Data sheet | Item number: 233-148
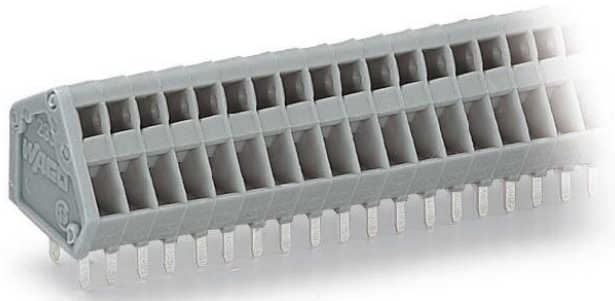
PCB terminal block; 0.5 mm²; Pin spacing 2.5 mm; 48-pole; CAGE CLAMP®; 0,50 mm²; gray
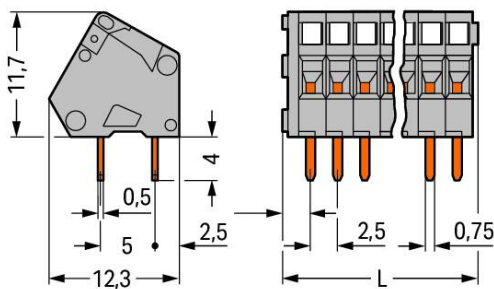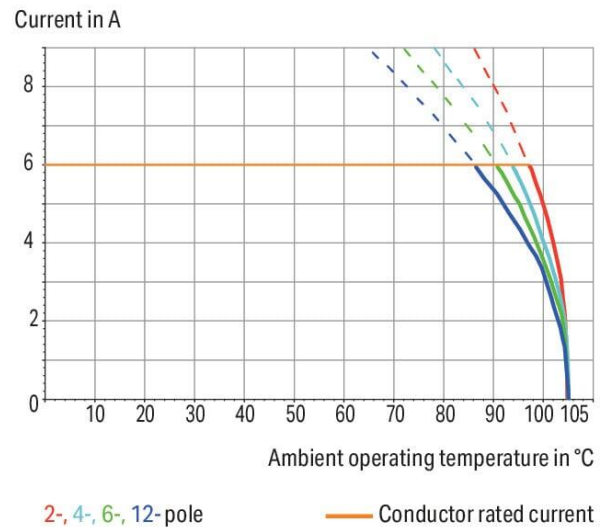
i Picture differs from the item.

Color: ▬

Current-Carrying Capacity Curve
Pin spacing: 2.5 mm / Conductor cross-section: 0.5 mm² "f-st"
Based on: EN 60512-5-2 / Reduction factor: 1

Current in A

Ambient operating temperature in °C

2-, 4-, 6-, 12- pole   ▬ Conductor rated current

Dimensions in mm
L = (pole no. x pin spacing) + 2.3 mm

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
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

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
Rated current CSA (Use Group B)	4 A

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

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 mm² / 28 … 20 AWG
Fine-stranded conductor	0.08 … 0.5 mm² / 28 … 20 AWG
Fine-stranded conductor; with insulated ferrule	0.25 mm²
Fine-stranded conductor; with uninsulated ferrule	0.25 mm²
Note (conductor cross-section)	Terminating 0.75 mm²/18 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	2.5 mm / 0.098 inches
Width	122.3 mm / 4.815 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

Material data

Note (material data)

Information on material specifications can be found here

Color	gray
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	0.196 MJ
Weight	16.1 g

Environmental requirements

Limit temperature range	-60 … +105 °C

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
ECCN	NO DATA
PU (SPU)	40 (10) pcs
Packaging type	box
Country of origin	CH
GTIN	4045454050818
Customs tariff number	85369010000

Environmental Product Compliance

RoHS Compliance Status	Compliant,No Exemption

Approvals / Certificates

General approvals

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

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

Declarations of conformity and manufacturer's declarations

Logo	Approval	Additional Approval Text	Certificate name
CE	**EU-Declaration of Conformity** WAGO GmbH & Co. KG	-	-
UKCA	**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-

