Operating instructions

Level sensors model RMG

Level sensor with reed switch chain technology, model RMG, flange connection

TC FLUID CONTROL
A division of the WIKA group

Contents

WARNING!
This symbol warns you against actions that can cause injury to people or damage to the instrument.

13442163.01 06/2010 GB/D/F

1. Functional description

The level transmitter model RMG is used for remote measuring of the level of liquid media.

It operates according to the float principle with magnetic transmission in three-wire potentiometer circuit. A reed measuring network (reed contacts + resistors) built into the slip pipe (5) is actuated by a permanent magnet built into the float (6). This provides a proportional resistance signal for evaluation. Evaluation may take place for example with a series-connected resistance transmitter.

2. Area of application

Level transmitters serve exclusively for monitoring the level of liquid media. All materials which come into contact with the media must be suitably resistant. The medium to be monitored may not be heavily contaminated. It may not have a tendency to crystallize.

The level transmitters must be operated on safety barriers or an intrinsically safe control circuit for use in „e“ areas of zone 1 or 2.

3. Assembly

Install WIKA level transmitters according to their model (flange or thread (3)). Fit a suitable gasket (4) for sealing. Make sure they are installed in the right position.

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4. Electrical connection

Note
The WIKA level transmitters only works correct when mounted in vertical position. The max. deviation from the vertical is ± 30° and must not be exceeded.

The float (6) must be removed before installing the transmitter in openings with a diameter smaller than the diameter of the float.
The float must be marked with „top“.
The float should be refitted inside the tank after installing the level transmitter and the set collar (7) fixed.

4. Electrical connection

Note
All cabling and electrical connections must be carried out in accordance with the regulations applicable in the country where the equipment is installed and by personnel qualified to do.

Current spikes may occur Malfunctions by using longer cable lengths or if the lines are laid together with energy lines. A screened cable must be used and earthed at one end.

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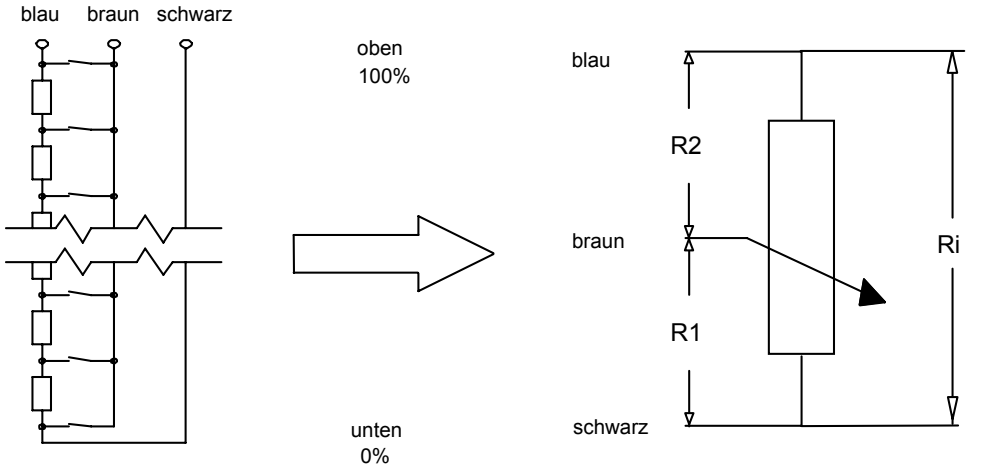
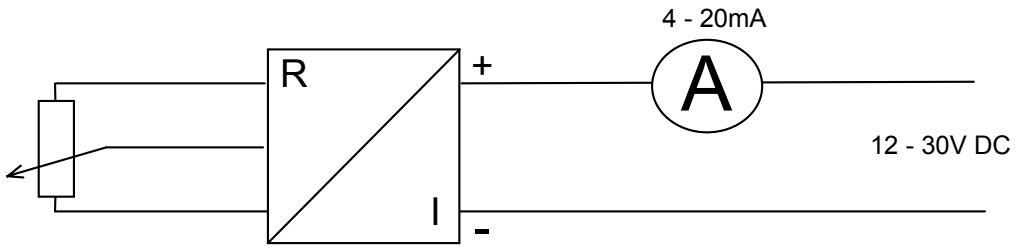
The level transmitter must be connected according to the wiring diagram printed on the transmitter and wired with the electronic evaluation unit to be connected in series.



Innenschaltbild

Potentiometer Ersatzschaltung

The cable bushing (2) must then be sealed and the lid of the connection enclosure (1) closed tightly.
The transmitters with built-in head transducer must be connected as shown in the wiring diagram.



See the respective wiring diagram for the terminal wiring.

5. Maintenance

The level transmitters operate free of maintenance and wear when used properly.

Under extreme operating conditions, the transmitter must be eye-checked within the scope of the necessary revisions.

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6. Function test

A function test can only be carried out when the level sensor has been removed.

- Disconnect the cable
- Connect an ohmmeter to two wires
- Move the float by hand from Min. to Max.
- The displayed resistance value changes continuously depending on the connected wire colours (Tab. 1):

black-brown (R1)	blue-brown (R2)	black-blue (Ri)
Resistance value increases in proportion to the height of the float.	Resistance value drops from the value of the total resistance inversely proportionally to the height of the float.	Indication of the total resistance (Ri)

Table 1

The value of the resistance chain is given on the tag plate mounted at the level transmitter.

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7. Notes

Do not operate level transmitters in the immediate vicinity of strong electromagnetic fields. (Distance away at least 1 m).

Only operate in connection with suitable transducers.
Safety barriers or licensed measuring transmitters must be used for operation in „e“ zone 1 o 2.

