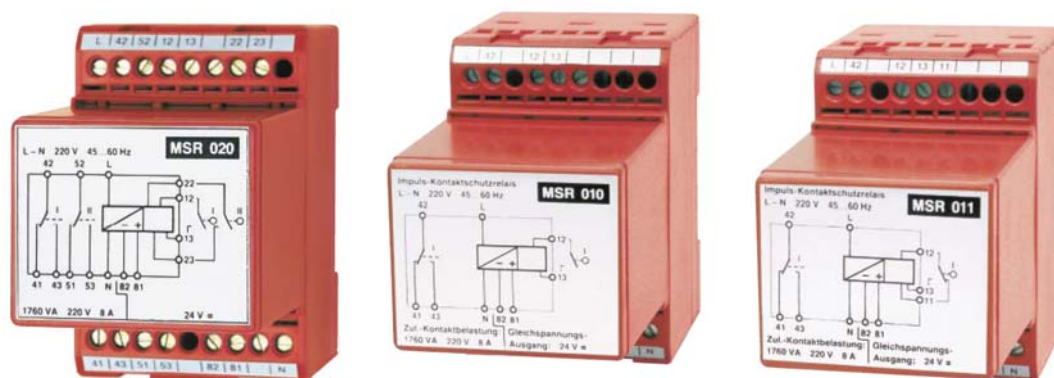


Operating Instructions for Low-action and snap-action contacts

Model: MSR



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Manufactured and sold by:

Kobold Messring GmbH
Nordring 22-24
D-65719 Hofheim
Tel.: +49(0)6192-2990
Fax: +49(0)6192-23398
E-Mail: info.de@kobold.com
Internet: www.kobold.com

2. Note

Please read these operating instructions before unpacking and putting the unit into operation. Follow the instructions precisely as described herein.

The instruction manuals on our website www.kobold.com are always for currently manufactured version of our products. Due to technical changes, the instruction manuals available online may not always correspond to the product version you have purchased. If you need an instruction manual that corresponds to the purchased product version, you can request it from us free of charge by email (info.de@kobold.com) in PDF format, specifying the relevant invoice number and serial number. If you wish, the operating instructions can also be sent to you by post in paper form against an applicable postage fee.

Operating instructions, data sheet, approvals and further information via the QR code on the device or via www.kobold.com

The devices are only to be used, maintained and serviced by persons familiar with these operating instructions and in accordance with local regulations applying to Health & Safety and prevention of accidents.

When used in machines, the measuring unit should be used only when the machines fulfil the EC machine guidelines.

3. Instrument Inspection

Instruments are inspected before shipping and sent out in perfect condition.

Should damage to a device be visible, we recommend a thorough inspection of the delivery packaging. In case of damage, please inform your parcel service / forwarding agent immediately, since they are responsible for damages during transit.

Scope of delivery:

The standard delivery includes:

- Contact protection relay, model: MSR

4. Regulation Use

Any use of the contact protection relay, model MSR, which exceeds the manufacturer's specifications may invalidate its warranty. Therefore, any resulting damage is not the responsibility of the manufacturer. The user assumes all risk for such usage.

5. Operating Principle

Multifunctional relays comprise a power supply unit, pulse generator, isolation amplifier and switching amplifier, which serves to increase the switching capacity, while as the control loop is connected to low voltage. The switching capacity of reed contacts is very often exceeded especially by switching capacitive & inductive loads; this causes the reed contacts to stick – thus giving rise to dangerous functional faults.

A contact protection relay is used to eliminate this problem by significantly improving the switch capacity and service life of the reed contacts.

In addition, types MSR-010 and MSR-020 have a time response. The chatter effect is thus almost totally eliminated, resulting in no switching operation taking place when the contact opens or closes briefly. The switching operation is thus clearly defined. Type MSR-011 is a bistable interval relay with latching and is thus suitable for an interval switching, for example for pump control. Design and construction of the contact protection relay satisfy VDE regulations 0110 insulation class c/250 V. The housing, made of polyamide 6.6, can be mounted by clip-on mounting on 35 x 7.5 mm rail (according to DIN 50022), or panel-mounted, by individual screw attachment.

