

## Data sheet | Item number: 235-412

PCB terminal block; 2.5 mm<sup>2</sup>; Pin spacing 5/5.08 mm; 12-pole; PUSH WIRE®

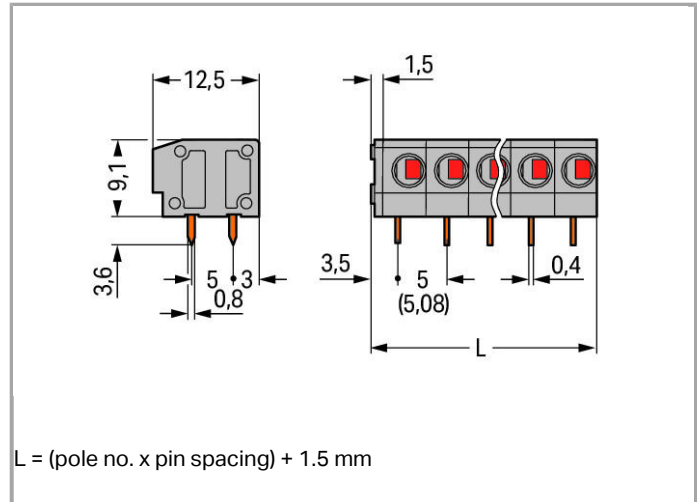


[www.wago.com/235-412](http://www.wago.com/235-412)



RoHS Compliant

Color:



### Item description

- Low-profile modular PCB terminal blocks with PUSH WIRE® connection for custom terminal strip assemblies
- Push-in termination for solid conductors
- Double solder pins for high mechanical stability
- Conductor removal via screwdriver (2.5mm x 0.4mm)
- Set to metric or inch pin spacing by compressing terminal strips or pulling them apart

Other variants can be requested via the WAGO sales department or, if necessary, configured at <https://configurator.wago.com/>: Direct marking, Mixed-color terminal strips, Other colors, Other pole numbers, PCB terminal strips with 7.5/7.62 mm and 10/10.16 mm pin spacing

### Data

#### Electrical data

#### Ratings per IEC/EN 60664-1

|                                 |       |
|---------------------------------|-------|
| Rated voltage (III / 3)         | 250 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                  | 24 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) | 10 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  |

### Connection data

|   |   |
|---|---|
| Connection technology                                       | PUSH WIRE <sup>®</sup>                      |
| Actuation type  | Operating tool                              |
| Solid conductor   | 0.5 ... 2.5 mm <sup>2</sup> / 20 ... 14 AWG |
| Fine-stranded conductor with ferrule with plastic collar    | 0.25 ... 1.5 mm <sup>2</sup>                |
| Fine-stranded conductor with ferrule without plastic collar | 0.25 ... 1.5 mm <sup>2</sup>                |
| Strip length  | 9 ... 10 mm / 0.35 ... 0.39 Inch            |
| Conductor entry angle to the PCB                            | 0°  |
| No. of poles  | 12  |
| Total number of connection points                           | 12  |
| Total number of potentials                                  | 12  |
| Number of connection types                                  | 1   |
| Number of levels  | 1   |

### Geometrical Data

|                                   |                            |
|-----------------------------------|----------------------------|
| Pin spacing                       | 5/5.08 mm / 0.197/0.2 inch |
| Width                             | 61.5 mm / 2.421 inch       |
| Height                            | 12.8 mm / 0.504 inch       |
| Height from the surface           | 9.2 mm / 0.362 inch        |
| Depth                             | 12.5 mm / 0.492 inch       |
| Solder pin length                 | 3.6 mm                     |
| Solder pin dimensions             | 0.8 x 0.4 mm               |
| Drilled hole diameter (tolerance) | 1 <sup>(+ 0.1)</sup> mm    |

## PCB contact

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

## Material Data

|                             |                                   |
|-----------------------------|-----------------------------------|
| Color                       | gray                              |
| 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                   | 0.136 MJ                          |
| Weight                      | 8.226 g                           |

## Environmental Requirements

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

## Commercial data

|                    |                     |
|--------------------|---------------------|
| Country of origin  | CH                  |
| GTIN               | 4044918655392       |
| Customs Tariff No. | 85369010000         |
| Product Group      | 4 (Printed Circuit) |

## Approvals / Certificates

### Country specific Approvals

| Logo   | Approval                        | Certificate name |
|--|---------------------------------|------------------|
|  | CCA<br>DEKRA Certification B.V. | 2149549.02       |
|  | CCA<br>DEKRA Certification B.V. | NTR NL 6919      |
|  | CCA<br>DEKRA Certification B.V. | NTR NL-7144      |



CCA  
DEKRA Certification B.V.

