

## Data Sheet | Item Number: 733-103

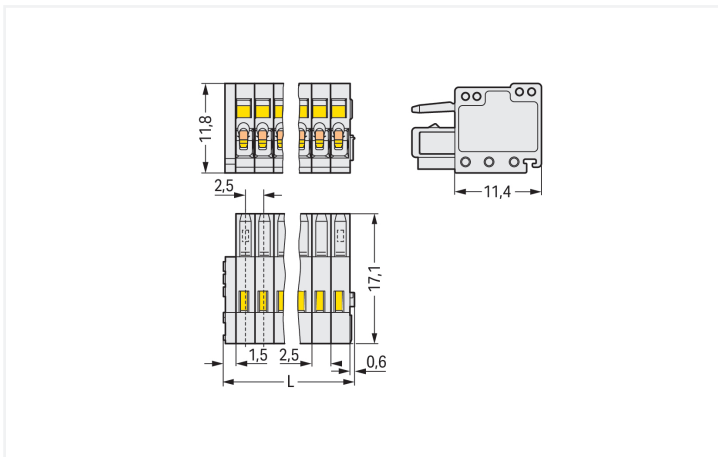
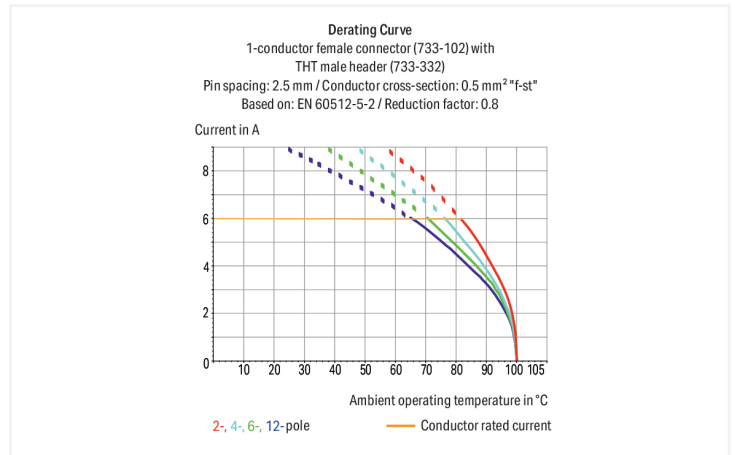
1-conductor female connector; CAGE CLAMP®; 0.5 mm<sup>2</sup>; Pin spacing 2.5 mm; 3-pole; 100% protected against mismatching; light gray

<https://www.wago.com/733-103>



Color: ■ light gray

Similar to illustration



Dimensions in mm

L = (pole no. x pin spacing) + 2.1 mm

### Female connector, 733 Series, CAGE CLAMP®

Easy electrical installations are guaranteed with this female connector (item number 733-103). Strip lengths must be between 5 and 6 mm when connecting conductors to this female connector. Featuring one conductor terminal along with CAGE CLAMP®, this connector is highly versatile. Our highly-rated and maintenance-free CAGE CLAMP® connection makes it easy to connect all types of conductors without having to prepare the conductor. For example, you don't need to crimp ferrules. The dimensions are (9.6 x 11.8 x 17.1) mm (width x height x depth). Depending on the type of conductor, this female connector is suitable for conductor cross sections ranging from 0.08 mm<sup>2</sup> to 0.5 mm<sup>2</sup>.

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:

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 | 150 V | -       | - |  |
| Nominal voltage                 |  | 100 V          | 160 V  | 320 V  | Rated current | 4 A   | -       | - |  |
| Rated impulse withstand voltage |  | 2.5 kV         | 2.5 kV | 2.5 kV |               |       |         |   |  |
| Rated current                   |  | 6 A            | 6 A    | 6 A    |               |       |         |   |  |

| Approvals per |  | CSA   |   |   |
|---------------|--|-------|---|---|
| Use group     |  | B     | C | D |
| Rated voltage |  | 150 V | - | - |
| Rated current |  | 4 A   | - | - |

## Connection Data

|                            |   |   |  |  |
|----------------------------|---|---|--|--|
| Clamping units             | 3 | <b>Connection 1</b>                               |  |  |
| Total number of potentials | 3 | 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 ... 0.5 mm <sup>2</sup> / 28 ... 20 AWG |  |
|                            |   | Fine-stranded conductor                           | 0.08 ... 0.5 mm <sup>2</sup> / 28 ... 20 AWG |  |
|                            |   | Fine-stranded conductor; with insulated ferrule   | 0.25 ... 0.34 mm <sup>2</sup>                |  |
|                            |   | Fine-stranded conductor; with uninsulated ferrule | 0.25 ... 0.34 mm <sup>2</sup>                |  |
|                            |   | Strip length                                      | 5 ... 6 mm / 0.2 ... 0.24 inches             |  |
|                            |   | Pole number                                       | 3  |  |
|                            |   | Conductor entry direction to mating direction     | 0°   |  |

