Operating Instructions RV / RW

Introduction

Despite the ease of use and reliable operation of the instrument is necessary that each person who will assemble, adjust and use this machine was fully acquainted with this instruction manual.

Safety

General

To ensure safe operation, the device must be observed in this instruction manual. It is also necessary to observe all legal and safety regulations, codes and standards which the application relates.

Purpose of use

Devices type RW2 used to monitor instantaneous flow of viscous liquids. Any other use is not recommended. Unless otherwise specified, the scale for mineral oil. Special applications where there is such. The cyclic switching, it is necessary to consult with the manufacturer.

Devices of this type can not be used as a security feature in which failure could result in property damage or injury. Machinery which these elements are installed must be designed so as not to impair their function.

Qualified personnel

The device may be installed only by a person who possesses the necessary qualifications and experience in the installation and operation of these devices.

Principle of operation

The function of this device is based on the use of the float, the position of which indicates the current flow. The float is equipped with a magnet forming a magnetic field that is detected by the switching contact. Furthermore, flow rate can be read off on the side of the indicator. On the float against the liquid flow a spring, which allows installation in any position. The devices are not calibrated to the bottom inlet and vertical orientation. The other positions will flow data distorted. Devices are compensated for by the viscosity of 30 to 600 cSt, which means that the measurement error in this viscosity range will vary within the stated limits.

Commissioning

Process Connection

The following requirements must be met:

- There is adequate process connection
- is verified by its size, thread depth and used suitable sealing material (liquid sealing materials can ingress into the device jeopardize its function)

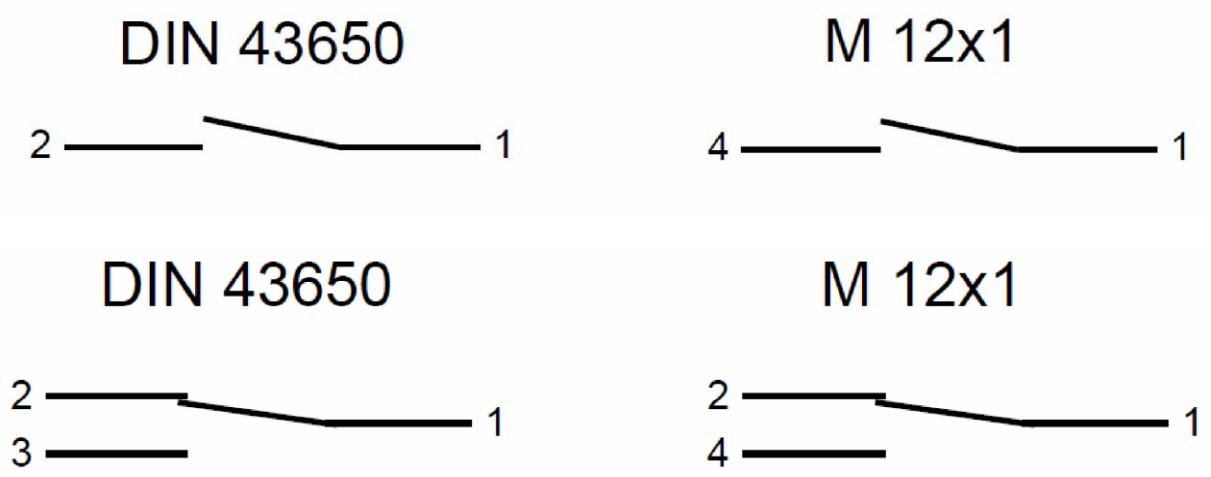
Other conditions

- The device must not be used as supporting portion pipe
- sample medium may not contain solid particles (especially magnetic, which accumulate on the float, and may affect the apparatus)
- must be proven durability of the material used devices are substances that can be both inside and outside the instrument occurring
- external magnetic field may influence switching functions, it is necessary to maintain sufficient distance from devices that generate this field (e.g. electric motors and generators)
- Process connection brackets and pipes of ferromagnetic material can also influence the magnetic field device. It is necessary to maintain a minimum distance of 100 mm from the elements (e.g. steel)
- Device accuracy is affected by the disturbing elements in the pipeline, such as elbows, T-joints, valves, constrictions, branching etc. It is necessary to maintain the straight pipe is located at least 10DN before and 5DN per unit.
- It is necessary to avoid electrical surges, and increasing the flow rate to increase it gradually.

