

Data Sheet | Item Number: 281-616

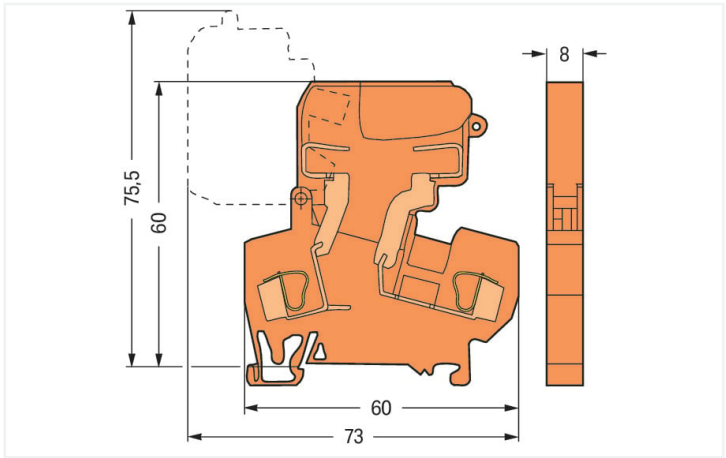
2-conductor fuse terminal block; with pivoting fuse holder; for 5 x 20 mm miniature metric fuse; without blown fuse indication; for DIN-rail 35 x 15 and 35 x 7.5; 4 mm²; CAGE CLAMP®; 4,00 mm²; orange

<https://www.wago.com/281-616>



Color: ■ orange

Similar to illustration



Dimensions in mm

Fuse terminal block, 281 Series, operating tool

This fuse terminal block (item number 281-616) is designed for simple and secure connections. Conductors can only be connected to this fuse terminal block if their strip length is between 9 mm and 10 mm. This product incorporates conductor terminals and utilizes CAGE CLAMP®. Our CAGE CLAMP® connection provides a safe and maintenance-free way to connect all types of conductors. You do not need to prepare the conductor in any way, such as crimping ferrules. Depending on the type of conductor, this fuse terminal block is designed for conductor cross sections ranging from 0.08 mm² to 4 mm². It features one level and two clamping points for connecting two potentials. The orange housing is made of polyamide (PA66) for insulation. These function terminal blocks are mounted using DIN-35 rails..

| Electrical data | | | | | Ratings per IEC/EN – Notes | |
|----------------------|--|------------------|-----|----|----------------------------|---|
| Ratings per | | IEC/EN 60947-7-3 | | | Ratings (note) | Electrical ratings are given by the fuse. |
| Overvoltage category | | III | III | II | | |
| Pollution degree | | 3 | 2 | 2 | | |
| Nominal voltage | | 800 V | - | - | | |
| Rated surge voltage | | 8 kV | - | - | | |
| Rated current | | 10 A | - | - | | |

| Power Loss | | General information | |
|--|--|---------------------|-----------------------------|
| Power loss (max.) $P_{I(max)}$ (note) | When selecting glass cartridge fuses, make sure that the maximum power loss listed below is not exceeded. The power loss is determined according to IEC or EN 60947-7-3/VDE 0611-6 at 23°C. The temperature rise of the terminal block must be checked according to their application and mounting. Higher ambient temperatures represent an additional impact on miniature fuses. Therefore, in such applications, the rated current must be reduced if necessary. More details are available from the manufacturers. | Fuse receptacle | pivoting |
| Power loss P_I max. overload and short-circuit protection (individual arrangement) | 2.5 W | Fuse type | Cylindrical fuse; 5 x 20 mm |
| Power loss P_I max. overload and short-circuit protection (group arrangement) | 1.6 W | | |
| Power loss P_I max. short-circuit protection (individual arrangement) | 4 W | | |
| Power loss P_I max. short-circuit protection (group arrangement) | 4 W | | |