Available models:

- | | |
|----------------|--|
| MSR 010 | Monostable contact protection relay for connection of a single contact, e. g. limit value switches types S-1 / M-1 or S-2 / M-2. |
| MSR 020 | Monostable contact protection relay for connection of one double or two single contacts, e. g. limit value switches types S-1 / M-1 or S-22 / M-22. |
| MSR 011 | Bistable contact protection relay for connection of two contacts (interval operation). With this bistable version, the switching condition of one contact is memorized temporarily (latched) until the other contact is operated (No permanent storage - unlatched). |

6. Electrical Connection



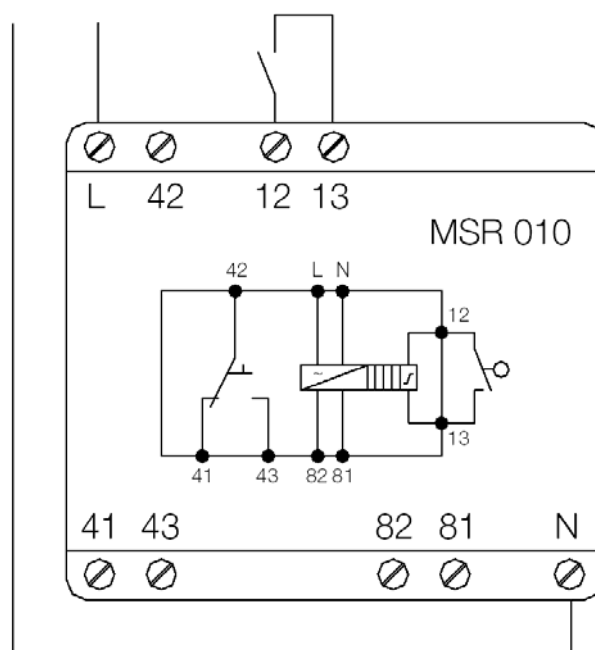
Please make sure that the voltage values of your plant match the voltage values of the unit. Make sure that the electrical supply lines are de-energised.

Attention! Incorrect connections can lead to damage of the unit electronics.

6.1 MSR-010

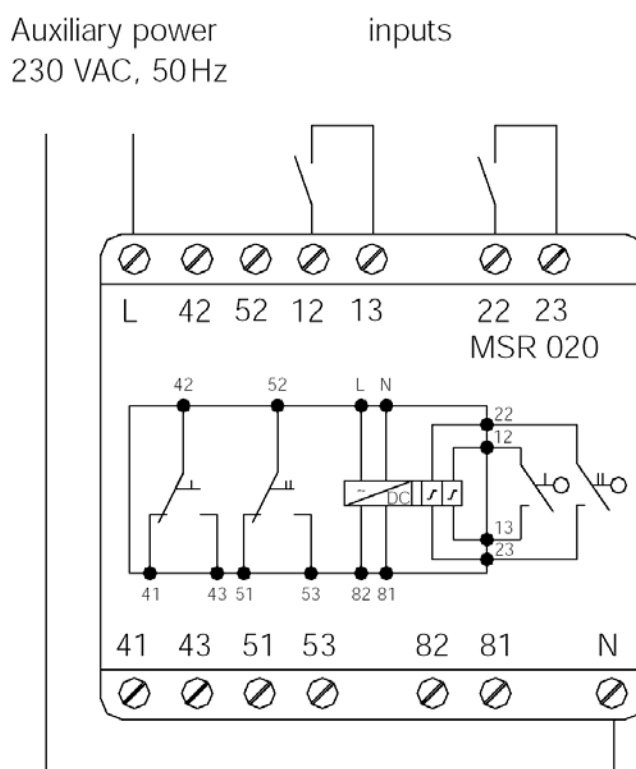
The multifunctional relay is supplied with the corresponding voltage via terminals N and L. When the supply voltage has been switched on (and the connected limit value switch is not operated, i.e., contact is open) the potential free change-over contact of the MSR-relay is non-operative (see type plate). By operating the limit value switch (contact is closed) the change-over contact is energized. When the supply voltage is disconnected, the potential free change-over contact of the MSR relay returns to its inoperative condition.

Auxiliary power input
230 VAC, 50Hz



6.2 MSR-020

The multifunctional relay is supplied with the corresponding voltage via terminals L and N. When the supply voltage has been switched on (and the connected limit value switch is not operated, i.e.; contact is open) the potential free change-over contact of the MSR-relay is non-operative (see type plate). By operating the limit value switch (contact is closed) the change-over contacts are energized. When the supply voltage is disconnected, the potential free change-over contact of the MSR relay returns to its inoperative condition.



Important Note:

If desired, multiple relays (also MSR-010 and MSR-020 together) could also be switched together. This way, one control output (terminal 12 or 22) can drive max. 4 control inputs (terminal 13 or 23). The max. permissible contact per signal input resistance reduces to 2 k Ω (1 k Ω by supply 24 V_{AC/DC}). Bridging between control outputs is not necessary. Should a control output drive control inputs of multiple MSR-relays, one must ensure a uniform reference potential. The terminal 82 of MSR-Relay must be connected in this case.



6.3 MSR-011

The multifunctional relay is supplied with the corresponding voltage via terminals L and N. When the supply voltage has been switched on (the connected limit value switch is not operated, contact is closed, contact is open) the contacts are operated at the potential free change-over contact.

