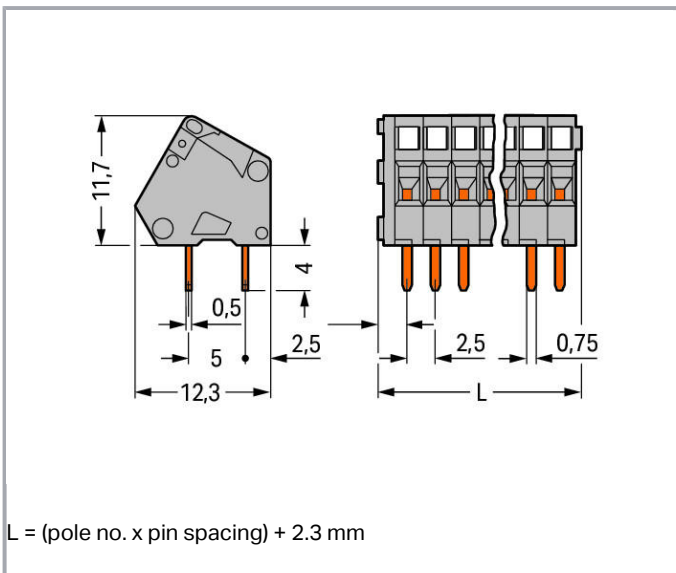
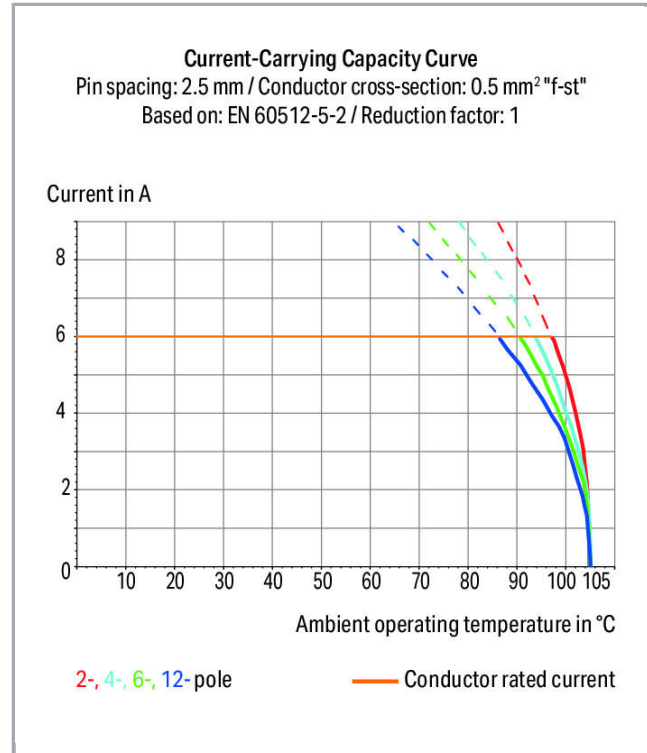
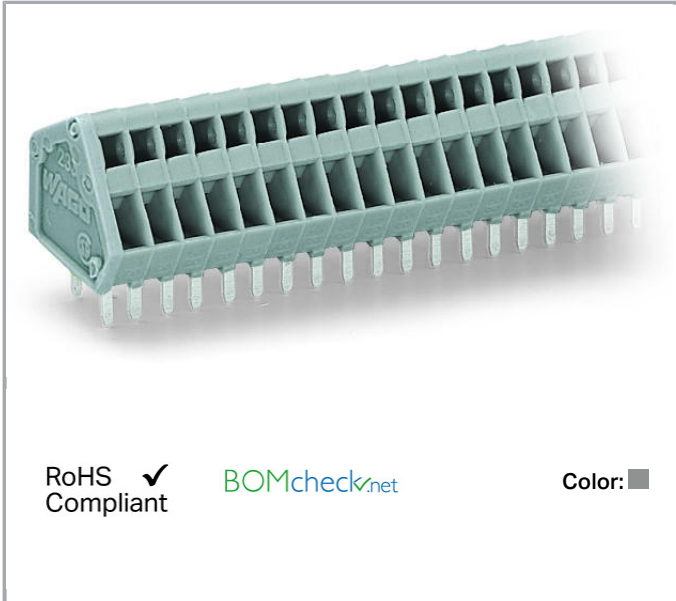