| Connection data | | |
|--|--|--|
| Clamping units | 2 | |
| Total number of potentials | 2 | |
| Number of levels | 1 | |
| Connection 1 | | |
| Connection technology | CAGE CLAMP® | |
| Actuation type | Operating tool | |
| Connectable conductor materials | Copper Aluminum | |
| Connectable conductor materials (note) | <p>Terminating Aluminum Conductors WAGO Spring-Clamp Terminal Blocks are suitable for solid aluminum conductors up to 4 mm²/12 AWG if WAGO "Alu-Plus" Contact Paste 249-130 is used for termination.</p> <p>"Alu-Plus" Contact Paste Advantages:</p> <ul style="list-style-type: none">• Automatically destroys the oxide film during clamping.• Prevents fresh oxidation at the clamping point.• Prevents electrolytic corrosion between aluminum and copper conductors (in the same terminal block).• Provides long-term protection against corrosion. <p>Using terminal blocks with CAGE CLAMP® Spring Pressure Connection Technology, aluminum conductors must first be cleaned with a blade and then immediately inserted into the clamping units filled with "Alu-Plus" contact paste.</p> <p>It is also possible to apply WAGO "Alu-Plus" additionally on the whole surface of the aluminum conductor before termination.</p> <p>Please note that the nominal currents must be adapted to the reduced conductivity of the aluminum conductors:: 2.5 mm² = 16 A 4 mm² = 22 A</p> | |
| Solid conductor | 0.08 ... 4 mm² / 28 ... 12 AWG | |
| Fine-stranded conductor | 0.08 ... 4 mm² / 28 ... 12 AWG | |
| Strip length | 9 ... 10 mm / 0.35 ... 0.39 inches | |
| Wiring direction | Front-entry wiring | |

| Physical data | | |
|-----------------------------------|----------------------|--|
| Width | 8 mm / 0.315 inches | |
| Height | 60 mm / 2.362 inches | |
| Depth from upper-edge of DIN-rail | 60 mm / 2.362 inches | |

| Mechanical data | | |
|-----------------|----------------|--|
| Design | angled | |
| Mounting type | DIN-35 rail | |
| Marking level | Center marking | |





| Material data | | |
|------------------------------------|------------------|--|
| Note (material data) | | Information on material specifications can be found here |
| Color | orange | |
| Material group | I | |
| Insulation material (main housing) | Polyamide (PA66) | |
| Flammability class per UL94 | V0 | |
| Fire load | 0.328 MJ | |
| Weight | 17.3 g | |

| Environmental requirements | | |
|----------------------------------|-----------------|--|
| Processing temperature | -35 ... +85 °C | |
| Continuous operating temperature | -60 ... +105 °C | |

| Commercial data | | |
|-----------------------|----------------------------------|--|
| Product Group | 1 (Rail Mounted Terminal Blocks) | |
| eCl@ss 10.0 | 27-14-11-16 | |
| eCl@ss 9.0 | 27-14-11-16 | |
| ETIM 9.0 | EC000899 | |
| ETIM 8.0 | EC000899 | |
| PU (SPU) | 50 pcs | |
| Packaging type | Box | |
| Country of origin | IN | |
| GTIN | 4045454871529 | |
| Customs tariff number | 85369095000 | |

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

| Approvals / Certificates | | | | | | | | | | | |
|--|----------|---|----------|----------|------------------|---|---|---|---|---|---|
| General approvals | | Declarations of conformity and manufacturer's declarations | | | | | | | | | |
|    | | | | | | | | | | | |
| Approval | Standard | Certificate Name | | | | | | | | | |
| CSA CSA Group | C22.2 | 1505034 | | | | | | | | | |
| KEMA/KEUR DEKRA Certification B.V. | EN 60947 | NTR NL-7135 | | | | | | | | | |
| KEMA/KEUR DEKRA Certification B.V. | EN 60947 | 2160584.31 | | | | | | | | | |
| UR UL International Germany GmbH | UL 1059 | E45172 | | | | | | | | | |
| | | <table><tr><th>Approval</th><th>Standard</th><th>Certificate Name</th></tr><tr><td>EU-Declaration of Confor- mity WAGO GmbH & Co. KG</td><td>-</td><td>-</td></tr><tr><td>UK-Declaration of Confor- mity WAGO GmbH & Co. KG</td><td>-</td><td>-</td></tr></table> | Approval | Standard | Certificate Name | EU-Declaration of Confor- mity WAGO GmbH & Co. KG | - | - | UK-Declaration of Confor- mity WAGO GmbH & Co. KG | - | - |
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| UK-Declaration of Confor- mity WAGO GmbH & Co. KG | - | - | | | | | | | | | |



Approvals for marine applications



| Approval | Standard | Certificate Name |
|---|----------|------------------|
| ABS American Bureau of Ship- ping | - | 20-HG1941090-PDA |

