

Magnetostrictive level measurement for filling stations and fuel depots

MAGNETOSTRICTIVE &
WIRELESS TECHNOLOGY

START
italiana



Magnetostrictive liquid level gauges

with rigid stainless steel shaft up to 5,5 meters suitable for gasoline, gasoil, LPG, adblue, solvents, bus multipoint technology.

Different versions for different applications:

- radio wireless, battery powered
- wired with RS485 communication
- wired RS485 LOG: tank measure recording if power and communication are lost.

ATEX, CE, IP protection, OIML compliance:

- intrinsically safe or explosion proof versions
- submersible IP68 protection certified
- metrological certifications:
 - OIML R85 for fixed tanks
 - OIML R80 for tank trucks.

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Main features

Supports tele-diagnostic/maintenance functions.

Internal sensor replacement without removing rod from the tank.

Remote configuration of operation parameters.

Internal sensor can be withdrawn without removing probe from tank.

Connection to the tank: fixed or adjustable thread/flanged/inside riser.

Stainless Steel AISI 304/316 shaft.

Measuring range from 200 mm. up to 5.500 mm.

Calculation of data relating to:

- Product level in 0,01 mm.
- Interface level in 0,01 of mm. (water presence detection).
- Product mean temperature up to max. 5 integrated digital sensors.

Standard measuring accuracy: +/- 0,5 mm.

Standard resolution: +/- 0,01 mm.

Temperature accuracy range -20 +70 °C: +/- 0,2 °C.

Temperature resolution: ± 0,0625 °C.

Magnetostrictive level probe

Operating principle

The operation of **Magnetostrictive Level Probe** is based on the principle denominated **Wiedemann effect** and allows a continuous and highly accurate reading of the of liquids inside a tank.

The **level transmitter XMT** consists of an electronic circuit with microprocessor located in the head and of a stainless steel rod housing a wave guide located inside the tank.


A high frequency electric impulse is generated by the electronic device.


In the exact point of intersection with the magnetic field generated by the permanent magnet housed in the float, a mechanical impulse caused by the magnetostrictive torsional deformation is generated.

The mechanical impulse travels at the speed of sound in the wave guide up to the detector located in the measuring housing.



By measuring of the time elapsed between the sending of the initial signal and its return the exact position of the floats along the rod is defined with 0,01 mm. resolution.

Explosion proof ATEX certifications

INERIS 06ATEX0051  II 1/2 G Ex d IIA T6
Ex tD A21 IP66/68 T85 °C Tamb: -20 °C to 60 °C.

CESI 06ATEX 020  II 1/2 G Ex db
II 2 Ex tB IIIC T 85 °C IP67.

Intrinsically safe ATEX certifications

CEC 09ATEX131 REV. 3  II 1 G Ex ia IIB T4 Ga
 II 1D Ex t IIIC T 135 °C Da IP66/68.

Metrological certifications

OIML R85/2008-CZ-11.03 of 29.06.2011
for fixed tanks and R80 for mobile tanks.

I.S. wireless probes XMT-SI-RF

New generation of magnetostrictive wireless level gauge with the ultimate low frequency wireless technology.

Advantages:

- Avoid expensive costs for digging, wiring and cables.
- Low power consumption with save energy management.
- Long life lithium battery up to 5 years.

Stainless steel IP68 compact version:

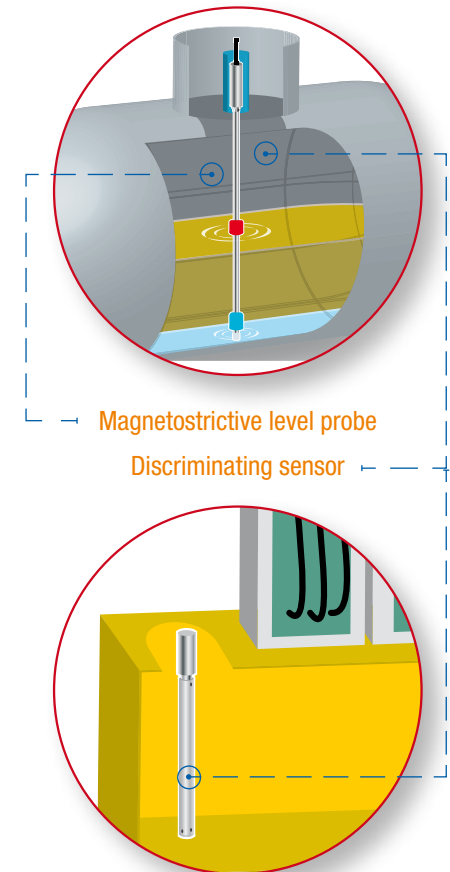
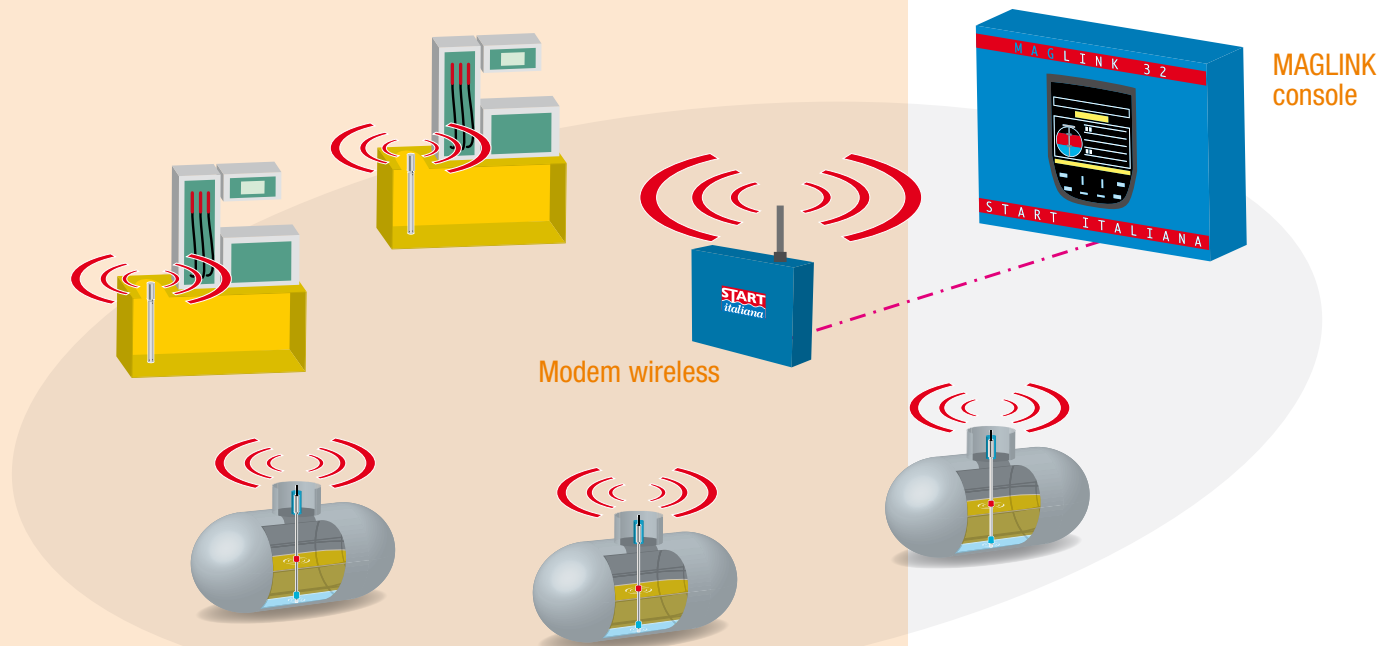
- Battery and antenna embedded inside the probe.
- Suitable for underground and above ground tanks.
- Reliable and guaranteed data transmission in harsh conditions (metallic lid cover, concrete sump).

