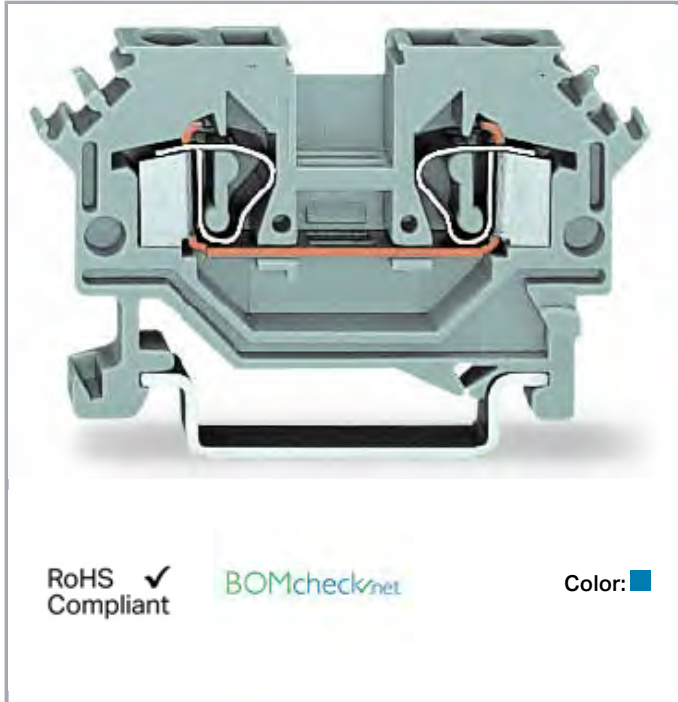


Data sheet | Item number: 281-604

2-conductor through terminal block; 4 mm²; suitable for Ex i applications; lateral marker slots; for DIN-rail 35 x 15 and 35 x 7.5; CAGE CLAMP®; 4,00 mm²; blue



Item description

Note:

Terminating Aluminum Conductors

WAGO spring clamp terminal blocks are suitable for solid aluminum conductors up to 4 mm²/12 AWG if WAGO "Alu-Plus" Contact Paste is used for termination.

"Alu-Plus" Contact Paste Advantages:

- Automatically destroys the oxide film during clamping.
- Prevents fresh oxidation at the clamping point.
- Prevents electrolytic corrosion between aluminum and copper conductors (in the same terminal block).
- Provides long-term protection against corrosion.

Using terminal blocks with CAGE CLAMP® Spring Pressure Connection Technology, **aluminum conductors must first be cleaned with a blade** and then immediately be inserted into the clamping units filled with "Alu-Plus" Contact Paste.

It is also possible to apply WAGO "Alu-Plus" **additionally** on the whole surface of the aluminum conductor before termination.

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



Please note that the nominal currents must be adapted to the reduced conductivity of the aluminum conductors::

2.5 mm² = 16 A

4 mm² = 22 A

Data

Electrical data

Ratings per IEC/EN 60664-1

Ratings per	IEC/EN 60947-7-1
Nominal voltage (III/3)	800 V
Rated surge voltage (III/3)	8 kV
Rated current	32 A
Legend (ratings)	(III / 3) $\triangleq$ Overvoltage category III / Pollution degree 3

Connection data

Connection technology	CAGE CLAMP®
Actuation type	Operating tool
Connectable conductor materials	Copper Aluminum
Solid conductor	0.08 ... 4 mm ² / 28 ... 12 AWG
Fine-stranded conductor	0.08 ... 4 mm ² / 28 ... 12 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch
Total number of connection points	2
Total number of potentials	1
Number of levels	1
Wiring type	Front-entry wiring

Geometrical Data

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

Mechanical data

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

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

Material Data

Color	blue
Insulation material	Polyamide 66 (PA66)
Fire load	0.128 MJ
Weight	6.9 g

Commercial data

Packaging type	BOX
Country of origin	DE
GTIN	4044918500630
Customs tariff number	85369010000

Approvals / Certificates

Country specific Approvals

Logo	Approval	Additional Approval Text	Certificate name
	CCA DEKRA Certification B.V.	EN 60947, IEC 60947	NTR NL-7454/A1
	CSA DEKRA Certification B.V.	C22.2 No. 158	1505034
	KEMA/KEUR DEKRA Certification B.V.	EN 60947	71-107288

Ship Approvals

Logo	Approval	Additional Approval Text	Certificate name
	ABS American Bureau of Shipping	-	20-HG1941090-PDA
	BV Bureau Veritas S.A.	EN 60947	07436/E0 BV