NTR NL-7625



CSA  
DEKRA Certification B.V.


1673956



VDE  
VDE Prüf- und Zertifizierungsinstitut

40029328

### Ship Approvals

| Logo   | Approval  | Certificate name |
|--|---|------------------|
|  | <b>DNV GL</b><br>Det Norske Veritas, Germanischer Lloyd | TAE000016Z       |


### UL-Approvals


| Logo   | Approval                                   | Certificate name |
|--|--|------------------|
|  | <b>UL</b><br>UL International Germany GmbH | E45172 sec. 6    |


### Compatible products

#### Marking accessories


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|  | <b>Item no.: 210-332/500-202</b><br>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  | <a href="http://www.wago.com/210-332/500-202">www.wago.com/210-332/500-202</a> |
|  | <b>Item no.: 210-332/500-204</b><br>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 | <a href="http://www.wago.com/210-332/500-204">www.wago.com/210-332/500-204</a> |
|  | <b>Item no.: 210-332/500-205</b><br>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   | <a href="http://www.wago.com/210-332/500-205">www.wago.com/210-332/500-205</a> |
|  | <b>Item no.: 210-332/500-206</b><br>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 | <a href="http://www.wago.com/210-332/500-206">www.wago.com/210-332/500-206</a> |
|  | <b>Item no.: 210-332/508-202</b><br>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  | <a href="http://www.wago.com/210-332/508-202">www.wago.com/210-332/508-202</a> |


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|--|---|--|
|  | <b>Item no.: 210-332/508-204</b><br>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 | <a href="http://www.wago.com/210-332/508-204">www.wago.com/210-332/508-204</a> |
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|  | <b>Item no.: 210-332/508-205</b><br>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 | <a href="http://www.wago.com/210-332/508-205">www.wago.com/210-332/508-205</a> |
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|  | <b>Item no.: 210-332/508-206</b><br>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 | <a href="http://www.wago.com/210-332/508-206">www.wago.com/210-332/508-206</a> |
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## tools

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|  | <b>Item no.: 210-647</b><br>Operating tool with partially insulated shaft; Blade (2.5 x 0.4) mm; short | <a href="http://www.wago.com/210-647">www.wago.com/210-647</a> |
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|  | <b>Item no.: 210-648</b><br>Operating tool with partially insulated shaft; Blade (2.5 x 0.4) mm; short; angled | <a href="http://www.wago.com/210-648">www.wago.com/210-648</a> |
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|  | <b>Item no.: 210-719</b><br>Operating tool with partially insulated shaft; Type 1, blade (2.5 x 0.4) mm | <a href="http://www.wago.com/210-719">www.wago.com/210-719</a> |
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## ferrule