Downloads

Environmental Product Compliance

| Compliance Search |
|---|
| Environmental Product Compliance 281-616 |



Documentation

| Additional Information |
|------------------------|
| Technical Section |

pdf
2246.92 KB



| Bid Text |
|-----------------|
| 281-616 |
| 19.02.2019 |
| xml 3.44 KB |
| 281-616 |
| 09.03.2017 |
| doc 25.00 KB |



CAD/CAE-Data

| CAD data |
|----------------------|
| 2D/3D Models 281-616 |



| CAE data |
|------------------------------|
| EPLAN Data Portal 281-616 |
| WSCAD Universe 281-616 |
| ZUKEN Portal 281-616 |



1 Compatible Products

1.1 Required Accessories

1.1.1 End plate

1.1.1.1 End plate



Item No.: 281-311
End and intermediate plate; 2.5 mm thick;
gray

Item No.: 281-309
End and intermediate plate; 2.5 mm thick;
orange



1.2 Optional Accessories

1.2.1 DIN-rail

1.2.1.1 Mounting accessories



Item No.: 210-196
Aluminum carrier rail; 35 x 8.2 mm; 1.6 mm thick; 2 m long; unslotted; similar to EN 60715; silver-colored



Item No.: 210-198
Copper carrier rail; 35 x 15 mm; 2.3 mm thick; 2 m long; unslotted; according to EN 60715; copper-colored



Item No.: 210-508
Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; slotted; galvanized; similar to EN 60715; silver-colored



Item No.: 210-197
Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; slotted; similar to EN 60715; silver-colored



Item No.: 210-506
Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; unslotted; galvanized; similar to EN 60715; silver-colored



Item No.: 210-114
Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; unslotted; similar to EN 60715; silver-colored



Item No.: 210-118
Steel carrier rail; 35 x 15 mm; 2.3 mm thick; 2 m long; unslotted; according to EN 60715; silver-colored



Item No.: 210-115
Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; according to EN 60715; "Hole width 18 mm; silver-colored



Item No.: 210-112
Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; according to EN 60715; "Hole width 25 mm; silver-colored



Item No.: 210-504
Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; galvanized; according to EN 60715; silver-colored



Item No.: 210-113
Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; unslotted; according to EN 60715; silver-colored



Item No.: 210-505
Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; unslotted; galvanized; according to EN 60715; silver-colored

1.2.2 Ferrule

1.2.2.1 Ferrule



Item No.: 216-241
Ferrule; Sleeve for 0.5 mm² / 20 AWG; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; white



Item No.: 216-242
Ferrule; Sleeve for 0.75 mm² / 18 AWG; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; gray



Item No.: 216-243
Ferrule; Sleeve for 1 mm² / AWG 18; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; red



Item No.: 216-244
Ferrule; Sleeve for 1.5 mm² / AWG 16; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; black



Item No.: 216-246
Ferrule; Sleeve for 2.5 mm² / AWG 14; insulated; electro-tin plated; electrolytic copper; gastight crimped; acc. to DIN 46228, Part 4/09.90; blue



Item No.: 216-106
Ferrule; Sleeve for 2.5 mm² / AWG 14; un-insulated; electro-tin plated; silver-colored

1.2.3 Installation

1.2.3.1 Cover



Item No.: 709-153
Cover; Type 1; suitable for cover carrier, type 1; 1 m long; transparent

1.2.3.2 Cover carrier



Item No.: 709-167
Cover carrier; Type 1; incl. fixing/retaining screws and knurled nut; suitable for 279 to 282 and 880 Series rail-mounted terminal blocks; suitable for 264 Series miniature rail-mounted terminal blocks; suitable for 270 Series sensor and actuator terminal blocks; gray

1.2.3.3 Mounting accessories



Item No.: 209-106
Mounting carrier; for isolated mounting on DIN 35 rails; gray



Item No.: 249-116
Screwless end stop; 6 mm wide; for DIN-rail 35 x 15 and 35 x 7.5; gray