## Physical data

|             |                        |
|-------------|------------------------|
| Pin spacing | 2.5 mm / 0.098 inches  |
| Width       | 9.6 mm / 0.378 inches  |
| Height      | 11.8 mm / 0.465 inches |
| Depth       | 17.1 mm / 0.673 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               | Yes                     |

### Material data

|                                    |  |
|------------------------------------|--|
| Note (material data)               | <a href="#">Information on material specifications can be found here</a> |
| Color                              | light 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                          | 0.027 MJ   |
| Weight                             | 1.4 g  |

### Environmental requirements

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

### Environmental Testing

|   |   |
|---|---|
| Test specification:<br>Railway applications –<br>Rolling stock –<br>Electronic equipment            | DIN EN 50155 (VDE 0115-200):2022-06                 |
| Test procedure:<br>Railway applications –<br>Rolling stock equipment –<br>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)              | 200 pcs                |
| Packaging type        | Box                    |
| Country of origin     | DE                     |
| GTIN                  | 4044918293976          |
| 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  |           |                  |
|--|-----------|------------------|
|    |           |                  |
| Approval   | Standard  | Certificate Name |
| CCA<br>DEKRA Certification B.V.  | EN 61984  | 2169534.01       |
| CCA<br>DEKRA Certification B.V.  | IEC 61984 | NL-31141         |
| CSA<br>DEKRA Certification B.V.  | C22.2     | 1465035          |
| UL<br>UL International Germany GmbH  | UL 1977   | E45171           |

| Declarations of conformity and manufacturer's declarations                          |          |                  |
|---|----------|------------------|
|  |          |                  |
| Approval  | Standard | Certificate Name |
| Railway<br>WAGO GmbH & Co. KG   | -        | Railway Ready    |

Approvals for marine applications



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

Downloads

Environmental Product Compliance

Compliance Search

Environmental Product  
Compliance 733-103



Documentation

Additional Information

Technical Section

03.04.2019

pdf

2027.26 KB



CAD/CAE-Data

CAD data

2D/3D Models 733-103



CAE data

EPLAN Data Portal  
733-103



ZUKEN Portal 733-103



1 Compatible Products

1.1 System counterpart

1.1.1 Male connector/plug



[Item No.: 733-203](#)

1-conductor male connector; CAGE CLAMP®; 0.5 mm²; Pin spacing 2.5 mm; 3-pole; 100% protected against mismatching; light gray



[Item No.: 733-203/032-000](#)

1-conductor male connector; CAGE CLAMP®; 0.5 mm²; Pin spacing 2.5 mm; 3-pole; 100% protected against mismatching; Strain relief plate; 0,50 mm²; light gray



[Item No.: 733-363/105-604/997-406](#)

THR male header; 0.8 x 0.8 mm solder pin; angled; 100% protected against mismatching; in tape-and-reel packaging; Pin spacing 2.5 mm; 3-pole; black



[Item No.: 733-363/105-604](#)

THR male header; 0.8 x 0.8 mm solder pin; angled; 100% protected against mismatching; Pin spacing 2.5 mm; 3-pole; black



[Item No.: 733-333/105-604/997-446](#)

THR male header; 0.8 x 0.8 mm solder pin; straight; 100% protected against mismatching; in tape-and-reel packaging; Pin spacing 2.5 mm; 3-pole; black



[Item No.: 733-333/105-604](#)

THR male header; 0.8 x 0.8 mm solder pin; straight; 100% protected against mismatching; Pin spacing 2.5 mm; 3-pole; black



[Item No.: 733-363](#)

THT male header; 0.8 x 0.8 mm solder pin; angled; 100% protected against mismatching; Pin spacing 2.5 mm; 3-pole; light gray



[Item No.: 733-333](#)

THT male header; 0.8 x 0.8 mm solder pin; straight; 100% protected against mismatching; Pin spacing 2.5 mm; 3-pole; light gray

## 1.2 Optional Accessories

### 1.2.1 Ferrule

#### 1.2.1.1 Ferrule



**Item No.: 216-301**

Ferrule; Sleeve for 0.25 mm<sup>2</sup> / AWG 24; insulated; electro-tin plated; yellow



**Item No.: 216-321**

Ferrule; Sleeve for 0.25 mm<sup>2</sup> / AWG 24; insulated; electro-tin plated; yellow



**Item No.: 216-151**

Ferrule; Sleeve for 0.25 mm<sup>2</sup> / AWG 24; uninsulated; electro-tin plated



