

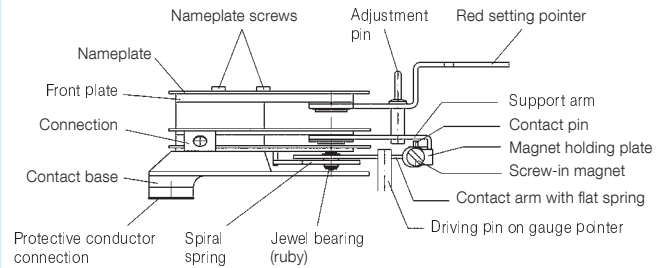
Electrical contacts electromechanical



Precision contact system



Sectional view



Magnetic spring contact

Electrical contacts (electromechanical magnetic spring contacts) in measuring devices with pointers are auxiliary electrical switches which open or close electrical circuits at set limit values by means of a contact arm which is moved in accordance with the indicated value. They consist of:

- An adjustable red setting pointer
- A support arm which is connected to the setting pointer and which holds the contact pin
- A contact arm which is moved by the gauge pointer and which carries the second contact pin

A contact adjustment lock in the window of the gauge allows the user to adjust the setting pointer to the value at which the device is to switch. The gauge pointer can move beyond the adjusted setting pointer after the contact has been made (however, the contact remains active).

Two types of electromechanical contacts are available: magnetic spring contacts and sliding contacts (which are not described in detail here).

Principle of operation

Magnetic spring contacts have a permanent magnet screwed to the setting pointer at the contact support arm. To close the circuit, the contact pin of the moving contact arm is attracted by the magnet so that the contact snaps closed. When the circuit opens, the magnet attracts the contact arm until the resetting force of the measuring element overcomes the effective force of the magnet so that the contact snaps open.

The snap action reduces arcing between the contacts, thus allowing for greater switch ratings. Due to the increased contact force, this type of contact is also less sensitive to vibrations. Furthermore, the contact stability is increased by greater contacting pressure.

Application

Magnetic spring contacts can be used under almost any type of operating condition. They can also be integrated into devices with filling. In order to prevent switching errors (particularly in the case of greater inductive switch ratings or considerable system vibration or in gauges with filling) we recommend installing our pulse-controlled series MSR contact protection relays.

Technical specifications

Supply voltage
Max. 250 V

Making current and breaking current
Max. 1.0 A

Continuous current
Max. 0.6 A

Switch rating
Max. 30 W 50 VA

Contact material
Ag80 Ni20 Au 10 μ
(extra charge for special materials)

Switching accuracy
Approx. 2–5 % of full scale value

Operating temperature range
-20/+70 °C or corresponding to the respective gauges

Adjustment range
5–95 % measuring range of gauge