1.2.4 Jumper

1.2.4.1 Jumper



Item No.: 281-402
Jumper; insulated; gray



Item No.: 709-110
Wire commoning chain; 2.5 mm²; insulated; black



Item No.: 709-111
Wire commoning chain; 2.5 mm²; insulated; black



Item No.: 709-112
Wire commoning chain; 2.5 mm²; insulated; black



Item No.: 210-103
Wire commoning chain; insulated; black



Item No.: 210-123
Wire commoning chain; insulated; blue

1.2.5 Locking system

1.2.5.1 Locking system



Item No.: 210-254
Interlocking link; mechanically locks multiple links; 1 m long; transparent

1.2.6 Marking

1.2.6.1 Marker



Item No.: 793-5501/000-006
WMB marking card; as card; for terminal block width 5 - 17.5 mm; stretchable 5 - 5.2 mm; plain; snap-on type; blue



Item No.: 793-5501/000-007
WMB marking card; as card; for terminal block width 5 - 17.5 mm; stretchable 5 - 5.2 mm; plain; snap-on type; gray



Item No.: 793-5501/000-023
WMB marking card; as card; for terminal block width 5 - 17.5 mm; stretchable 5 - 5.2 mm; plain; snap-on type; green



Item No.: 793-5501/000-017
WMB marking card; as card; for terminal block width 5 - 17.5 mm; stretchable 5 - 5.2 mm; plain; snap-on type; light green



Item No.: 793-5501/000-012
WMB marking card; as card; for terminal block width 5 - 17.5 mm; stretchable 5 - 5.2 mm; plain; snap-on type; orange



Item No.: 793-5501/000-005
WMB marking card; as card; for terminal block width 5 - 17.5 mm; stretchable 5 - 5.2 mm; plain; snap-on type; red



Item No.: 793-5501/000-024
WMB marking card; as card; for terminal block width 5 - 17.5 mm; stretchable 5 - 5.2 mm; plain; snap-on type; violet



Item No.: 793-5501
WMB marking card; as card; for terminal block width 5 - 17.5 mm; stretchable 5 - 5.2 mm; plain; snap-on type; white



1.2.6.1 Marker



Item No.: 793-5501/000-002
WMB marking card; as card; for terminal block width 5 - 17.5 mm; stretchable 5 - 5.2 mm; plain; snap-on type; yellow



Item No.: 793-501/000-006
WMB marking card; as card; not stretchable; plain; snap-on type; blue



Item No.: 793-501/000-007
WMB marking card; as card; not stretchable; plain; snap-on type; gray



Item No.: 793-501/000-023
WMB marking card; as card; not stretchable; plain; snap-on type; green



Item No.: 793-501/000-017
WMB marking card; as card; not stretchable; plain; snap-on type; light green



Item No.: 793-501/000-012
WMB marking card; as card; not stretchable; plain; snap-on type; orange



Item No.: 793-501/000-005
WMB marking card; as card; not stretchable; plain; snap-on type; red



Item No.: 793-501/000-024
WMB marking card; as card; not stretchable; plain; snap-on type; violet



Item No.: 793-501
WMB marking card; as card; not stretchable; plain; snap-on type; white



Item No.: 793-501/000-002
WMB marking card; as card; not stretchable; plain; snap-on type; yellow



Item No.: 2009-115/000-006
WMB-Inline; for Smart Printer; 1500 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; blue



Item No.: 2009-115/000-007
WMB-Inline; for Smart Printer; 1500 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; gray



Item No.: 2009-115/000-023
WMB-Inline; for Smart Printer; 1500 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; green



Item No.: 2009-115/000-017
WMB-Inline; for Smart Printer; 1500 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; light green



Item No.: 2009-115/000-012
WMB-Inline; for Smart Printer; 1500 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; orange



Item No.: 2009-115/000-024
WMB-Inline; for Smart Printer; 1500 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; violet



Item No.: 2009-115
WMB-Inline; for Smart Printer; 1500 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; white



Item No.: 2009-115/000-002
WMB-Inline; for Smart Printer; 1500 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; yellow

1.2.7 Push-in type wire jumper

1.2.7.1 Jumper



Item No.: 249-126
Push-in type wire jumper; 0.75 mm²; insulated; 110 mm long; black



Item No.: 249-123
Push-in type wire jumper; 0.75 mm²; insulated; 180 mm long; black



Item No.: 249-127
Push-in type wire jumper; 0.75 mm²; insulated; 250 mm long; black



