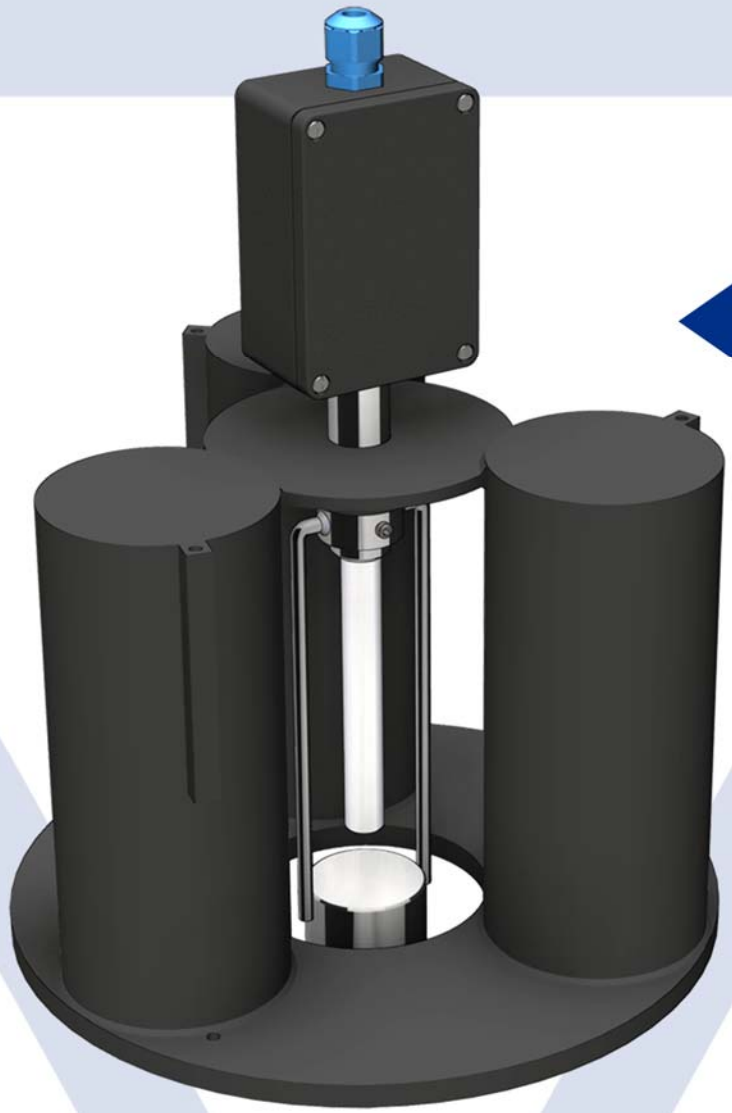
Interface bar probe

STMk 180/120 SB R TND ES2 SW V ExG



- Monitoring of rain water in separating tanks
- Insensitive to contamination
- Outdoor application IP65
- Oil layer from 1 - 50 mm
- 2 wire technology

Use

Can be utilized in basins or shafts for oil separation. For liquid/liquid interface separation of organic and aqueous medias.

Application

As a standard, the bar probe is manufactured in stainless steel and the measuring electrode in PTFE with a bar reference electrode and is applied as an interfacial layer level measurement. The aqueous media to be measured may change its electrical properties. An organic layer from 1 – 50 mm can be detected.

Serial number: TAG number: D-5330

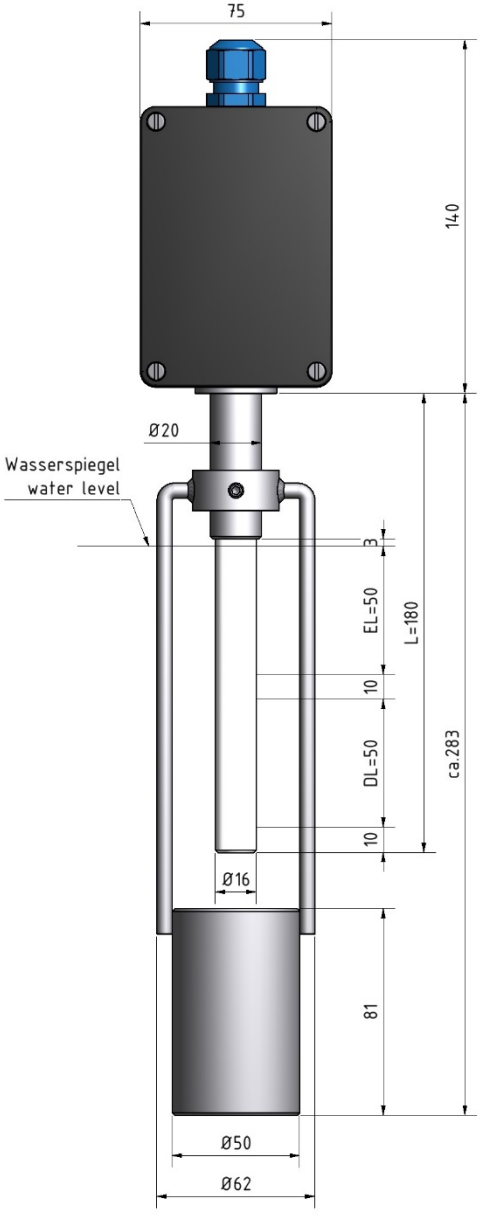
Model code:

