

**Operating Instruction  
for  
Float Switch**

**Model: NSM**



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## **2. Note**

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

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.

## **3. Instrument Inspection**

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These devices are checked before shipping and sent out in perfect condition. Should damage to a device be visible, we recommend a thorough inspection of the delivery packing. In case of damage, please inform your parcel service/forwarding agent immediately, since they are responsible for damages during transit.

### **Scope of delivery:**

Standard scope of delivery applies:

- Float switch, model: NSM
- Operating instruction

## **4. Regulation Use**

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These units of type NSM are employed for purposes of monitoring the filling-level status of liquids. Only such liquids may be measured which are compatible with the materials used in the construction of these units.

Float switches are usable as switching elements for level control in almost any situation, where a two-point control is sufficient to solve the problem under consideration. These devices are easy to install and practically maintenance-free. Float switches represent an inexpensive solution while offering high reliability at the same time.

## 5. Operating Principle

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The float switch consists of a body with built-in micro-switch. The supplied contact is a change-over type (SPDT), which can be used selectively as a N.O. or N.C. contact.

The contact switches when exceeding or falling short of the horizontal float position. Setting switch point is carried out through on-site assembly of the switch at the desired position by cable-clamping. When top mounting, the switching point is determined by means of ballast cable weights.

## 6. Mechanical Connection

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The float switch cable is fastened centrally between the lower and upper levels. The switching angle of the switch is approx. 45°. Thus the difference in level is about 1.4 times that of free cable length.

Example: Free cable-length 10 cm  
Level difference approx. 14cm

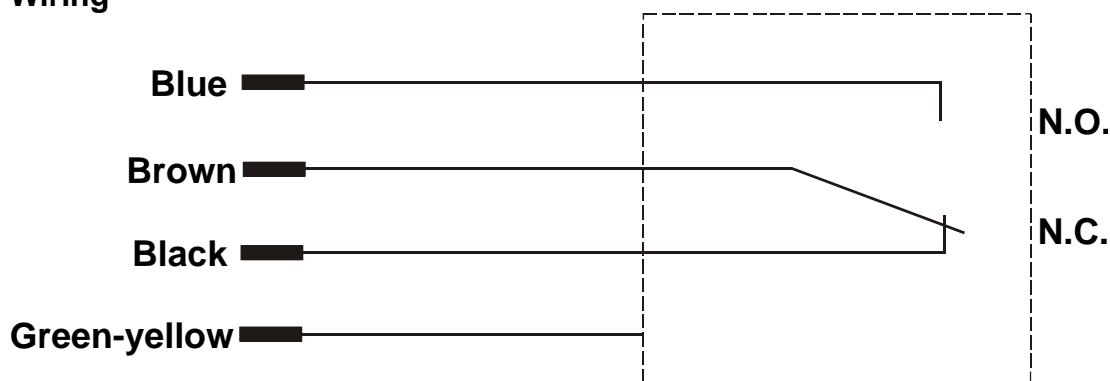
Attention: The bending radius of the cable is 15-times of the cable diameter.  
Neoprene cable: approx. 11 cm

The cable should not be bound with strap-hardened cable binder and not in a vertical direction, if possible. The use of bending protection trumpets is recommended.

## 7. Electrical Connection

The maximum electrical load of the switch is indicated on the instrument sticker.

### Wiring



Yellow-green:	Ground
Blue-brown:	N.O. with increasing level
Brown-black:	N.C. with increasing level



**Note!** Water can penetrate the cut-end jacketing of the cable and seep along the line into the switch. Do not allow the liquid to rise above this end. The wiring should be connected either in a dry area or in a junction-box, satisfying the safety class IP65 requirement (or better). The use of a ground-fault-interrupting circuit breaker is recommended.

After connecting desired external devices to the limit-contact, the device is ready for use.

## 8. Maintenance

Providing that, the medium to be measured is not contaminated, the NSM unit is maintenance-free.

## 9. Technical Information

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Material:	float polypropylene cable gland polyamide
Cable:	standard: 2 m neoprene option: silicone
Max. pressure:	3 bar
Max. temperature:	60 °C neoprene 95 °C silicone cable
Medium density:	> 0.6 kg/ l
Contact:	microswitch, function changeover contact
Switch capacity:	max. 250 VAC, max. 2 A
Class of protection:	IP 68
Hysteresis:	min. 140 mm max. 500 mm

## 10. Order Codes

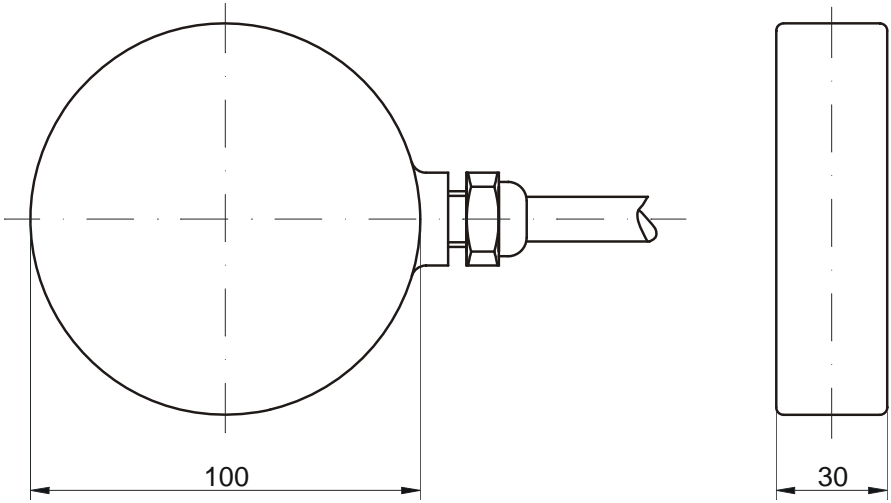
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Example: NSM-02NEO

Description	Order no.
Standard: 2 m neoprene cable	<b>NSM-02 NEO</b>
Option: silicone-rubber-insulated non-sheathed cable	<b>NSM-YY SIL</b>

Please specify cable length in clear text.

11. Dimensions



## 12. EU Declaration of Conformance

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We, Kobold-Messring GmbH, Hofheim-Ts., Federal Republic of Germany, declare that the product

**Float Switch Type: NSM...**

to which this declaration relates is in conformity with the standards noted below:

**EN 60730-1:2012** Automatic electrical controls for household and similar use - Part 1: General requirements

**EN 60730-2-15:2011** Automatic electrical controls for household and similar use - Part 2-15: Particular requirements for automatic electrical air flow, water flow and water level sensing controls


Also the following EC guidelines are fulfilled:

<b>2014/35/EU</b>	<b>Low Voltage Directive</b>
<b>2011/65/EU</b>	<b>RoHS</b>

Hofheim, 01. Dec. 2016



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