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| Operating & Installation Instructions | |  Lennox Road Basingstoke Hants. RG22 4AW England Tel: +44 1256 320244 |
| FS-105E | | |
| Part Number: 995-0102 | Issue: B | |

Please Note: The flow switch is designed and manufactured in accordance with Sound Engineering Practice as defined by the Pressure Equipment Directive 97/23/EC. This flow switch must not be used as a “safety accessory” as defined by the Pressure Equipment Directive, Article 1, Paragraph 2.1.3. The CE Mark on the unit does not relate to the Pressure Equipment Directive.

Installation:

Due to the instrument construction is the mounting-attitude of free choice. Flowdirection is from low to high scale-value. To avoid measuring errors, straightening sections should be fitted with at least 10 x D upstream and 5 x D downstream (D = pipe-diameter). All standard threads conform with R-standard (DIN 2999, Part 1). During installation it has to be made sure that only matching threads and suitable sealing material is used, otherwise it might cause malfunction and leakage.

The medium should not contain any solid or magnetic particles, these might cause malfunctions. In such cases it is recommended to install a strainer of the type SFD (double screen) or SFM (with magnet). The strainer must be fitted upstream of the straightening section.

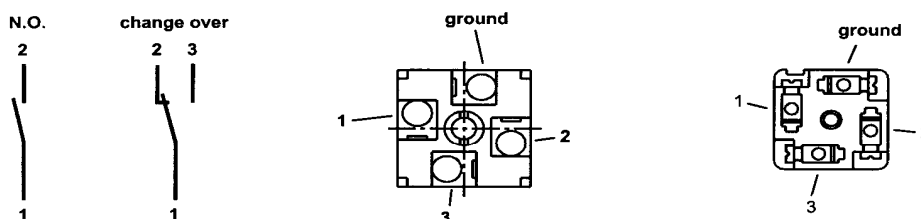
The instruments will have their highest accuracy when installed in a vertical position with flow from bottom to top. Other installation-directions might cause differences in indication due to the weight of the float.

When attaching the fittings to the flowmonitor the max. Thread depth must be observed. An over-length of the thread might cause malfunctions or even destroy the flow-monitor.

The flow-monitor with contact must not be installed in inductive or strong magnetic fields. When connecting the flow-monitor-switch to the electrical part of the plant make certain that under no circumstances the electrical ratings are larger as stated (housing-label). **Not even for a fractional moment!** The reed-contact reacts very sensitive to overloads, those even can destroy the switch. Special attention should be paid to inductive loads, as they can generate current peaks up to ten times higher as the nominal value of the coil. In such cases (where overload might occur) it is recommended to install a protection-relais or similar device.

A direct connection to SPS-inputs is possible as the reed contacts are plated (gold or rhodium).

Connecting-diagram for switch housing with plug (Standard):



