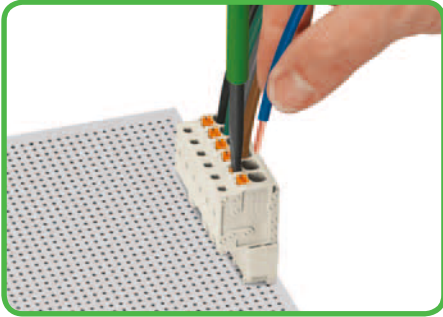
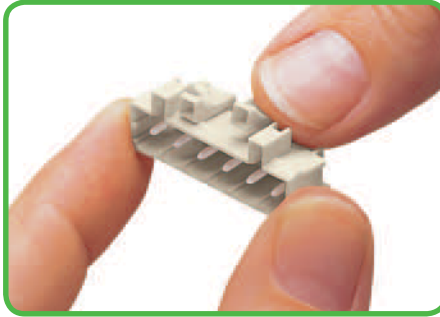


## Description and Handling

# MCS - MULTI CONNECTION SYSTEM MIDI 100% Protected Against Mismatching



Inserting/removing conductor via 3.5 mm screwdriver - CAGE CLAMP<sup>®</sup>S actuation in mated condition.

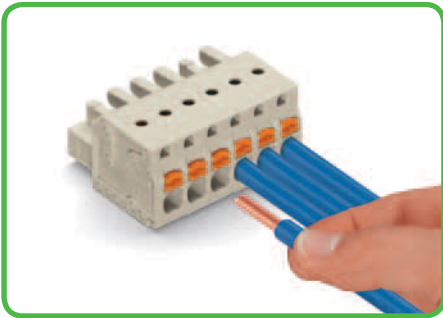


Coding a male header - fitting coding key(s).

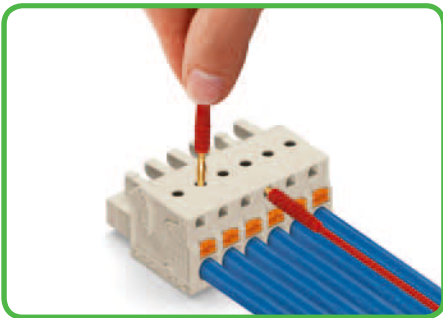


Coding a female connector - removing coding finger(s).

### 2721 Series Female Connector with Push-Buttons

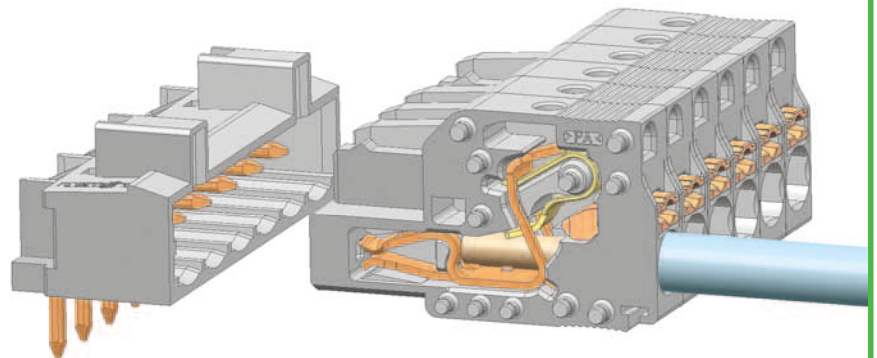


Inserting solid or ferruled conductors via CAGE CLAMP<sup>®</sup>S push-in terminations.



Testing parallel to conductor entry via integrated test ports - female connector with push-button actuated CAGE CLAMP<sup>®</sup>S. Tip contact with current bar from top of unit.