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



DNV GL
Det Norske Veritas, Germanischer Lloyd

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Lloyds Register

EN 60947

91/20112
(E9)

UL-Approvals

Logo	Approval	Additional Approval Text	Certificate name
	UR Underwriters Laboratories Inc.	UL 1059	E45172

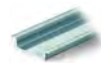
Compatible products

Carrier rail



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



Item no.: 210-113

Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; unslotted; according to EN 60715



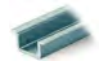
Item no.: 210-114

Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; unslotted; similar to EN 60715



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



Item no.: 210-118

Steel carrier rail; 35 x 15 mm; 2.3 mm thick; 2 m long; unslotted; according to EN 60715

Item no.: 210-196

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



Aluminum carrier rail; 35 x 8.2 mm; 1.6 mm thick; 2 m long; unslotted; similar to EN 60715; silver-colored



Item no.: 210-197

Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; slotted; similar to EN 60715



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.: 210-504

Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; slotted; galvanized; according to EN 60715



Item no.: 210-505

Steel carrier rail; 35 x 7.5 mm; 1 mm thick; 2 m long; unslotted; galvanized; according to EN 60715



Item no.: 210-506

Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; unslotted; galvanized; similar to EN 60715



Item no.: 210-508

Steel carrier rail; 35 x 15 mm; 1.5 mm thick; 2 m long; slotted; galvanized; similar to EN 60715

Marking accessories



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



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



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.: 2009-115/000-017

WMB-Inline; for Smart Printer; 1500 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; light green



Item no.: 2009-115/000-023

WMB-Inline; for Smart Printer; 1500 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; green



Item no.: 2009-115/000-024

WMB-Inline; for Smart Printer; 1500 pieces on roll; stretchable 5 - 5.2 mm; plain; snap-on type; violet

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

	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.: 209-185 Adaptor; gray
	Item no.: 249-105 Group marker carrier; gray
	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.: 793-501/000-005 WMB marking card; as card; not stretchable; plain; snap-on type; red
	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.: 793-501/000-012 WMB marking card; as card; not stretchable; plain; snap-on type; orange
	Item no.: 793-501/000-017 WMB marking card; as card; not stretchable; plain; snap-on type; light green
	Item no.: 793-501/000-023 WMB marking card; as card; not stretchable; plain; snap-on type; green
	Item no.: 793-501/000-024 WMB marking card; as card; not stretchable; 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

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

**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.: 793-5501/000-005**

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.: 793-5501/000-006**

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.: 793-5501/000-012**

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.: 793-5501/000-017**

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.: 793-5501/000-023**

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.: 793-5501/000-024**

WMB marking card; as card; for terminal block width 5 - 17.5 mm; stretchable 5 - 5.2 mm; plain; snap-on type; violet

Protective Warning Marker

**Item no.: 281-415**

Protective warning marker; with high-voltage symbol, black; for 5 terminal blocks; yellow

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

Push-In type wire jumper

**Item no.: 249-123**

Push-in type wire jumper; 0.75 mm²; insulated; 180 mm long; black

**Item no.: 249-125**

Push-in type wire jumper; insulated; 60 mm long; black

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



Item no.: 249-126
Push-in type wire jumper; 0.75 mm²; insulated; 110 mm long; black



Item no.: 249-127
Push-in type wire jumper; 0.75 mm²; insulated; 250 mm long; black

End plate



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



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.: 281-327
Separator plate; 2 mm thick; oversized; orange



Item no.: 281-337
Separator plate; 2 mm thick; oversized; gray



Item no.: 284-334
Step-down cover plate; 1 mm thick; for 2-, 3- and 4-conductor terminal blocks; gray



Item no.: 284-344
Step-down cover plate; 1 mm thick; for 2-, 3- and 4-conductor terminal blocks; orange

tools



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



Item no.: 210-658
Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft; angled; short



Item no.: 210-720
Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft

assembling



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



Item no.: 709-153
Cover; Type 1; suitable for cover carrier, type 1; 1 m long; transparent

ferrule



Item no.: 216-106
Ferrule; Sleeve for 2.5 mm² / AWG 14; uninsulated; electro-tin plated

