

1. Product description

Application according to instructions

The probes USE3000, USE6000 and USE15000 are sensors for level measuring of liquid media in tank systems, the probes XM and XT outside at tank systems.
The transducer MU3L transforms the level-dependent resistance signal of the probes into an analog output signal of 4...20 mA and is mounted in the terminal box of the probe (KLS).

2. Installation

The transmitters can be installed in the pressureless tank from outside through the tank top or tank bottom by using a mounting plug or flange. The mounting position is vertical with a maximum angle of inclination of 30 degrees.

The maximum operating pressure (depends on the mounting elements and the float) must not be exceeded.

The electrical connection has to be according to the connection scheme shown inside the cover of the terminal box.

The supply voltage shown on the type label must not be exceeded.

Please note the output signal shown on the type label.

3. Operation

During operation the float of the probe moves up and down with the upper liquid level and produces a resistance (voltage divider signal proportional to the tank level).

This signal can be evaluated directly or be transformed into an 2-wire 4...20mA current output signal.

A standard built-in wire-break protection reduces the output current to 3,5 mA in case of wire break. The level evaluation / display is possible with Barksdale UAS / UAD-units as well as with other data acquisition units (e. g. SPS).

Customer specific sensor or transmitter adjustments are available, please note special documentation.

4. Maintenance

The USE-probes are maintenance-free in non-depositing media.

In media with residues the sensor as well as the float must be wiped off regularly depending on the degree of contamination.

The MU3L transducer is maintenance-free.

Probe accuracy (without transducer)

Depending on requirements and model various screen sizes are available:

R12 - (1/4" = 6,4 mm), accuracy appr. 0,3% bei 3000 mm - standard

R08 - (1/6" = 4,2 mm), accuracy appr. 0,1% bei 3000 mm - on request

The measuring accuracy of the probes can be calculated with following formula (depending on the measuring length):

$$\pm \frac{(\text{screen} : 2)}{\text{Measur. length } L_m} \times 100\%$$

$$\text{e. g.: } \pm \frac{(6,4 \text{ mm} : 2)}{1000 \text{ mm}} \times 100\% = 0,32\%$$

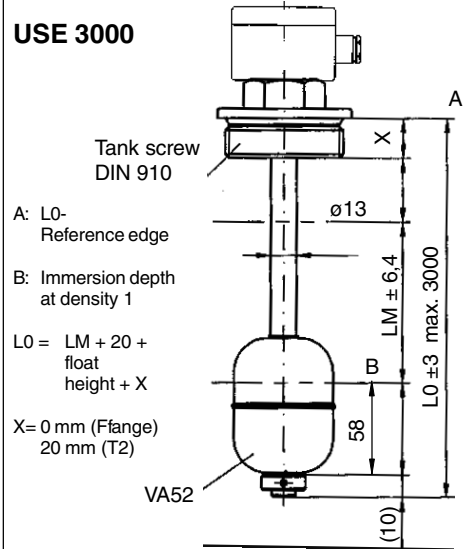
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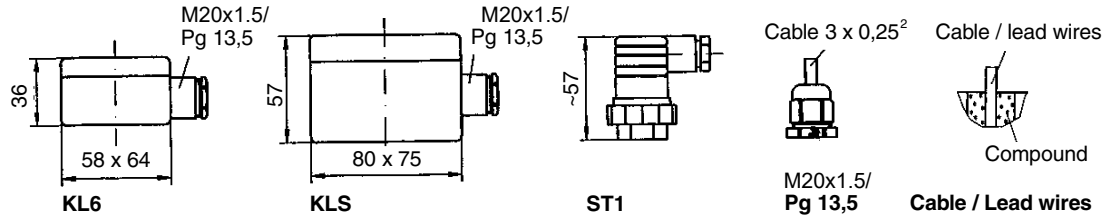
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Due to technical changes

