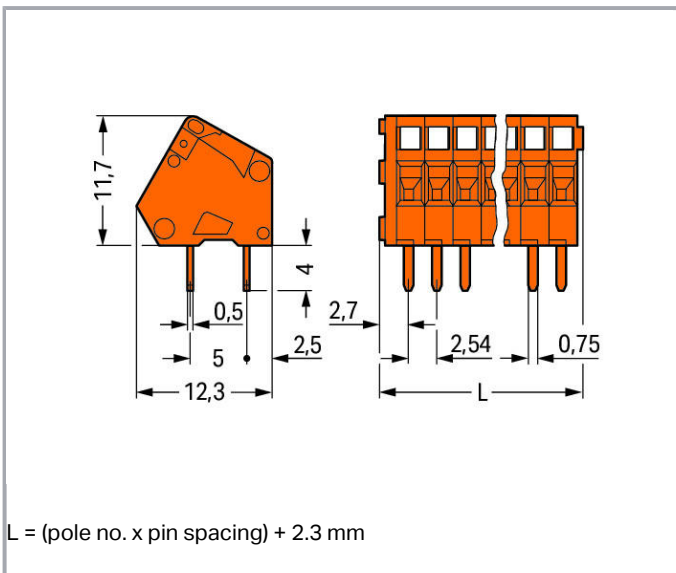
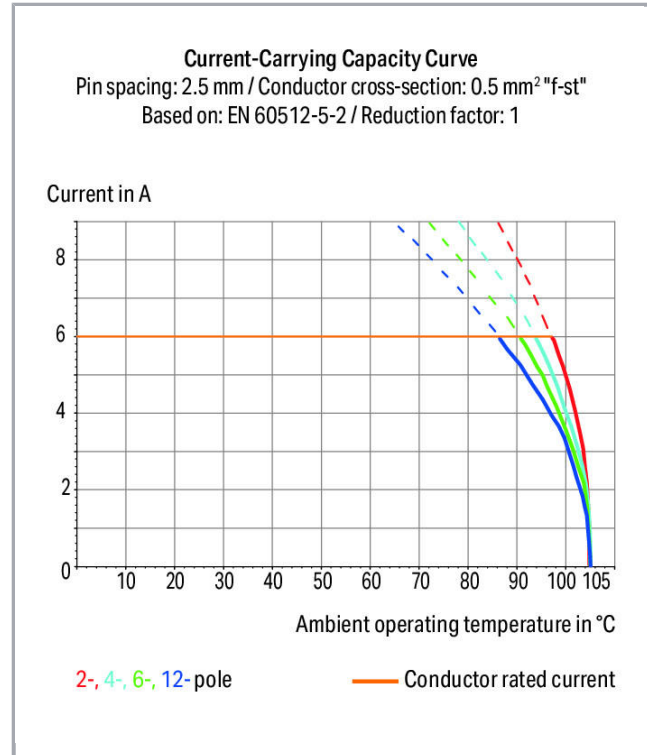
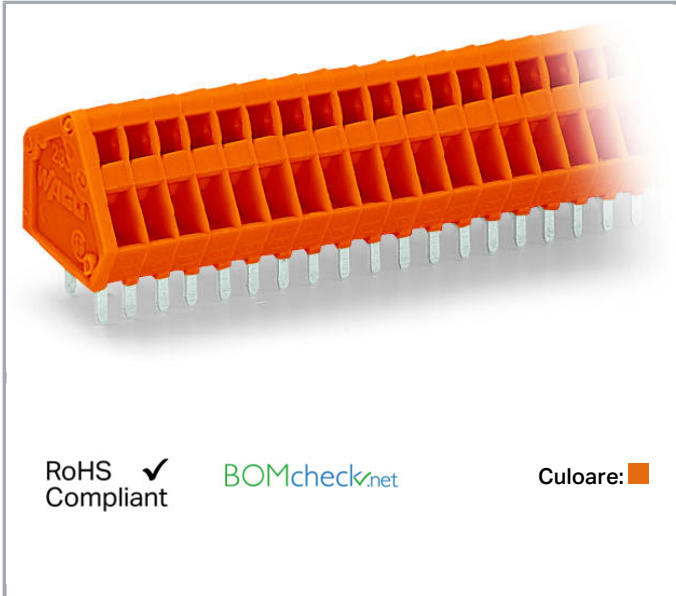