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

**Item no.: 216-201**Ferrule; Sleeve for 0.5 mm² / 20 AWG; insulated; electro-tin plated; white**Item no.: 216-202**Ferrule; Sleeve for 0.75 mm² / 18 AWG; insulated; electro-tin plated; gray**Item no.: 216-203**Ferrule; Sleeve for 1 mm² / AWG 18; insulated; electro-tin plated; red**Item no.: 216-204**Ferrule; Sleeve for 1.5 mm² / AWG 16; insulated; electro-tin plated; black**Item no.: 216-205**Ferrule; Sleeve for 2.08 mm² / AWG 14; insulated; electro-tin plated; yellow**Item no.: 216-206**Ferrule; Sleeve for 2.5 mm² / AWG 14; insulated; electro-tin plated; blue**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.: 216-301**Ferrule; Sleeve for 0.25 mm² / AWG 24; insulated; electro-tin plated; yellow**Item no.: 216-302**Ferrule; Sleeve for 0.34 mm² / 22 AWG; insulated; electro-tin plated; green**check****Item no.: 209-170**Test plug adapter; 8.3 mm wide; for 4 mm Ø test plugs; suitable for 1.5 mm² - 10 mm² tbs; gray**Item no.: 249-144**L-type test plug module; modular; with spring-loaded contact pin; Center module; 2,50 mm²; gray**Item no.: 249-145**L-type end module; modular; with rigid contact pin; End module; 2,50 mm²; gray**Item no.: 249-146**

L-type spacer module; modular; e.g., bridging commoned terminal blocks; gray

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



Item no.: 249-147
B-type test plug module; modular; 2,50 mm²; gray



Item no.: 249-148
B-type spacer module; modular; e.g., for bridging commoned terminal blocks; gray



Item no.: 280-404
Test plug adapter; 5 mm wide; for test plug 210-137 (2.3 mm Ø); suitable for 1.5 mm² - 4 mm² tbs; gray



Item no.: 281-407
Test plug; 6 mm wide; Nominal current 24 A; for 0.08 mm² - 2.5 mm²; 2,50 mm²; gray



Item no.: 281-418
Test plug module; modular; suitable for all WAGO 281, 776, 777 and 781 series rail-mounted terminal blocks with jumper slots in the current bar; gray

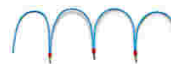


Item no.: 281-419
Spacer module; modular; bridging commoned terminal blocks; gray

Jumper



Item no.: 210-103
Wire commoning chain; insulated; black



Item no.: 210-123
Wire commoning chain; insulated; blue



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



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



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



Item no.: 281-482
Jumper; insulated; gray



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



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



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



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



Item no.: 283-414
Step-down jumper; insulated; gray

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



Item no.: 284-414

Step-down jumper; insulated; gray



Item no.: 709-110

Wire commoning chain; 2.5 mm²; insulated; black



Item no.: 709-111

Wire commoning chain; 2.5 mm²; insulated; black



Item no.: 709-112

Wire commoning chain; 2.5 mm²; insulated; black



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

Downloads

Documentation

Additional Information

Technical explanations

CAD/CAE-Data

CAD data

2D/3D Models 281-604

CAE data

EPLAN Data Portal 281-604

WSCAD Universe 281-604

ZUKEN Portal 281-604

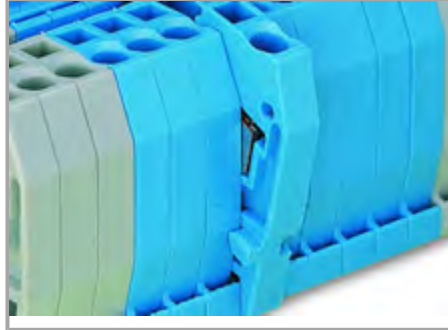
Subject to changes. Please also observe the further product documentation!

Installation Notes

Installation



Snapping a terminal block onto the carrier rail.



Quick assembly keys prevent reverse mounting.



Removing a terminal block from the assembly.



Steel carrier rails are not suited for PEN (ground and N-conductor) applications per EN 60947-7-2 (VDE 0611, Part 3).

Conductor termination

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



CAGE CLAMP® connection

Inserting a conductor.



CAGE CLAMP® connection

Inserting a conductor.



CAGE CLAMP® connection
Removing a conductor.

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



Inserting insulation stops.

Commoning

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



Commoning using an adjacent jumper (280-402) and alternate jumper (280-409). Push jumper down until fully inserted.

Testing



Testing with a test plug

(picture shows a test plug fitted with CAGE CLAMP®).



Testing with a test plug

(picture shows 209-170 Test Plug Adapter).



The test plug modules are directly plugged into the jumper contact slot of the current bar.

Cover

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



Protective warning markers inserted into the operating slots.

Marking



Marking via WMB Multi Marking System.

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