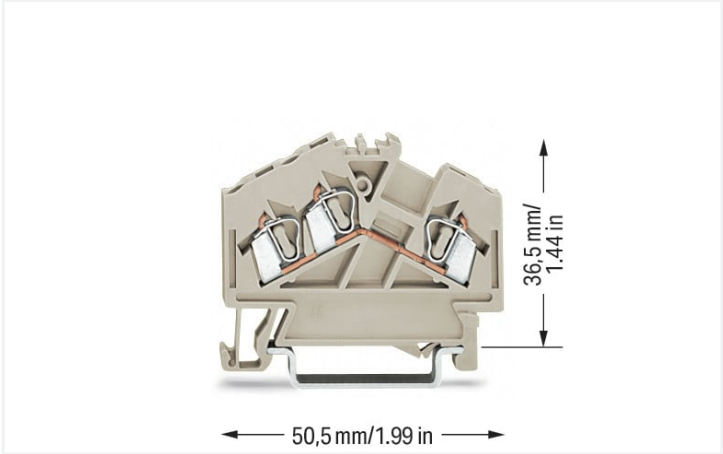
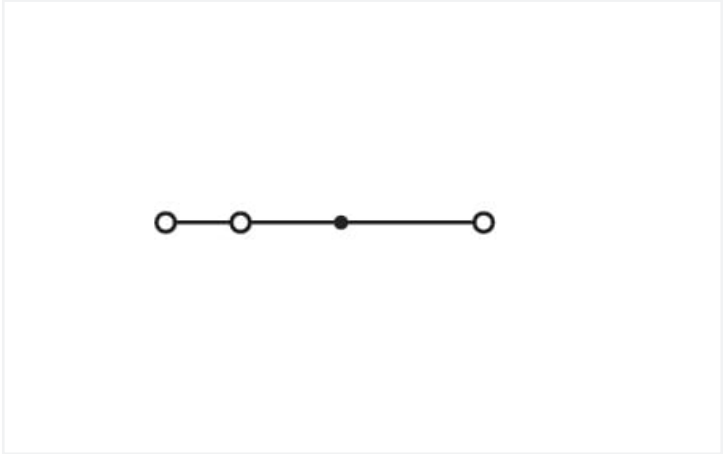


Data Sheet | Item Number: 280-998

3-conductor through terminal block; 2.5 mm²; suitable for Ex e II applications; center marking; for DIN-rail 35 x 15 and 35 x 7.5; CAGE CLAMP®; 2,50 mm²; light gray
<https://www.wago.com/280-998>



Color: ■ light gray



Similar to illustration

Through terminal block, 280 Series, CAGE CLAMP®

Our through terminal block (item number 280-998) simplifies electrical installations. Whether for use in industry or building installations, our rail-mount through terminal blocks allow you to quickly and securely connect electrical conductors. They're perfect for either classic through-wiring or distributing potential, depending on the variant. Conductors can only be connected to this through terminal block if their strip length is between 8 mm and 9 mm. This product incorporates conductor terminals and utilizes CAGE CLAMP®. Our trusted universal connection known as CAGE CLAMP® is industry-leading when it comes to connection technology and electrical interconnections. Depending on the conductor type, this through terminal block is suitable for conductor cross sections ranging from 0.08 mm² to 2.5 mm². It features one level and three clamping points that you can use to connect a single potential. The light gray 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 angled front-entry wiring makes it possible to connect copper conductors.

Electrical data					Ex information	
Ratings per		IEC/EN 60947-7-1				
Overvoltage category		III	III	II	Reference hazardous areas	See application instructions in section "Knowledge and Downloads – Documentation – Additional Information: Technical Section; Technical Explications"
Pollution degree		3	2	2		
Nominal voltage		-	-	-	Rated voltage EN (Ex e II)	550 V
Rated surge voltage		-	-	-	Note (rated voltage)	Using staggered jumpers reduces the maximum rated voltage to 275 V.
Rated current		-	-	-	Rated current (Ex e II)	23 A



Power Loss	
Power loss, per pole (potential)	0.7036 W
Rated current I _N for specified power loss	23 A
Resistance value for specified, current-dependent power loss	0.00133 Ω

Connection data			
Clamping units	3	Connection 1	
Total number of potentials	1	Connection technology	CAGE CLAMP®
Number of levels	1	Actuation type	Operating tool
		Connectable conductor materials	Copper
		Solid conductor	0.08 ... 2.5 mm² / 28 ... 12 AWG
		Fine-stranded conductor	0.08 ... 2.5 mm² / 28 ... 12 AWG
		Note (conductor cross-section)	12 AWG: THHN, THWN
		Strip length	8 ... 9 mm / 0.31 ... 0.35 inches
		Wiring direction	Front-entry wiring, angled

