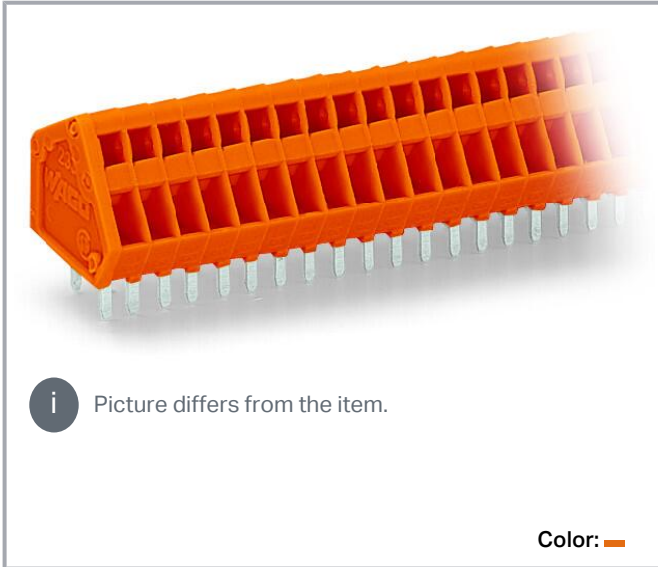


Data sheet | Item number: 233-448

PCB terminal block; 0.5 mm²; Pin spacing 2.54 mm; 48-pole; CAGE CLAMP®;
0,50 mm²; orange

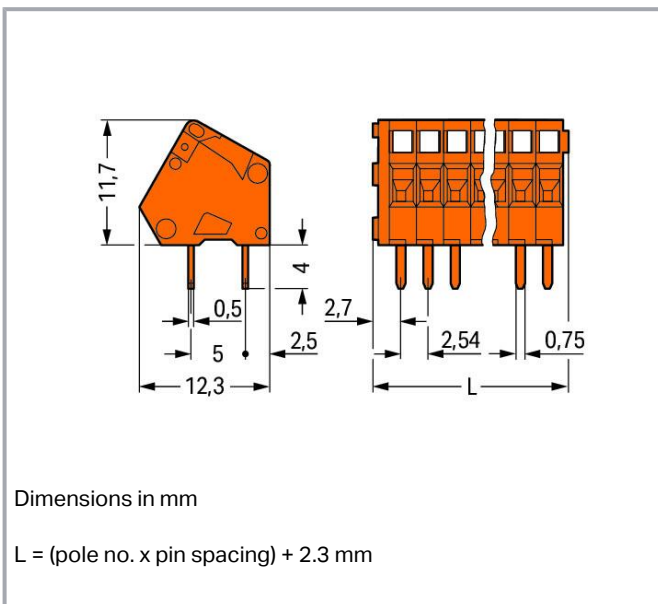
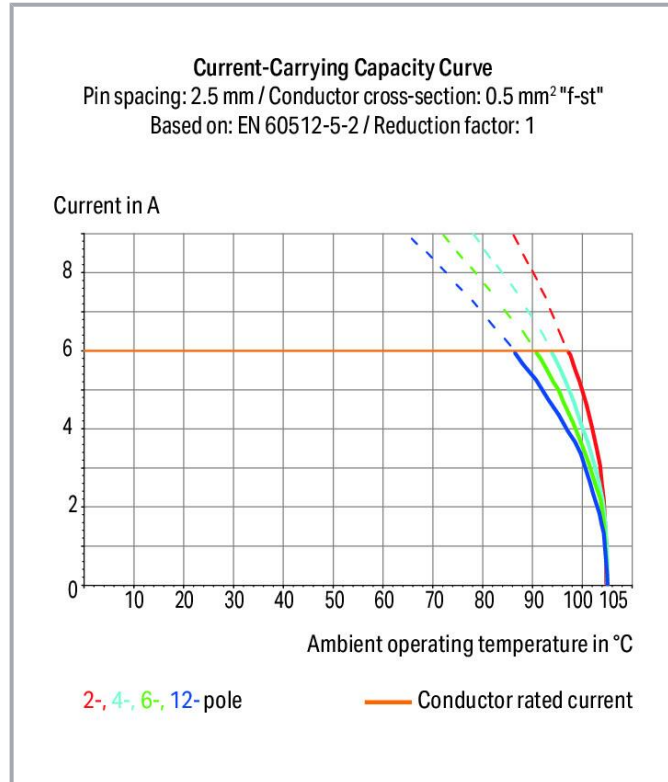


www.wago.com/233-448



i Picture differs from the item.