**Item No.: 216-131**

Ferrule; Sleeve for 0.25 mm<sup>2</sup> / AWG 24; uninsulated; electro-tin plated; silver-colored



**Item No.: 216-302**

Ferrule; Sleeve for 0.34 mm<sup>2</sup> / 22 AWG; insulated; electro-tin plated; light turquoise



**Item No.: 216-322**

Ferrule; Sleeve for 0.34 mm<sup>2</sup> / 22 AWG; insulated; electro-tin plated; light turquoise



**Item No.: 216-132**

Ferrule; Sleeve for 0.34 mm<sup>2</sup> / AWG 24; uninsulated; electro-tin plated



**Item No.: 216-152**

Ferrule; Sleeve for 0.34 mm<sup>2</sup> / AWG 24; uninsulated; electro-tin plated

### 1.2.2 Marking

#### 1.2.2.1 Marking strip



**Item No.: 210-331/250-202**

Marking strips; as a DIN A4 sheet; MARKED; 1-16 (400x); Height of marker strip: 2.3 mm/0.091 in; Strip length 182 mm; Horizontal marking; Self-adhesive; white



**Item No.: 210-331/250-207**

Marking strips; as a DIN A4 sheet; MARKED; 1-48 (100x); Height of marker strip: 2.3 mm/0.091 in; Strip length 182 mm; Horizontal marking; Self-adhesive; white



**Item No.: 210-331/250-204**

Marking strips; as a DIN A4 sheet; MARKED; 17-32 (400x); Height of marker strip: 2.3 mm/0.091 in; Strip length 182 mm; Horizontal marking; Self-adhesive; white



**Item No.: 210-331/250-206**

Marking strips; as a DIN A4 sheet; MARKED; 33-48 (400x); Height of marker strip: 2.3 mm/0.091 in; Strip length 182 mm; Horizontal marking; Self-adhesive; white

### 1.2.3 Strain relief

#### 1.2.3.1 Strain relief plate

**Item No.: 734-127**

Strain relief plate; for female and male connectors; 6 mm wide; 1 part; Pin spacing 3.5 mm; light gray

### 1.2.4 Test and measurement

#### 1.2.4.1 Testing accessories



**Item No.: 735-500**

WAGO Test pin; 1 mm Ø; 30 V AC / 60 V DC; CAT0; 1 A; 6 mm uninsulated; Test lead for soldering up to 0,5mm<sup>2</sup>

## 1.2.5 Tool

### 1.2.5.1 Operating tool



**Item No.: 210-719**

Operating tool; Blade: 2.5 x 0.4 mm; with a partially insulated shaft



**Item No.: 210-251**

Operating tool; for MCS MICRO and MINI with CAGE CLAMP® connection; yellow



**Item No.: 233-335**

Operating tool; green



**Item No.: 233-331**

Operating tool; insulated; yellow



**Item No.: 733-130**

Operating tool; made of insulating material; 1-way; loose; white



**Item No.: 733-191**

Operating tool; made of insulating material; 1-way; loose; yellow

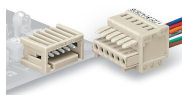


**Item No.: 233-332**

Operating tool; made of insulating material; white

## Installation Notes

### Mismatching protection

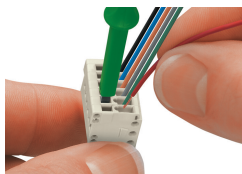


Male headers and female connectors are 100% protected against mismatching. Only mating halves with the same pole number can be connected.

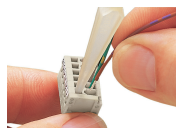
### Conductor termination



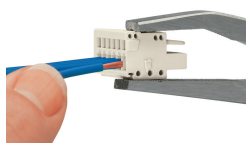
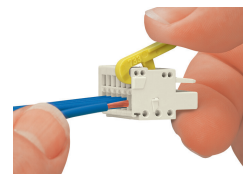
Inserting conductor via (2.5 x 0.4) mm screwdriver – CAGE CLAMP® actuation perpendicular to conductor entry.



Conductor termination via screwdriver (233-335) – parallel to CAGE CLAMP® actuation



Conductor termination via operating tool (733-191)



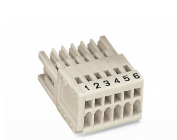
Conductor termination via operating tool (210-251)

### Coding

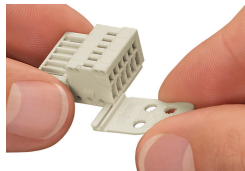


Coding a female connector – removing coding finger(s).

## Marking



## Strain relief



Strain relief plates for factory or in-the-field assembly

## Testing



Testing via 1 mm Ø test pin (735-500), touch contact.