



Powder level bar probe

SRMd 250/100 SB RT GP TC1" V ExG



- High-resolution measuring signal
- No moving parts
- Outdoor application IP68
- Process pressure 16 bar

Use

Can be utilized in multipurpose plants, reactors, fermenters, pilot plant or production. For powder detection organic media.

Application

The bar probe is manufactured in the standard version in stainless steel, the measuring electrode in 316L, which is applied as an powder detection-level bar probe. The media to be measured can have variable electrical properties. If the dielectrical constant or the el. conductivity changes, the powder crown is reliably detected via the hysteresis.



Serial number:

TAG number:

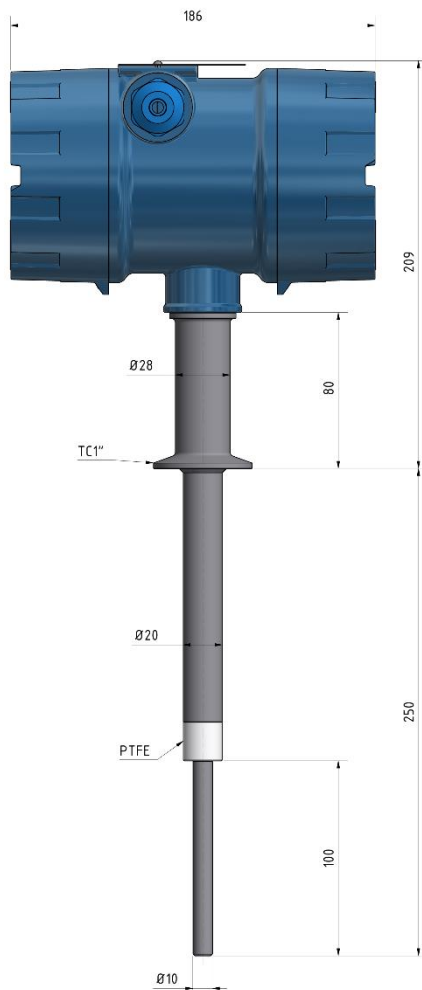
Model code:

SRMd 250/100 SB RT GP TV1" V ExG

S	Bar probe
R	Measuring electrode stainless steel V4A
Md	Measuring electronics protection housing integrated measuring electronics MTI 20/1 AEO2K Measuring electronics – protective housing, outdoor, seal: Silicone cable gland PM M20 × 1.5, cable clamping range 8-11mm, IP 68 to EN 60529
L	Probe length to lower edge of the flange 250 mm
EL	Measuring probe length 100 mm
SB	Bar measuring electrode, \varnothing /diam. = 10 mm,
RK1	Probe material: stainless steel 316L, PTFE isolation
GP	Limit value full/ empty indicator, powder detection
TC1	1" Tri-Clamp connection; 316L
V	Seal O-ring FKM (Viton)

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

Pressure -1 bar up to max. 16 bar standard

Measuring principle Impedance

Measuring range DC >1.4 / 0 - 500 Imp

Integration time 40 - 400 ms / 0 - 3750 Imp

Use Ex-zone II 1/2G Zone 0

Application powder detection

Measuring electronics Housing round: MTI ../. AEO2K

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® MLS

Article n° 02.29.12.1325

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 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

$U_i \leq 18,9 \text{ V}$ $I_i \leq 49 \text{ mA}$

$P_i \leq 231 \text{ mW}$

$C_i = 60 \text{ nF}$ $L_i = 0 \text{ mH}$



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 mipromex® 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 mipromex®.

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 safe 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



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 $U_0 \leq 18.9 \text{ V}$

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