Data sheet | Item number: 233-112

PCB terminal block; 0.5 mm<sup>2</sup>; Pin spacing 2.5 mm; 12-pole; CAGE CLAMP®;  
0,50 mm<sup>2</sup>; gray



[www.wago.com/233-112](http://www.wago.com/233-112)



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

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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

### Electrical data

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

Ratings per	IEC/EN 60664-1
Rated 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
Rated voltage (II / 2)	320 V
Rated impulse voltage (II / 2)	2.5 kV
Rated current	6 A
Legend (ratings)	(III / 2) ± 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 ferrule with plastic collar	0.25 mm <sup>2</sup>

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

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Fine-stranded conductor with ferrule without plastic collar	0.25 mm <sup>2</sup>
Strip length	5 ... 6 mm / 0.2 ... 0.24 inch
Conductor entry angle to the PCB	30°
No. of poles	12
Total number of connection points	12
Total number of potentials	12
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	2.5 mm / 0.098 inch
Width	32.3 mm / 1.272 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 (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	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 (E <sub>Cu</sub> )
Contact plating	tin-plated
Fire load	0.052 MJ
Weight	4.1 g

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

## Environmental Requirements





Limit temperature range	-60 ... +105 °C
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## Commercial data


Product Group	4 (Printed Circuit)
Packaging type	BOX
Country of origin	CH
GTIN	4045454049263
Customs Tariff No.	85369010000

## Approvals / Certificates

### Country specific Approvals

Logo	Approval	Additional Approval Text	Certificate name
	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	2169331.02
	CSA DEKRA Certification B.V.	C22.2	1465035


### Ship Approvals

Logo	Approval	Additional Approval Text	Certificate name
	ABS American Bureau of Shipping	-	19- HG1869876- PDA
	DNV GL Det Norske Veritas, Germanischer Lloyd	-	TAE000016Z

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







## UL-Approvals

Logo	Approval	Additional Approval Text	Certificate name
	UL UL International Germany GmbH	UL 1059	20190731- E45172



## Counterpart

## Compatible products

### tools

	<b>Item no.: 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>Item no.: 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>Item no.: 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>Item no.: 233-331</b> Operating tool; insulated; yellow	<a href="http://www.wago.com/233-331">www.wago.com/233-331</a>
	<b>Item no.: 233-332</b> Operating tool; made of insulating material	<a href="http://www.wago.com/233-332">www.wago.com/233-332</a>
	<b>Item no.: 233-335</b> Operating tool	<a href="http://www.wago.com/233-335">www.wago.com/233-335</a>

### ferrule

	<b>Item no.: 216-131</b> 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>
	<b>Item no.: 216-151</b> 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.: 216-301</b> Ferrule; Sleeve for 0.25 mm <sup>2</sup> / AWG 24; insulated; electro-tin plated; yellow	<a href="http://www.wago.com/216-301">www.wago.com/216-301</a>

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



Item no.: 216-321

Ferrule; Sleeve for 0.25 mm<sup>2</sup> / AWG 24; insulated; electro-tin plated; yellow

[www.wago.com/216-321](http://www.wago.com/216-321)

**Marking accessories**

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](http://www.wago.com/210-331/250-202)

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](http://www.wago.com/210-331/250-204)

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](http://www.wago.com/210-331/250-206)

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](http://www.wago.com/210-331/250-207)

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](http://www.wago.com/210-331/254-202)

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](http://www.wago.com/210-331/254-204)

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](http://www.wago.com/210-331/254-206)

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](http://www.wago.com/210-331/254-207)

**Downloads**

**Documentation**

**Additional Information**

Technical explanations

Apr 3, 2019

pdf  
3.6 MB

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**CAD/CAE-Data**

**CAD data**

2D/3D Models 233-112

URL

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#### CAE data

EPLAN Data Portal 233-112	<a href="#">URL</a>	<a href="#">Download</a>
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#### PCB Design

Symbol and Footprint 233-112	<a href="#">URL</a>	<a href="#">Download</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

