

Description

The mechanical power relays are a product group of electro-mechanical high current relays.

These relays have been designed for the use in utility vehicles and passenger cars and are able to switch or carry up to 300 A continuous load at 12 or 24 V DC.

The high number of operating cycles at rated load, including capacitive and inductive loads, make these power relays particularly suitable for the utility vehicle sector.

The main terminals are stud terminals. Screw flanges allow horizontal and vertical mounting. Thus these relays can replace any conventional power relays in the market.

Versions

- single-pole make contact
- bistable
- side mount flanges as standard version
- extendable mounting with foot flange or side flange with standard hole sizes and also customised mounting methods
- standard: screw terminals for the activation

Applications

- battery isolation switch or battery switch-over relay
- switching of high-capacity loads (examples: air-conditioning, compressor units)
- replacement of massive cylindrical standard automotive relays

Features and Benefits

- water-proof and dust-proof
- side mount and foot mount
- low weight
- long life span
- high continuous current
- low current consumption and power loss
- wide temperature range
- free-wheeling diode optional
- overheating protection optional
- barrier between main terminals

Approvals

Authority	Approval mark	Regulation	Rated voltage
KBA	E1 10R-047621	ECE-R 10	24 V



Technical Data

Load circuit

Rated voltage	U_N	12 V DC, 24 V DC
Continuous current	I_N	100 A, 200 A, 300 A
Overload	20 s 1 s	$2 \times I_N$ $8 \times I_N$
Contact voltage drop ¹⁾	max. 150 mV max. 175 mV	(initially) (after typical life)

Control circuit

Operating voltage	12 V DC: 24 V DC:	9...16 V DC 16...32 V DC
Coil power	bistable	< 60 W (50 ms)
Pulse duration		50 ms...1 s

General

Typical life ²⁾	mechanical resistive	> 100,000 cycles > 50,000 cycles (300 A)
Voltage resistance	1050 V / 1 min	to ISO 16750-2, Code F
Insulation resistance	> 100 M Ω (initially)	to ISO 16750-2, Code F
Temperature range		-40...+85 °C
Degree of protection	housing IP 6K9K to ISO 20563 terminal area IP00 to ISO 20653	
Vibration		57,9 m/s ² to ISO 16750-3 Kap. 4.1.2.7
Shock	500 m/s ² : ON position 300 m/s ² : OFF position to ISO 16750-3 Kap. 4.2.2	
Corrosion		5 % salt mist to ISO 16750-4 Cap. 5.5 Code H
Humidity		85 % rel. humidity to ISO 16750-4 Cap. 5.7 Code H

Chemical resistance to ISO 16750-5

Oil, hydraulic liquids, alcohol, urea, extinguishing agents, battery acid, detergents, grease, cold cleaner

Flammability	meets the requirements to ECE-R 118 02 app. 6.7
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Dimensions

	w x h x d (without terminals or flanges)
Single pole, bistable	49.6 (62) x 91.3 x 45.8 [mm]
Mass single pole	≤ 290 g
Tightening torque values	M10 studs 15 Nm M4 screws 2.0 Nm M5 side flange 6,0 Nm

¹⁾ at rated current

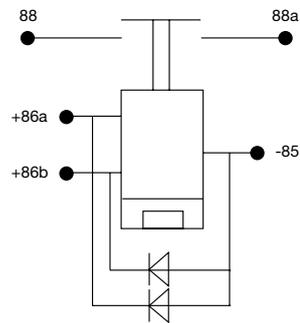
²⁾ typical for a bistable relay

Order numbering code

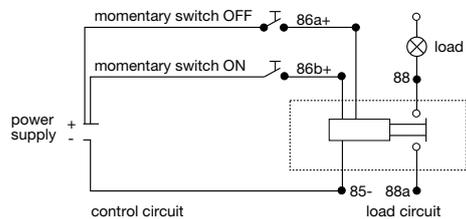
Type No.											
MPR10-N bistable											
Number of poles											
1 single pole											
Rated voltage											
1 12 V											
2 24 V											
Current rating											
1 100 A (M8, M10)											
2 200 A (M8, M10)											
3 300 A (M10)											
Design of load terminals											
1 M8 studs (100 A, 200 A)											
2 M10 studs (100 A, 200 A, 300 A)											
Accessories of load terminals											
1 washers and nuts mounted											
2 washers and nuts bulk shipped											
Coil connection (control contacts)											
1 M4 screws											
Mounting method											
0 without											
1 side flange with Ø 5,4 mm hole											
3 plate for side flange											
4 plate for foot mount											
5 M4 connectors side and foot											
Options 1											
0 without											
2 with suppressor diode											
Options 2											
0 without											
Options 3											
0 without											
MPR10-N-	1	2	3	-2	1	1	1	-2	0	0	ordering example