Item No.: 249-125
Push-in type wire jumper; insulated; 60 mm long; black

1.2.8 Test and measurement

1.2.8.1 Testing accessories



Item No.: 249-147
B-type test plug module; modular; 2,50 mm²; gray



Item No.: 280-404
Test plug adapter; 5 mm wide; for test plug (2.3 mm Ø); suitable for 1.5 mm² - 4 mm² tbs; gray



Item No.: 281-407
Test plug; 6 mm wide; Nominal current 24 A; for 0.08 mm² - 2.5 mm²; 2,50 mm²; gray

1.2.9 Tool

1.2.9.1 Operating tool



Item No.: 210-658
Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft; angled; short; multicoloured



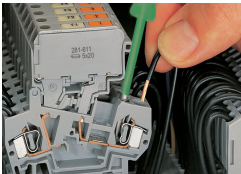
Item No.: 210-720
Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft; multicoloured



Item No.: 210-657
Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft; short; multicoloured

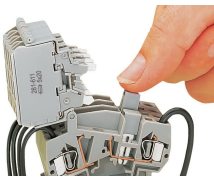
Installation Notes

Conductor termination



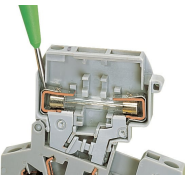
CAGE CLAMP® connection
Inserting a conductor.
With ferruled conductors, it is necessary to use a terminal block one size smaller than the conductor's nominal cross-section.

Commoning

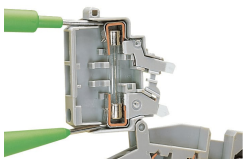


Commoning
Distributing current to several fuse-protected circuits via insulated push-in type jumpers.

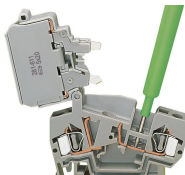
Testing



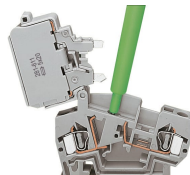
Voltage test, either at input or output with fuse holder in closed position (live)



Through test with fuse holder in open position (no voltage)



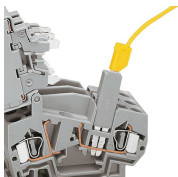
Voltage test at input in the test slot of the current bar



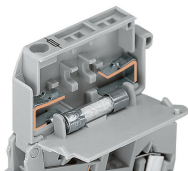
Testing voltage at the output via separate test slot.



Measuring current between jumper slot and separate test slot.



Testing voltage (input side) via test plug adapter (280-404, shown) or test plug (281-407).



5 x 20 mm, 5 x 25 mm and 1/4" x 1" fuse holders are fitted with stops on the inside of the cover.

Security

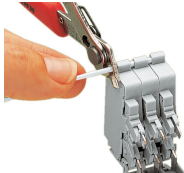


Touch-proof protection in all positions of the fuse holder



Fuse holder will remain safely locked open in vertical assemblies.

Locking system

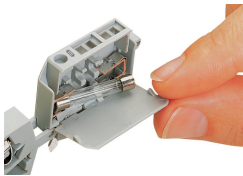


Ganging several fuse holders with an interlocking link (example shows 8 mm wide terminal blocks).

Application



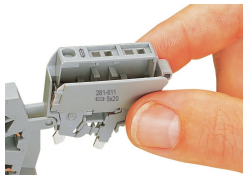
Fuse replacement:
Before replacing a fuse, pivot the fuse holder into the locked open position.



Fuse replacement:
One end of the fuse is automatically ejected from the holder when opening the cover.



Fuse replacement:
Easily removing a fuse by hand.



Fuse replacement:
Insert a new fuse and snap the cover closed.



Storing a spare fuse (fuse holder without blown fuse indication) for the types of fuses 5 x 20 mm, 5 x 25 mm und 5 x 30 mm.

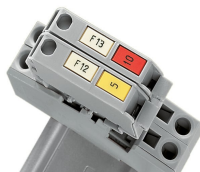


Fused disconnect or disconnect terminal blocks with a width of 8 mm can be assembled adjacently. At the end of an assembly, or if there is **no** adjacent fused disconnect or disconnect terminal block, an end or intermediate plate must be used.

Marking



All fuse holders are printed with correct fuse size.



Each fuse holder features two marker slots for custom WMB Multi markers (example shows 8 mm wide terminal blocks).