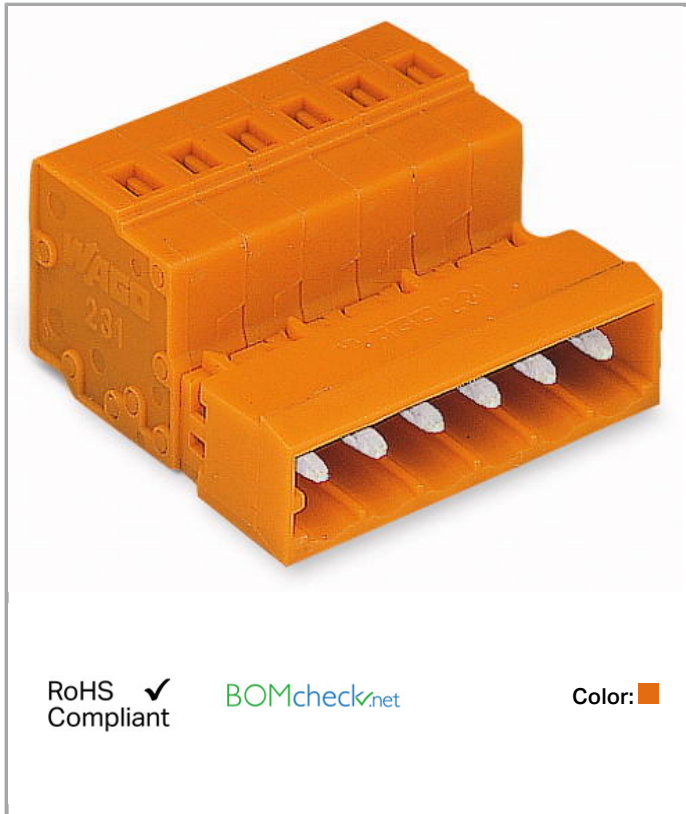


Data sheet | Item number: 231-648

1-conductor male connector; 2.5 mm²; Pin spacing 5.08 mm; 18-pole

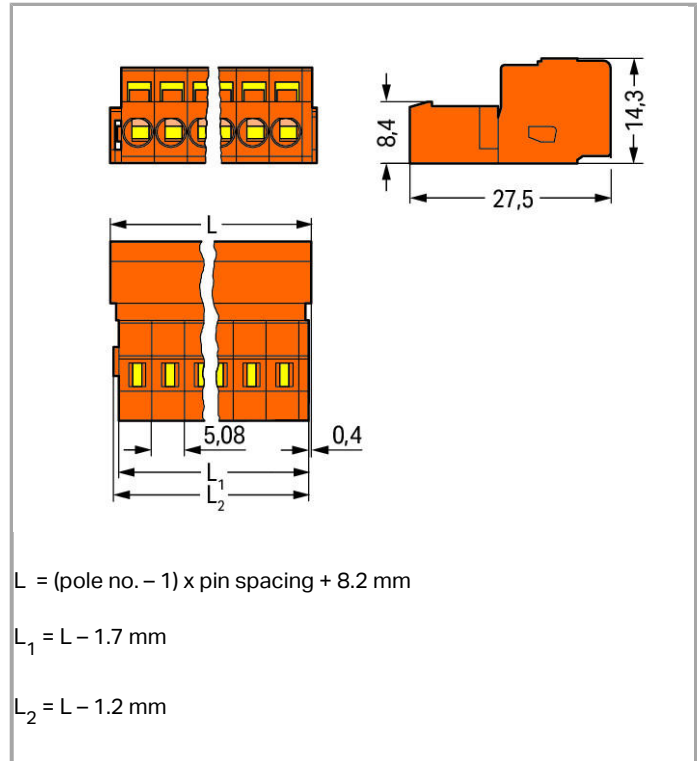
www.wago.com/231-648



RoHS Compliant

BOMcheck.net

Color: ■



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

$$L_1 = L - 1.7 \text{ mm}$$

$$L_2 = L - 1.2 \text{ mm}$$

Item description

- 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

Other variants can be requested via the WAGO sales department or, if necessary, configured at <https://configurator.wago.com/>: Gold-plated or partially gold-plated contact surfaces, Other pole numbers

