Contact protection relay
For pointer instruments with magnetic snap-action contacts
Model 905

Applications

- Control and regulation of industrial processes
- Monitoring of plants and switching of circuits
- Machine building, general plant construction, chemical industry, petrochemical industry, power plants, mining, on-/offshore and environmental technology

Special features

- Increasing the switching power to a maximum of 2 kVA
- Avoidance of vibration-induced erroneous switching
- Increasing the reliability and service life of the switch contacts
- 1 or 2 potential-free change-over contacts
- Case for DIN-rail mounting

Contact protection relay model 905.12

Description

The model 905 contact protection relay is used in combination with model 821 magnetic snap-action contacts. The contact protection relay consists of a power supply unit, a control element, a switching amplifier and a relay output.

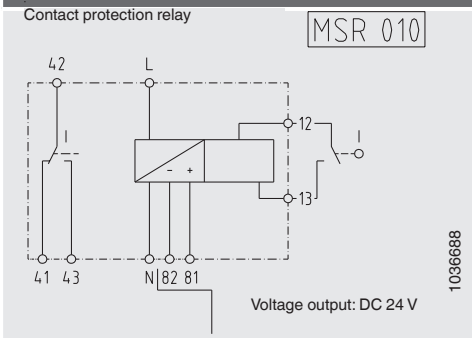
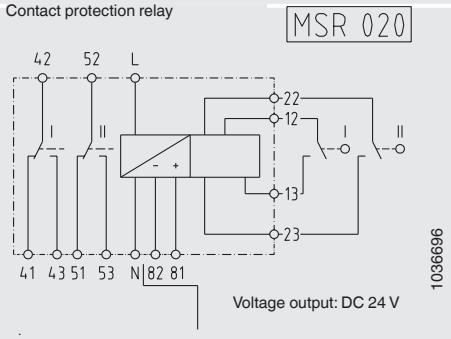
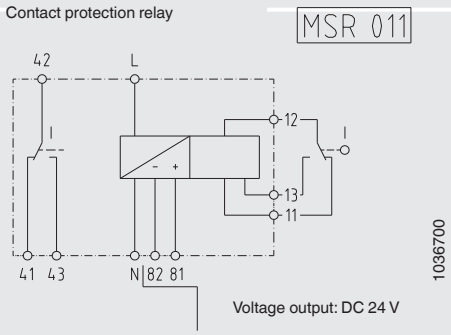
These instruments increase the switching power, using the built-in relay output, to a maximum of 2 kVA.
The control unit prevents unwanted switching, for example, through vibration. The pulsed DC voltage of the control unit ensures that the switch contact of the measuring instrument is only supplied with voltage when the contact is firmly closed (without fluttering or chattering). If the relay output is activated, this state is held for at least 0.5 seconds (drop-out delay) to avoid unnecessarily fast switching.
This guarantees optimal contact protection and switching reliability for several million switching cycles.

Liquid-filled measuring instruments with frequently switching contacts should generally be operated with contact protection relays, since the case filling would otherwise increase the burn-off of the contact pins.

In addition to the relay outputs for operating the contacts, an additional voltage output with DC 24 V (max. 20 mA) is available. With this, for example, control lamps or sensors can be supplied.

With inductive or capacitive loads, the contact protection measures must be observed.

Overview of versions

Model	For connection to instruments	Relay output	Pin assignment
905.12 (MSR 010)	With 1 contact Model 821	1 change-over contact	
905.13 (MSR 020)	With 2 contacts Model 821	2 change-over contacts	
905.14 (MSR 011)	With 2 contacts Model 821.21	1 bistable change-over contact, can be used as a two-point controller (e.g. for interval switching with pump control)	

Pointer instruments with 3 or 4 switch contacts can be operated by interconnecting the contact protection relays described above (e.g. 3 contacts with model 905.12 + model 905.13).

Specifications

Basic information		
Case		
Mounting	Suitable for DIN rail per EN 60715, TH 35-7.5 and TH 35-15	
Material	Polyamide 6.6, red/black	
Voltage supply	■ AC 230 V, -10 ... +6 %, 50 ... 60 Hz ■ AC 115 V, -10 ... +6 %, 50 ... 60 Hz ■ AC 24 V, -10 ... +6 %, 50 ... 60 Hz ■ DC 24 V, -10 ... +15 %	
Power consumption		
AC 115 V or AC 115 V	Approx. 6 VA	
AC 24 V or DC 24 V	Approx. 1.5 VA/W	
Control voltage		
AC 115 V or AC 115 V	DC 35 ... 40 V; galvanically isolated from the mains	
AC 24 V or DC 24 V	DC 24 V; galvanically isolated from the mains	
Pulse duration: Pause	0.5 ms : 50 ms, ± 20%	

