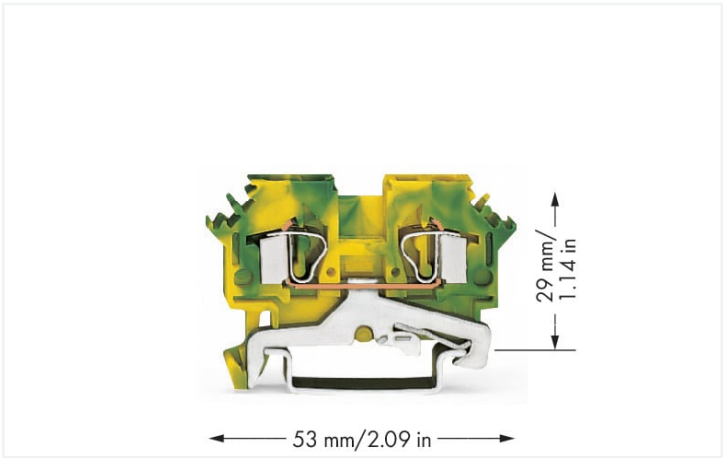# Data Sheet | Item Number: 281-607/999-950

2-conductor ground terminal block; 4 mm²; suitable for Ex e II applications; lateral marker slots; for DIN-rail 35 x 15 and 35 x 7.5; CAGE CLAMP®; 4,00 mm²; green-yellow

https://www.wago.com/281-607/999-950

Color: ▩ green-yellow

Similar to illustration

Similar to illustration

Ground terminal block, 281 Series, CAGE CLAMP®

Easily, quickly and safely connect conductors with this ground terminal block (item number 281-607/999-950). Ground terminal blocks connect directly to the mounting rail via an integrated contact foot. This creates an electrical and mechanical connection between the electrical conductors and the mounting adapter. Strip lengths must be between 9 mm and 10 mm when connecting conductors to this ground terminal block. Featuring conductor terminals along with CAGE CLAMP®, this connector outperforms the competition. Our renowned universal connection known as CAGE CLAMP® leads the way when it comes to connection technology and electrical interconnections. Depending on the type of conductor, this ground terminal block is ideal for conductor cross sections ranging from 0.08 mm² to 4 mm². It has one level. You can connect a single potential using the two clamping points. The green-yellow housing is made of polyamide (PA66) for insulation. An operating tool is used to operate this through rail-mount terminal block. These through rail-mount terminal blocks are mounted using DIN-35 rails.. The front-entry wiring means you can connect copper conductors.

Electrical data

Ratings per

Ratings per	IEC/EN 60947-7-2		
Overvoltage category	III	III	II
Pollution degree	3	2	2
Nominal voltage	-	-	-
Rated surge voltage	-	-	-
Rated current	-	-	-

Ex information

Reference hazardous areas	See application instructions in section "Knowledge and Downloads – Documentation – Additional Information: Technical Section; Technical Explications"

Connection data

Clamping units	2
Total number of potentials	1
Number of levels	1

Connection 1

Connection technology	CAGE CLAMP®
Actuation type	Operating tool
Connectable conductor materials	Copper
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

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Physical data

Width	6 mm / 0.236 inches
Height	53 mm / 2.087 inches
Depth from upper-edge of DIN-rail	29 mm / 1.142 inches

Mechanical data

Design	horizontal type
Mounting type	DIN-35 rail
Marking level	Side marking

Material data

Note (material data)	Information on material specifications can be found here
Color	green-yellow
Material group	I
Insulation material (main housing)	Polyamide (PA66)
Flammability class per UL94	V0
Fire load	0.118 MJ
Weight	11.8 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	27-14-11-41
eCl@ss 9.0	27-14-11-41
ETIM 9.0	EC000901
ETIM 8.0	EC000901
PU (SPU)	50 pcs
Packaging type	Box
Country of origin	DE
GTIN	4044918512152
Customs tariff number	85369010000

Environmental Product Compliance

CAS-No.	7439-92-1
REACH Candidate List Substance	Lead
RoHS Compliance Status	Compliant,No Exemption
SCIP notification number (Austria)	08dc6ea8-72ba-4bde-822b-6748a8dae0ff
SCIP notification number (Belgium)	dff68b87-36ab-4b0a-8796-bf918f3a176a
SCIP notification number (Bulgaria)	ef62772e-88dd-4a46-8c41-b4873f8ca98c
SCIP notification number (Czech Republic)	589c6604-318d-454d-8263-3bf2774fba17
SCIP notification number (Denmark)	9ed3426f-3edd-4502-981d-5847884c1dba
SCIP notification number (Finland)	4d4a2567-cbbd-4e12-ae3f-5a51d9e27b60
SCIP notification number (France)	5d6267c1-1473-4a6a-acaf-e551f5fb6021
SCIP notification number (Germany)	954f4190-14e1-49b9-96ff-defb346402dd
SCIP notification number (Hungary)	c87b20ab-1ddc-440b-b434-69a888dc2c3e
SCIP notification number (Italy)	d9e1553c-dc53-470c-bddd-ae2b36de6ed2
SCIP notification number (Netherlands)	391afcbc-42c4-496b-8dc9-f99e982fcc58
SCIP notification number (Poland)	3cfb8a17-f50a-45d7-9943-33b678015ff6
SCIP notification number (Romania)	8f234077-799b-470f-93da-cd999cf06e05

