

Data sheet | Item number: 235-109

PCB terminal block; push-button; 1.5 mm²; Pin spacing 3.81 mm; 9-pole;
Push-in CAGE CLAMP®; 1,50 mm²; orange



www.wago.com/235-109



Subject to changes. Please also observe the further product documentation!

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Email: info.de@wago.com | Web: www.wago.com

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Item description

- PCB terminal strips with push-buttons
- Push-in termination of solid and ferruled conductors
- Convenient termination/removal of fine-stranded conductors via push-buttons

Data

Notes

Variants:

Other pole numbers

Subject to changes. Please also observe the further product documentation!



Other colors
 Mixed-color PCB connector strips
 Direct marking
 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) | 200 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) | 500 V |
| Rated surge voltage (II/2) | 4 kV |
| Rated current | 17.5 A |
| Legend (ratings) | (III / 2) $\hat{=}$ Overvoltage category III / Pollution degree 2 |

Ratings per UL

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

Ratings per CSA

| Approvals per | CSA |
|---------------------------------|-------|
| Rated voltage CSA (Use Group B) | 300 V |
| Rated current CSA (Use Group B) | 10 A |

Connection data

| | |
|----------------------------|---|
| Connection points | 9 |
| Total number of potentials | 9 |
| Number of connection types | 1 |
| Number of levels | 1 |

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Connection 1

| | |
|---|---|
| Connection technology | Push-in CAGE CLAMP® |
| Actuation type | Push-button |
| Solid conductor | 0.5 ... 1.5 mm ² / 20 ... 16 AWG |
| Fine-stranded conductor | 0.75 ... 1.5 mm ² / 20 ... 16 AWG |
| Fine-stranded conductor; with insulated ferrule | 0.25 ... 1 mm ² |
| Fine-stranded conductor; with uninsulated ferrule | 0.25 ... 1 mm ² |
| Note (conductor cross-section) | Fine-stranded conductor 0.75 ... 1.5 mm ² / 18 ... 16 AWG (I max. 4 A) |
| Strip length | 9 ... 10 mm / 0.35 ... 0.39 inches |
| Conductor connection direction to PCB | 0° |
| Pole number | 9 |

Physical data

| | |
|--------------------------------------|-------------------------|
| Pin spacing | 3.81 mm / 0.15 inches |
| Width | 35.79 mm / 1.409 inches |
| Height | 19.1 mm / 0.752 inches |
| Height from the surface | 15.5 mm / 0.61 inches |
| Depth | 12.5 mm / 0.492 inches |
| Solder pin length | 3.6 mm |
| Solder pin dimensions | 0.4 x 0.8 mm |
| Drilled hole diameter with tolerance | 1 ^(+0.1) mm |

Plug-in connection

| | |
|--------------------------------------|----|
| Plugging without loss of pin spacing | No |
|--------------------------------------|----|

PCB contact

| | |
|-------------------------------------|--|
| PCB contact | THT |
| Solder pin arrangement | over the entire terminal strip (in-line) |
| Number of solder pins per potential | 2 |

Material Data

| | |
|----------------------|--|
| Note (material data) | Information on material specifications can be found here |
| Color | orange |
| Material group | I |

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| | |
|-----------------------------|--|
| Insulation material | 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 | 0.094 MJ |
| Weight | 5.3 g |

Environmental requirements

| | |
|-------------------------|-----------------|
| Limit temperature range | -60 ... +105 °C |
|-------------------------|-----------------|

Commercial data

| | |
|-----------------------|--------------------------------|
| Product Group | 4 (Printed Circuit Connectors) |
| eCl@ss 10.0 | 27-44-04-01 |
| eCl@ss 9.0 | 27-44-04-01 |
| ETIM 8.0 | EC002643 |
| ETIM 7.0 | EC002643 |
| PU (SPU) | 120 (30) pcs |
| Packaging type | box |
| Country of origin | CH |
| GTIN | 4044918828826 |
| Customs tariff number | 85369010000 |

Environmental Product Compliance

| | |
|------------------------|-------------------------|
| RoHS Compliance Status | Compliant, No Exemption |
|------------------------|-------------------------|

Approvals / Certificates

General approvals

| Logo | Approval | Additional Approval Text | Certificate name |
|------|---------------------------------|--------------------------|------------------|
| | CCA DEKRA Certification B.V. | EN 60947 | NTR NL-7144 |
| | CCA DEKRA Certification B.V. | EN 60947-7-4 | NTR NL-7774 |
| | CCA DEKRA Certification B.V. | EN 60998 | NTR NL-6919 |
| | CSA | C22.2 | 1673956 |

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DEKRA Certification B.V.