Schematic diagrams

MPR10 bistable

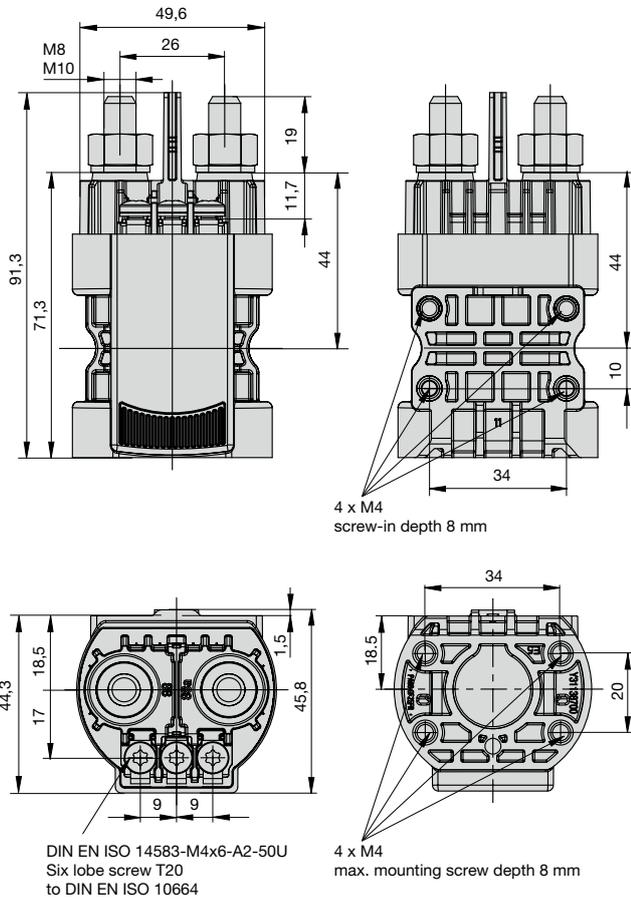


MPR10 bistable



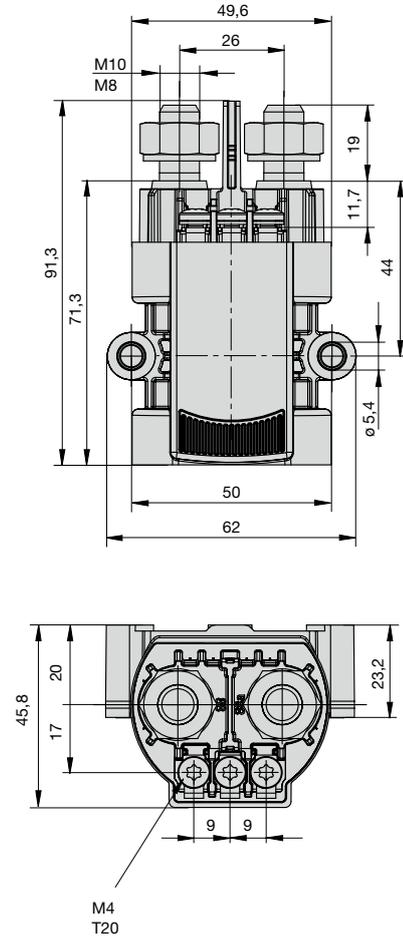
Dimensions

Mounting method 5 without integral side flange for optional side and/or foot plate with M4 connectors



Dimensions

Mounting method 1 with side flange (50 mm distance between holes) and M4 screw terminals



All dimensions without tolerances are for reference only. E-T-A reserves the right change specifications at any time in the interest of improved design, performance and cost effectiveness, the right to make changes in these specifications without notice is reserved. Product markings may not be exactly as the ordering codes. Errors and omissions excepted.