# Fișă tehnică | Număr articol: 233-448

PCB terminal block; 0.5 mm<sup>2</sup>; Pin spacing 2.54 mm; 48-pole; CAGE CLAMP®; 0,50 mm<sup>2</sup>; orange

[www.wago.com/233-448](http://www.wago.com/233-448)



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Aveți întrebări despre produsele noastre?  
Vă stăm la dispoziție pentru preluarea apelului la +40 (0) 31 421 85 68.



## Descriere articol

- 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

## Date

### Electrical data

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

Ratings per	IEC/EN 60664-1
Nominal voltage (III/3)	63 V
Rated surge voltage (III/3)	2,5 kV
Rated voltage (III/2)	160 V
Rated surge 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) $\hat{=}$ Overvoltage category III / Pollution degree 2

#### Approvals per UL 1059

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

#### Approvals per CSA

Rated voltage CSA (Use Group B)	150 V
Rated current CSA (Use Group B)	4 A

## Connection data

Connection technology	CAGE CLAMP®
Actuation type	Operating tool
Solid conductor	0.08 ... 0.5 mm <sup>2</sup> / 28 ... 20 AWG
Fine-stranded conductor	0.08 ... 0.5 mm <sup>2</sup> / 28 ... 20 AWG
Fine-stranded conductor; with insulated ferrule	0.25 mm <sup>2</sup>

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Fine-stranded conductor; with uninsulated ferrule	0.25 mm <sup>2</sup>
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch
Conductor connection direction to PCB	30°
Pole No.	48
Total number of connection points	48
Total number of potentials	48
Number of connection types	1
Number of levels	1
Note (conductor cross-section)	Terminating 0.75 mm <sup>2</sup> /18 AWG conductors is possible; however insulation diameter allows only every other clamping unit to be terminated with this conductor size.

### Geometrical Data

Pin spacing	2.54 mm / 0.1 inch
Width	124.22 mm / 4.891 inch
Height	15.7 mm / 0.618 inch
Height from the surface	11.7 mm / 0.461 inch
Depth	12.1 mm / 0.476 inch
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

### Material Data

Color	orange
Material group	I
Insulation material	Polyamide 66 (PA 66)
Flammability class per UL94	V0
Clamping spring material	Chrome nickel spring steel (CrNi)
Contact material	Electrolytic copper (E <sub>Cu</sub> )
Contact plating	tin-plated
Fire load	0,244 MJ
Weight	16,4 g

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## Environmental Requirements





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

## Commercial data


Product Group	4 (Printed Circuit)
Packaging type	BOX
Country of origin	CH
GTIN	4045454051242
Customs tariff number	85369010000

## Aprobări / certificate

### Country specific Approvals

Emblemă	Aprobare	Text de aprobare suplimentar	Nume certificat
	CCA DEKRA Certification B.V.	EN 60998	2153951.01
	CCA DEKRA Certification B.V.	EN 60998	NTR NL 6946
	CCA DEKRA Certification B.V.	EN 60947-7-4	2169331.02
	CSA DEKRA Certification B.V.	C22.2	1465035

### Ship Approvals

Emblemă	Aprobare	Text de aprobare suplimentar	Nume certificat
	ABS American Bureau of Shipping	-	19- HG1869876- PDA
	DNV GL Det Norske Veritas, Germanischer Lloyd	-	TAE000016Z


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## UL-Approvals

Emblemă	Aprobare	Text de aprobare suplimentar	Nume certificat
	UL UL International Germany GmbH	UL 1059	20190731- E45172