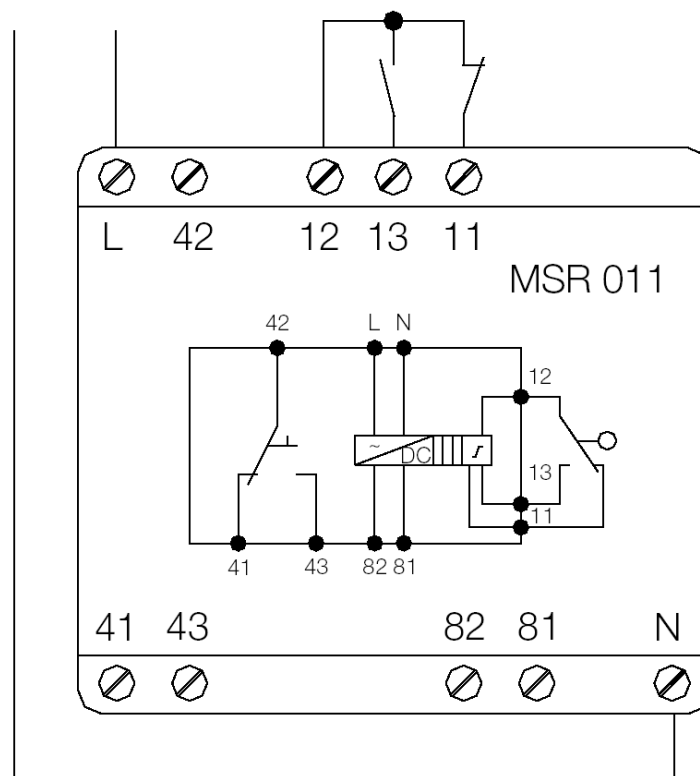
If contact of limit value switch is opened (contact remains open), the contacts at the change-over contact stay closed. Only when contact is closed (contact has no influence on the switching behaviour any longer) the potential-free change-over device of the MSR relay returns to its inoperative condition (see type plate).

If contact of the limit value switch opens again, the contacts at the change-over contact remain inoperative. If contacts close, the contacts at the change-over contact are operated again (interval operation).

This is a bistable execution, intermediately memorising the switching condition of one contact during the interval until the other contact is operated (no permanent memorising).

When the supply voltage is interrupted, the potential free change-over contact of the MSR series returns to its inoperative condition. If both contacts are closed, the preferential situation will depend on the respective transitional resistances and is considered as undefined in this case.

Auxiliary power input
230 VAC, 50Hz



7. Technical Information

Operating instructions, data sheet, approvals and further information via the QR code on the device or via www.kobold.com

8. Order Codes

Operating instructions, data sheet, approvals and further information via the QR code on the device or via www.kobold.com

9. Dimensions

Operating instructions, data sheet, approvals and further information via the QR code on the device or via www.kobold.com

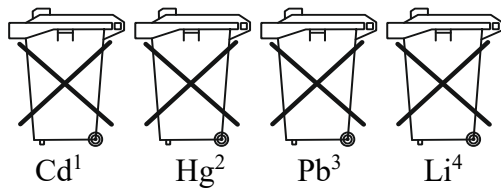
10. Disposal

Note!

- Avoid environmental damage caused by media-contaminated parts
- Dispose of the device and packaging in an environmentally friendly manner
- Comply with applicable national and international disposal regulations and environmental regulations.

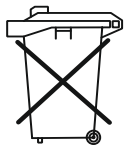
Batteries

Batteries containing pollutants are marked with a sign consisting of a crossed-out garbage can and the chemical symbol (Cd, Hg, Li or Pb) of the heavy metal that is decisive for the classification as containing pollutants:



1. „Cd" stands for cadmium
2. „Hg" stands for mercury
3. „Pb" stands for lead
4. „Li" stands for lithium

Electrical and electronic equipment



11. EC Declaration of Conformance

We, KOBOLD Messring GmbH, Nordring 22-24, 65719 Hofheim, Germany, declare under our sole responsibility that the product:

Impulse contact protection relay

Model: MSR

to which this declaration relates is in conformity with the following EU directives stated below:

2014/35/EU	Low Voltage Directive
2014/30/EU	EMC Directive
2011/65/EU	RoHS (category 9)
2015/863/EU	Delegated Directive (RoHS III)

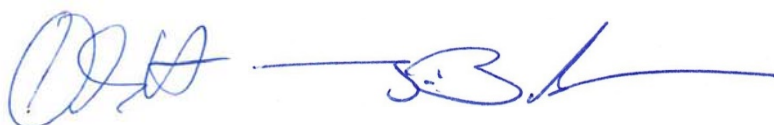
Also, the following standards are fulfilled:

EN 61000-6-2:2005 Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments

EN 61000-6-4:2011 Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments

EN 50178:1998 Electronic equipment for use in power installations

Hofheim, 10 October 2023



H. Volz
General Manager

J. Burke
Compliance Manager