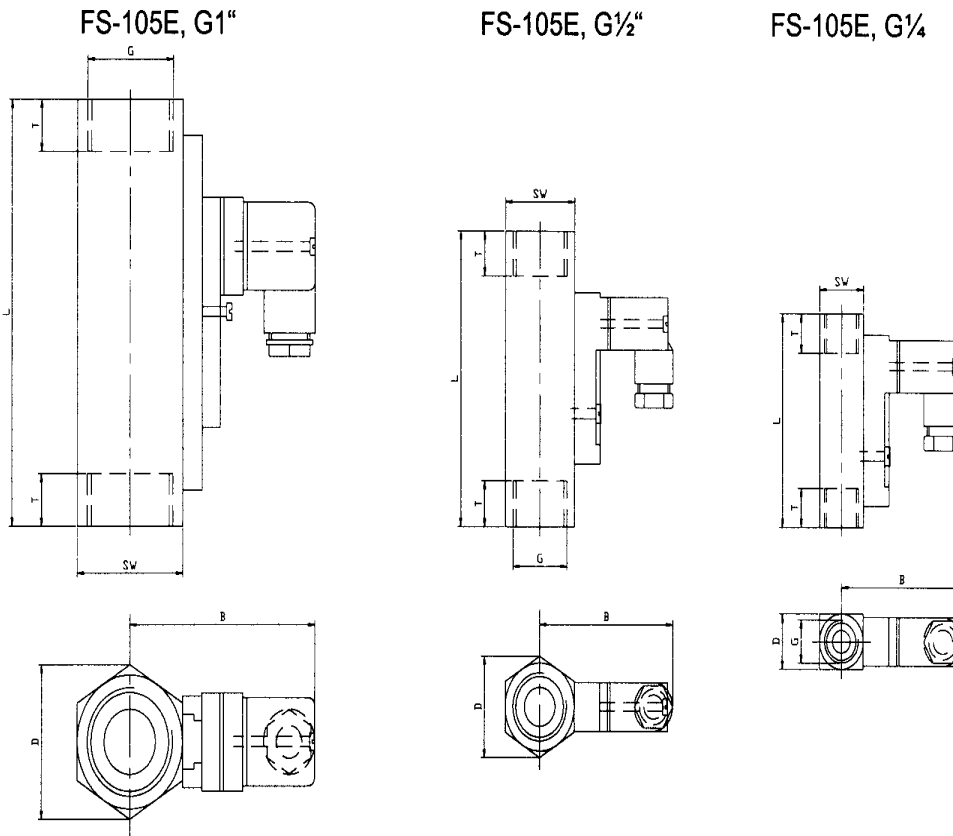
Switch Adjustment:

Loosen the fixing-screws of the switch-housing so far, that it can be moved. Now shift the arrow on the switch housing until he lines up with the desired flowrate indicated on the body-scale. Tighten the fixing screws and apply a drop of paint to prevent them from becoming loose.

Maintenance:

The instrument contains only a few moving parts, so that only frequent cleaning is required. With a higher amount of contamination a strainer and shorter cleaning intervalls are strongly recommended. Further it is suggested to perform a functional test of the float in regular intervalls (for free movement) to insure a safe performance of the plant. Malfunction could occur by precipitation due to temperature-changes.

DIMENSIONAL-OUTLINE DRAWING



Dimensions

| Type | SW | D | B | G | T | L | approx. Weight g |
|----------------------------|----|----|----|--------|----|-----|---------------------|
| FS-105E, G $\frac{1}{4}$ " | 17 | 17 | 47 | R 1/4" | 10 | 65 | 140 |
| FS-105E, G $\frac{1}{2}$ " | 27 | 31 | 52 | R 1/2" | 14 | 90 | 350 |
| FS-105E, G1" | 41 | 47 | 72 | R 3/4" | 21 | 152 | 1100 |

| Operational Data: | FS-105E, G1" | FS-105E, G $\frac{1}{2}$ " | FS-105E, G $\frac{1}{4}$ " |
|--|-----------------------|----------------------------|----------------------------|
| Operating pressure: | PN 250 bar | PN 250 bar | PN 300 bar |
| Pressure drop: | 0,02 - 0,4 bar | 0,02 - 0,3 bar | 0,02 - 0,2 bar |
| Operating temp. max: | 120 °C | 120 °C | 120 °C |
| Electrical Data: | | | |
| N.O. contact: | 250 V - 3 A - 100 VA | 220 V - 1 A - 100 VA | 200 V - 1 A - 20 VA |
| Change over contact: | 500 V - 1,5 A - 50 VA | 500 V - 1,5 A - 50 VA | 150 V - 1 A - 20 VA |
| Protection-class: | IP 65 | | |
| Material: | Brass | Brass | Brass |
| Housing: | Brass | Brass | Brass |
| Float: | Brass | Brass | Brass |
| Spring: | SS 316 ti | SS 316 ti | SS 316 ti |
| Tolerance: | ± 10% of fullscale | | |
| Switchhousing with plug in accordance to DIN 43650 | | | |