Environmental Product Compliance

SCIP notification number (Sweden)	59b59a97-0576-4563-aa63-ad11e189d349

Approvals / Certificates

General approvals

CCA | **KEMA KEUR** | **UL**

Approval	Standard	Certificate Name
CCA DEKRA Certification B.V.	IEC 60947	NTR NL-7454/A1
KEMA/KEUR DEKRA Certification B.V.	EN 60947	71-107288
UL UL International Germany GmbH	UL 1059	E45172

Declarations of conformity and manufacturer's declarations

Approval	Standard	Certificate Name
ATEX-Attestation of Conformity WAGO GmbH & Co. KG	-	-
EU-Declaration of Conformity WAGO GmbH & Co. KG	-	-
UK-Declaration of Conformity WAGO GmbH & Co. KG	-	-

Approvals for marine applications

ABS | **BUREAU VERITAS** | **DNV**

Approval	Standard	Certificate Name
ABS American Bureau of Shipping	-	20-HG1941090-PDA
BV Bureau Veritas S.A.	EN 60947	07436/F0 BV
DNV GL Det Norske Veritas, Germanischer Lloyd	-	TAE00001V2

Approvals for hazardous areas

AEx | **Ex** | **CCC** | **IECEx**

Approval	Standard	Certificate Name
AEx UL International Germany GmbH c/o Physikalisch Technische Bundesanstalt	UL 60079	E185892 (AEx e II resp. Ex e II)
ATEX Physikalisch Technische Bundesanstalt (PTB)	-	PTB 00 ATEX 3110 U (II 2 G Ex eb IIC Gb bzw. I M 2 Ex eb I Mb)
CCC CNEX	GB/T 3836.3	2020312313000232 (Ex eb IIC Gb, Ex eb I Mb)
IECEx Physikalisch Technische Bundesanstalt	IEC 60079-0	IECEx PTB 03.0004U (Ex eb IIC Gb or Ex eb I Mb)

Downloads

Environmental Product Compliance

Compliance Search

Environmental Product Compliance 281-607/999-950	↓

Documentation

Additional Information

Technical Section	pdf 2246.92 KB	↓

CAD/CAE-Data

CAD data

| 2D/3D Models 281-607/999-950 | ↓ |

CAE data

EPLAN Data Portal 281-607/999-950	↓
WSCAD Universe 281-607/999-950	↓
ZUKEN Portal 281-607/999-950	↓

1 Compatible Products

1.1 Required Accessories

1.1.1 End plate

1.1.1.1 End plate

Item No.: 281-353
End and intermediate plate; 3 mm thick; light gray

Item No.: 209-191
Separator for Ex e/Ex i applications; 3 mm thick; 120 mm wide; orange

Item No.: 209-192
Separator for Ex e/Ex i applications; 3 mm thick; 125.5 mm wide; orange

Item No.: 209-190
Separator for Ex e/Ex i applications; 3 mm thick; 90 mm wide; orange

Item No.: 281-354
Separator plate; 2 mm thick; oversized; light gray

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

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WAGO

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; uninsulated; 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 Insulation stop

1.2.4.1 Insulation stop

Item No.: 281-470
Insulation stop; 0.08 - 0.2 mm² "s" (0.14 mm² "f-st"); 5 pieces/strip; white

Item No.: 281-471
Insulation stop; 0.25 - 0.5 mm²; 5 pieces/strip; light gray

Item No.: 281-472
Insulation stop; 0.75 - 1.5 mm²; 5 pieces/strip; dark gray

1.2.5 Jumper

1.2.5.1 Jumper

Item No.: 281-490
Jumper; 10-way; insulated; gray

Item No.: 281-482
Jumper; 2-way; insulated; gray

Item No.: 281-492
Jumper; 2-way; insulated; gray

Item No.: 281-483
Jumper; 3-way; insulated; gray

Item No.: 281-485
Jumper; 5-way; insulated; gray

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

Item No.: 281-409
Jumper; insulated; gray

Item No.: 281-422
Jumper; insulated; yellow-green

Item No.: 781-452
Staggered jumper; from 1 to 2; insulated; gray

Item No.: 781-453
Staggered jumper; from 1 to 3; insulated; gray

Item No.: 781-454
Staggered jumper; from 1 to 4; insulated; gray

Item No.: 781-455
Staggered jumper; from 1 to 5; insulated; gray

Item No.: 781-456
Staggered jumper; from 1 to 6; insulated; gray

1.2.6 Marking

1.2.6.1 Group marker carrier

Item No.: 209-140
Group marker carrier; gray

Item No.: 209-141
Group marker carrier; gray

Item No.: 209-142
Group marker carrier; gray

Item No.: 249-105
Group marker carrier; gray

1.2.6.2 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

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

1.2.6.2 Marker

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 Protective warning marker

1.2.7.1 Cover

Item No.: 281-415
Protective warning marker; for 5 terminal blocks; with high-voltage symbol, black; yellow