KEMA/KEUR

EN 60947

2160584.38

DEKRA Certification B.V.

Declarations of conformity and manufacturer's declarations

| Logo | Approval | Additional Approval Text | Certificate name |
|------|---|--------------------------|------------------|
| | EU-Declaration of Conformity WAGO GmbH & Co. KG | - | - |
| | UK-Declaration of Conformity WAGO GmbH & Co. KG | - | - |

Approvals for marine applications

| Logo | Approval | Additional Approval Text | Certificate name |
|------|---|--------------------------|--------------------------|
| | ABS American Bureau of Shipping | - | 19- HG1869876- PDA |
| | BV Bureau Veritas S.A. | IEC 60998 | 11915/DO BV |
| | DNV GL Det Norske Veritas, Germanischer Lloyd | - | TAE000016Z |

Optional accessories

Tool

| Operating tool | | |
|--------------------------|---|--|
| Item no.: 210-657 | Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft; short; multicoloured | www.wago.com/210-657 |
| Item no.: 210-720 | Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft; multicoloured | www.wago.com/210-720 |

Marking accessories

| Marking strip | | |
|----------------------------------|--|--|
| Item no.: 210-332/381-202 | 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 | www.wago.com/210-332/381-202 |
| Item no.: 210-332/381-206 | 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 | www.wago.com/210-332/381-206 |
| Item no.: 210-332/381-205 | 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 | www.wago.com/210-332/381-205 |

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**Item no.: 210-332/381-204**

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

www.wago.com/210-332/381-204

| Ferrule | |
|--|--|
| Ferrule | |
| Item no.: 216-101 Ferrule; Sleeve for 0.5 mm ² / AWG 22; uninsulated; electro-tin plated; silver-colored | www.wago.com/216-101 |
| Item no.: 216-102 Ferrule; Sleeve for 0.75 mm ² / AWG 20; uninsulated; electro-tin plated; silver-colored | 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.: 216-123 Ferrule; Sleeve for 1 mm ² / AWG 18; uninsulated; electro-tin plated; silver-colored | www.wago.com/216-123 |
| Item no.: 216-122 Ferrule; Sleeve for 0.75 mm ² / AWG 20; uninsulated; electro-tin plated; silver-colored | www.wago.com/216-122 |
| Item no.: 216-142 Ferrule; Sleeve for 0.75 mm ² / 18 AWG; uninsulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 1/08.92 | www.wago.com/216-142 |
| Item no.: 216-132 Ferrule; Sleeve for 0.34 mm ² / AWG 24; uninsulated; electro-tin plated | www.wago.com/216-132 |
| Item no.: 216-121 Ferrule; Sleeve for 0.5 mm ² / AWG 22; uninsulated; electro-tin plated; silver-colored | www.wago.com/216-121 |
| 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.: 216-131 Ferrule; Sleeve for 0.25 mm ² / AWG 24; uninsulated; electro-tin plated; silver-colored | www.wago.com/216-131 |
| Item no.: 216-141 Ferrule; Sleeve for 0.5 mm ² / 20 AWG; uninsulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 1/08.92 | www.wago.com/216-141 |
| Item no.: 216-152 Ferrule; Sleeve for 0.34 mm ² / AWG 24; uninsulated; electro-tin plated | www.wago.com/216-152 |
| Item no.: 216-203 Ferrule; Sleeve for 1 mm ² / AWG 18; insulated; electro-tin plated; red | www.wago.com/216-203 |
| Item no.: 216-202 Ferrule; Sleeve for 0.75 mm ² / 18 AWG; insulated; electro-tin plated; gray | www.wago.com/216-202 |
| Item no.: 216-151 Ferrule; Sleeve for 0.25 mm ² / AWG 24; uninsulated; electro-tin plated | www.wago.com/216-151 |
| Item no.: 216-201 | |

