

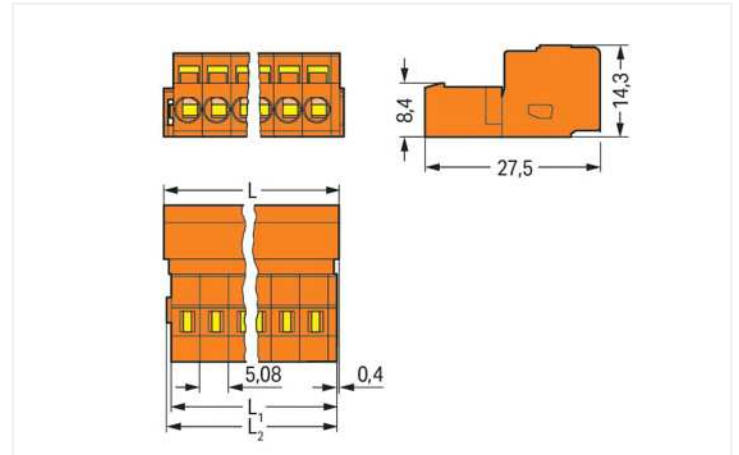
## Data Sheet | Item Number: 231-654

1-conductor male connector; CAGE CLAMP®; 2.5 mm<sup>2</sup>; Pin spacing 5.08 mm; 24-pole; 2,50 mm<sup>2</sup>; orange

<https://www.wago.com/231-654>



Color: ■ orange

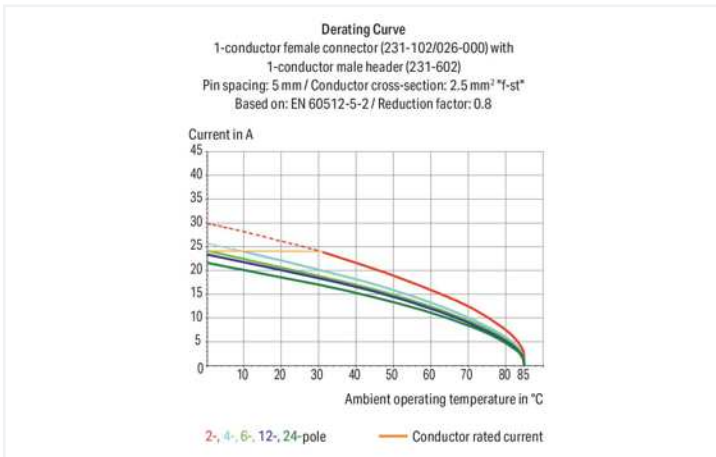


Dimensions in mm

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

$L1 = L - 1.7 \text{ mm}$

$L2 = L - 1.2 \text{ mm}$



- 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

Ratings per	IEC/EN 60664-1
Nominal voltage (III/3)	320 V
Rated impulse voltage (III/3)	4 kV
Rated voltage (III/2)	320 V
Rated impulse voltage (III/2)	4 kV
Nominal voltage (II/2)	630 V
Rated surge voltage (II/2)	4 kV
Rated current	12 A
Legend (ratings)	(III / 2) $\Delta$ Overvoltage category III / Pollution degree 2

### Ratings per UL 1059

Approvals per	UL 1059
Rated voltage UL (Use Group B)	300 V
Rated current UL (Use Group B)	15 A
Rated voltage UL (Use Group D)	300 V
Rated current UL (Use Group D)	10 A

### Ratings per UL 1977

Rated voltage (UL 1977)	600 V
Rated current UL 1977	15 A

### Ratings per CSA

Approvals per	CSA
Rated voltage CSA (Use Group B)	300 V
Rated current CSA (Use Group B)	15 A
Rated voltage CSA (Use Group D)	300 V
Rated current CSA (Use Group D)	10 A

### Connection data

Connection points	24
Total number of potentials	24
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 <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor	0.08 ... 2.5 mm <sup>2</sup> / 28 ... 12 AWG
Fine-stranded conductor; with insulated ferrule	0.25 ... 1.5 mm <sup>2</sup>
Fine-stranded conductor; with uninsulated ferrule	0.25 ... 2.5 mm <sup>2</sup>
Strip length	8 ... 9 mm / 0.31 ... 0.35 inches
Pole number	24
Conductor entry direction to mating direction	0°

### Physical data

Pin spacing	5.08 mm / 0.2 inches
Width	125.12 mm / 4.926 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)	<a href="#">Information on material specifications can be found here</a>
Color	orange
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 <sub>Cu</sub> )
Contact plating	Tin
Fire load	0.597 MJ
Weight	36.8 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	4044918261333
Customs tariff number	85366990990

### Approvals / Certificates

#### General approvals



Approval	Standard	Certificate Name
CB DEKRA Certification B.V.	IEC 61984	NL-39756/A1
CSA DEKRA Certification B.V.	C22.2	1466354
KEMA/KEUR DEKRA Certification B.V.	EN 61984	71-121453
UL UL International Germany GmbH	UL 1977	E45171

#### General approvals

UR Underwriters Laboratories Inc.	UL 1059	E45172
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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	-	19-HG1869876-PDA
DNV GL Det Norske Veritas, Ger- manischer Lloyd	-	TAE000016Z
LR Lloyds Register	IEC 61984	96/20035 (E5)