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|---|---|--|
|  | <b>Item no.: 216-101</b><br>Ferrule; Sleeve for 0.5 mm <sup>2</sup> / AWG 22; uninsulated; electro-tin plated | <a href="http://www.wago.com/216-101">www.wago.com/216-101</a> |
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|  | <b>Item no.: 216-102</b><br>Ferrule; Sleeve for 0.75 mm <sup>2</sup> / AWG 20; uninsulated; electro-tin plated | <a href="http://www.wago.com/216-102">www.wago.com/216-102</a> |
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|  | <b>Item no.: 216-103</b><br>Ferrule; Sleeve for 1 mm <sup>2</sup> / AWG 18; uninsulated; electro-tin plated | <a href="http://www.wago.com/216-103">www.wago.com/216-103</a> |
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|  | <b>Item no.: 216-104</b><br>Ferrule; Sleeve for 1.5 mm <sup>2</sup> / AWG 16; uninsulated; electro-tin plated | <a href="http://www.wago.com/216-104">www.wago.com/216-104</a> |
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|  | <b>Item no.: 216-121</b><br>Ferrule; Sleeve for 0.5 mm <sup>2</sup> / AWG 22; uninsulated; electro-tin plated | <a href="http://www.wago.com/216-121">www.wago.com/216-121</a> |
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|  | <b>Item no.: 216-122</b><br>Ferrule; Sleeve for 0.75 mm <sup>2</sup> / AWG 20; uninsulated; electro-tin plated | <a href="http://www.wago.com/216-122">www.wago.com/216-122</a> |
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|  | <b>Item no.: 216-123</b><br>Ferrule; Sleeve for 1 mm <sup>2</sup> / AWG 18; uninsulated; electro-tin plated | <a href="http://www.wago.com/216-123">www.wago.com/216-123</a> |
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|  | <b>Item no.: 216-124</b><br>Ferrule; Sleeve for 1.5 mm <sup>2</sup> / AWG 16; uninsulated; electro-tin plated | <a href="http://www.wago.com/216-124">www.wago.com/216-124</a> |
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|  | <b>Item no.: 216-131</b><br>Ferrule; Sleeve for 0.25 mm <sup>2</sup> / AWG 24; uninsulated; electro-tin plated | <a href="http://www.wago.com/216-131">www.wago.com/216-131</a> |
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|  | <b>Item no.: 216-132</b><br>Ferrule; Sleeve for 0.34 mm <sup>2</sup> / AWG 24; uninsulated; electro-tin plated | <a href="http://www.wago.com/216-132">www.wago.com/216-132</a> |
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|  | <b>Item no.: 216-141</b><br>Ferrule; Sleeve for 0.5 mm <sup>2</sup> / AWG 22; uninsulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 1/08.92 | <a href="http://www.wago.com/216-141">www.wago.com/216-141</a> |
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|    | <b>Item no.: 216-142</b><br>Ferrule; Sleeve for 0.75 mm <sup>2</sup> / AWG 20; uninsulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 1/08.92 | <a href="http://www.wago.com/216-142">www.wago.com/216-142</a> |
|    | <b>Item no.: 216-143</b><br>Ferrule; Sleeve for 1 mm <sup>2</sup> / AWG 18; uninsulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 1/08.92    | <a href="http://www.wago.com/216-143">www.wago.com/216-143</a> |
|    | <b>Item no.: 216-144</b><br>Ferrule; Sleeve for 1.5 mm <sup>2</sup> / AWG 16; uninsulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 1/08.92  | <a href="http://www.wago.com/216-144">www.wago.com/216-144</a> |
|    | <b>Item no.: 216-151</b><br>Ferrule; Sleeve for 0.25 mm <sup>2</sup> / AWG 24; uninsulated; electro-tin plated   | <a href="http://www.wago.com/216-151">www.wago.com/216-151</a> |
|    | <b>Item no.: 216-152</b><br>Ferrule; Sleeve for 0.34 mm <sup>2</sup> / AWG 24; uninsulated; electro-tin plated   | <a href="http://www.wago.com/216-152">www.wago.com/216-152</a> |
|    | <b>Item no.: 216-201</b><br>Ferrule; Sleeve for 0.5 mm <sup>2</sup> / AWG 22; insulated; electro-tin plated  | <a href="http://www.wago.com/216-201">www.wago.com/216-201</a> |
|    | <b>Item no.: 216-202</b><br>Ferrule; Sleeve for 0.75 mm <sup>2</sup> / AWG 20; insulated; electro-tin plated   | <a href="http://www.wago.com/216-202">www.wago.com/216-202</a> |
|    | <b>Item no.: 216-203</b><br>Ferrule; Sleeve for 1 mm <sup>2</sup> / AWG 18; insulated; electro-tin plated  | <a href="http://www.wago.com/216-203">www.wago.com/216-203</a> |
|   | <b>Item no.: 216-204</b><br>Ferrule; Sleeve for 1.5 mm <sup>2</sup> / AWG 16; insulated; electro-tin plated  | <a href="http://www.wago.com/216-204">www.wago.com/216-204</a> |
|  | <b>Item no.: 216-221</b><br>Ferrule; Sleeve for 0.5 mm <sup>2</sup> / AWG 22; insulated; electro-tin plated  | <a href="http://www.wago.com/216-221">www.wago.com/216-221</a> |
|  | <b>Item no.: 216-222</b><br>Ferrule; Sleeve for 0.75 mm <sup>2</sup> / AWG 20; insulated; electro-tin plated   | <a href="http://www.wago.com/216-222">www.wago.com/216-222</a> |
|  | <b>Item no.: 216-223</b><br>Ferrule; Sleeve for 1 mm <sup>2</sup> / AWG 18; insulated; electro-tin plated  | <a href="http://www.wago.com/216-223">www.wago.com/216-223</a> |
|  | <b>Item no.: 216-224</b><br>Ferrule; Sleeve for 1.5 mm <sup>2</sup> / AWG 16; insulated; electro-tin plated  | <a href="http://www.wago.com/216-224">www.wago.com/216-224</a> |
|  | <b>Item no.: 216-241</b><br>Ferrule; Sleeve for 0.5 mm <sup>2</sup> / AWG 22; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90    | <a href="http://www.wago.com/216-241">www.wago.com/216-241</a> |
|  | <b>Item no.: 216-242</b><br>Ferrule; Sleeve for 0.75 mm <sup>2</sup> / AWG 20; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90   | <a href="http://www.wago.com/216-242">www.wago.com/216-242</a> |
|  | <b>Item no.: 216-243</b><br>Ferrule; Sleeve for 1 mm <sup>2</sup> / AWG 18; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90      | <a href="http://www.wago.com/216-243">www.wago.com/216-243</a> |
|  | <b>Item no.: 216-244</b><br>Ferrule; Sleeve for 1.5 mm <sup>2</sup> / AWG 16; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90    | <a href="http://www.wago.com/216-244">www.wago.com/216-244</a> |
|  | <b>Item no.: 216-262</b><br>Ferrule; Sleeve for 0.75 mm <sup>2</sup> / AWG 20; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90   | <a href="http://www.wago.com/216-262">www.wago.com/216-262</a> |
|   | <b>Item no.: 216-263</b><br>Ferrule; Sleeve for 1 mm <sup>2</sup> / AWG 18; insulated; electro-tin plated; electrolytic copper; gastight crimped;                                      | <a href="http://www.wago.com/216-263">www.wago.com/216-263</a> |