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PDA

DNV DNV GL SE	-		TAE000016Z

Optional accessories

Ferrule

Ferrule

	Item no.: 216-131 Ferrule; Sleeve for 0.25 mm² / AWG 24; uninsulated; electro-tin plated; silver-colored	www.wago.com/216-131
	Item no.: 216-151 Ferrule; Sleeve for 0.25 mm² / AWG 24; uninsulated; electro-tin plated	www.wago.com/216-151
	Item no.: 216-301 Ferrule; Sleeve for 0.25 mm² / AWG 24; insulated; electro-tin plated; yellow	www.wago.com/216-301
	Item no.: 216-321 Ferrule; Sleeve for 0.25 mm² / AWG 24; insulated; electro-tin plated; yellow	www.wago.com/216-321

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
	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

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

	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

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

Downloads
Documentation

Additional Information

Technical Section Technical explanations	2019 Apr 3	pdf 2.1 MB	Download

CAD/CAE-Data
CAD data

2D/3D Models 233-148	URL	Download

CAE data

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

EPLAN Data Portal 233-148	URL	Download

ZUKEN Portal 233-148	URL	Download

PCB Design

Symbol and Footprint via Ultra Librarian 233-148	URL	Download

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
- Altair
- Altium 6 to current version
- Autodesk Fusion 360
- 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
- Zuken eCADSTAR 2020 and 2021Zuken CR-5000 and CR-8000

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

PCB Component Libraries (EDA), PCB CAD Library Ultra Librarian

Symbol and Footprint via SamacSys 233-148   URL   Download

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:

- 3D (stp)
- Altium
- CADSTAR
- Capture
- CircuitStudio
- CR-5000
- CR-8000
- DEHDL
- DesignSpark PCB
- DesignSpark PCB PRO
- DipTrace
- EAGLE
- Easy-PC
- EasyEDA
- eCADSTAR
- KiCad
- OrCAD_Allegro16
- PADS
- Proteus
- Pulsonix
- Quadcept
- SOLIDWORKS PCB
- TARGET 3001!
- xDX Designer
- Xpedition

PCB Component Libraries (EDA), PCB CAD Library SamacSys Electronic Component
Search Engine

Asset Administration Shell

Asset Administration Shell 233-148

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32423 Minden
Phone: +49571 887-0 | Fax: +49571 887-169
Email: info.de@wago.com | Web: www.wago.com

Asset Administration Shell 233-148

URL   Download

Environmental Product Compliance

Compliance Search
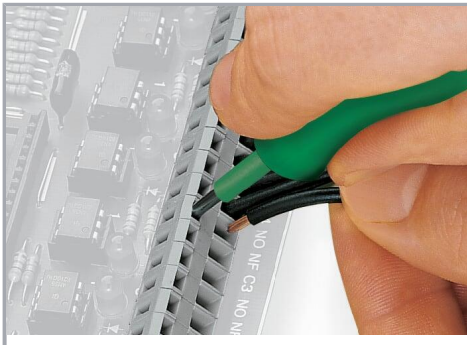
Environmental Product Compliance 233-148
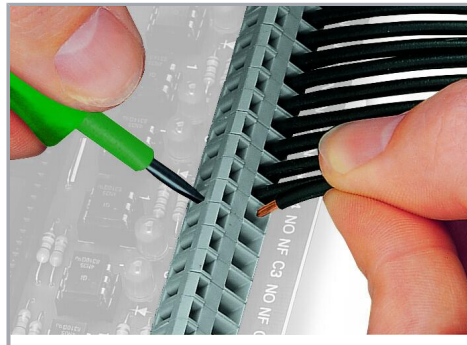
URL   Download