Color: ■



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

- Compact terminal strips with CAGE CLAMP[®] connection and screwdriver actuation parallel or perpendicular to conductor entry
- Double solder pins for high mechanical stability
- Custom color combinations

Data

Notes

Variants:

Other pole numbers

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)	63 V
Rated impulse voltage (III/3)	2.5 kV
Rated voltage (III/2)	160 V
Rated impulse voltage (III/2)	2.5 kV
Nominal voltage (II/2)	320 V
Rated surge voltage (II/2)	2.5 kV
Rated current	6 A
Legend (ratings)	(III / 2) ≙ Overvoltage category III / Pollution degree 2

Ratings per UL 1059

Approvals per	UL 1059
Rated voltage UL (Use Group B)	150 V
Rated current UL (Use Group B)	4 A

Ratings per CSA

Approvals per	CSA
Rated voltage CSA (Use Group B)	150 V

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Rated current CSA (Use Group B)	4 A
---------------------------------	-----

Connection data

Connection points	48
Total number of potentials	48
Number of connection types	1
Number of levels	1

Connection 1

Connection technology	CAGE CLAMP®
Actuation type	Operating tool
Solid conductor	0.08 ... 0.5 mm ² / 28 ... 20 AWG
Fine-stranded conductor	0.08 ... 0.5 mm ² / 28 ... 20 AWG
Fine-stranded conductor; with insulated ferrule	0.25 mm ²
Fine-stranded conductor; with uninsulated ferrule	0.25 mm ²
Note (conductor cross-section)	Terminating 0.75 mm ² /18 AWG conductors is possible; however insulation diameter allows only every other clamping unit to be terminated with this conductor size.
Strip length	5 ... 6 mm / 0.2 ... 0.24 inches
Conductor connection direction to PCB	30 °
Pole number	48

Physical data

Pin spacing	2.54 mm / 0.1 inches
Width	124.22 mm / 4.891 inches
Height	15.7 mm / 0.618 inches
Height from the surface	11.7 mm / 0.461 inches
Depth	12.1 mm / 0.476 inches
Solder pin length	4 mm
Solder pin dimensions	0.5 x 0.75 mm
Drilled hole diameter with tolerance	1.1 ^(+0.1) mm

PCB contact

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

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



Material Data

Note (material data)

Information on material specifications can be found here

Color	orange
Material group	I
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	0.22 MJ
Weight	16.4 g

Environmental requirements

Limit temperature range	-60 ... +105 °C
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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)	40 (10) pcs
Packaging type	box
Country of origin	CH
GTIN	4045454051242
Customs tariff number	85369010000

Environmental Product Compliance

RoHS Compliance Status	Compliant, No Exemption
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Approvals / Certificates







General approvals

Logo	Approval	Additional Approval Text	Certificate name



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	CCA DEKRA Certification B.V.	EN 60998	NTR NL 6946
	CCA DEKRA Certification B.V.	EN 60998	2153951.01
	CCA DEKRA Certification B.V.	EN 60947-7-4	NTR NL 7786
	CSA DEKRA Certification B.V.	C22.2	1465035
	KEMA/KEUR DEKRA Certification B.V.	EN 60947-7-4	71-111040
	UL UL International Germany GmbH	UL 1059	E45172

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

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







DNV GL
Det Norske Veritas, Germanischer Lloyd







TAE000016Z

Optional accessories


Ferrule

Ferrule		
	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.: 216-151 Ferrule; Sleeve for 0.25 mm ² / AWG 24; uninsulated; electro-tin plated	www.wago.com/216-151
	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

Tool

Operating tool		
	Item no.: 210-648 Operating tool; Blade: 2.5 x 0.4 mm; with a partially insulated shaft; angled; short	www.wago.com/210-648
	Item no.: 210-647 Operating tool; Blade: 2.5 x 0.4 mm; with a partially insulated shaft; multicoloured	www.wago.com/210-647
	Item no.: 210-719 Operating tool; Blade: 2.5 x 0.4 mm; with a partially insulated shaft	www.wago.com/210-719
	Item no.: 233-332 Operating tool; made of insulating material; white	www.wago.com/233-332
	Item no.: 233-331 Operating tool; insulated; yellow	www.wago.com/233-331
	Item no.: 233-335 Operating tool; green	www.wago.com/233-335

Marking accessories



Marking strip		
	Item no.: 210-331/250-207 Marking strips; as a DIN A4 sheet; MARKED; 1-48 (100x); Height of marker strip: 2.3 mm/0.091 in; Strip length 182 mm; Horizontal marking; Self-adhesive; white	www.wago.com/210-331/250-207