100% protected against mismatching

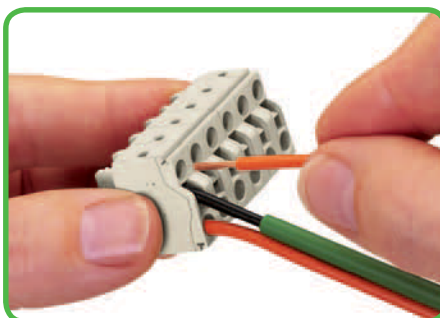


MCS-MIDI

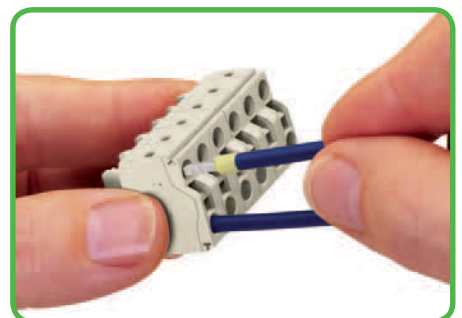
Pin spacing 5 mm and 7.5 mm



Marking via self-adhesive marker strips or factory direct printing.



Inserting conductor via 3.5 mm screwdriver into a 2-conductor female connector equipped with CAGE CLAMP<sup>®</sup>S.



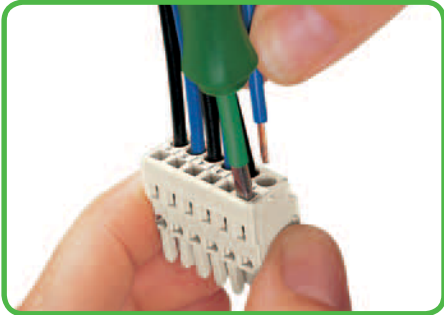
Inserting ferruled, fine-stranded conductors via CAGE CLAMP<sup>®</sup>S push-in terminations.

CAGE CLAMP<sup>®</sup> and CAGE CLAMP<sup>®</sup>S clamp the following copper conductors:<sup>\*</sup>  
solid

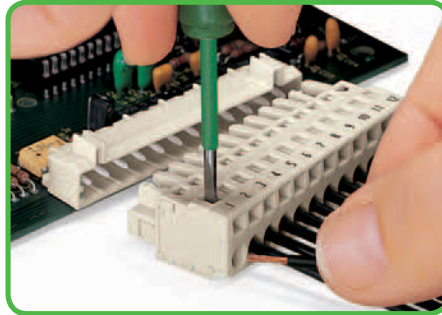
stranded

fine-stranded, also with tinned single strands

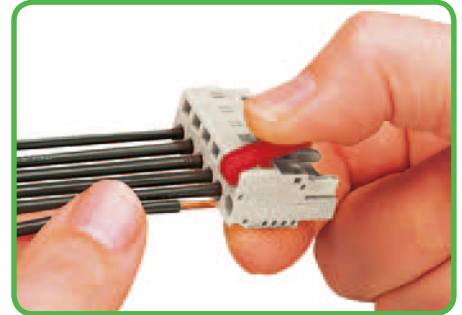
\* For aluminum conductors, see notes in Section 11.



Inserting conductor via 3.5 mm screwdriver - horizontal CAGE CLAMP® actuation.



Inserting conductor via 3.5 mm screwdriver - vertical CAGE CLAMP® actuation.

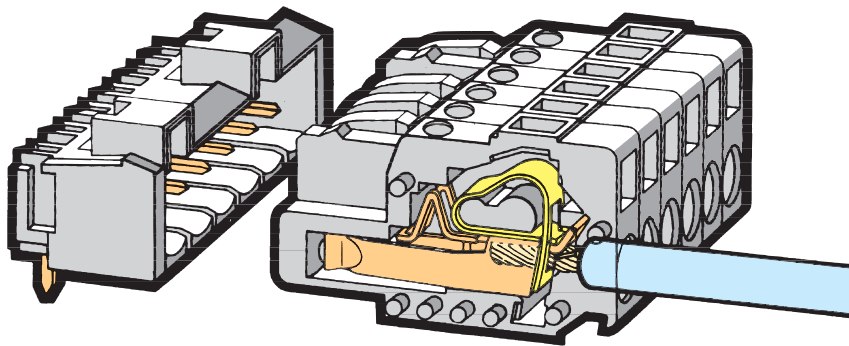


Inserting conductor - CAGE CLAMP® actuation via 231-291 push-buttons.