STMk 180/120 SB R TND ES2 SW V ExG

S	|	bar probe
T	|	Teflon™ coated measuring electrode
M	|	measuring electronics protection housing integrated measuring electronics MTI 50/0 AEE22K connection head glass fiber reinforced polyester with graphite additive, FPM gasket, IP 65 according to EN 60529, cable connection PM M16 x 1.5 blue, cable clamping range ø 3-6 mm
L	|	probe length to lower edge of the flange 180 mm
EL	|	measuring probe length 120 mm
SB	|	bar measuring electrode, ø/diam. = 16 mm, s = 1 mm
R	|	wetted probe material stainless steel 316L
TN	|	continuous interface layer and level oil detection (analog measuring technique)
D	|	differential measurement for pollution and water compensation
ES2	|	2-fold rod reference electrode Ø 62 mm rod ø 6 mm with counterweight
SW	|	built in float SW PE 290
V	|	double seal O-ring FPM (universally applicable)

probe Ex-protection: SEV 09 ATEX 0133 X CE 1254

ExG	|	(gas-) Ex-version (probe/MTI) II 1/2G Ex ia IIC Ga/Gb



Technical data

Temperature range
–20 ... +80 °C medium | –20 ... +60 °C connection head

Cleaning temperature 100 °C max., 10 min. pressureless (CIP)

Pressure atm (-1 bar up to max. 6 bar)

Measuring principle impedance

Measuring range 1..50 mm

Resolution up to 0.3 .. 1.5 Imp/mm

Integration time 40 - 400 ms / 0 - 3750 Imp

Use Ex-zone II 1/2G zone 1

Measuring electrode PTFE layer thickness
ø 16.0 mm / PTFE s = 1 mm

Application Interface detection continuous, level

Measuring electronics Housing square: MTI 50/0 AEE22K

Protection connection head square IP65

Wiring
Shielded 2-core cable 0.75 mm² twisted CY/EIG to all evaluation devices mipromex®, cable length up to 200 m or max.
C = 120 nF / R = 30 Ohm line impedance

Connection to evaluation unit mipromex® MAT / MLS

Article n° probe: 02.29.12.0754
probe incl. floater PE 290: 22.03.46.017

Technical data on-site MTI measuring electronics

Design type
Plug-in electronics with square stainless cover in the protective housing, with HF-connection; IP 20

Installation
Protection housing with mounting holes, plug-in electronics insertable, fixed with 2 screws M4x8

Performance
Linear conversion of an impedance range into a normed digital measurement signal

Use/Display
One-time compensation of basic capacity of the HF cable and uncovered dry probe, LED display for quick adjustment

Dimensions electronics
Square version height x width x length 51 x 70 x 77 mm

Weight electronics
140 g

Ex-power supply / connection wiring
Shielded two-wire connection 0.75 mm2 twisted CY/EIG to all evaluation devices mipromex® cable length up to 200 m or max. C= 120 nF / R = 30 Ohm line impedance

Transfer signal
Impulse parcel, superimposed on the supply current

Measuring voltage/current
U ~ 14.5 V I ~ 13,5 mA

Nominal data of the supply voltage
Rate data **Ex ia** IIC only for connection to mipromex® type M** **** * - or *TI*K-units

Circuit with the following maximum output values
$U_i \leq$ 18,9 V $I_i \leq$ 49 mA
$P_i \leq$ 231 mW
$C_i =$ 60 nF $L_i =$ 0 mH

Ambient temperature
–20 … +60 °C

Storage temperature
–30 … +80 °C, ideal +20 °C

Measuring range
10 / 20 / 50 / 100 / 200 / 300 respective 0 up to max. 3750 impulses, special ranges available. The resolution range depends on the probe dimensions and is product specific.