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	Item no.: 210-331/250-202 Marking strips; as a DIN A4 sheet; MARKED; 1-16 (400x); Height of marker strip: 2.3 mm/0.091 in; Strip length 182 mm; Horizontal marking; Self-adhesive; white	www.wago.com/210-331/250-202
	Item no.: 210-331/254-204 Marking strips; as a DIN A4 sheet; MARKED; 17-32 (400x); Height of marker strip: 2.3 mm/0.091 in; Strip length 182 mm; Horizontal marking; Self-adhesive; white	www.wago.com/210-331/254-204
	Item no.: 210-331/250-204 Marking strips; as a DIN A4 sheet; MARKED; 17-32 (400x); Height of marker strip: 2.3 mm/0.091 in; Strip length 182 mm; Horizontal marking; Self-adhesive; white	www.wago.com/210-331/250-204
	Item no.: 210-331/254-206 Marking strips; as a DIN A4 sheet; MARKED; 33-48 (400x); Height of marker strip: 2.3 mm/0.091 in; Strip length 182 mm; Horizontal marking; Self-adhesive; white	www.wago.com/210-331/254-206
	Item no.: 210-331/250-206 Marking strips; as a DIN A4 sheet; MARKED; 33-48 (400x); Height of marker strip: 2.3 mm/0.091 in; Strip length 182 mm; Horizontal marking; Self-adhesive; white	www.wago.com/210-331/250-206
	Item no.: 210-331/254-202 Marking strips; as a DIN A4 sheet; MARKED; 1-16 (400x); Height of marker strip: 2.3 mm/0.091 in; Strip length 182 mm; Horizontal marking; Self-adhesive; white	www.wago.com/210-331/254-202
	Item no.: 210-331/254-207 Marking strips; as a DIN A4 sheet; MARKED; 1-48 (100x); Height of marker strip: 2.3 mm/0.091 in; Strip length 182 mm; Horizontal marking; Self-adhesive; white	www.wago.com/210-331/254-207

Downloads

Documentation

Additional Information

Technical Section	2019 Apr 3	pdf	Download
Technical explanations		2.0 MB	

CAD/CAE-Data

CAE data

EPLAN Data Portal 233-448	URL	Download
ZUKEN Portal 233-448	URL	Download

PCB Design

Symbol and Footprint 233-448	URL	Download
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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

CAD data

2D/3D Models 233-448	URL	Download
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Environmental Product Compliance

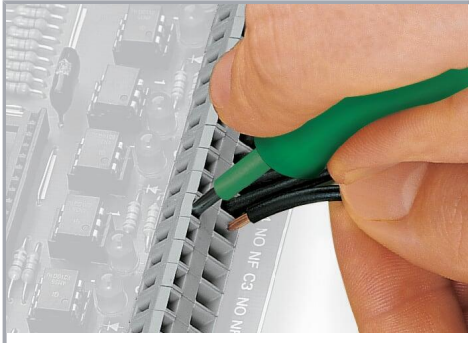
Compliance Search

Environmental Product Compliance 233-448 PCB terminal block; 0.5 mm ² ; Pin spacing 2.54 mm; 48-pole; CAGE CLAMP®; 0,50 mm ² ; orange	URL	Download
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Subject to changes. Please also observe the further product documentation!

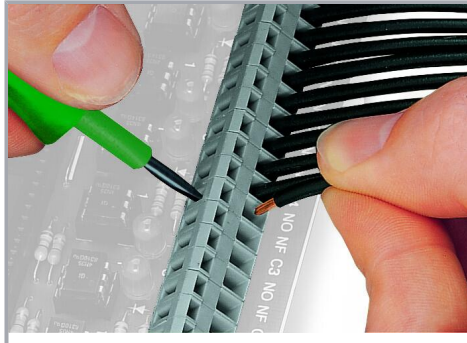
Installation Notes

Conductor termination



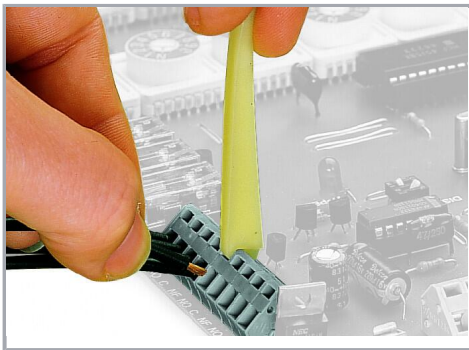
Inserting a conductor via 3.5 mm screwdriver.

Screwdriver actuation parallel to conductor entry

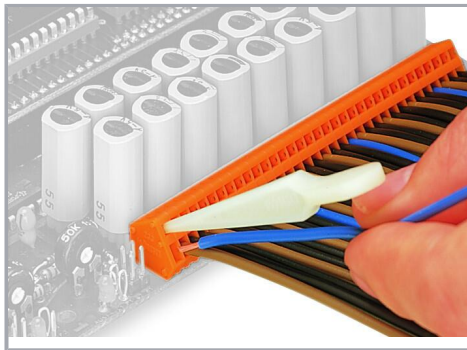


Inserting a conductor via 3.5 mm screwdriver.

Screwdriver actuation perpendicular to conductor entry



Inserting a conductor via operating tool.



Compared to standard screwdrivers, these operating tools are far more convenient for wiring PCB terminal strips at factory.

Installation

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



PCB Terminal Strips placed behind each other save space – staggering them by half the pin spacing simplifies subsequent wiring of the first row.

Installation