For operation at safety barriers the total resistance of the reed measuring chain (Ri) must be at least 40 kΩ.

The level transmitter may not be exposed to any heavy mechanical stress.

8. Wiring diagramm two wire head mounted transmitters

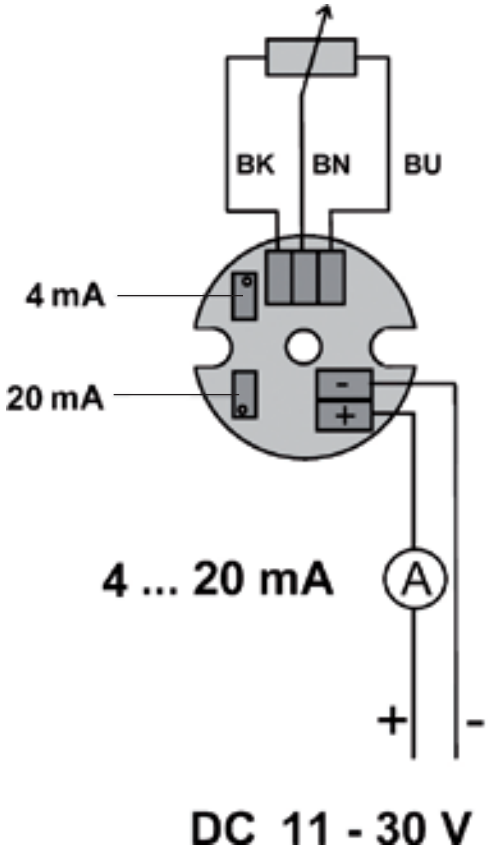

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Illustration of the principle

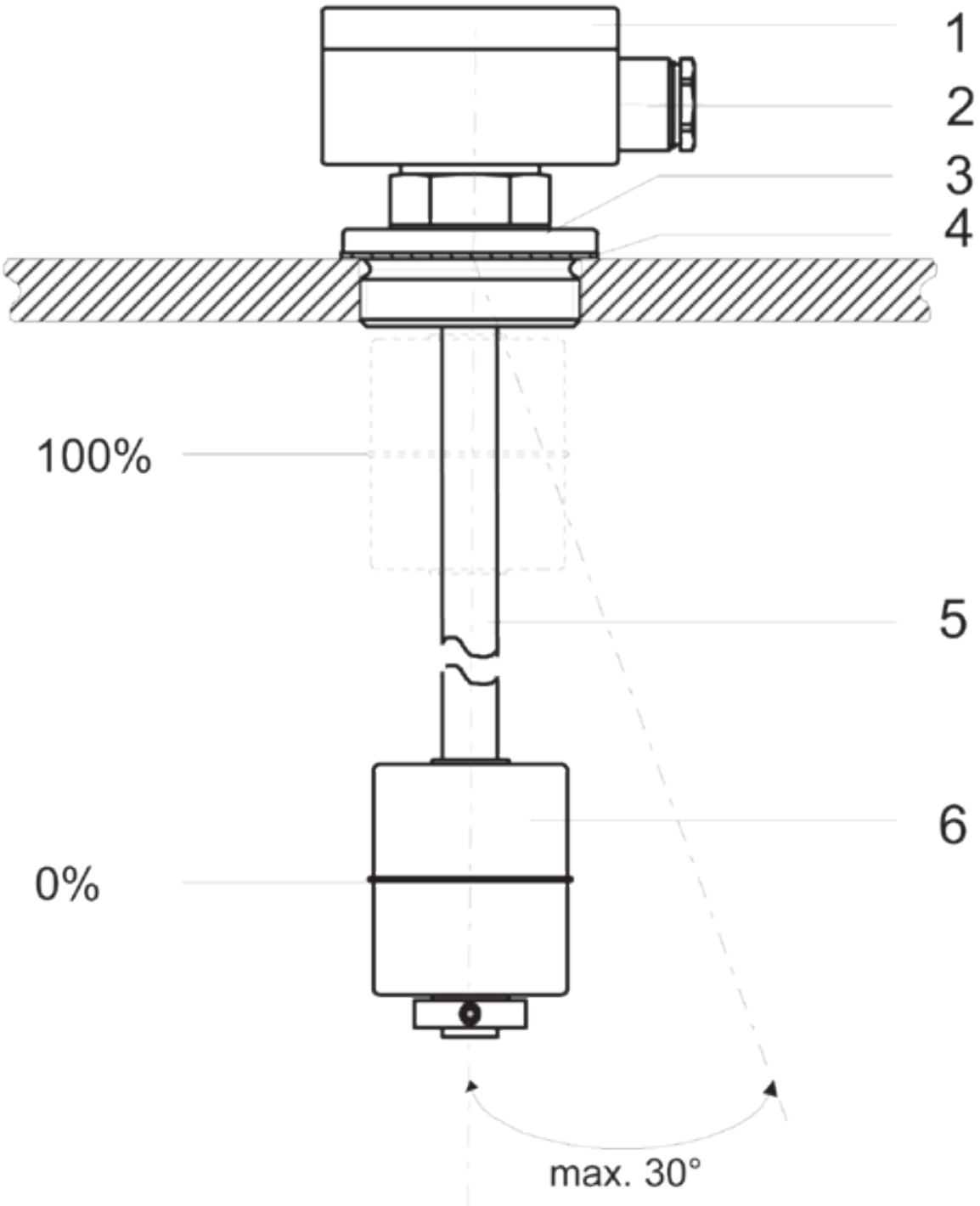

Fig. 1

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