Resolution
Max. 0.003 pF/impulses

Norm range for pipe probe with remote MTI housing
Type STK .../100/200/300
55 pF, type MTI 30/, 50/(0 - 16) basic adjustment range depending on probe and HF-cable length, determined by the manufacturer

Basic adjustment range
MTI .../. 0 to 16, 0 to 500 pF

Measurement frequency
~ 500 kHz

Linearity
Deviation < 0,1 % (without probe)

Hysteresis
1 measured impulse

Temperature influence 5 – 45 °C
Type MTI .../.A analog: < ± 3 measuring impulse

Certification
gas II 1/2G Ex ia Gb IIC T6
dust II 1/2D Ex iaD 20/21 IP65 T85°C
II 1/2G Ex d ia IIC T6
RL 2014/34/EU
Inspection report n°: 08-IK-0395.01 with extension 1
Unit can be supplied without Ex-protection

Intrinsically save Ex-connection:
Measuring electronics MTI ... In a protective housing or bar probe type S**; K** ; F**
EMC-tested, STS 024 report n° 990102WS corresponds to EN 1127-1 : 20011
EN 61000-6-2 2005 EN 6100-6-4 : 2007
EN 60079-0 : 2012 EN 60079-11 : 2012

Measuring system

The measuring loop consists of a probe with remote on-site electronics MTI and the evaluation unit mipromex® in a non Ex-zone. The cable length for an Ex ia application is max. 200 m.

Function

The impedance changes as a function of the dielectric constant and the el. conductivity of the organic and aqueous media, as well as depending on the immersion depth of the active measuring electrode. The detected impedance at the measuring electronics MTI is directly transformed into a normed digital sum signal and transmitted as a pulse train to the mipromex®.

Mounting directions

- Follow internal safety regulations and installation guidelines
- After installation in the floater, the height of the probe must be adjusted to the water surface
- Measuring electrode must be immersed completely
- Floater must be freely movable
- Ambient temperature: max. allowed temperature in the connection head must not exceed +60 °C

Disassembly instructions

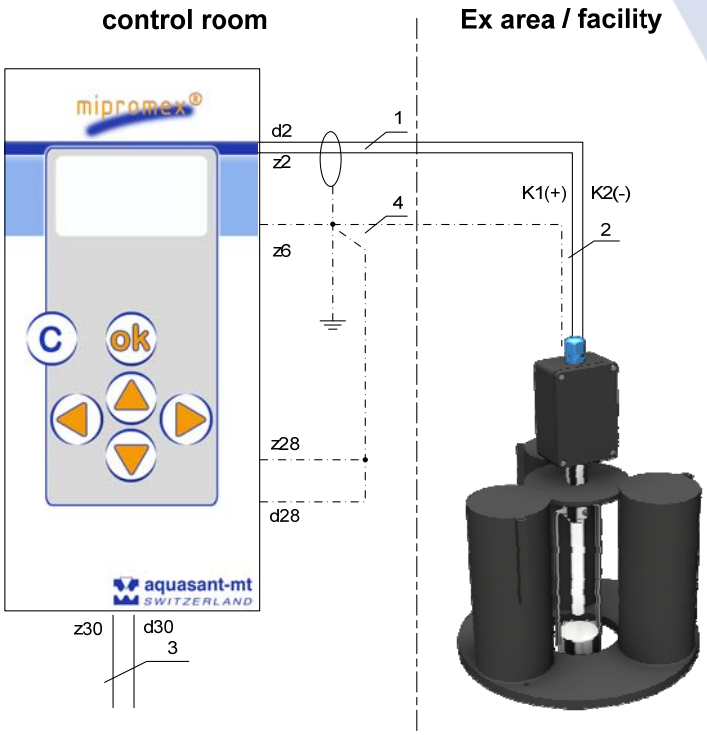
- Follow internal safety regulations and installation guidelines
- Pull out the floater at the guideway
- Disconnect electrical connections.
- Dismount the reference electrode incl. the stabilizer weight and pull it down
- Dismount the probe from the floater and pull it up
- Before shipment to aquasant for repair, clean the probe incl. floater and add data sheets for personal safety purpose

Electrical directions

- Wiring must comply with the circuit and grounding diagram.
- Connections to MTI clamps 1(+)/2(-), protected against polarity reversal, suitable for wire cross section 0.2 – 1.5 mm^2
- The connecting cable has to suit the demands at the measuring circle.
- MTI-housing lid in [Ex ia] zone can be opened under live-line working.
- Output signal of mipromex® is a pulse modulated signal U_0 ≤18.9 V

Basic circuit diagram

Probe connection to evaluation unit mipromex®
Connection diagram MRM2 Monorack DIN housing



Certificates

Explosion protection (ATEX)
EC-type examination SEV 09 ATEX 0133 X
- Ex-certification according to directive 2014/34 EU

CE-Mark
The probe fulfills the legal requirements according to the EC-directives. CE 1254

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