# 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.

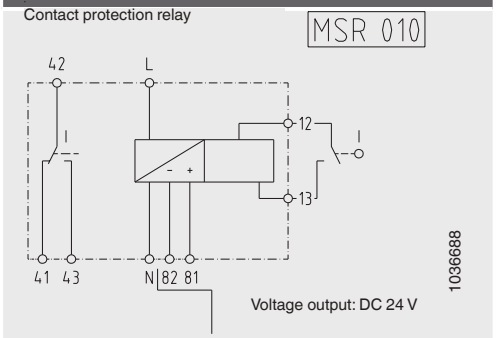
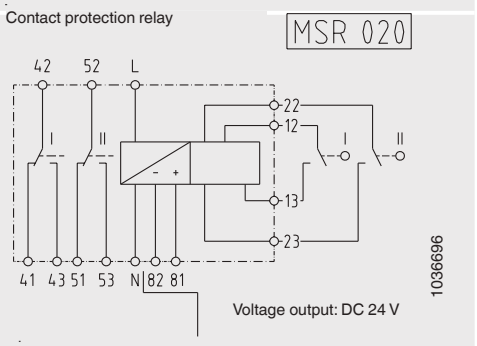
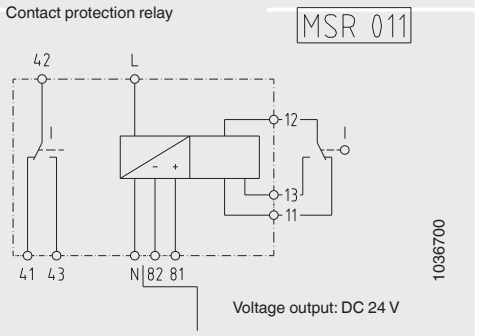
These instruments increase the switching power, using the built-in relay output, to a maximum of 2 kVA.
The control unit prevents unwanted switching, for example, through vibration. The pulsed DC voltage of the control unit ensures that the switch contact of the measuring instrument is only supplied 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<br>Model 821 | 1 change-over contact |  |
| **905.13 (MSR 020)** | With 2 contacts<br>Model 821 | 2 change-over contacts |  |
| **905.14 (MSR 011)** | With 2 contacts<br>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<br>■ AC 115 V, -10 ... +6 %, 50 ... 60 Hz<br>■ AC 24 V, -10 ... +6 %, 50 ... 60 Hz<br>■ 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% | |

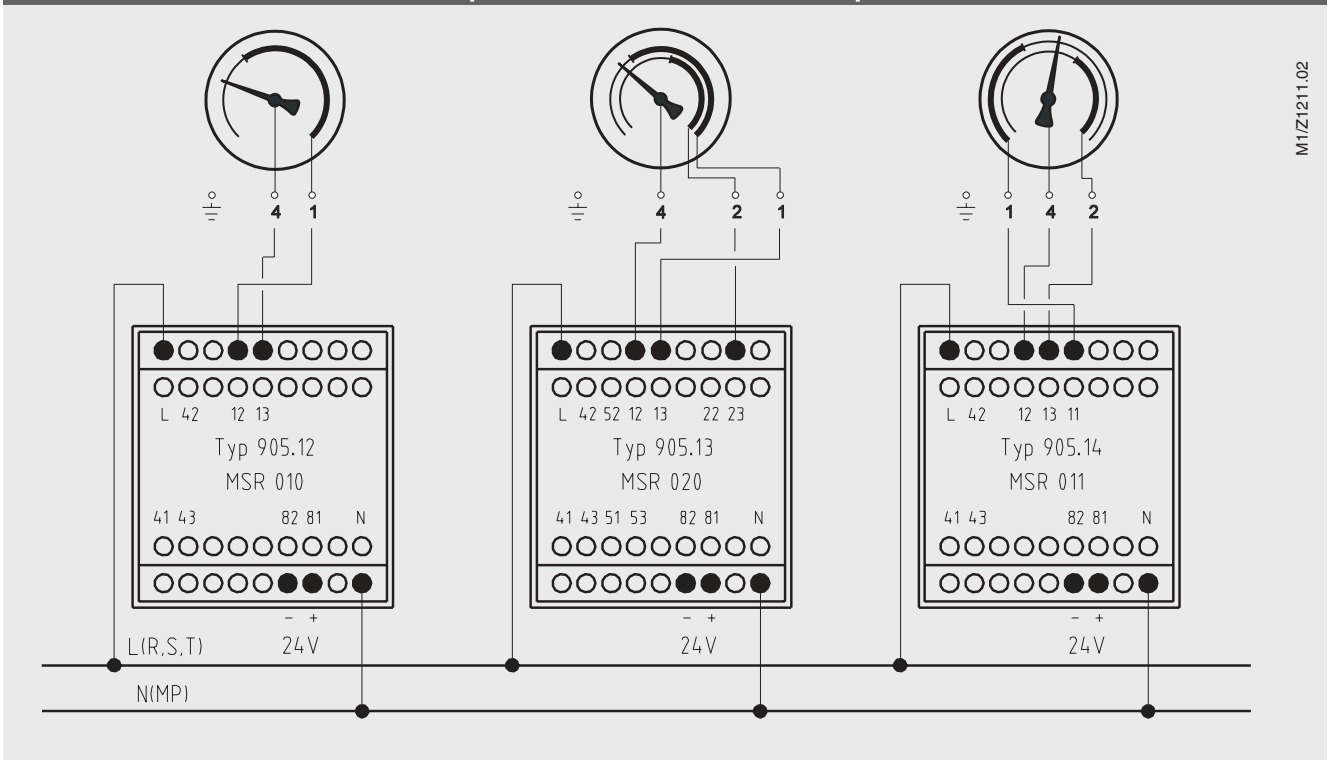
| Output signal | | |
|---|---|---|
| **Relay output** | | |
| Model 905.12 | 1 x SPDT (single pole double throw) | |
| Model 905.13 | 2 x SPDT (single pole double throw) | |
| Model 905.14 | 1 x SPDT (single pole double throw), bistable | |
| Switching power in accordance with utilization category | 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<br>Model 821 + model 905.12 | Double contact<br>Model 821 + model 905.13 | Double contact, interval switching<br>Model 821.21 + model 905.14 |
|---|---|---|

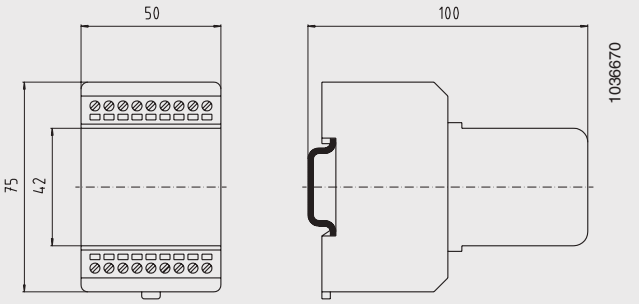



## Approvals

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

## Dimensions in mm

### Model 905





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