; clamping collar; 2,50 mm²; gray



Item No.: 2231-122/037-000
1-conductor female connector; push-button; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 22-pole; Lateral locking levers; 2,50 mm²; gray



Item No.: 2231-122/008-000
1-conductor female connector; push-button; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 22-pole; Snap-in mounting feet; 2,50 mm²; gray



Item No.: 2231-122/102-000
1-conductor female connector; push-button; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 22-pole; with integrated end plate; 2,50 mm²; gray



Item No.: 232-252
THT female header; angled; Pin spacing 5 mm; 22-pole; 0.6 x 1.0 mm solder pin; gray



Item No.: 232-252/031-000
THT female header; angled; Pin spacing 5 mm; 22-pole; clamping collar; 0.6 x 1.0 mm solder pin; gray



Item No.: 232-252/039-000
THT female header; angled; Pin spacing 5 mm; 22-pole; Locking lever; 0.6 x 1.0 mm solder pin; gray



Item No.: 232-252/047-000
THT female header; angled; Pin spacing 5 mm; 22-pole; Spacer flange; 0.6 x 1.0 mm solder pin; gray



Item No.: 232-152
THT female header; straight; Pin spacing 5 mm; 22-pole; 0.6 x 1.0 mm solder pin; gray



Item No.: 232-152/031-000
THT female header; straight; Pin spacing 5 mm; 22-pole; clamping collar; 0.6 x 1.0 mm solder pin; gray



Item No.: 232-152/039-000
THT female header; straight; Pin spacing 5 mm; 22-pole; Locking lever; 0.6 x 1.0 mm solder pin; gray



Item No.: 232-152/047-000
THT female header; straight; Pin spacing 5 mm; 22-pole; Spacer flange; 0.6 x 1.0 mm solder pin; gray

1.2 Optional Accessories

1.2.1 Coding

1.2.1.1 Coding



Item No.: 231-129
Coding key; snap-on type; light gray

1.2.2 Cover

1.2.2.1 Cover



Item No.: 231-668
Lockout caps; for covering unused clamping units; gray

1.2.3 Ferrule

1.2.3.1 Ferrule



Item No.: 216-301
Ferrule; Sleeve for 0.25 mm² / AWG 24; insulated; electro-tin plated; yellow



Item No.: 216-321
Ferrule; Sleeve for 0.25 mm² / AWG 24; insulated; electro-tin plated; yellow



Item No.: 216-151
Ferrule; Sleeve for 0.25 mm² / AWG 24; uninsulated; electro-tin plated



Item No.: 216-131
Ferrule; Sleeve for 0.25 mm² / AWG 24; uninsulated; electro-tin plated; silver-colored



Item No.: 216-302
Ferrule; Sleeve for 0.34 mm² / 22 AWG; insulated; electro-tin plated; light turquoise



Item No.: 216-322
Ferrule; Sleeve for 0.34 mm² / 22 AWG; insulated; electro-tin plated; light turquoise



Item No.: 216-132
Ferrule; Sleeve for 0.34 mm² / AWG 24; uninsulated; electro-tin plated



Item No.: 216-152
Ferrule; Sleeve for 0.34 mm² / AWG 24; uninsulated; electro-tin plated



1.2.3.1 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.: 216-201 Ferrule; Sleeve for 0.5 mm² / 20 AWG; insulated; electro-tin plated; white	 Item No.: 216-221 Ferrule; Sleeve for 0.5 mm² / 20 AWG; insulated; electro-tin plated; 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.: 216-121 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.: 216-222 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.: 216-122 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.: 216-223 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.: 216-123 Ferrule; Sleeve for 1 mm² / AWG 18; un-insulated; electro-tin plated; silver-colored
 Item No.: 216-204 Ferrule; Sleeve for 1.5 mm² / AWG 16; insulated; electro-tin plated; black	 Item No.: 216-224 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.: 216-124 Ferrule; Sleeve for 1.5 mm² / AWG 16; un-insulated; electro-tin plated	 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			



1.2.4 Insulation stop			
1.2.4.1 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	
1.2.5 Jumper			
1.2.5.1 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			
1.2.6 Marking			
1.2.6.1 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		
1.2.7 Tool			
1.2.7.1 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; multicoloured	Item No.: 209-132 Operating tool; for connecting comb-style jumper bar; made of insulating material; 2-way; natural
			
Item No.: 210-250 Operating tool; for MCS MINI and MIDI with CAGE CLAMP® connection; red	Item No.: 280-440 Operating tool; made of insulating material; 10-way	Item No.: 209-130 Operating tool; made of insulating material; 1-way; for 264 Series (1-1/2-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	Item No.: 280-434 Operating tool; made of insulating material; 4-way

1.2.7.1 Operating tool



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



Item No.: 280-437
Operating tool; made of insulating material; 7-way



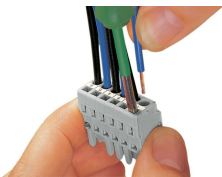
Item No.: 280-438
Operating tool; made of insulating material; 8-way



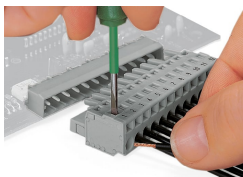
Item No.: 231-159
Operating tool; natural

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.

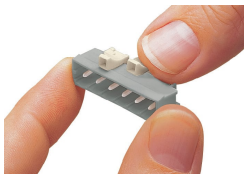


Inserting a conductor into CAGE CLAMP® unit via operating tool (231-291).



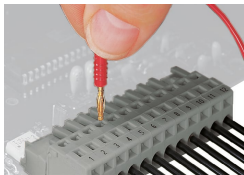
Inserting a conductor via operating tool.

Coding



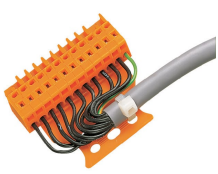
Coding a male header – fitting coding key(s).

Testing

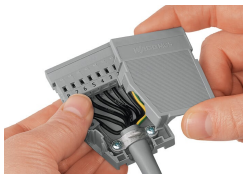


Testing – female connector with CAGE CLAMP®
Integrated test ports for testing perpendicular to conductor entry via 2 or 2.3 mm Ø test plug

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.