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| | |
|--|--|
| Ferrule; Sleeve for 0.5 mm ² / 20 AWG; insulated; electro-tin plated; white | www.wago.com/216-201 |
| Item no.: 216-223 Ferrule; Sleeve for 1 mm ² / AWG 18; insulated; electro-tin plated; red | www.wago.com/216-223 |
| Item no.: 216-241 Ferrule; Sleeve for 0.5 mm ² / 20 AWG; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; white | www.wago.com/216-241 |
| Item no.: 216-242 Ferrule; Sleeve for 0.75 mm ² / 18 AWG; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; gray | www.wago.com/216-242 |
| Item no.: 216-222 Ferrule; Sleeve for 0.75 mm ² / 18 AWG; insulated; electro-tin plated; gray | www.wago.com/216-222 |
| Item no.: 216-221 Ferrule; Sleeve for 0.5 mm ² / 20 AWG; insulated; electro-tin plated; white | www.wago.com/216-221 |
| 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; red | www.wago.com/216-243 |
| 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; red | www.wago.com/216-263 |
| Item no.: 216-262 Ferrule; Sleeve for 0.75 mm ² / 18 AWG; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; gray | www.wago.com/216-262 |
| Item no.: 216-301 Ferrule; Sleeve for 0.25 mm ² / AWG 24; insulated; electro-tin plated; yellow | www.wago.com/216-301 |
| Item no.: 216-321 Ferrule; Sleeve for 0.25 mm ² / AWG 24; insulated; electro-tin plated; yellow | www.wago.com/216-321 |
| Item no.: 216-322 Ferrule; Sleeve for 0.34 mm ² / 22 AWG; insulated; electro-tin plated; light turquoise | www.wago.com/216-322 |
| Item no.: 216-302 Ferrule; Sleeve for 0.34 mm ² / 22 AWG; insulated; electro-tin plated; light turquoise | www.wago.com/216-302 |

Downloads

Documentation

Additional Information

2019 年4月3日

pdf
2.0 MB

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CAD/CAE-Data

CAD data

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2D/3D Models 235-109

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PCB Design

Symbol and Footprint 235-109

[URL](#)

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CAX data for your PCB design, consisting of "schematic symbols and PCB footprints", allow easy integration of the WAGO component into your development environment.

Supported formats:

- Accel EDA 14 & 15
- Altium 6 to current version
- Cadence Allegro
- DesignSpark
- Eagle Libraries
- KiCad
- Mentor Graphics BoardStation
- Mentor Graphics Design Architect
- Mentor Graphics Design Expedition 99 and 2000
- OrCAD 9.X PCB and Capture
- PADS PowerPCB 3, 3.5, 4.X, and 5.X
- PADS PowerPCB and PowerLogic 3.0
- PCAD 2000, 2001, 2002, 2004, and 2006
- Pulsonix 8.5 or newer
- STL
- 3D STEP
- TARGET 3001!
- View Logic ViewDraw
- Quadcept
- Zuken CadStar 3 and 4
- Zuken CR-5000 and CR-8000

PCB Component Libraries (EDA), PCB CAD Library Ultra Librarian

CAE data

ZUKEN Portal 235-109

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EPLAN Data Portal 235-109

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Environmental Product Compliance

Compliance Search

Environmental Product Compliance 235-109

URL

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PCB terminal block; push-button; 1.5 mm²; Pin spacing 3.81 mm; 9-pole; Push-in
CAGE CLAMP®; 1,50 mm²; orange

Installation Notes

Conductor termination



Inserting/removing fine-stranded conductors via push-button.



Insert/remove fine-stranded conductors with ferrules via push-button.



Insert solid conductors via push-in termination.

Installation

Subject to changes. Please also observe the further product documentation!



Combining 1- and 2-conductor terminal blocks with different pin spacing.

Testing



Application example: field-wiring terminal strip

Subject to changes. Please also observe the further product documentation!