1.2.8 Push-in type wire jumper

1.2.8.1 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

1.2.9 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
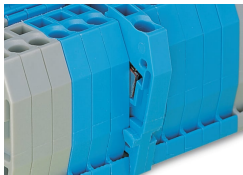Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft; multicoloured

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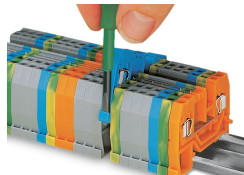
Installation Notes

Installation
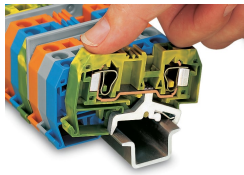
Snapping a ground conductor block onto the DIN-rail automatically makes a direct electrical connection to the rail.
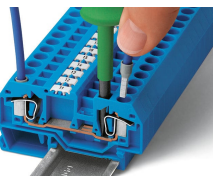
Quick assembly keys prevent reverse mounting.

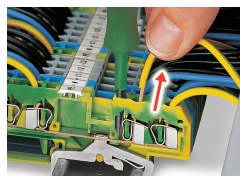Removing a terminal block from the assembly.

Conductor termination

CAGE CLAMP® connection
Inserting a conductor.

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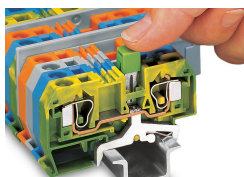

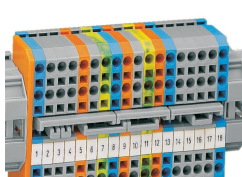**CAGE CLAMP® connection**
Removing a solid conductor.

Inserting insulation stops.

Commoning

Commoning ground conductor terminal blocks with through terminal blocks is possible in one direction only (via rear side of terminal block) using adjacent jumpers. WAGO recommends using yellow–green adjacent jumpers in addition to the required marking of these blocks.

Staggered jumpers are suitable for sophisticated circuit requirements. Push jumpers down until fully inserted!
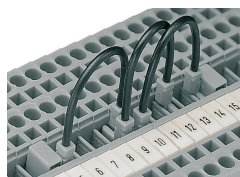

Push-In Type Wire Jumpers
When installing machines or control systems, it is often necessary to make an additional connection between two terminal blocks that are not next to each other on the rail. In such cases, WAGO's touch-proof, push-in type wire jumpers are the ideal solution.

These jumpers are compatible with the following rail-mount terminal blocks:
- 279 Series (1.5 mm²/16 AWG),
- 280/775/780 Series (2.5 mm²/14 AWG)
- 281/769/776/777/781 and 880 Series (4 mm²/12 AWG)
They are available in three conductor lengths (60, 110 and 250 mm), allowing up to 60 terminal blocks to be commoned depending on their width (see table on the right).

The 280/775/780 and 281/776/777/781 Series Terminal Blocks accept two wire jumpers, allowing the use of commoning chains. Furthermore, the 280/769/775/780/880 and 281/776/777/781 Series allow both wire jumper and adjacent jumper to be simultaneously plugged into a same terminal block.
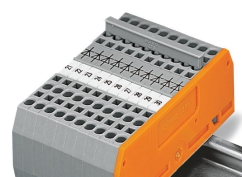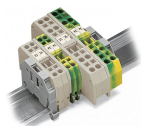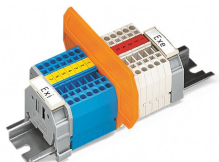

Commoning using comb-style jumper bars:
Push comb-style jumper bars down until fully inserted.

Marking
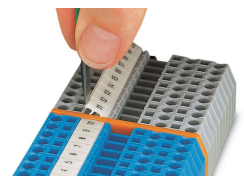
Labeling via WMB Multi Marking System.

Ex application

Separator plate for Ex e/Ex i applications

According to EN 50020, a minimum distance of 50 mm must be kept between live parts of Ex e and Ex i circuits. The use of Ex e/Ex i separators is a space-saving solution when Ex e and Ex i terminal blocks are mounted on a common DIN-rail.

For 279 ... 282 Series:
209-190 for 2-conductor terminal blocks
209-191 for 2-, 3-, 4-conductor terminal blocks

End and intermediate plate

In order to meet creepage and clearance requirements for Ex e applications, it is necessary to insert an end or intermediate plate between a through and a ground conductor terminal block.

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