721, 722 and 723 Series

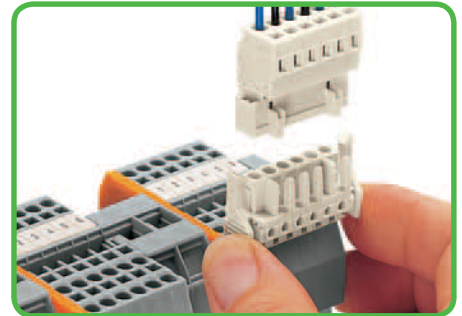
100% protected against mismatching

CAGE CLAMP®

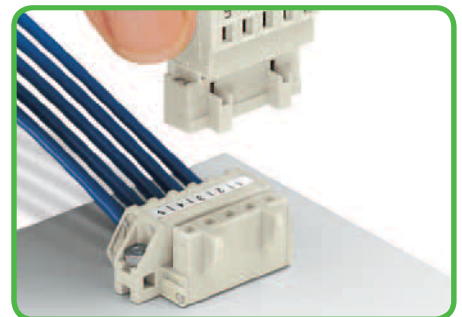


MCS-MIDI

Pin spacing 5 mm and 7.5 mm



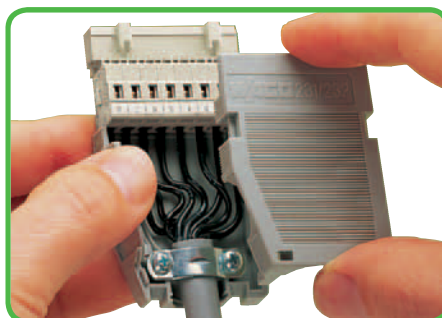
Connectors for 280 Series rail-mounted terminal blocks.



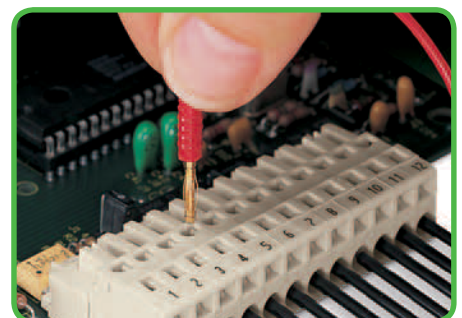
Angled female connector for panel mounting.



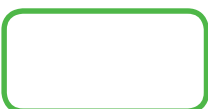
Male connector with strain relief plate.



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



Testing - female connector with CAGE CLAMP®. Vertical insertion of Ø 2 mm and Ø 2.3 mm test plugs.



fine-stranded,  
tip-bonded

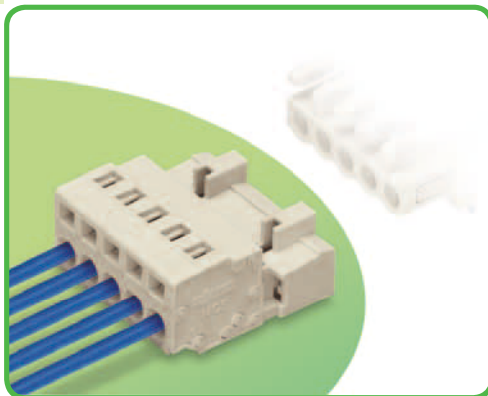


fine-stranded with  
crimped ferrules  
(gas-tight)



fine-stranded with  
crimped pin terminal  
(gas-tight)

## Male Connectors Pin Spacing 5 mm MCS-MIDI



- 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 fixing flanges for panel or through-panel mounting
- Optional, preceding ground contact available for 3- to 5-pole male connectors
- 100 % protected against mismatching
- With coding keys