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|  | acc. to DIN 46228, Part 4/09.90   |  |
|  | <b>Item no.: 216-264</b><br>Ferrule; Sleeve for 1.5 mm <sup>2</sup> / AWG 16; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90 | <a href="http://www.wago.com/216-264">www.wago.com/216-264</a> |
|  | <b>Item no.: 216-284</b><br>Ferrule; Sleeve for 1.5 mm <sup>2</sup> / AWG 16; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90 | <a href="http://www.wago.com/216-284">www.wago.com/216-284</a> |
|  | <b>Item no.: 216-301</b><br>Ferrule; Sleeve for 0.25 mm <sup>2</sup> / AWG 24; insulated; electro-tin plated  | <a href="http://www.wago.com/216-301">www.wago.com/216-301</a> |
|  | <b>Item no.: 216-302</b><br>Ferrule; Sleeve for 0.34 mm <sup>2</sup> / AWG 24; insulated; electro-tin plated  | <a href="http://www.wago.com/216-302">www.wago.com/216-302</a> |
|  | <b>Item no.: 216-321</b><br>Ferrule; Sleeve for 0.25 mm <sup>2</sup> / AWG 24; insulated; electro-tin plated  | <a href="http://www.wago.com/216-321">www.wago.com/216-321</a> |
|  | <b>Item no.: 216-322</b><br>Ferrule; Sleeve for 0.34 mm <sup>2</sup> / AWG 24; insulated; electro-tin plated  | <a href="http://www.wago.com/216-322">www.wago.com/216-322</a> |

## Downloads

### smartDATA

#### CAD data

|                     |     |          |
|---------------------|-----|----------|
| 3D Download 235-412 | URL | Download |
|---------------------|-----|----------|

#### PCB libraries

|   |                      |                |          |
|---|----------------------|----------------|----------|
| DesignSpark Library for WAGO PCB Terminal Blocks<br>Compatible with DesignSpark PCB Version 4.x or higher     | 2.1<br>Oct 6, 2014   | ZIP<br>22.5 MB | Download |
| EAGLE Library for WAGO PCB Terminal Blocks<br>Compatible with EAGLE PCB Design Software Version 6.x or higher | 2.1<br>Nov 17, 2017  | ZIP<br>23.9 MB | Download |
| TARGET Library for WAGO PCB Terminal Blocks<br>Compatible with TARGET PCB Design Software Version 17.x        | 1.1.0<br>Oct 6, 2014 | ZIP<br>27.1 MB | Download |

Subject to changes.

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