Zertifiziertes QM-System
DIN EN ISO 9001
Zertifikat-Nr. 01017

Bypass Level Indicator

KOBOLD

measuring
•
monitoring
•
analysing

SZM

- Measuring length: 370 … 3080 mm
- p_{max}: 10 bar; t_{max}: -20 °C ... 100 °C
- Viscosity: max. 50 mm²/s
- Connection:
  DIN flange DN 15 ... 50,
  ANSI flange ½" ... 2",
  union nut G ½, ½" NPT
- Material:
  Stainless steel 1.4301/1.4404
- Local indication without auxiliary power
- Limit contacts

N2

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Description

The SZM type glass tube level indicator is applicable for the indication of liquid level in small and middle-sized, standing or lying round containers used in food, pharmaceutical and chemical industries.

The loads occurring at the installation are absorbed by the outer armature, thus the glass tube is protected against breaking. The outer armature also protects the glass tube against the mechanical impacts that may occur following the installation.

It is recommended that the normal design level indicators be fitted on vessels containing pure liquids, while the indicators mounted with cleaning stubs (a bottom, or bottom-top stub) be fitted on containers filled with contaminated liquid.

Installation length means the distance between the horizontal centre lines of the two flanges, that is minimum 370 mm, and maximum 3080 mm.

The glass tubes longer than 1500 mm are welded. The bottom, and top sealing of the glass tube is by two O-rings each, the material of which is to be chosen to be chemically compatible with the liquid measured. Standard sealing material is FPM, whereas EPDM or NBR are available on request.

The level indicator may be furnished with capacitive level sensors - max. 3 pieces over 100 mm - as requested (NAMUR design), which monitor the minimum and/or maximum level or any level along the scale. Anodised aluminium rule with indication of level or volume may be mounted optionally on side of the outer armature.

The scale can be engraved on the aluminium rule or the glass tube, or can be printed on a foil and to be attached to the glass tube or aluminium rule.

Areas of Application:

- Pharmaceutical
- Chemical
- Food
- Water Treatment
- Oil
- Milk
- Storage tanks for liquids

Technical Details

Measuring length:	370 ... 3080 mm
Material:	stainless steel
Gasket:	FPM (standard) EPDM, NBR on request
Process connection:	DIN flange DN 15 ... 50, ANSI flange ½" ... 2" or union nut G½, ½" NPT
Scale resolution:	engraved, 1 cm printed on foil, 2 mm
Max. pressure:	10 bar
Temperature:	-20 °C ... 100 °C
Density:	any (no float used)
Max. viscosity:	50 mm²/s

Limit Contacts**

Type:	capacitive sensor
Voltage:	8.2 V_{DC}
Non-actuated current consumption:	≤1.2 mA
Actuated current consumption:	≥2.1 mA
Adjustment:	fine adjustment via potentiometer
Output function*:	2-wire, according to DIN EN 60947-5-6 (NAMUR)
Electrical connection:	cables
Cable quality:	Ø5.2, LIFYY, PVC, 2 m
Cable cross section:	2 x 0.34 mm²
Display switch state:	LED yellow
Material:	plastic, PA12-GF30
Protection:	IP67

* A transistor relay (for example KFD2.../KFA6...) should be connected on the load side for each switching circuit for operation.

***Note:* Customer **cannot** retrofit the contacts himself. If retrofitting of contacts is desired, the SZM should be ordered with a remark "prepared for retrofitting of limit contact".

1/09-2016

Materials

Ordering code	Measuring tube	Connection	**Flange** (not wetted part)	Sealing
SZM-K	glass	1.4301	1.4301	FPM
SZM-S	glass	1.4404	1.4404	FPM

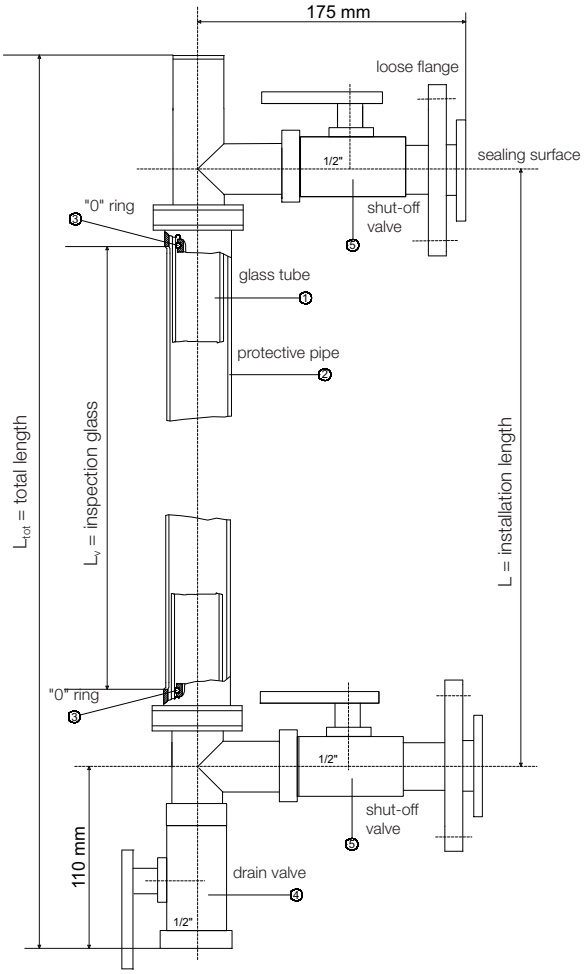
Order Details SZM-K..., S... (Example: **SZM-K00 F4 G10**)