### Technical data:

| Pin Spacing          | 5 mm<br>0.197 in |       |       |
|----------------------|------------------|-------|-------|
| Rating per           | IEC/EN 60664-1   |       |       |
| Overtension category | III              | III   | II    |
| Pollution degree     | 3                | 2     | 2     |
| Rated voltage        | 320 V            | 320 V | 630 V |
| Rated surge voltage  | 4 kV             | 4 kV  | 4 kV  |
| Nominal current      | 12 A             | 12 A  | 12 A  |
| Approvals per        | UL/CSA           |       |       |
| Use group UL 1059    | B                | C     | D     |
| Rated voltage        | 300 V            | -     | 300 V |
| Nominal current UL   | 15 A             | -     | 10 A  |
| Nominal current CSA  | 15 A             | -     | 10 A  |

The MCS-MIDI connection system is UL 1977 approved and capable of up to 600 V for factory wiring.

### Conductor data:

|                               |   |                |
|-------------------------------|---|----------------|
| Connection technology         | CAGE CLAMP®   |                |
| Conductor size: solid         | 0.08 - 2.5 mm <sup>2</sup>                            |                |
| Conductor size: fine-stranded | 0.08 - 2.5 mm <sup>2</sup>                            |                |
| Conductor size: fine-stranded | 0.25 - 1.5 mm <sup>2</sup> (with insulated ferrule)   |                |
| Conductor size: fine-stranded | 0.25 - 2.5 mm <sup>2</sup> (with uninsulated ferrule) |                |
| AWG                           | 28 - 12   | 12: THHN, THWN |
| Strip length                  | 8 - 9 mm / 0.31 - 0.35 in                             |                |

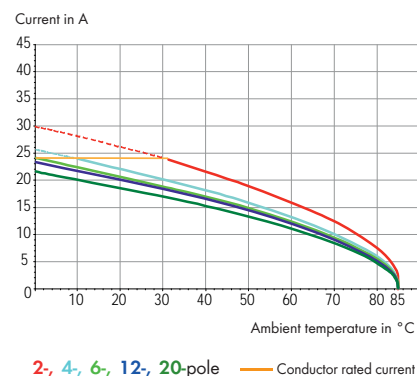
### Material data:

|  |  |
|--|--|
| Material group   | I                                      |
| Insulating material  | Nylon 6.6 (PA 6.6)                     |
| Flammability rating per UL 94  | V0                                     |
| Lower/Upper temperature limit  | -60°C / +100°C                         |
| Clamping spring material   | Chrome-nickel spring steel (CrNi)      |
| Contact material   | Electrolytic copper (E <sub>cu</sub> ) |
| Contact plating  | tin-plated                             |
| MCS connectors are also available upon request with gold-plated or partially gold-plated contact surfaces. |  |
| Depending on the version requested, “item no. suffix . . . /010-000” is added to the “basic item no.”      |  |

MCS - MULTI CONNECTION SYSTEM includes connectors **without** breaking capacity in accordance with IEC 61984. When used as intended, these connectors shall not be connected/disconnected when live or under load. The circuit design should ensure header pins, which can be touched, are not live in unmated condition.

### Derating Curve

721-102/026-000 female connector  
with 721-602 male connector  
Pin spacing: 5 mm / Conductor size: 2.5 mm<sup>2</sup> “f-st”  
Based on: EN 60512-5-2 / Reduction factor: 0.8



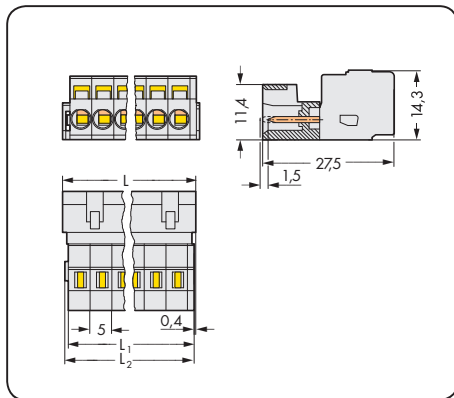
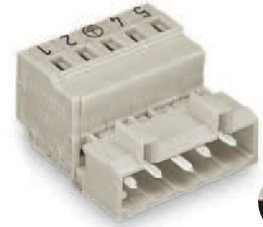
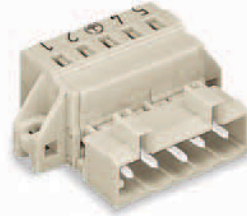
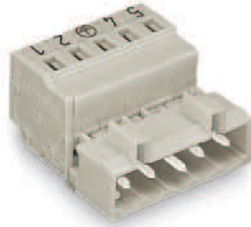
### MCS-MIDI accessories:

### Page:

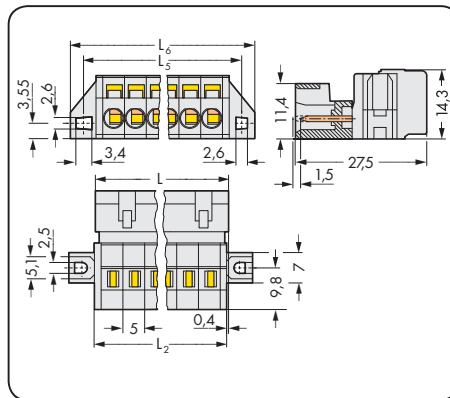
|                        |           |
|------------------------|-----------|
| Marking accessories    | 540 - 543 |
| Operating tools        | 466 - 467 |
| Direct marking         | 358 - 360 |
| Comb-style jumper bars | 476       |
| Insulation stop        | 469       |
| Coding keys            | 468       |
| Screws                 | 546       |
| Strain relief housings | 472 - 473 |
| Strain relief plates   | 470 - 471 |

# Male Connectors MCS-MIDI

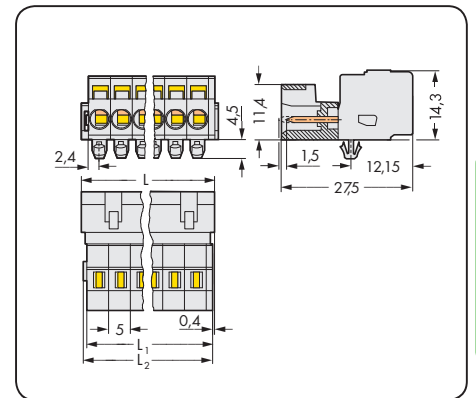
| Pin spacing 5 mm / 0.197 in |             | With fixing flanges<br>Pin spacing 5 mm / 0.197 in |             | With snap-in mounting feet<br>Pin spacing 5 mm / 0.197 in |             |
|-----------------------------|-------------|--|-------------|---|-------------|
| 0.08 - 2.5 mm <sup>2</sup>  | AWG 28 - 12 | 0.08 - 2.5 mm <sup>2</sup>                         | AWG 28 - 12 | 0.08 - 2.5 mm <sup>2</sup>                                | AWG 28 - 12 |
| 320 V/4 kV/2 12 A           | 300 V/15 A  | 320 V/4 kV/2 12 A                                  | 300 V/15 A  | 320 V/4 kV/2 12 A   | 300 V/15 A  |



L = (pole no. - 1) x pin spacing + 8.2 mm  
L<sub>1</sub> = L - 1.7 mm  
L<sub>2</sub> = L - 1.2 mm



L = (pole no. - 1) x pin spacing + 8.2 mm  
L<sub>2</sub> = L - 0.2 mm  
L<sub>5</sub> = L<sub>2</sub> + 5.8 mm  
L<sub>6</sub> = L<sub>2</sub> + 11.8 mm



L = (pole no. - 1) x pin spacing + 8.2 mm  
L<sub>1</sub> = L - 1.7 mm  
L<sub>2</sub> = L - 1.2 mm