Data

Electrical data

Ratings per IEC/EN 60664-1

| | |
|---------------------------------|-------|
| Rated 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 |
| Rated voltage (II / 2) | 630 V |
| Rated impulse voltage (II / 2) | 4 kV |
| Rated current | 12 A |
| Legend (ratings) | (III / 2) $\hat{=}$ Overvoltage category III / Pollution degree 2 |

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 |

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 technology | CAGE CLAMP® |
| Actuation type | Operating tool |
| Solid conductor | 0.08 ... 2.5 mm ² / 28 ... 12 AWG |
| Fine-stranded conductor | 0.08 ... 2.5 mm ² / 28 ... 12 AWG |
| Fine-stranded conductor with ferrule with plastic collar | 0.25 ... 1.5 mm ² |
| Fine-stranded conductor with ferrule without plastic collar | 0.25 ... 2.5 mm ² |
| Strip length | 8 ... 9 mm / 0.31 ... 0.35 Inch |
| No. of poles | 18 |
| Total number of connection points | 18 |
| Total number of potentials | 18 |
| Number of connection types | 1 |
| Number of levels | 1 |
| Conductor entry direction to mating direction | 0° |

Geometrical Data

| | |
|-------------|-----------------------|
| Pin spacing | 5.08 mm (0.2 inch) |
| Width | 94.64 mm / 3.726 inch |
| Height | 14.3 mm / 0.563 inch |
| Depth | 27.5 mm / 1.083 inch |

Plug connection

| | |
|------------------------------------|---------------------|
| Contact type (pluggable connector) | Male connector/plug |
| Connector connection type | for conductors |
| Mismating protection | No |

Material Data

| | |
|-----------------------------|-----------------------------------|
| Color | orange |
| Material group | I |
| Insulating material | Polyamide 66 (PA 66) |
| Flammability class per UL94 | V0 |
| Clamping spring material | Chrome nickel spring steel (CrNi) |
| Contact material | Electrolytic copper (Ecu) |
| Contact plating | tin-plated |
| Fire load | 0.45 MJ |
| Weight | 27.64 g |

Environmental Requirements


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

Commercial data


| | |
|--------------------|------------------------|
| Country of origin | DE |
| GTIN | 4044918261104 |
| Customs Tariff No. | 85366990990 |
| Product Group | 3 (Multi Conn. System) |

Approvals / Certificates

Country specific Approvals

| Logo | Approval | Certificate name |
|--|--|------------------|
| | CB DEKRA Certification B.V. | NL-39756 |
|  | KEMA/KEUR DEKRA Certification B.V. | 2190761.01 |



Ship Approvals

| Logo | Approval | Certificate name |
|--|---|------------------|
|  | ABS American Bureau of Shipping | 14-HG1241537-PDA |
| | DNV GL | TAE000016Z |








Det Norske Veritas, Germanischer Lloyd

UL-Approvals

| Logo | Approval | Certificate name |
|--|--------------------------------------|------------------|
|  | UL UL International Germany GmbH | E45171 |
|  | UR Underwriters Laboratories Inc. | E45172 |

Compatible products





Jumper




















| | | |
|--|--|--|
|  | Item no.: 231-902 Comb-style jumper bar; for 5 mm and 5.08 mm pin spacing; reduces conductor size to 1.5 mm | www.wago.com/231-902 |
|  | Item no.: 231-903 Comb-style jumper bar; 3-way; suitable for 231 Series female connectors; with 5 mm pin spacing; insulated | www.wago.com/231-903 |
|  | Item no.: 231-905 Comb-style jumper bar; 5-way; suitable for 231 Series female connectors; with 5 mm pin spacing; insulated | www.wago.com/231-905 |
|  | Item no.: 231-907 Comb-style jumper bar; 7-way; suitable for 231 Series female connectors; with 5 mm pin spacing; insulated | www.wago.com/231-907 |
|  | Item no.: 231-910 Comb-style jumper bar; 10-way; suitable for 231 Series female connectors; with 5 mm pin spacing; insulated | www.wago.com/231-910 |















