



EN: This Datasheet/Document is presented by the manufacturer.

Please visit our website for pricing and availability at www.hestore.hu.

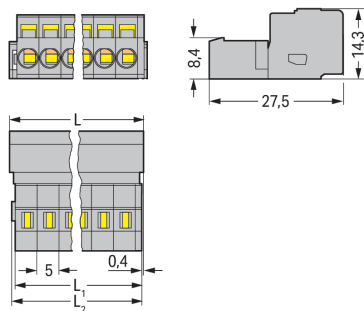
Data Sheet | Item Number: 231-604

1-conductor male connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 4-pole; gray

<https://www.wago.com/231-604>

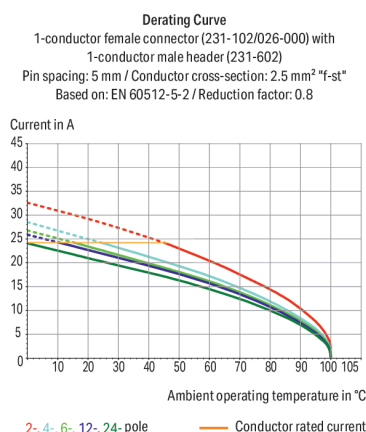


Color: ■ gray



Dimensions in mm

$L = (\text{pole no.} - 1) \times \text{pin spacing} + 8.2 \text{ mm}$
 $L_1 = L - 1.7 \text{ mm}$
 $L_2 = L - 1.2 \text{ mm}$



Male connector, 231 Series, 0 ° conductor exit to connection direction

Our male connector (item number 231-604) simplifies electrical installations. Ensure that the strip lengths are between 8 and 9 mm when connecting conductors to this male connector. This product features one conductor terminal and utilizes CAGE CLAMP®. Our proven universal connection known as CAGE CLAMP® is industry-leading when it comes to connection technology and electrical interconnections. The dimensions are (23.2 x 14.3 x 27.5) mm (width x height x depth). Depending on the type of conductor, this male connector is ideal 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:	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	
Overvoltage category		III	II
Pollution degree		3	2
Nominal voltage		320 V	630 V
Rated impulse withstand voltage		4 kV	4 kV
Rated current		12 A	12 A
Approvals per		UL 1059	
Use group		B	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	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	5 mm / 0.197 inches
Width	23.2 mm / 0.913 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 (main housing)	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	0.1 MJ
Weight	6.3 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 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
		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



Environmental Testing	
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)	100 pcs	
Packaging type	Box	
Country of origin	DE	
GTIN	4044918256896	
Customs tariff number	85366930000	

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	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			



Approvals for marine applications

			
Approval	Standard	Certificate Name	
ABS American Bureau of Ship- ping	-	24-0095975-PDA	
DNV DNV GL SE	-	TAE000016Z	
LR Lloyds Register	IEC 61984	96/20035 (E5)	
PRS Polski Rejestr Statków	-	TE/1095/880590/23	

Downloads

Environmental Product Compliance

Compliance Search
Environmental Product Compliance 231-604



Documentation

Additional Information
Technical Section
03.04.2019
pdf 2027.26 KB



CAD/CAE-Data

CAD data
2D/3D Models 231-604



CAE data
EPLAN Data Portal 231-604
ZUKEN Portal 231-604



1 Compatible Products

1.1 System counterpart

1.1.1 Female connector/socket



Item No.: 232-104/026-000
1-conductor female connector; angled;
CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm;
4-pole; 2,50 mm²; gray



Item No.: 232-204/026-000
1-conductor female connector; angled;
CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm;
4-pole; 2,50 mm²; gray



Item No.: 731-504/031-000
1-conductor female connector; angled;
CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm;
4-pole; clamping collar; DIN-35 rail/panel
mounting; 2,50 mm²; gray



Item No.: 731-504/008-000
1-conductor female connector; angled;
CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm;
4-pole; Snap-in mounting feet; 2,50 mm²;
gray



Item No.: 231-104/031-000
1-conductor female connector; CAGE
CLAMP®; 2.5 mm²; Pin spacing 5 mm; 4-pole;
clamping collar; gray



Item No.: 231-104/026-000
1-conductor female connector; CAGE
CLAMP®; 2.5 mm²; Pin spacing 5 mm; 4-
pole; gray



Item No.: 231-104/037-000
1-conductor female connector; CAGE
CLAMP®; 2.5 mm²; Pin spacing 5 mm; 4-
pole; Lateral locking levers; gray



Item No.: 231-104/124-000
1-conductor female connector; CAGE
CLAMP®; 2.5 mm²; Pin spacing 5 mm; 4-pole;
Snap-in flange; gray

1.1.1 Female connector/socket

**Item No.: 231-104/008-000**

1-conductor female connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 4-pole; Snap-in mounting feet; gray

**Item No.: 231-104/026-000/033-000**

1-conductor female connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 4-pole; Strain relief plate; gray

**Item No.: 231-104/102-000**

1-conductor female connector; CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 4-pole; with integrated end plate; gray

**Item No.: 2231-1104/327-000**

1-conductor female connector; lever; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 4-pole; 2,50 mm²; gray

**Item No.: 2231-1104/328-000**

1-conductor female connector; lever; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 4-pole; Centered locking levers; gray

Item No.: 2231-1104/328-000/334-000

1-conductor female connector; lever; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 4-pole; Centered locking levers; Strain relief plate; gray

**Item No.: 2231-1104/331-000**

1-conductor female connector; lever; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 4-pole; clamping collar; gray