Physical data		
Width	5 mm / 0.197 inches	
Height	50.5 mm / 1.988 inches	
Depth from upper-edge of DIN-rail	36.5 mm / 1.437 inches	

Mechanical data		
Design	angled	
Mounting type	DIN-35 rail	
Marking level	Center marking	

Material data		
Note (material data)	Information on material specifications can be found here	
Color	light gray	
Material group	I	
Insulation material (main housing)	Polyamide (PA66)	
Flammability class per UL94	V0	
Fire load	0.12 MJ	
Weight	6.8 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	27-14-11-20	
eCl@ss 9.0	27-14-11-20	
ETIM 9.0	EC000897	
ETIM 8.0	EC000897	
PU (SPU)	100 pcs	
Packaging type	Box	
Country of origin	DE	
GTIN	4044918328043	
Customs tariff number	85369010000	

Environmental Product Compliance		
RoHS Compliance Status	Compliant, No Exemption	

Approvals / Certificates

General approvals			Declarations of conformity and manufacturer's declarations		
  					
Approval	Standard	Certificate Name	Approval	Standard	Certificate Name
CCA DEKRA Certification B.V.	EN 60947	2157201.01	ATEX-Attestation of Con- formity WAGO GmbH & Co. KG	-	-
CSA DEKRA Certification B.V.	C22.2	1536071	EU-Declaration of Confor- mity WAGO GmbH & Co. KG	-	-
UL UL International Germany GmbH	UL 1059	E45172	UK-Declaration of Confor- mity WAGO GmbH & Co. KG	-	-

Approvals for marine applications			Approvals for hazardous areas		
  			   		
Approval	Standard	Certificate Name	Approval	Standard	Certificate Name
ABS American Bureau of Ship- ping	EN 60947	20-HG1941090-PDA	AEx UL International Germany GmbH c/o Physikalisch Technische Bundesanstalt	UL 60079	E185892 (AEx e II resp. Ex e II)
BV Bureau Veritas S.A.	EN 60947	07436/F0 BV	ATEX Physikalisch Technische Bundesanstalt	IEC 60079-0	PTB 99 ATEX 3109 U (Ex eb IIC, IM 2 Ex eb IMb)
DNV GL Det Norske Veritas, Ger- manischer Lloyd	-	TAE00001V2	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 280-998

Download icon

Documentation

Additional Information

Technical Section

pdf

2246.92 KB

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Bid Text

280-998

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CAD data

2D/3D Models 280-998

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CAE data

EPLAN Data Portal 280-998

Download icon

WSCAD Universe 280-998

Download icon

ZUKEN Portal 280-998

Download icon

1 Compatible Products

1.1 Required Accessories

1.1.1 End plate

1.1.1.1 End plate

Item No.: 280-354
End and intermediate plate; 2.5 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.: 280-355
Separator plate; 2.5 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



1.2.1.1 Mounting accessories



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

1.2.2 Ferrule

1.2.2.1 Ferrule



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; light turquoise



Item No.: 216-201
Ferrule; Sleeve for 0.5 mm² / 20 AWG; insulated; electro-tin plated; electrolytic copper; acc. to DIN 46228, Part 4/09.90; white



Item No.: 216-101
Ferrule; Sleeve for 0.5 mm² / AWG 22; un-insulated; electro-tin plated; silver-colored



Item No.: 216-202
Ferrule; Sleeve for 0.75 mm² / 18 AWG; insulated; electro-tin plated; gray



Item No.: 216-102
Ferrule; Sleeve for 0.75 mm² / AWG 20; un-insulated; electro-tin plated; silver-colored



Item No.: 216-203
Ferrule; Sleeve for 1 mm² / AWG 18; insulated; electro-tin plated; red



Item No.: 216-103
Ferrule; Sleeve for 1 mm² / AWG 18; un-insulated; electro-tin plated



Item No.: 216-204
Ferrule; Sleeve for 1.5 mm² / AWG 16; insulated; electro-tin plated; black



Item No.: 216-104
Ferrule; Sleeve for 1.5 mm² / AWG 16; un-insulated; electro-tin plated; silver-colored

1.2.3 Installation

1.2.3.1 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.: 280-470
Insulation stop; 0.08 - 0.2 mm² "s" (0.14 mm² "f-st"); 5 pieces/strip; white