## Counterpart

## Produse compatibile

### tools

	<b>Nr. articol: 210-647</b> Operating tool; Blade: 2.5 x 0.4 mm; with a partially insulated shaft	<a href="http://www.wago.com/210-647">www.wago.com/210-647</a>
	<b>Nr. articol: 210-648</b> Operating tool; Blade: 2.5 x 0.4 mm; with a partially insulated shaft; angled; short	<a href="http://www.wago.com/210-648">www.wago.com/210-648</a>
	<b>Nr. articol: 210-719</b> Operating tool; Blade: 2.5 x 0.4 mm; with a partially insulated shaft	<a href="http://www.wago.com/210-719">www.wago.com/210-719</a>
	<b>Nr. articol: 233-331</b> Operating tool; insulated; yellow	<a href="http://www.wago.com/233-331">www.wago.com/233-331</a>
	<b>Nr. articol: 233-332</b> Operating tool; made of insulating material	<a href="http://www.wago.com/233-332">www.wago.com/233-332</a>
	<b>Nr. articol: 233-335</b> Operating tool	<a href="http://www.wago.com/233-335">www.wago.com/233-335</a>

### Marking accessories

	<b>Nr. articol: 210-331/250-202</b> 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	<a href="http://www.wago.com/210-331/250-202">www.wago.com/210-331/250-202</a>
	<b>Nr. articol: 210-331/250-204</b> 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	<a href="http://www.wago.com/210-331/250-204">www.wago.com/210-331/250-204</a>

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**Nr. articol: 210-331/250-206** [www.wago.com/210-331/250-206](http://www.wago.com/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

**Nr. articol: 210-331/250-207** [www.wago.com/210-331/250-207](http://www.wago.com/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

**Nr. articol: 210-331/254-202** [www.wago.com/210-331/254-202](http://www.wago.com/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

**Nr. articol: 210-331/254-204** [www.wago.com/210-331/254-204](http://www.wago.com/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

**Nr. articol: 210-331/254-206** [www.wago.com/210-331/254-206](http://www.wago.com/210-331/254-206)  
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**Nr. articol: 210-331/254-207** [www.wago.com/210-331/254-207](http://www.wago.com/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

#### ferrule



**Nr. articol: 216-131** [www.wago.com/216-131](http://www.wago.com/216-131)  
 Ferrule; Sleeve for 0.25 mm<sup>2</sup> / AWG 24; uninsulated; electro-tin plated



**Nr. articol: 216-151** [www.wago.com/216-151](http://www.wago.com/216-151)  
 Ferrule; Sleeve for 0.25 mm<sup>2</sup> / AWG 24; uninsulated; electro-tin plated

**Nr. articol: 216-301** [www.wago.com/216-301](http://www.wago.com/216-301)  
 Ferrule; Sleeve for 0.25 mm<sup>2</sup> / AWG 24; insulated; electro-tin plated; yellow

**Nr. articol: 216-321** [www.wago.com/216-321](http://www.wago.com/216-321)  
 Ferrule; Sleeve for 0.25 mm<sup>2</sup> / AWG 24; insulated; electro-tin plated; yellow

## Descărcări

### Documentation

#### Additional Information

Technical explanations	Apr 3, 2019	pdf 3,6 MB	Descărcare
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## CAD/CAE-Data

### CAD data

2D/3D Models 233-448	URL	Descărcare
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#### CAE data

EPLAN Data Portal 233-448	<a href="#">URL</a>	<a href="#">Descărcare</a>
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#### PCB Design

Symbol and Footprint 233-448	<a href="#">URL</a>	<a href="#">Descărcare</a>
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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

