Interface bar probe

STMd 950/600 SB R TN ES4 K DN80 C2 ExG

- High-resolution measuring signal
- Pressure independent, stable measuring signal
- No moving parts
- Outdoor application IP68
- Process pressure 16 bar
- Process temperature 170 °C
- Insensitive to contamination

Use
Can be utilized at multipurpose plants, separators, continuous settling tanks, pilot plant or production. For liquid/liquid interface separation of organic to aqueous media.

Application
The bar probe is manufactured in the standard version in stainless steel, the measuring electrode in PTFE with a bar reference electrode, which is applied as an interface-level bar probe. The media to be measured must have constant electrical properties. If the dielectrical constant or the el. conductivity changes, a product compensated measuring system has to be used.
### Model code:
STMd 950/600 SB R TN ES4 K DN80 C2 ExG

<table>
<thead>
<tr>
<th>S</th>
<th>Bar probe</th>
</tr>
</thead>
<tbody>
<tr>
<td>T</td>
<td>Teflon® coated measuring electrode</td>
</tr>
<tr>
<td>Md</td>
<td>Measuring electronics protection housing (indoor) integrated measuring electronics MTI 100/1 AEO2</td>
</tr>
<tr>
<td></td>
<td>Measuring electronics – protective housing, outdoor, seawater-proof (Offshore), blue RAL 5007, seal: Silicone, EX/fireproof, cable gland brass Exd M20 x 1.5, cable clamping range 8-11mm, IP 68 to EN 60529</td>
</tr>
<tr>
<td>L</td>
<td>Probe length to lower edge of the flange 950 mm</td>
</tr>
<tr>
<td>EL</td>
<td>Measuring probe length 600 mm</td>
</tr>
<tr>
<td>SB</td>
<td>Bar measuring electrode, ø/diam. = 18.0 mm, s = 4.0 mm</td>
</tr>
<tr>
<td>R</td>
<td>Wetted probe material stainless steel 316L</td>
</tr>
<tr>
<td>TN</td>
<td>Continuous interface layer and level detection (analogue measuring technique)</td>
</tr>
<tr>
<td>K</td>
<td>Cooling gills stainless steel (&lt;-20 / &gt;100 max. 170 °C)</td>
</tr>
<tr>
<td>ES4</td>
<td>4-fold cage Reference electrode ø/diam. 6 mm with spacer block Ø 58 mm</td>
</tr>
<tr>
<td>DN</td>
<td>Flange DN80 PN16 according to form B1 after EN 1092-1; 316L</td>
</tr>
<tr>
<td>C2</td>
<td>Double seal Kalez 4079, second O-ring FPM (universally applicable)</td>
</tr>
</tbody>
</table>

Probe Ex-protection: SEV 09 ATEX 0133 X CE 1254
ExdG | (Gas-) Ex-version (probe/MTI) II 1/2G Ex d ia II C Ga/Gb

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### Technical data

**Temperature range**
-20 ... +170 °C medium | -20 ... +60 °C connection head

**Cleaning temperature** 210 °C max., 10 min. pressureless (CIP)

**Pressure** -1 bar up to max. 16 bar / 150 lbs. standard

**Measuring principle** Impedance

**Measuring range** DC 1.4 ... 80 / 0 - 2990 Imp

**Resolution** up to < 1 mm

**Conductivity optimum of the organic phase**
MTI standard: 0 ... 200 μS/cm (constant)

**Basic capacity** Cₚ: 63.1 pF / Rₚ: 1.1 MΩ

**Integration time** 40 - 400 ms / 0 - 3750 Imp

**Use Ex-zone** II 1/2G Zone 0

**Measuring electrode PTFE-layer thickness**
ø 18.0 mm / PTFE s = 4.0 mm

**Application** Interface detection continuous, level

**Measuring electronics** Housing round: MTI 100/1 AEO2

**Protection** connection head round IP68

**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® MIQ / MIL

**Article n°** 02.29.12.000 10063
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**
Square version height x width x length 57 x 80 x 175 mm

**Weight electronics**
140 g

**Ex-power supply / connection wiring**
Shielded two-wire connection 0.75 mm2 twisted CY/EIG to all evaluation devices miprorex® cable length up to 200 m or max. C= 120nF / 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 II C only for connection to miprorex® type M** *** - or *TI*K-units

Circuit with the following maximum output values

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>U ≤ 18.9 V</td>
<td>I ≤ 49 mA</td>
</tr>
<tr>
<td>P ≤ 231 mW</td>
<td></td>
</tr>
<tr>
<td>C = 60 nF</td>
<td>L = 0 mH</td>
</tr>
</tbody>
</table>

**Ambient temperature**
-20 ... +60 °C

**Storage temperature**
-30 ... +80 °C, ideal +20 °C

**Measuring system**
The measuring loop consists of a probe with remote on-site electronics MTI and the evaluation unit miprorex® in a non Ex-zone. The cable length is for an Ex ia application 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 transformed directly into a normed digital sum signal and transmitted as a pulse train to the miprorex®.
Mounting directions

- Installation from top to bottom or bottom to top (length and turbulence dependent)
- During installation the bar probe must be handled carefully. Always hold the probe at the flange and support the measuring electrode.
- Internal installation guidelines always have to be followed and suitable sealing used.
- Observe internal safety regulations for open tanks
- The pipe insulation must not enclose the cooling rod
- Ambient temperature: max. allowed temperature in the connection head must not exceed +60°C, if pipe probe is insulated and measuring electronics is remote installed
- Pressure tests have to be conducted with mounted probe

Disassembly instructions

- Empty tank and flush with nitrogen or water according to operating instructions (observe internal safety regulations)
- Disconnect electrical connections. Dismount probe, lift at the flange. Careful, residual liquid may leak out.
- Data sheets for personal safety purpose need to be added with repair shipments to aquasant.

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 mm²
- 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 U₀ ≤ 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
- Confidential test report no.: 08-IK-0395.01

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