Item No.: 280-471
Insulation stop; 0.25 - 0.5 mm²; 5 pieces/strip; light gray



Item No.: 280-472
Insulation stop; 0.75 - 1 mm²; 5 pieces/strip; black



1.2.5 Jumper

1.2.5.1 Jumper



[Item No.: 280-490](#)
Jumper; 10-way; insulated; gray



[Item No.: 280-482](#)
Jumper; 2-way; insulated; gray



[Item No.: 280-492](#)
Jumper; 2-way; insulated; gray



[Item No.: 280-483](#)
Jumper; 3-way; insulated; gray



[Item No.: 280-484](#)
Jumper; 4-way; insulated; gray



[Item No.: 280-485](#)
Jumper; 5-way; insulated; gray



[Item No.: 280-402](#)
Jumper; insulated; gray



[Item No.: 280-409](#)
Jumper; insulated; gray



[Item No.: 280-422](#)
Jumper; insulated; yellow-green



[Item No.: 780-452](#)
Staggered jumper; from 1 to 2; insulated; gray



[Item No.: 780-453](#)
Staggered jumper; from 1 to 3; insulated; gray



[Item No.: 780-454](#)
Staggered jumper; from 1 to 4; insulated; gray



[Item No.: 780-455](#)
Staggered jumper; from 1 to 5; insulated; gray



[Item No.: 780-456](#)
Staggered jumper; from 1 to 6; insulated; gray



[Item No.: 780-457](#)
Staggered jumper; from 1 to 7; insulated; gray



[Item No.: 780-458](#)
Staggered jumper; from 1 to 8; insulated; gray

1.2.6 Marking

1.2.6.1 Double marker carrier



[Item No.: 209-128](#)
Adaptor; gray

1.2.6.2 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

1.2.6.3 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



1.2.6.3 Marker



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



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.: 280-415
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



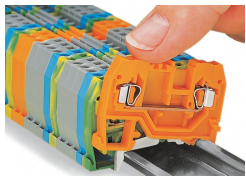
Item No.: 210-720
Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft; multicoloured



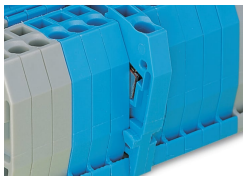
Item No.: 210-657
Operating tool; Blade: 3.5 x 0.5 mm; with a partially insulated shaft; short; multicoloured

Installation Notes

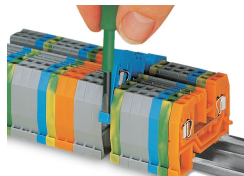
Installation



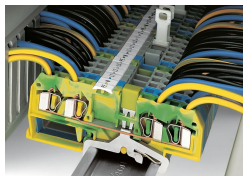
Snapping a terminal block onto the DIN-rail.



Quick assembly keys prevent reverse mounting.

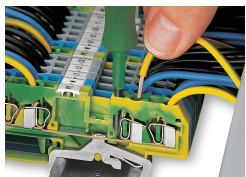


Removing a terminal block from the assembly.

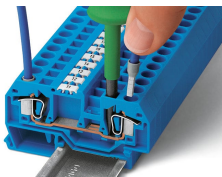


Steel DIN-rails are not suited for PEN (ground and N-conductor) applications per EN 60947-7-2 (VDE 0611, Part 3).

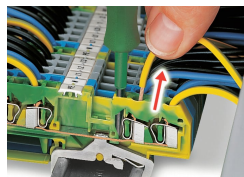
Conductor termination



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.

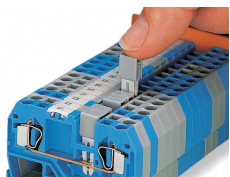


CAGE CLAMP® connection
Removing a solid conductor.

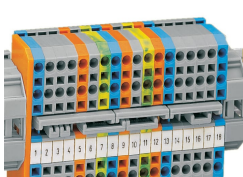


Inserting insulation stops.

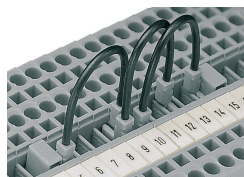
Commoning



Commoning using an adjacent jumper.
Push jumper down until fully inserted!



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.

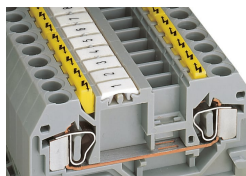
These jumpers are compatible with the following rail-mount terminal blocks:
- 279 Series (1.5 mm²/16 AWG),
- 280/775/780 Series (2.5 mm²/14 AWG)
- 281/769/776/777/781 and 880 Series (4 mm²/12 AWG)
They are available in three conductor lengths (60, 110 and 250 mm), allowing up to 60 terminal blocks to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



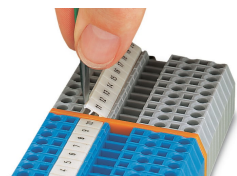
4-conductor through terminal blocks, angled type, formation of groups with 3-way, comb-style jumper bars

Cover



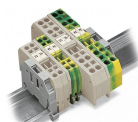
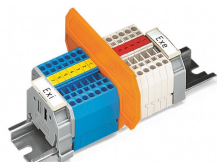
Protective warning markers inserted into the operating slots

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.