Impulse-controlled Multifunctional Relays

For limit switch contact assemblies with direct (electromechanical) contacts with additional direct voltage output

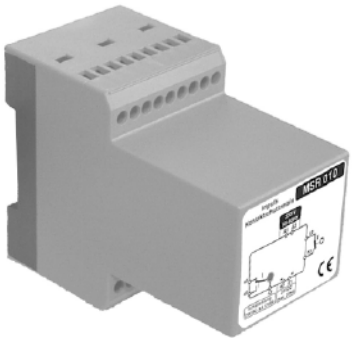
MSR

Application

Multifunctional relays model MSR are contact protecting relays for the connection of electromechanical limit switch contact assemblies with standard contacts (model S) resp. magnetic contacts (model M) with 1 and 2 limit values.

Impulse-controlled multifunctional relays model MSR
• increase the switching safety and allow a higher switching frequency of operation that is endangered by external influences like for example aggressive atmosphere, contamination or oxidation of the contact stems
• reduce the contact load
• reduce the accidental switching of the vibration / pulsation (see below)
• should be used for instruments with case filling. They reduce the risk of oil contamination by the electric arc.

The relays are provided with an additional direct voltage output. All instruments have an LED-switching status display.



Function

Multifunctional relays model MSR have particularly been developed to come up against the named problems:

This is being reached by the following actions:

• Almost load-free switching by impluse-shaped control signals with a pulse-pause rate 1:100.

• Overcoming of barrier layers by impulse voltages with 35-40 V DC

• Reduction of the uncontrollable switching error of the contacts that are caused by chattering or other vibrations of the contacts, by application of a delayed release of 450 ms.

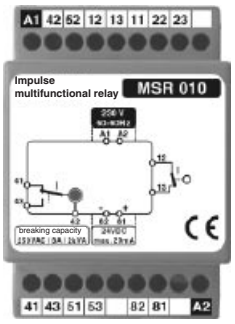
• Increase of the breaking capacity of the contacts by down-streamed relays with potential-free change-over contact in the output.

Regulations

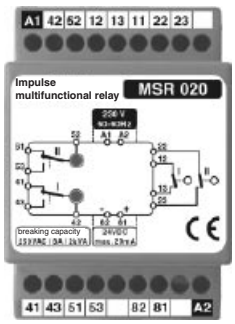
MSR multifunctional relays meet the following requirements:

EN 50178	- Electrical safety
EN 61000-6-2	- Stability
EN 61000-6-3	- Interference emission
EN 60947-5-1	- Low voltage switchgear

Standard Version

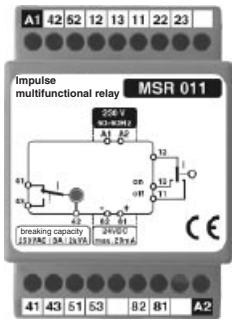


MSR 010
Monostable version for
1 limit value
S1, S2 or
M1, M2.



MSR 020
Monostable version for
2 limit values, e.g.
S11, S22 or
M11, M22.

or two 1-fold limit values



MSR 011
Bistable version for
2 limit values in
interval-operation
S21 or
M21

The switching status of the limit value is being buffered up to the confirmation of the other limit value (interval operation, no permanent storage)

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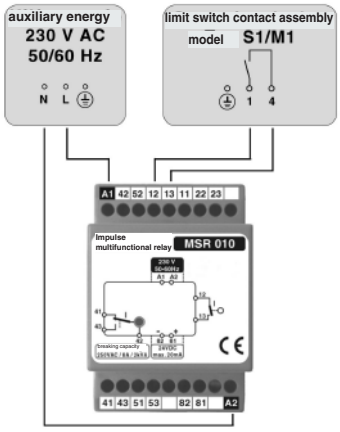
9521
03/11

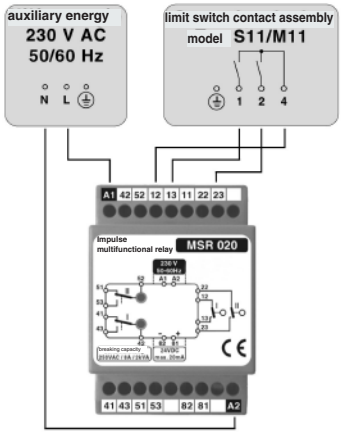
Connecting Example, Technical Data, Drawing and Weight

Connecting Example

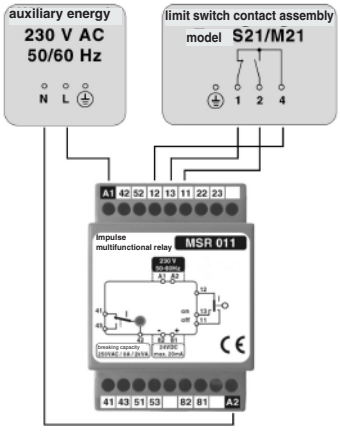
for MSR 010



for MSR 020



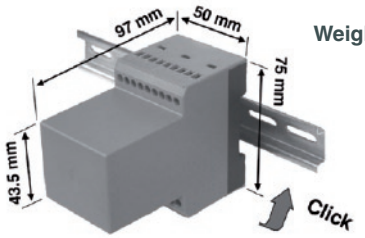
for MSR 011



Technical Data

Auxiliary energy	Auxiliary energy:	230 VAC, + 6...-10%, 50 – 60 Hz
	Special version:	auxiliary energy 24 V DC others upon request
	Power consumption:	typ. 6 VA
Control signal	Impulse-control voltage:	35 – 40 VDC
	Pulse-pause rate (1:100):	0.5 ms / 50 ms
Outputs	**Relay outputs**	potential-free change over contact / output
	On-delay:	10 ms
	Delayed release:	450 ms
	Contact material:	AgCdO resp. AgNi+Au
	Rated operational current I_e according to utilisation category:	AC 1: 250 V / 8A
		DC 1: 250 V / 0,3A
		AC13: 250 V / 3A
		DC13: 250 V / 0.1A
	Breaking capacity:	max. 250 VAC/8A
		min. 24 V/ VDC; 100 mA
	Short circuit device:	F10A (max. short circuit current < 100 A)
	Electrical durability for I_e:	10^5 switching cycles for 6 switches/ min.
	Mechanical durability:	10^7 switching cycles (without load)
	Voltage output	
	for external instruments e.g. transmitter, LED-display	
		24 VDC ± 10%
		Imax 20 mA
		conditionally short circuit proof
LED-switching status display		LED red
Application field		
	Rated insulation voltage:	250 VAC
	Overvoltage category:	III
	Pollution degree:	2 / EN 50 178
	Protection type:	IP 20 / EN 60 529
	Temperature range:	0 – 70 °C
	Case material:	polyamide 6.6, colour red/black
	Mouting suitable for :	standard mounting bar DIN EN 60 715, 35 x 7.5 mm und 35x15 mm
	Connection cross section:	0.5 - 2.5 mm²

Drawing



Weight (kg): approx. 0.220kg

Technical changes, replacement of materials and errors excepted.