

# Programmable Encoder Type ST-0907-V2-A (ATEX)

## Programmable 4-20mA loop powered encoder

- ❑ Based on the sophisticated Zettlex ST technology for inductive displacement sensing
- ❑ Non-Contact (no wear problems, no loading and no added hysteresis on the system to effect measurement at low flow)
- ❑ Absolute measurement (no problems if power is disconnected and reconnected)
- ❑ Robust construction (long life without problems)
- ❑ Smart (one time factory calibration stored in electronic memory)
- ❑ Accurate (more than 1000 measurement points over full-scale deflection)
- ❑ High resolution measurement (sensor can indicate changes in flow before the eye can)
- ❑ Programmable output filter for stable output (damping of the pointer vibration)

- ❑ 4-20mA loop powered (2 wire connections)
- ❑ ATEX certified with the following ATEX marking:



II 1G Ex ia IIC T4/T6



## Technical specifications

### Mechanical specification

Measurement range	100°
Angle resolution	0.03°
Linearity	±1%
Gap range (electronics to target)	4.3mm..5.8mm <sup>a,b</sup>
Max non-concentricity	±1.5mm
Repeatability	< 0.2%

### Electrical specification

Operating voltage	9..28V DC
Supply current	4..20mA
Reverse polarity protection	yes
Over-voltage protection	up to 30V
Output signal	4..20mA <sup>c</sup>
Load impedance	< (V <sub>SUPPLY</sub> - 8)/0.02 [Ω]
Resolution of the output signal	> 10 bit
Programmable output filter	0..5s (0.5s steps)
Temperature stability	< 80ppm/K
Standard connections	2 way terminal block, wires<1.0mm <sup>2</sup>
Operating temperature	-40°C..+85°C
Storage temperature	-40°C..+60°C

### ATEX approval

Certificate number	FTZU09ATEX0221X
Product marking	Ⓔ II 1G Ex ia IIC T4/T6
Ambient temperature for T4	-40°C<T <sub>a</sub> <+85°C
Ambient temperature for T6	-40°C<T <sub>a</sub> <+60°C
Applicable in zones	0, 1, 2

### Ex data

U <sub>i</sub> = 28V	I <sub>i</sub> = 120mA	P <sub>i</sub> = 0.82W
C <sub>i</sub> = 0nF	L <sub>i</sub> = 5μH	

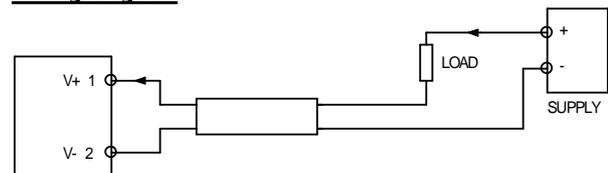
<sup>a</sup> Specified performance is only within this range of the gap

<sup>b</sup> Gap is measured between top of the pointer and top of the electronics board

<sup>c</sup> Guaranteed only within the full scale ±5% on both ends

## Installation instructions

### Wiring diagram



i-MON

Wires must be kept away from the underneath of the electronics board area otherwise they could affect the accuracy of the output. (3 pin header/socket is for in-house calibration only)

### Ex installation:

- The module must only be installed by qualified personnel who are familiar with the national and international laws, directives and standards that apply.
- Cable entries and blanking elements shall be used that are suitable for the application and correctly installed. For an ambient temperature ≥ 60°C, heat resistant cables shall be used with a rating of at least 20°C above the ambient temperature.
- The separation distance between the encoder's conductive parts (terminal screws, e.t.c.) and other conductive parts within the enclosure must be ≥ 5mm.
- The transmitter must be mounted in an enclosure in order to provide a degree of ingress protection of at least IP20.
- If the enclosure in which the transmitter is mounted is made of aluminium and installed in Zones 0 and 1 it shall not contain by weight more than 7.5% in total of magnesium, titanium and zirconium. The enclosures must be separately certified to 1G category if the encoder is fitted in Zone 0.
- The additional enclosure of the apparatus shall be designed and/or installed in such a way that, even in the event of rare incidents, ignition sources due to impact and friction sparks are excluded.



Precision in the Extreme

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