**Item No.: 2231-1104/327-047**

1-conductor female connector; lever; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 4-pole; direct marking; gray

**Item No.: 2231-1104/327-9037**

1-conductor female connector; lever; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 4-pole; direct marking; gray

**Item No.: 2231-1104/038-000**

1-conductor female connector; lever; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 4-pole; Lateral locking levers; 2,50 mm²; gray

**Item No.: 2231-1104/038-000/334-000**

1-conductor female connector; lever; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 4-pole; Lateral locking levers; Strain relief plate; gray

**Item No.: 2231-1104/327-000/127-000**

1-conductor female connector; lever; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 4-pole; mounting foot flange; 2,50 mm²; gray

**Item No.: 2231-1104/126-000**

1-conductor female connector; lever; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 4-pole; Snap-in flange; gray

**Item No.: 2231-1104/327-000/334-000**

1-conductor female connector; lever; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 4-pole; Strain relief plate; gray

**Item No.: 2231-104/026-000**

1-conductor female connector; push-button; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 4-pole; 2,50 mm²; gray

**Item No.: 2231-104/031-000**

1-conductor female connector; push-button; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 4-pole; clamping collar; 2,50 mm²; gray

**Item No.: 2231-104/037-000**

1-conductor female connector; push-button; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 4-pole; Lateral locking levers; 2,50 mm²; gray

**Item No.: 2231-104/008-000**

1-conductor female connector; push-button; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 4-pole; Snap-in mounting feet; 2,50 mm²; gray

**Item No.: 2231-104/102-000**

1-conductor female connector; push-button; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 4-pole; with integrated end plate; 2,50 mm²; gray

**Item No.: 231-2104/037-000**

2-conductor female connector; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 4-pole; Lateral locking levers; gray

**Item No.: 231-2104/026-000**

2-conductor female connector; Push-in CAGE CLAMP®; 2.5 mm²; Pin spacing 5 mm; 4-pole; with integrated end plate; gray

**Item No.: 232-234/005-000/039-000**

Female connector for rail-mount terminal blocks; 0.6 x 1 mm pins; angled; Locking lever; Pin spacing 5 mm; 4-pole; gray

**Item No.: 232-234/005-000**

Female connector for rail-mount terminal blocks; 0.6 x 1 mm pins; angled; Pin spacing 5 mm; 4-pole; gray

**Item No.: 232-134/005-000/039-000**

Female connector for rail-mount terminal blocks; 0.6 x 1 mm pins; straight; Locking lever; Pin spacing 5 mm; 4-pole; gray

**Item No.: 232-134/005-000**

Female connector for rail-mount terminal blocks; 0.6 x 1 mm pins; straight; Pin spacing 5 mm; 4-pole; gray

**Item No.: 232-234**

THT female header; angled; Pin spacing 5 mm; 4-pole; 0.6 x 1.0 mm solder pin; gray

**Item No.: 232-234/031-000**

THT female header; angled; Pin spacing 5 mm; 4-pole; clamping collar; 0.6 x 1.0 mm solder pin; gray

**Item No.: 232-234/039-000**

THT female header; angled; Pin spacing 5 mm; 4-pole; Locking lever; 0.6 x 1.0 mm solder pin; gray

**Item No.: 232-234/047-000**

THT female header; angled; Pin spacing 5 mm; 4-pole; Spacer flange; 0.6 x 1.0 mm solder pin; gray

**Item No.: 232-134**

THT female header; straight; Pin spacing 5 mm; 4-pole; 0.6 x 1.0 mm solder pin; gray

**Item No.: 232-134/031-000**

THT female header; straight; Pin spacing 5 mm; 4-pole; clamping collar; 0.6 x 1.0 mm solder pin; gray

**Item No.: 232-134/039-000**

THT female header; straight; Pin spacing 5 mm; 4-pole; Locking lever; 0.6 x 1.0 mm solder pin; gray

**Item No.: 232-134/047-000**

THT female header; straight; Pin spacing 5 mm; 4-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.: 216-302
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

1.2.4 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.: 231-902

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



Item No.: 231-903

Jumper; for conductor entry; 3-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 Strain relief

1.2.7.1 Strain relief housing



Item No.: 232-604

Strain relief housing; for female and male connectors; 2 parts; Pin spacing 5 mm; 4-pole; 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.: 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.: 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

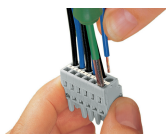


Item No.: 231-159

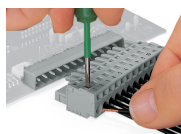
Operating tool; natural

Installation Notes

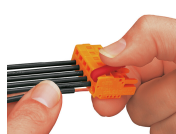
Conductor termination



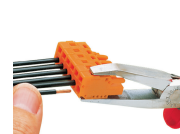
Inserting a conductor via 3.5 mm screwdriver – CAGE CLAMP® actuation parallel to conductor entry.



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

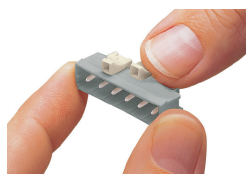


Inserting a conductor into CAGE CLAMP® unit via operating tool (231-291).



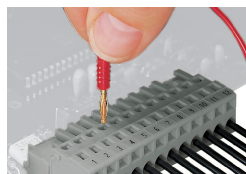
Inserting a conductor via operating tool.

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

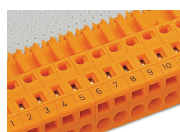


Male connector with strain relief plate



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

Marking



Labeling via direct marking or self-adhesive strips.