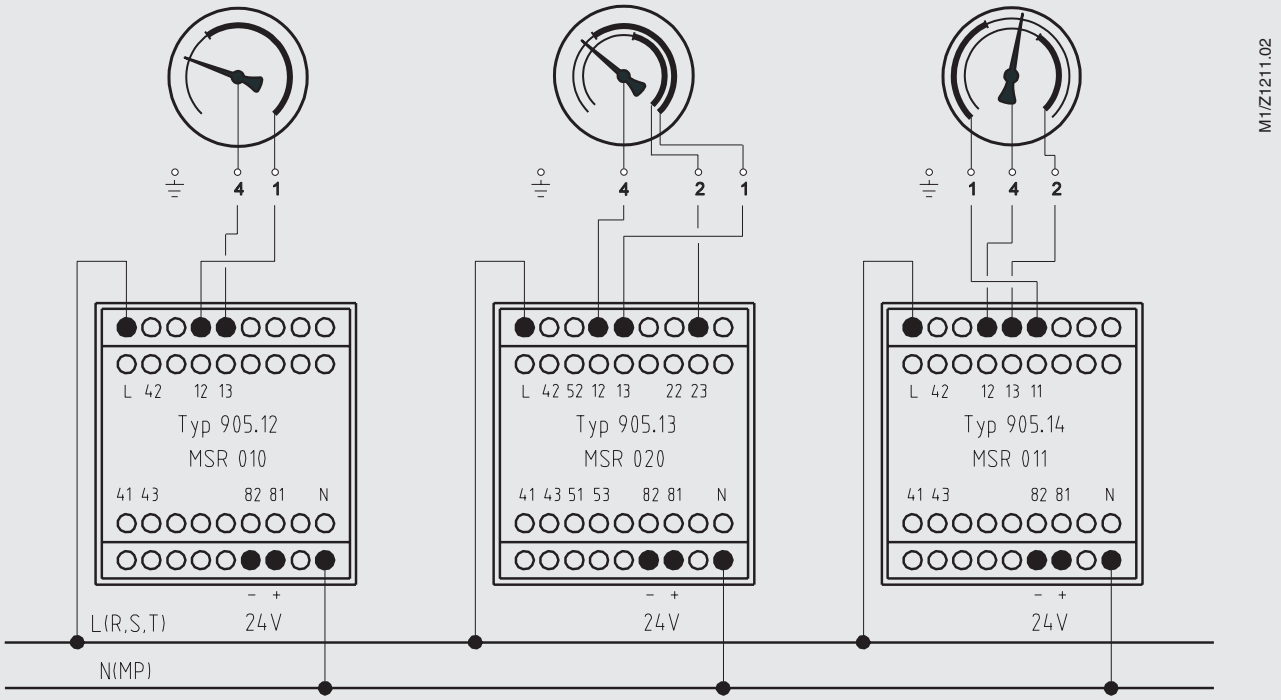
Output signal		
Relay output		
Model 905.12	1 x SPDT (single pole double throw)	
Model 905.13	2 x SPDT (single pole double throw)	
Model 905.14	1 x SPDT (single pole double throw), bistable	
Switching power in accordance with utilization category	AC1	250 V / 8 A
	AC13	250 V / 3 A
	DC1	250 V / 0.3 A
	DC13	250 V / 0.1 A
Pick-up delay	Approx. 10 ms	
Drop-out delay	Approx. 0.5 s	
Contact material	AgCdO or AgNi+Au	
Voltage output		
Supply voltage	DC 24 V, ± 10 %	
Current-carrying capacity	≤ 20 mA	

Electrical connection	
Connection type	Screw terminals
Wire cross-section	0.5 ... 2.5 mm² (20 .... 14 AWG)
Pin assignment	→ See page 4

Operating conditions	
Rated insulation voltage	AC 250 V
Overvoltage category	III
Operating temperature range	0 ... 70 °C [32 ... 158 °F]
Ingress protection per IEC/EN 60529	IP20
Weight	Approx. 0.24 kg [0.53 lb]

Connection examples for the contact protection relay

Single contact Model 821 + model 905.12	Double contact Model 821 + model 905.13	Double contact, interval switching Model 821.21 + model 905.14

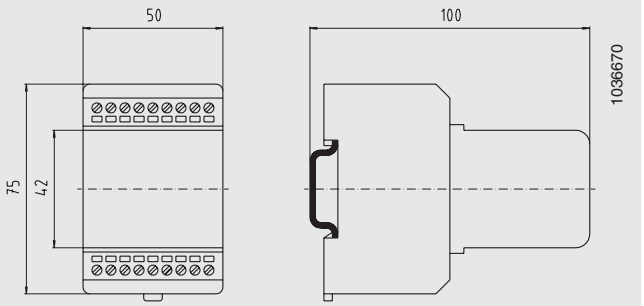


Approvals

Logo	Description	Region
CE	**EU declaration of conformity**	European Union
	EMC directive	
	Low voltage directive	

Dimensions in mm

Model 905



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