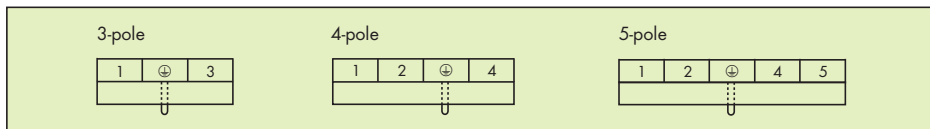
| Pole No.                          | Item No.                         | Item No.                                   | Pack. Unit | Pole No.  | Item No.                         | Item No.                                   | Pack. Unit | Pole No.  | Item No.                         | Item No.                                   | Pack. Unit |
|-----------------------------------|----------------------------------|--|------------|---|----------------------------------|--|------------|---|----------------------------------|--|------------|
| <b>Male connector, light gray</b> |                                  |  |            | <b>Male connector with fixing flanges, light gray</b> |                                  |  |            | <b>Male connector with snap-in mounting feet, for 0.6 - 1.2 mm plate thickness, Ø 3.5 mm mounting holes, light gray</b> |                                  |  |            |
|                                   | without preceding ground contact | with preceding ground contact and printing |            |   | without preceding ground contact | with preceding ground contact and printing |            |   | without preceding ground contact | with preceding ground contact and printing |            |
| 2                                 | 721-602                          |  | 100        | 2   | 721-602/019-000                  |  | 100        | 2   | 721-602/018-000                  |  | 100        |
| 3                                 | 721-603                          | 721-603/000-042                            | 100        | 3   | 721-603/019-000                  | 721-603/019-042                            | 50         | 3   | 721-603/018-000                  | 721-603/018-042                            | 100        |
| 4                                 | 721-604                          | 721-604/000-042                            | 100        | 4   | 721-604/019-000                  | 721-604/019-042                            | 50         | 4   | 721-604/018-000                  | 721-604/018-042                            | 100        |
| 5                                 | 721-605                          | 721-605/000-042                            | 50         | 5   | 721-605/019-000                  | 721-605/019-042                            | 50         | 5   | 721-605/018-000                  | 721-605/018-042                            | 50         |
| 6                                 | 721-606                          |  | 50         | 6   | 721-606/019-000                  |  | 50         | 6   | 721-606/018-000                  |  | 50         |
| 7                                 | 721-607                          |  | 50         | 7   | 721-607/019-000                  |  | 50         | 7   | 721-607/018-000                  |  | 50         |
| 8                                 | 721-608                          |  | 50         | 8   | 721-608/019-000                  |  | 50         | 8   | 721-608/018-000                  |  | 50         |
| 9                                 | 721-609                          |  | 50         | 9   | 721-609/019-000                  |  | 25         | 9   | 721-609/018-000                  |  | 50         |
| 10                                | 721-610                          |  | 50         | 10  | 721-610/019-000                  |  | 25         | 10  | 721-610/018-000                  |  | 50         |
| 11                                | 721-611                          |  | 25         | 11  | 721-611/019-000                  |  | 25         | 11  | 721-611/018-000                  |  | 25         |
| 12                                | 721-612                          |  | 25         | 12  | 721-612/019-000                  |  | 25         | 12  | 721-612/018-000                  |  | 25         |
| 13                                | 721-613                          |  | 25         | 13  | 721-613/019-000                  |  | 25         | 13  | 721-613/018-000                  |  | 25         |
| 14                                | 721-614                          |  | 25         | 14  | 721-614/019-000                  |  | 25         | 14  | 721-614/018-000                  |  | 25         |
| 15                                | 721-615                          |  | 25         | 15  | 721-615/019-000                  |  | 25         | 15  | 721-615/018-000                  |  | 25         |
| 16                                | 721-616                          |  | 25         | 16  | 721-616/019-000                  |  | 10         | 16  | 721-616/018-000                  |  | 25         |
| 20                                | 721-620                          |  | 10         | 20  | 721-620/019-000                  |  | 10         | 20  | 721-620/018-000                  |  | 10         |

For cutout dimensions, see page 484, table 1.

**Product Accessories** **Page**

Mounting adapter for DIN 35 rail, min. length 3 poles (209-137) 475

**Preceding ground contact position and on-unit markings:**



For other lengths, please contact factory.