

Pulse Controlled Multifunctional Relay

For limit switches with inductive contacts – not intrinsically safe –
With additional DC voltage output

MSR-I

Application

The multifunctional relays of the type series MSR-I are contact protection relays for the connection of limit switches with inductive contacts with 1 and 2 limit values.

Inductive contacts are wear-resistant (contact-free switching) and corrosion-free (all electrical components are moulded waterproof in cast resin in a plastic housing).

They are suitable for every industrial application. More and more frequently, they are being used in industrial facilities that do not require explosion protection with cost-intensive Ex certified switch amplifiers.

The relays are provided with an additional DC voltage output. All devices have an LED switching status indicator.

Please note: (intrinsically safe) switch amplifier models KF.-SR2.. see data sheet 9532.

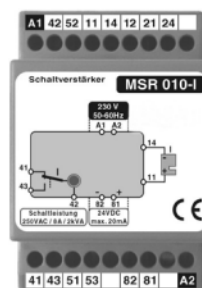


Regulations

MSR multifunctional relays meet the following requirements:

DIN EN 50178	Electrical Safety
DIN EN IEC 61000-6-2	Stability
EN 61000-6-3	Interference Emission
DIN EN 60947-5-1	Low-voltage Switchgear

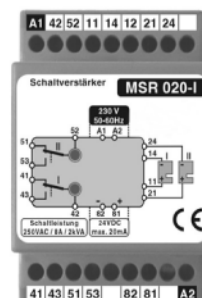
Standard Versions



MSR 010-I

monostable version
for 1 limit value

I1 or I2

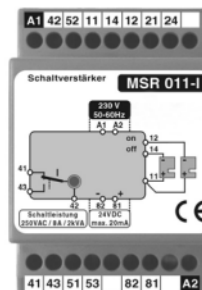


MSR 020-I

monostable version
for 2 limit values

I11 or I22

or two 1-fold limit values



MSR 011-I

bistable version
for 2 limit values in interval operation

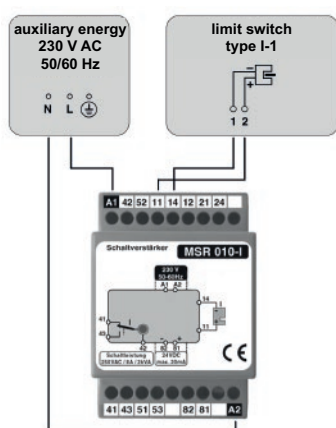
I21

the switching status of one limit value is temporarily stored until the other limit value is actuated (interval operation, no permanent storage)

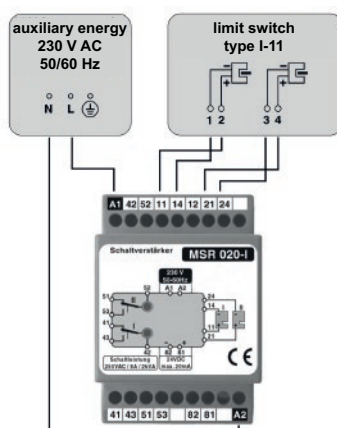
Connection Examples, Technical Data, Dimensional Drawing and Weight

Connection Examples

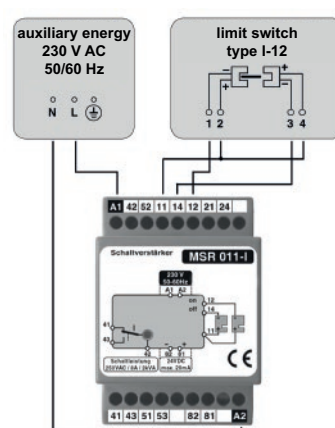
for MSR 010-I



for MSR 020-I



for MSR 011-I



Technical Data

Auxiliary energy	230 V AC, +6...-10 %, 50 – 60 Hz
special version	auxiliary energy 24 V DC, others upon request
power consumption	typ. 6 VA

Control signals	open-circuit voltage	10 V DC
	short circuit current	4.5 mA
	switching threshold	1.8 mA
	terminating impedance	2.2 kΩ, 100 nF

Outputs	relay outputs	potential-free changeover contact / output
	on-delay	10 ms
	release delay	450 ms
	contact material	AgCdO or AgNi+Au
	rated operational current I_e	AC1: 250 V / 8 A
	acc. to utilisation category	DC1: 250 V / 0.3 A AC13: 250 V / 3 A DC13: 250 V / 0.1 A
	breaking capacity	max. 250 V AC / 8 A min. 24 V / V DC; 100 mA

short circuit device	F 10 A (max. short circuit current < 100 A)
electrical endurance for I_e	10^5 switching cycles at 6 switches / min.
mechanical endurance	10^7 switching cycles without load

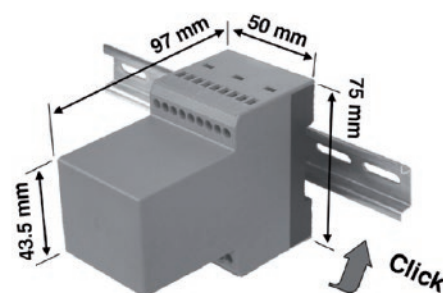
voltage output	for external devices, e.g. transmitters, LED displays
	24 V DC ± 10 %
	I_{max} 20 mA
	limited short-circuit protection

LED switching status indicator	red LED
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Application range

rated insulation voltage	250 V AC
overvoltage category	III
degree of contamination	2 / EN 50178
degree of protection	IP20 / DIN EN IEC 60529
temperature range	0 – 70 °C
case material	polyamide 6.6, colour red / black
mounting suitable for	standard rail DIN EN 60715, 35x7.5 mm and 35x15 mm
connection cross-sections	0.5 – 2.5 mm ²

Dimensional Drawing



Weight: approx. 0.22 kg (0.49 lb)