PCB terminal block; 0.5 mm²; Pin spacing 2.5 mm; 48-pole; CAGE CLAMP®; 0,50 mm²;
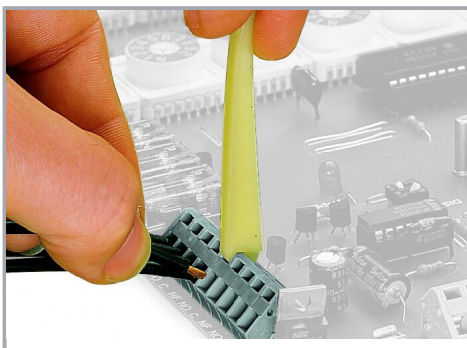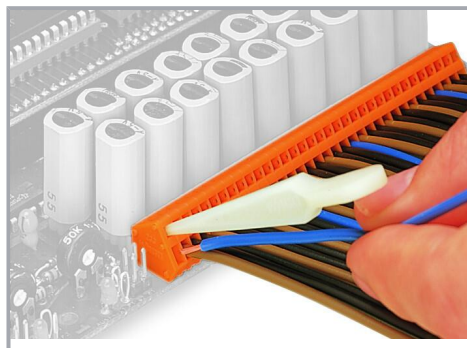gray

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!
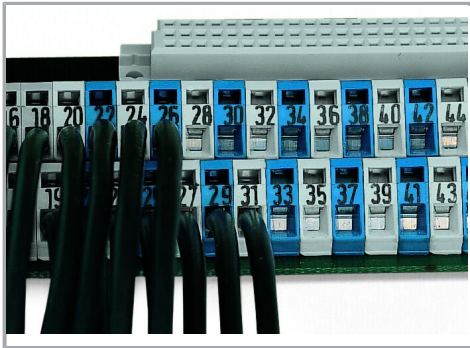
WAGO GmbH & Co. KG
Hansastr. 27
32423 Minden
Phone: +49571 887-0 | Fax: +49571 887-169
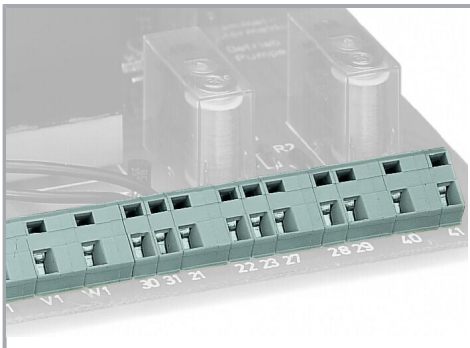Email: info.de@wago.com | Web: www.wago.com

Do you have any questions about our products?
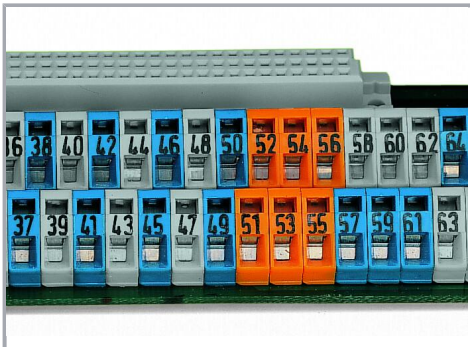We are always happy to take your call at +49 (571) 887-44222.

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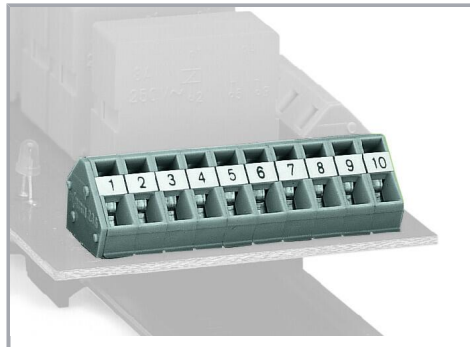
Installation

Combining PCB terminal blocks with different pin spacing.

Marking

Optional: Labeling via factory direct marking.

Optional: Labeling with self-adhesive marking strips possible

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