Downloads

Environmental Product Compliance

Compliance Search
Environmental Product Compliance 231-654

Documentation

Additional Information
Technical Section 03.04.2019 pdf 1949.09 KB

CAD/CAE-Data

CAD data
2D/3D Models 231-654

CAE data
EPLAN Data Portal 231-654
ZUKEN Portal 231-654

1 Compatible Products

1.1 System counterpart

1.1.1 Female connector/socket



[Item No.: 232-324/026-000](#)  
1-conductor female connector, angled;  
CAGE CLAMP®; 2.5 mm²; Pin spacing 5.08  
mm; 24-pole; 2,50 mm²; orange



[Item No.: 232-424/026-000](#)  
1-conductor female connector, angled;  
CAGE CLAMP®; 2.5 mm²; Pin spacing  
5.08 mm; 24-pole; 2,50 mm²; orange



[Item No.: 231-324/026-000](#)  
1-conductor female connector; CAGE  
CLAMP®; 2.5 mm²; Pin spacing 5.08 mm;  
24-pole; 2,50 mm²; orange



[Item No.: 231-324/027-000](#)  
1-conductor female connector; CAGE  
CLAMP®; 2.5 mm²; Pin spacing 5.08 mm;  
24-pole; clamping collar; 2,50 mm²; oran-  
ge



[Item No.: 231-324/031-000](#)  
1-conductor female connector; CAGE  
CLAMP®; 2.5 mm²; Pin spacing 5.08 mm;  
24-pole; clamping collar; 2,50 mm²; oran-  
ge



[Item No.: 231-324/037-000](#)  
1-conductor female connector; CAGE  
CLAMP®; 2.5 mm²; Pin spacing 5.08 mm;  
24-pole; Lateral locking levers; 2,50 mm²;  
orange



[Item No.: 231-324/008-000](#)  
1-conductor female connector; CAGE  
CLAMP®; 2.5 mm²; Pin spacing 5.08 mm;  
24-pole; Snap-in mounting feet; 2,50  
mm²; orange



[Item No.: 231-324/102-000](#)  
1-conductor female connector; CAGE  
CLAMP®; 2.5 mm²; Pin spacing 5.08 mm;  
24-pole; with integrated end plate; 2,50  
mm²; orange

### 1.1.1 Female connector/socket



**Item No.: 2231-324/026-000**

1-conductor female connector; push-button; Push-in CAGE CLAMP®; 2.5 mm<sup>2</sup>; Pin spacing 5.08 mm; 24-pole; 2,50 mm<sup>2</sup>; orange

**Item No.: 2231-324/031-000**

1-conductor female connector; push-button; Push-in CAGE CLAMP®; 2.5 mm<sup>2</sup>; Pin spacing 5.08 mm; 24-pole; clamping collar; 2,50 mm<sup>2</sup>; orange

**Item No.: 2231-324/037-000**

1-conductor female connector; push-button; Push-in CAGE CLAMP®; 2.5 mm<sup>2</sup>; Pin spacing 5.08 mm; 24-pole; Lateral locking levers; 2,50 mm<sup>2</sup>; orange

**Item No.: 2231-324/008-000**

1-conductor female connector; push-button; Push-in CAGE CLAMP®; 2.5 mm<sup>2</sup>; Pin spacing 5.08 mm; 24-pole; Snap-in mounting feet; 2,50 mm<sup>2</sup>; orange



**Item No.: 2231-324/102-000**

1-conductor female connector; push-button; Push-in CAGE CLAMP®; 2.5 mm<sup>2</sup>; Pin spacing 5.08 mm; 24-pole; with integrated end plate; 2,50 mm<sup>2</sup>; orange

**Item No.: 232-284**

THT female header; angled; Pin spacing 5.08 mm; 24-pole; 0.6 x 1.0 mm solder pin; orange

**Item No.: 232-284/031-000**

THT female header; angled; Pin spacing 5.08 mm; 24-pole; clamping collar; 0.6 x 1.0 mm solder pin; orange

**Item No.: 232-284/039-000**

THT female header; angled; Pin spacing 5.08 mm; 24-pole; Locking lever; 0.6 x 1.0 mm solder pin; orange



**Item No.: 232-284/047-000**

THT female header; angled; Pin spacing 5.08 mm; 24-pole; Spacer flange; 0.6 x 1.0 mm solder pin; orange

**Item No.: 232-184**

THT female header; straight; Pin spacing 5.08 mm; 24-pole; 0.6 x 1.0 mm solder pin; orange

**Item No.: 232-184/031-000**

THT female header; straight; Pin spacing 5.08 mm; 24-pole; clamping collar; 0.6 x 1.0 mm solder pin; orange

**Item No.: 232-184/039-000**

THT female header; straight; Pin spacing 5.08 mm; 24-pole; Locking lever; 0.6 x 1.0 mm solder pin; orange



**Item No.: 232-184/047-000**

THT female header; straight; Pin spacing 5.08 mm; 24-pole; Spacer flange; 0.6 x 1.0 mm solder pin; orange

### 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.