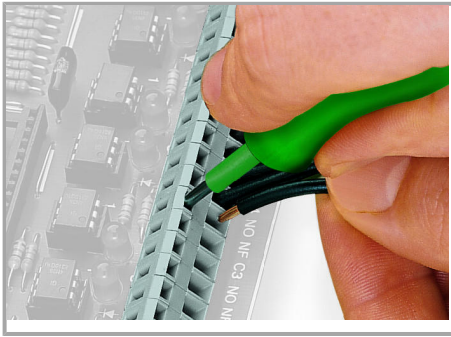
## Installation Notes

### Inserting a conductor

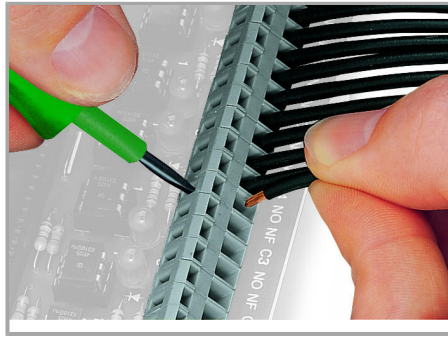
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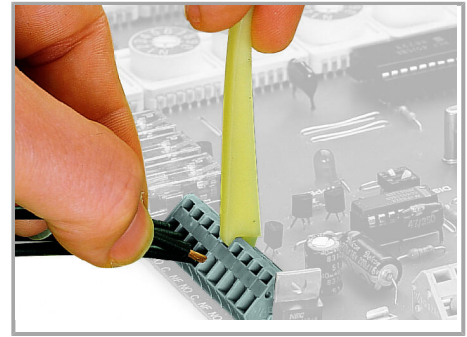
Aveți întrebări despre produsele noastre?  
Vă stăm la dispoziție pentru preluarea apelului la +40 (0) 31 421 85 68.



Inserting a conductor via 3.5 mm screwdriver.



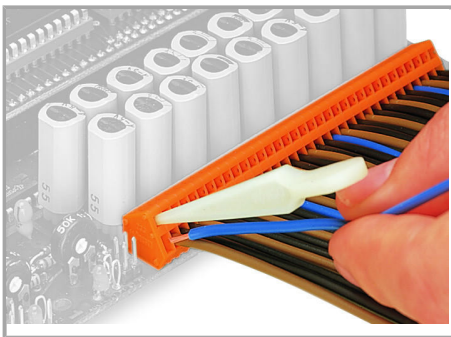
Inserting a conductor via 3.5 mm screwdriver.



Inserting a conductor via operating tool.

Screwdriver actuation parallel to conductor entry.

Screwdriver actuation perpendicular to conductor entry.

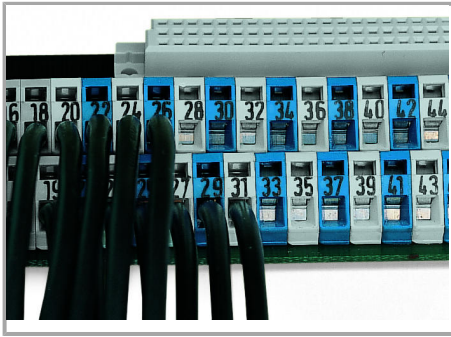


Compared to standard screwdrivers, these operating tools are far more convenient for wiring PCB terminal strips at factory.

#### Assembly

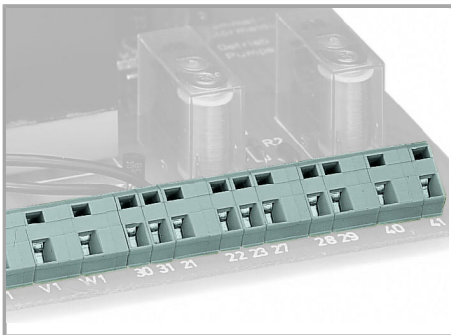
Supus modificărilor.





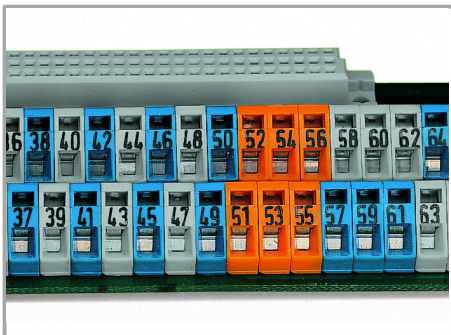
PCB Terminal Strips placed behind each other save space – staggering them by half the pin spacing simplifies subsequent wiring of the first row.

### Assembly

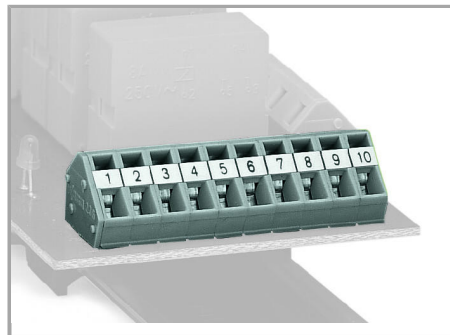


Combining PCB terminal blocks with different pin spacing.

### Marking



Labeling via factory direct marking.



Labeling with self-adhesive marking strips.

Supus modificărilor.