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## Installation Notes

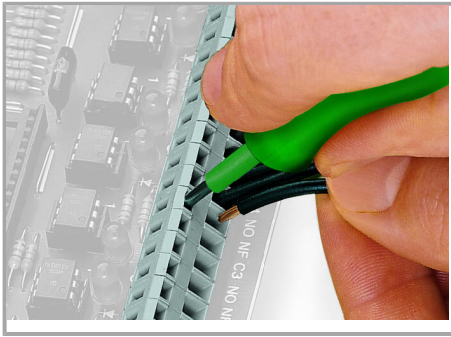
### Inserting a conductor

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

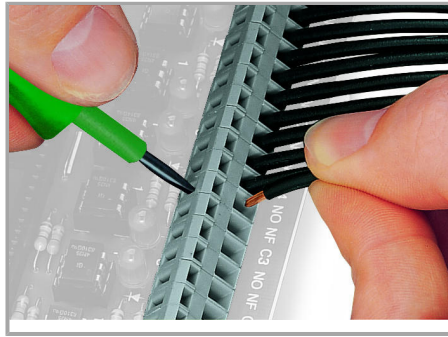
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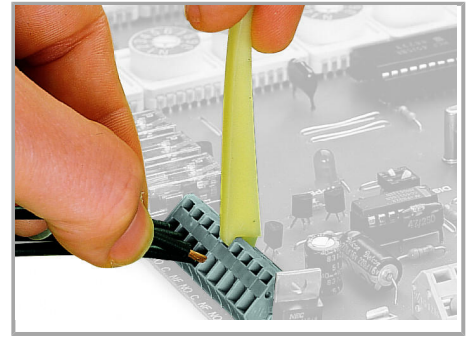
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Inserting a conductor via 3.5 mm screwdriver.



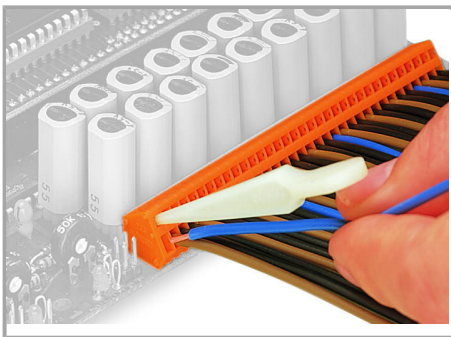
Inserting a conductor via 3.5 mm screwdriver.



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

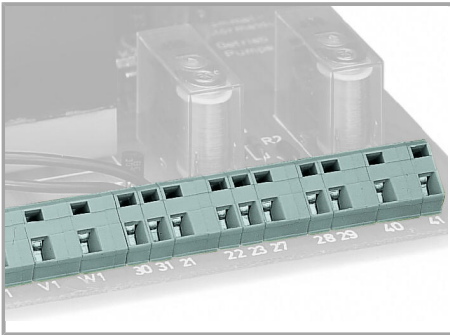
Subject to changes. Please also observe the further product documentation!





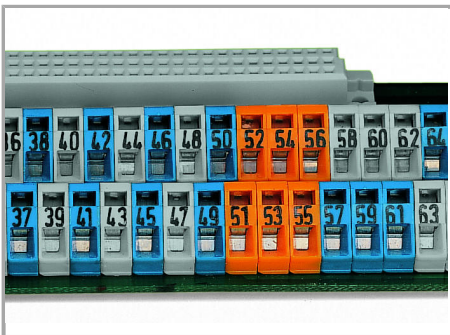
PCB Terminal Strips placed behind each other save space – staggering them by half the pin spacing simplifies subsequent wiring of the first row.

### Assembly

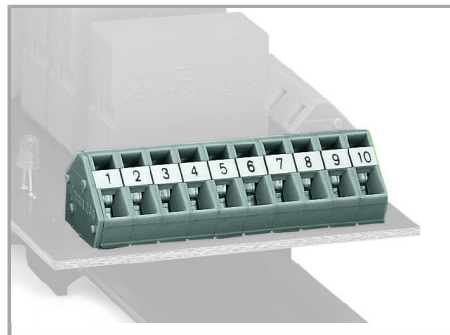


Combining PCB terminal blocks with different pin spacing.

### Marking



Labeling via factory direct marking.



Labeling with self-adhesive marking strips.

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