Electrical connections

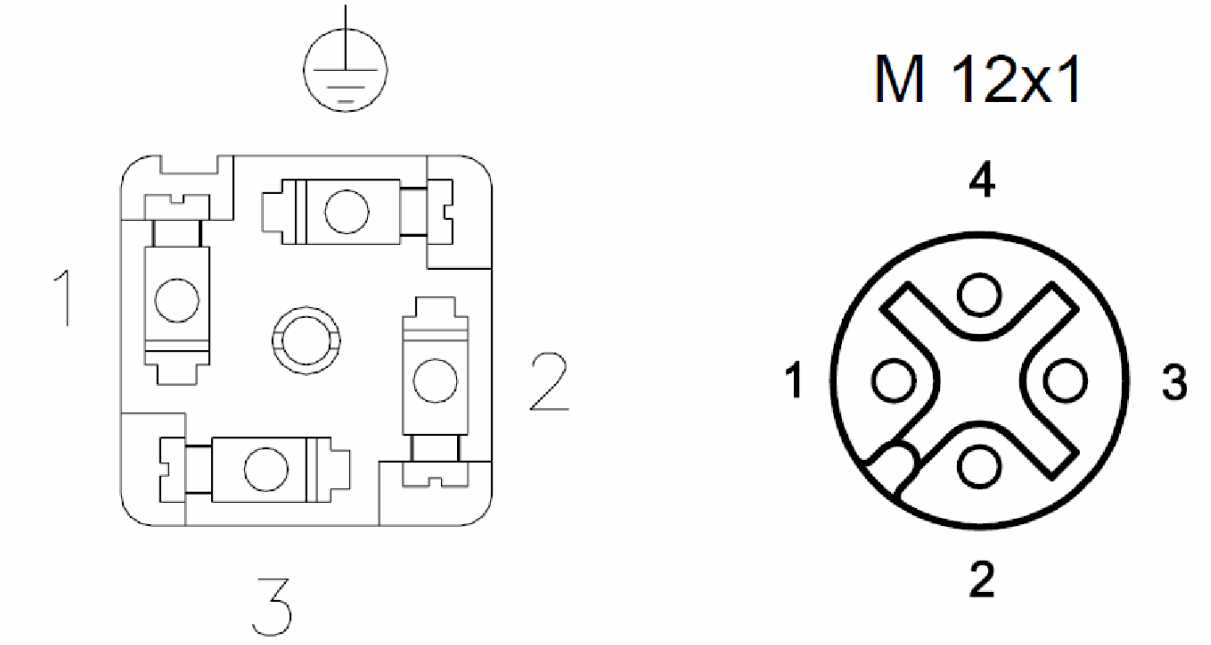
Contactsare without voltage potential and do not require external power. Each switch is set at the factory to match the scale. If the switch is to be replaced, it must also nekalibrovat scale.

Possible configurations of the switches at zero flow:



Sensors can indicate the minimum flow, maximum flow, or both using the changeover contact.

Pin placement:



When using the connecting head DIN 43650 is IP 65 protection ensured only in conjunction with the relevant cable diameter.

Sensors for termination of the cable conductors are labeled in accordance with the above scheme.

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On request, the sensor can be supplied with different connection interface contain.

When using the sensors in EEx embodiment should be taken procedures specific to these switches.

Contact protection:

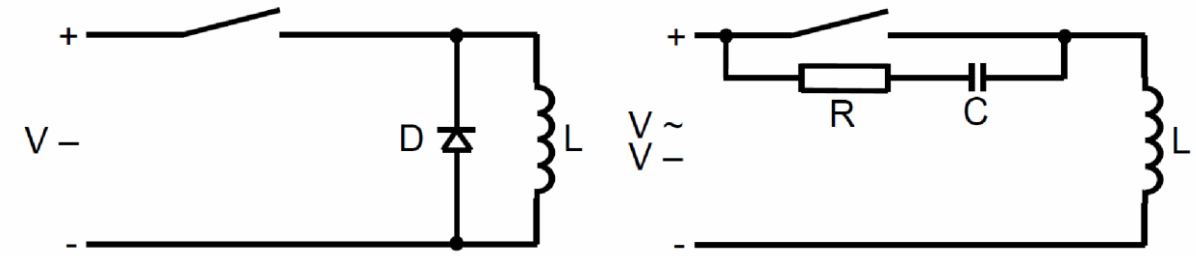
If the contact is not connected to the high impedance input (eg. Input control system), observe the following protective measures so as to prevent damage or destruction of the contact. Of course, that must not be exceeded the indicated maximum values of voltage and current even after a short time.