General accessories

| | | |
|--|--|--|
|  | Item no.: 231-669 Lockout caps; for covering unused clamping units | www.wago.com/231-669 |
|--|--|--|



ferrule

| | | |
|--|--|--|
|  | Item no.: 216-101 Ferrule; Sleeve for 0.5 mm ² / AWG 22; uninsulated; electro-tin plated | www.wago.com/216-101 |
|  | Item no.: 216-102 Ferrule; Sleeve for 0.75 mm ² / AWG 20; uninsulated; electro-tin plated | www.wago.com/216-102 |
|  | Item no.: 216-103 Ferrule; Sleeve for 1 mm ² / AWG 18; uninsulated; electro-tin plated | www.wago.com/216-103 |
|  | Item no.: 216-104 Ferrule; Sleeve for 1.5 mm ² / AWG 16; uninsulated; electro-tin plated | www.wago.com/216-104 |

| | | |
|--|--|--|
|  | Item no.: 216-106 Ferrule; Sleeve for 2.5 mm ² / AWG 14; uninsulated; electro-tin plated | www.wago.com/216-106 |
|  | Item no.: 216-121 Ferrule; Sleeve for 0.5 mm ² / AWG 22; uninsulated; electro-tin plated | www.wago.com/216-121 |
|  | Item no.: 216-122 Ferrule; Sleeve for 0.75 mm ² / AWG 20; uninsulated; electro-tin plated | www.wago.com/216-122 |
|  | Item no.: 216-123 Ferrule; Sleeve for 1 mm ² / AWG 18; uninsulated; electro-tin plated | www.wago.com/216-123 |
|  | Item no.: 216-124 Ferrule; Sleeve for 1.5 mm ² / AWG 16; uninsulated; electro-tin plated | www.wago.com/216-124 |
|  | Item no.: 216-131 Ferrule; Sleeve for 0.25 mm ² / AWG 24; uninsulated; electro-tin plated | www.wago.com/216-131 |
|  | Item no.: 216-132 Ferrule; Sleeve for 0.34 mm ² / AWG 24; uninsulated; electro-tin plated | www.wago.com/216-132 |
|  | Item no.: 216-141 Ferrule; Sleeve for 0.5 mm ² / AWG 22; uninsulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 1/08.92 | www.wago.com/216-141 |
|  | Item no.: 216-142 Ferrule; Sleeve for 0.75 mm ² / AWG 20; uninsulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 1/08.92 | www.wago.com/216-142 |
|  | Item no.: 216-143 Ferrule; Sleeve for 1 mm ² / AWG 18; uninsulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 1/08.92 | www.wago.com/216-143 |
|  | Item no.: 216-144 Ferrule; Sleeve for 1.5 mm ² / AWG 16; uninsulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 1/08.92 | www.wago.com/216-144 |
|  | Item no.: 216-151 Ferrule; Sleeve for 0.25 mm ² / AWG 24; uninsulated; electro-tin plated | www.wago.com/216-151 |
|  | Item no.: 216-152 Ferrule; Sleeve for 0.34 mm ² / AWG 24; uninsulated; electro-tin plated | www.wago.com/216-152 |
|  | Item no.: 216-201 Ferrule; Sleeve for 0.5 mm ² / AWG 22; insulated; electro-tin plated | www.wago.com/216-201 |
|  | Item no.: 216-202 Ferrule; Sleeve for 0.75 mm ² / AWG 20; insulated; electro-tin plated | www.wago.com/216-202 |
|  | Item no.: 216-203 Ferrule; Sleeve for 1 mm ² / AWG 18; insulated; electro-tin plated | www.wago.com/216-203 |
|  | Item no.: 216-204 Ferrule; Sleeve for 1.5 mm ² / AWG 16; insulated; electro-tin plated | www.wago.com/216-204 |
|  | Item no.: 216-221 Ferrule; Sleeve for 0.5 mm ² / AWG 22; insulated; electro-tin plated | www.wago.com/216-221 |
|  | Item no.: 216-222 Ferrule; Sleeve for 0.75 mm ² / AWG 20; insulated; electro-tin plated | www.wago.com/216-222 |