Model	Version	Valves	Connection	Scale	Switches
SZM-K = 1.4301 **SZM-S** = 1.4404	**0** = top: closed, bottom: outlet screw **1** = top: cleaning hole, bottom: outlet screw **2** = top: closed, bottom: cleaning hole **3** = top and bottom: cleaning hole **4** = top closed, bottom: drain valve **5** = top: cleaning hole, bottom: drain valve	**0** = without **1** = 2 x shut-off valves	**G4** = union nut G ½ male **I4** = union nut G ½ female **N4** = union nut ½" NPT male **M4** = union nut ½" NPT female **F4** = loose flange DIN 2526, C DN15; PN16 **F5** = loose flange DIN 2526, C DN20; PN16 **F6** = loose flange DIN 2526, C DN25; PN16 **F7** = loose flange DIN 2526, C DN32; PN16 **F8** = loose flange DIN 2526, C DN40; PN16 **F9** = loose flange DIN 2526, C DN50; PN16 **A4** = loose flange ANSI B 16.5 ½"; 150 lbs **A5** = loose flange ANSI B 16.5 ¾"; 150 lbs **A6** = loose flange ANSI B16.5 1"; 150 lbs **A7** = loose flange ANSI B 16.5 1 ¼"; 150 lbs **A8** = loose flange ANSI B 16.5 1 ½"; 150 lbs **A9** = loose flange ANSI B 16.5 2"; 150 lbs **B4** = loose flange ANSI B 16.5 ½"; 300 lbs **B5** = loose flange ANSI B 16.5 ¾"; 300 lbs **B6** = loose flange ANSI B 16.5 1"; 300 lbs **B7** = loose flange ANSI B 16.5 1 ¼"; 300 lbs **B8** = loose flange ANSI B 16.5 1 ½"; 300 lbs **B9** = loose flange ANSI B 16.5 2"; 300 lbs	**00** = without **G1*** = plastic foil on mesuring tube (2 mm division) **G2*** = engraved measuring tube (1 cm-division) **S1**** = sidewise Alu-scale (with plastic-foil, 2 mm-division) **S2**** = sidewise engraved Alu-scale (1 cm-division)	**0** = without **1** = 1 capacitive sensor **2** = 2 capacitive sensors **X** = X no. of contacts (please specify in clear text)

* scale length = Installation length - 120 mm
** scale length = Installation length - 100 mm

Note: *Please specify the installation length "L" in clear text, while ordering.*

Dimensions



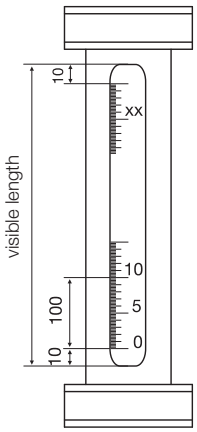
Total length (L_{tot}) according to the inspection glass (L_v)

All dimensions in mm.

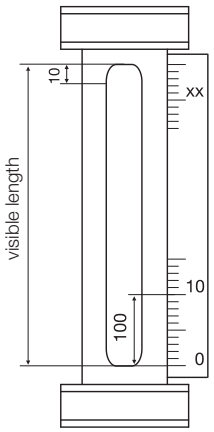
Model	Total length (L_{tot})	Inspection glass (L_v)
SZM-x 0	L + 80	L - 100
SZM-x 1	L + 115	L - 100
SZM-x 2	L + 115	L - 100
SZM-x 3	L + 150	L - 100
SZM-x 4	L + 150	L - 100
SZM-x 5	L + 185	L - 100

Measuring scale

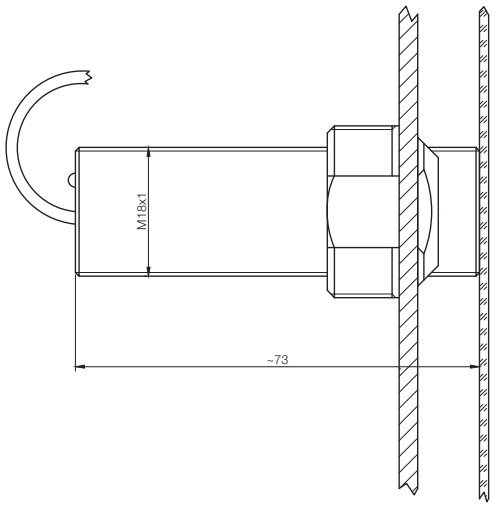
foil on glass tube

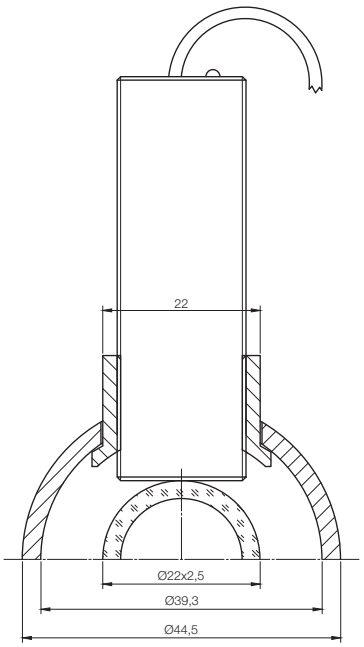


aluminium scale



Limit Contact Mounting*





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Design of the Ends