

Petrotec

MAGNETOSTRICTIVE PROBES

AUTOMATIC TANK GAUGE
SERVICE STATIONS
AND DEPOTS



STATE OF THE ART
MAGNETOSTRICTIVE
ATG TECHNOLOGY

GENERAL FEATURES

GENERAL CHARACTERISTICS

THE MAGNETOSTRICTIVE LEVEL PROBE BASES HIS PHYSICAL PHENOMENA ON THE WIEDEMANN EFFECT.

- ▶ The main features are:
 - ▶ Very high accuracy and repeatability
 - ▶ Reliability and robustness
 - ▶ Sharp leakage control
 - ▶ Full stainless steel execution
 - ▶ Ultra compact design
- ▶ Commonly used in the fuel level control, it allows the measure of the three essential parameters:
 - ▶ Fuel level
 - ▶ Water level on the bottom of the tank
 - ▶ Fuel temperature
- ▶ The magnetostrictive sensor measures with an high resolution of 0,01 mm and a final accuracy of 0,25 mm on the full scale range (Plus version only).
- ▶ Measuring length of the rigid pipe, range from 0,4 m up to 5,5 m
- ▶ Measuring length of the flexible pipe, range from 5,5 m up to 15 m

EXD / SS - WIRED MAGNETOSTRICTIVE LEVEL GAUGE

MECHANICAL CHARACTERISTICS

- ▶ ExD/SS:
 - ▶ Stainless Steel AISI304 Ø 50 mm enclosure IP 68 degree protection up to 10 m. water submersion max. 24h
 - ▶ Tank connection: threaded or flanged
 - ▶ Explosion proof construction, Exd brass nickel coated ½" NPT cable gland
 - ▶ Stainless steel pipe AISI 304 / 316 Ø 14.0 mm
 - ▶ N. 2 stainless steel AISI 316 / expanded NBR floats Ø 42 / 52 mm

ELECTRICAL FEATURES

- ▶ 2 m fuel resistant cable type CEI EN 50363 - ENI 001.181.00
- ▶ Power supply 12 - 30 VDC
- ▶ RS485 serial port communication

METROLOGICAL DATA

- ▶ Product Level / mm
- ▶ Interface Level / mm (water presence detection)
- ▶ Product average temperature up to max. 5 temp. sensors
- ▶ Temperature accuracy in range -20 ÷ +50 °C: ± 0,2 °C
- ▶ Standard Version:
 - ▶ Measuring probe accuracy: ± 0,5 mm
 - ▶ Real probe resolution: ± 0,05 mm
- ▶ Plus Version:
 - ▶ Measuring probe accuracy: ± 0,05 mm
 - ▶ Real probe resolution: ± 0,01 mm

WIRELESS MAGNETOSTRICTIVE PROBE COMMON FEATURES

- ▶ Transmission frequency 169 MHz for a safe and reliable data transmission from the underground reliable data transmission from the underground sump tanks
- ▶ Wireless magnetostrictive sensor battery powered
- ▶ Intrinsically safe version suitable for 0 zone
- ▶ Ultra low power mode
- ▶ Data transmission up to 3 km
- ▶ line of sight
- ▶ Battery life up to 7 years (depending of settings)
- ▶ No costs for cabling and digging
- ▶ Fast and easy installation
- ▶ Compact design

> PRECISION
EXD/SS



Certificate AR 18 ATEX 023
FISCO POWER SUPPLY



II 1/2G Ex ia/Ex d IIB T6 Ga/Gb IP68Tamb = -20
Tamb = -40 +70°C

CE compliance

PRECISION RS



RS - WIRED MAGNETOSTRICTIVE LEVEL GAUGE

MECHANICAL CHARACTERISTICS

- ▶ Stainless steel enclosure AISI 304 - Ø 42/35 mm
- ▶ IP 68 Protection up to 10 m/24h water submersion
- ▶ Tank connection: in riser, threaded or flanged
- ▶ Stainless steel pipe AISI 316 Ø 14.0 mm
- ▶ N. 2 INOX AISI 316 / NBR floats Ø 42 / 52 mm

ELECTRICAL FEATURES

- ▶ Intrinsically safe circuit to be connected to the passive barrier ISB
- ▶ Circular connector M12 - 4 pin polarized
- ▶ 2 m Fuel resistant cable type CEI EN 50363 ENI 001.181.00
- ▶ Power supply 12-30 Vdc
- ▶ RS485 serial port communication

METROLOGICAL DATA

- ▶ Product level / mm
- ▶ Interface level / mm (water presence detection)
- ▶ Product average temperature up to 5 temp. sensors
- ▶ Temperature accuracy -20 ÷ +50 °C: ± 0,2 °C

STANDARD VERSION:

- Measuring probe accuracy: ± 0,5 mm
- Real probe resolution: ± 0,05 mm

PLUS VERSION:

- Probe accuracy ± 0,25 mm
- Real probe resolution: ± 0,01 mm

PRECISION RTD



RTD - WIRELESS MAGNETOSTRICTIVE LEVEL GAUGE

MECHANICAL CHARACTERISTICS

- ▶ Stainless steel AISI 304 and Delrin enclosure, external diameter Ø 42 mm
- ▶ IP 68 protection up to 10 m/24h water submersion
- ▶ Tank connection: in riser, threaded or flanged
- ▶ Stainless steel pipe AISI 304 / 316 Ø 14.0 mm
- ▶ N. 2 INOX AISI 316 / NBR floats Ø 42 / 52 mm

ELECTRICAL FEATURES

- ▶ Intrinsically safe construction for installation in classified 0 zone
- ▶ Integrated battery and antenna
- ▶ Power supply: intrinsically safe lithium battery

METROLOGICAL DATA

- ▶ Product level / mm
- ▶ Interface level / mm (water presence detection)
- ▶ Product average temperature max 5 sensors
- ▶ Measuring probe accuracy: ± 0,5 mm
- ▶ Real probe resolution: ± 0,05 mm
- ▶ Temperature accuracy -20 ÷ +50 °C: ± 0,2 °C



PRECISION 485FX \ RTD-FX

485FX / RTD-FX - FLEXIBLE MAGNETOSTRICTIVE PROBE - WIRED AND WIRELESS EXECUTIONS

MECHANICAL CHARACTERISTICS

- ▶ Measuring range up to 15 m
- ▶ Stainless steel AISI 304 and Delrin enclosure Ø 42 mm
- ▶ IP 68 degree protection up to 10 m. water submersion max. 24h.
- ▶ Tank connection: threaded or flanged
- ▶ Corrugated stainless steel pipe AISI 31 Ø 18.0 mm
- ▶ N. 2 INOX AISI 316 / NBR floats Ø 105 / 50 mm

ELECTRICAL FEATURES

- ▶ Intrinsically safe construction 0 zone classified
- ▶ Wired RS485 and wireless versions
- ▶ Electrical features as above (see RS and RTD)

METROLOGICAL DATA

- ▶ Product level / mm
- ▶ Interface level / mm (water presence detection)
- ▶ Product average temperature max 5 sensors
- ▶ Measuring probe accuracy: ± 1.0 mm
- ▶ Real probe resolution: $\pm 0,05$ mm
- ▶ Repeatability $\pm 0,2$ mm
- ▶ Temperature accuracy $-20 \div +50$ °C: $\pm 0,2$ °C



Certificate AR 18 ATEX 023
FISCO FIELD DEVICE



II 1/1G Exia/h IIB T6 Ga/Ga IP68
Tamb = -40 +70°C

CE compliance



Management
System
IECEX-Scheme
94/9/EG

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