Inductive load:

This type of load typically causes relays, solenoid valves, electric motors

When switching threatening voltage spike that is 10 times greater than the operating voltage.

Sample protection:

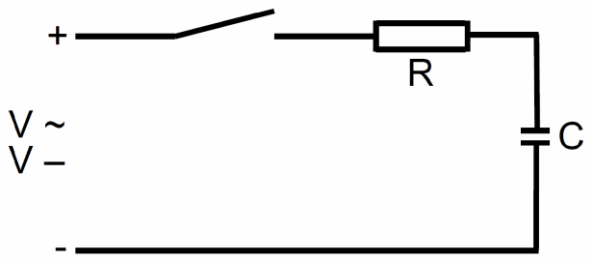


Capacitive load:

This type of stress typically caused by long supply lines, fluorescent lights, or any other type of capacitive loads.

When turning threatens peak current that exceeds the maximum operating current.

Sample Protection:



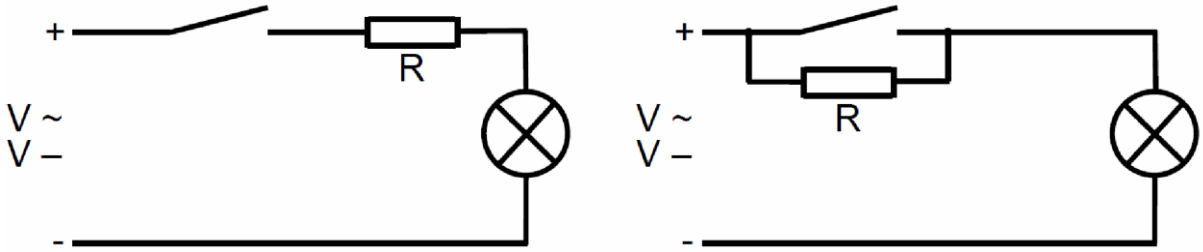
Where current limit the choice of the appropriate resistor values.

Resistive load:

This type of load causes such as bulbs or running engines.

When turning threatens peak current. (for example bulbs - fiber has during startup very low resistance)

Sample protection:



Setting the switching point

- loosen the locking screwthe
- movescontact so that the light was at the required level on a scale
- tighten the screws

instrument functions can be easily verified when setting the desired flow rate (either in operation or float shifting non-magnetic material to the desired level), and an ohmmeter connected to the output terminals. Slide your contact verify function.

Maintenance

Due to the small number of moving parts of the device does not require special maintenance. Regular inspections and service, however, extend its life.

Recommended inspection interval depends on the contamination of the media and external influences (e.g. vibrations)

during the inspection should be verified function switches tightness test is performed and the motion mechanism of the float.

It is the user's responsibility to determine the appropriate service interval depending on the nature of the operation.

During maintenance it is advisable to thoroughly clean the device.

Troubleshooting

switch does not respond to changes in flow rate:

- The switch is still open
  Possible causes
  (1) no flow
    ➢ Determine possible causes of
  (2) flow is too small or the contact is set at too high a flow rate
    ➢ set point of switching to a lower rate
    ➢ use the device with reduced size of the
  (3) non narrowing duct (too small diameter pipe)
    ➢ Correct disposal process connection
  (4) jammed float
    ➢ Clean the instrument and ensure free movement of the float
  (5) defective switch element
    ➢ Remove the cause of the fault (short circuit, overload)
    ➢ Replace the contact

- switch is still closed
  Possible cause:
  (1) the flow is too large or the contact is set too low flow
    ➢ Set the trigger pointflow at a higher
    ➢ Reduce theflow rate
    ➢ use the device with a greater range
  (2) jammed float

➢ Clean the instrument and ensure free movement of the float

(3) defective switch element

➢ Remove the cause of the fault (short circuit, overload)

➢ Replace the contact

- switching point not match the actual flow

  Possible causes:

  (1) The media does not match the scale

  ➢ Request a correction table for the media or special scale

  (2) Improper taper pipe (too small diameter pipe)

  ➢ Correct disposal process connection

  (3) Dirty appliance

  ➢ Clean the instrument and ensure free movement of the float

  (4) Fault on the device

  ➢ to send the instrument for repair andmanufacturers calibration