| | | |
|---|--|--|
|  | Item no.: 216-223 Ferrule; Sleeve for 1 mm ² / AWG 18; insulated; electro-tin plated | www.wago.com/216-223 |
|  | Item no.: 216-224 Ferrule; Sleeve for 1.5 mm ² / AWG 16; insulated; electro-tin plated | www.wago.com/216-224 |
|  | Item no.: 216-241 Ferrule; Sleeve for 0.5 mm ² / AWG 22; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90 | www.wago.com/216-241 |
|  | Item no.: 216-242 Ferrule; Sleeve for 0.75 mm ² / AWG 20; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90 | www.wago.com/216-242 |
|  | Item no.: 216-243 Ferrule; Sleeve for 1 mm ² / AWG 18; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90 | www.wago.com/216-243 |
|  | Item no.: 216-244 Ferrule; Sleeve for 1.5 mm ² / AWG 16; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90 | www.wago.com/216-244 |
|  | Item no.: 216-262 Ferrule; Sleeve for 0.75 mm ² / AWG 20; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90 | www.wago.com/216-262 |
|  | Item no.: 216-263 Ferrule; Sleeve for 1 mm ² / AWG 18; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90 | www.wago.com/216-263 |
|  | Item no.: 216-264 Ferrule; Sleeve for 1.5 mm ² / AWG 16; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90 | www.wago.com/216-264 |
|  | Item no.: 216-284 Ferrule; Sleeve for 1.5 mm ² / AWG 16; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90 | www.wago.com/216-284 |
|  | Item no.: 216-301 Ferrule; Sleeve for 0.25 mm ² / AWG 24; insulated; electro-tin plated | www.wago.com/216-301 |
|  | Item no.: 216-302 Ferrule; Sleeve for 0.34 mm ² / AWG 24; insulated; electro-tin plated | www.wago.com/216-302 |
|  | Item no.: 216-321 Ferrule; Sleeve for 0.25 mm ² / AWG 24; insulated; electro-tin plated | www.wago.com/216-321 |
|  | Item no.: 216-322 Ferrule; Sleeve for 0.34 mm ² / AWG 24; insulated; electro-tin plated | www.wago.com/216-322 |

Marking accessories

| | | |
|--|--|--|
|  | Item no.: 210-833 Marking strips; on reel; 6 mm wide; plain; Self-adhesive | www.wago.com/210-833 |
|  | Item no.: 210-834 Marking strips; on reel; 5 mm wide; plain; Self-adhesive | www.wago.com/210-834 |

Insulation stop

| | | |
|--|---|--|
|  | Item no.: 231-670 Insulation stop; 0.08-0.2 mm ² / 0.2 mm ² "s" | www.wago.com/231-670 |
|--|---|--|



Item no.: 231-671
Insulation stop; 0.25 - 0.5 mm²

www.wago.com/231-671



Item no.: 231-672
Insulation stop; 0.75 - 1 mm²

www.wago.com/231-672

Coding



Item no.: 231-129
Coding key; snap-on type

www.wago.com/231-129

tools



Item no.: 209-130
Operating tool; suitable for 264, 280 and 281 Series; 1-way; of insulating material

www.wago.com/209-130



Item no.: 209-132
Operating tool; for connecting comb-style jumper bar; 2-way; of insulating material

www.wago.com/209-132



Item no.: 210-657
Operating tool with partially insulated shaft; Blade (3.5 x 0.5) mm; short

www.wago.com/210-657



Item no.: 210-720
Operating tool with partially insulated shaft; Type 2, blade (3.5 x 0.5) mm

www.wago.com/210-720



Item no.: 231-131
Push-button; for female and male connectors; loose

www.wago.com/231-131



Item no.: 231-291
Operating tool; for male and female connectors with CAGE CLAMP®; loose

www.wago.com/231-291



Item no.: 280-432
Operating tool; of insulating material; 2-way

www.wago.com/280-432



Item no.: 280-433
Operating tool; of insulating material; 3-way

www.wago.com/280-433



Item no.: 280-434
Operating tool; of insulating material; 4-way

www.wago.com/280-434



Item no.: 280-435
Operating tool; of insulating material; 5-way

www.wago.com/280-435



Item no.: 280-436
Operating tool; of insulating material; 6-way

www.wago.com/280-436



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

www.wago.com/280-437



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

www.wago.com/280-438



Item no.: 280-440
Operating tool; of insulating material; 10-way

www.wago.com/280-440



Downloads

smartDATA

CAD data

3D Download 231-648

URL

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Subject to changes.