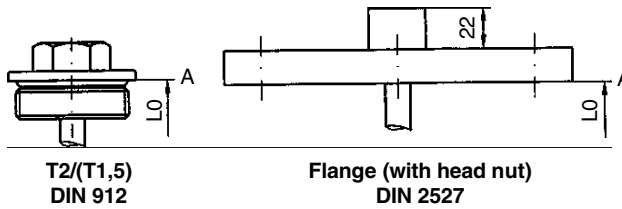
USE 3000



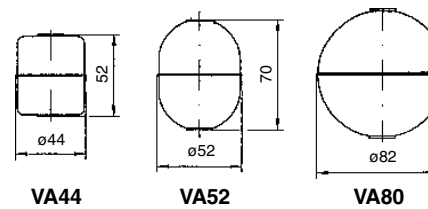
Electrical connections



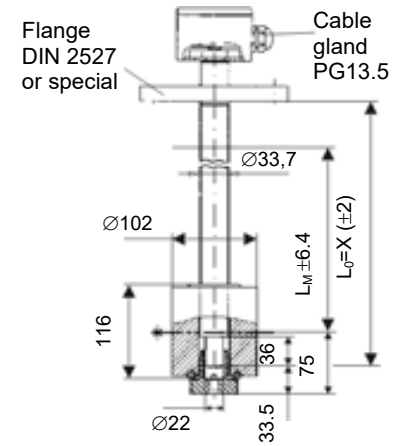
Mechanical connections



Floats



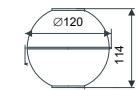
Float USE15000



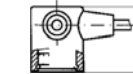
HY102/HY102t



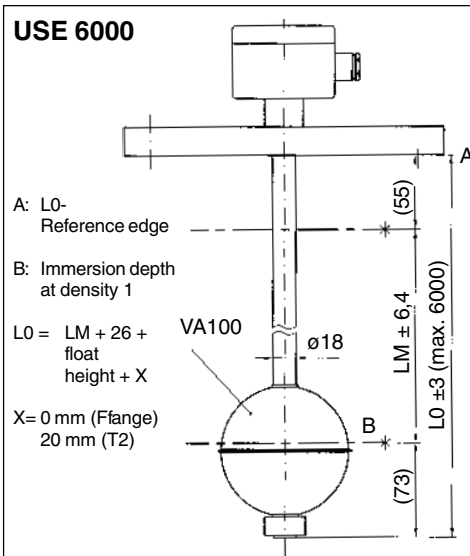
VA120



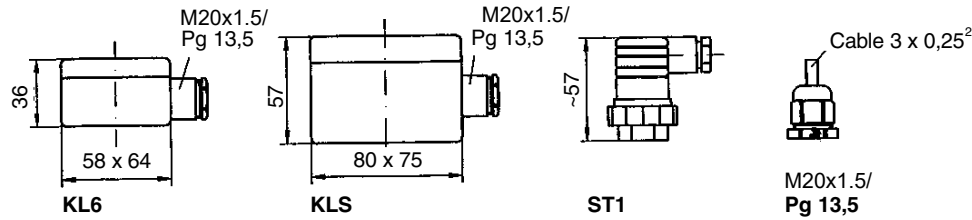
Electrical connection



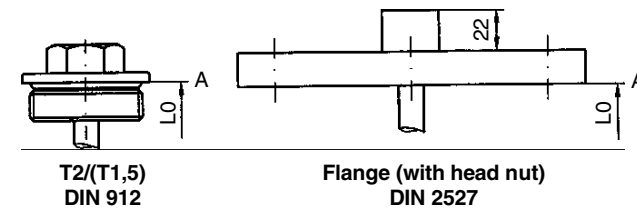
USE 6000



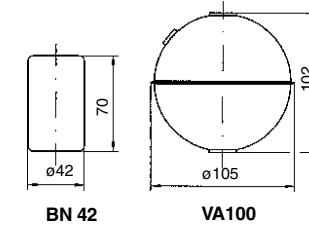
Electrical connections



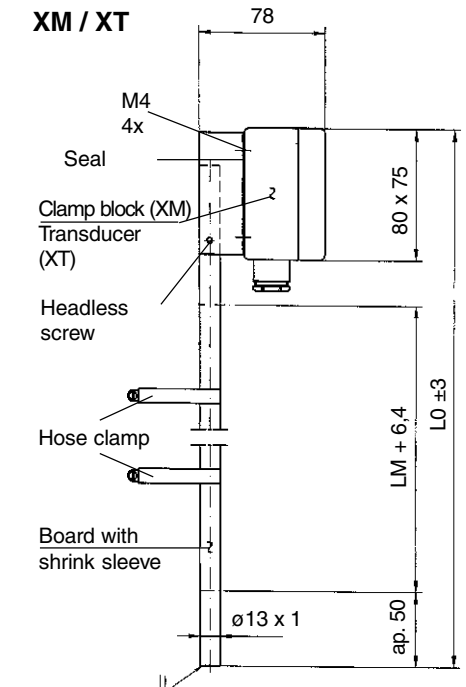
Mechanical connections



Floats



XM / XT



Technical Data

Model	USE 3000			USE 6000		USE 15000			XM	XT
Total length L ₀	max. 3000 mm			max. 6000 mm		max. 15.000 mm			max. 6000 mm	max. 6000 mm
Float	VA 44	VA 52	VA 80	VA 100, Ø 105 mm, ball	BN 42, Ø 42 mm, oval	HY102	HY102t	VN120	---	---
Min. spec. gravity in g/cm ³	0,9	0,74	0,5	0,62	0,55	0,55	0,94	0,80	---	---
Max. operating pressure (bar)	15	25	16	32	15	90	90	16	---	---
Max. temperature (Medium)	-10 °C...+90 °C - Standard -50 °C...+150 °C - High temp.			-10 °C...+90 °C - Standard -50 °C...+150 °C - High temp.	-10 °C...+90 °C - Standard -50 °C...+150 °C - High temp.	-10 °C...+90 °C - Stand. -50 °C...+150 °C - H. temp			-10 °C...+90 °C Stand. -50 °C + 150 °C - H. temp	-10 °C...+90 °C Stand. -50 °C + 150 °C - H. temp

Technical Data MU3L

Power Supply : 8...35 V DC

Output Signal : 4...20 mA
 Updating Time : 135 ms
 Load : $\leq (+UB-8) / 0,023 \text{ ohm}$
 $< \pm 0,01\% \text{ f. s.} / 100 \text{ Ohm}$

Signal at Wire Breaking : 3,5 mA

Response Time : 0,33 sec.

Accuracy : 0,2% f. s.

Max. Ambient Temperature : -40 °C...+85 °C

Level Indication Circuit : 3-wire potentiometer circuit

Connection Scheme