Features:

- Wireless transmission to the RF receiver up to 2 Km. line of sight.
- RF repeater for difficult environmental application.
- Wake up on radio function.
- Power up 500 mW adjustable.
- Signal measurement and display.

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Probes accessories

I.S. IP68 Junction box

An high IP rated multi-way connector box suitable for filling with bi-component gel to wiring magnetostrictive probes and sensors.

Technical features:

- 2 or 4 cable entry versions
- Enclosure material: PA66 hydrocarbon resistant
- Cable glands material: Geolast entries max. Ø 9,5 mm.
- Screw terminal blocks 5 poles
- Temperature: -20 °C +125 °C
- IP68 protection 5 m proof x 3 h
- EN60529:1991+A1:2000 - EN 60998-1:2004



Ex d IP68
Junction box

I.S. IP68
Junction box



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Ex d IP68 Junction box

Die Cast aluminium junction box. IP68 protection degree with terminal strip, bracket for wall mounting, No 4 IP68 ½" cable glands. FTZU 07ATEX 0184X II 2GD Ex d tD IIC T4-T6 certification.

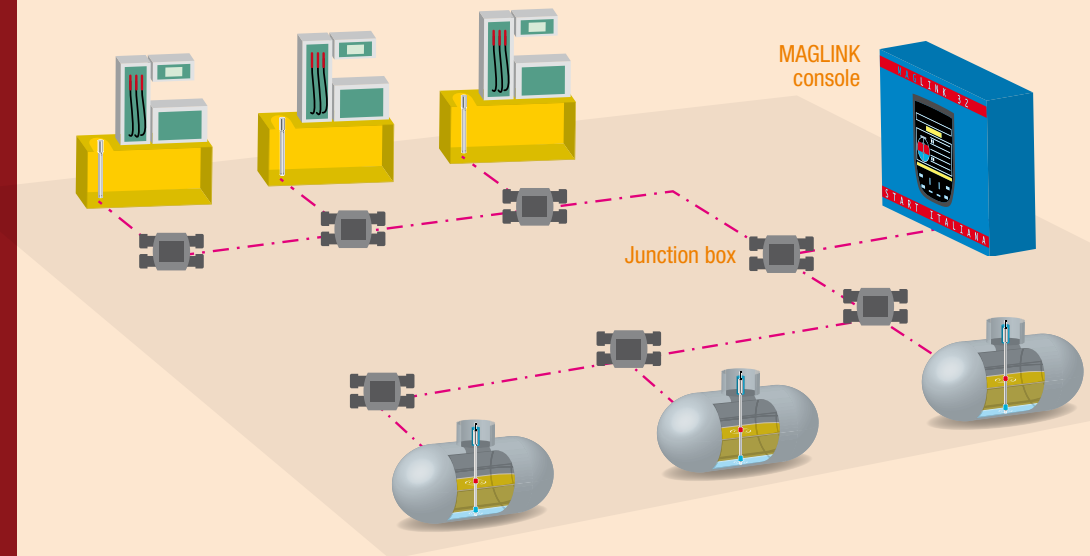
Sumps sensor

Detect and signal fluid presence in double wall tank cavities and in under dispenser sumps, discriminating between water and fuel. RS485 serial communication. Wireless RF available.

Iron Riser

2" iron Riser

"Multipoint" wiring for wired probes



I.S. probes XMT-SI-485/RF Serie

Intrinsically safe version.

- Stainless Steel Enclosure Ø 50 mm IP68 (submersible up to 1,2 m per 24 hours).
- In 2" riser installation.
- M12 circular connector with standard cable length 2 m.
Ø 9 mm, hydrocarbon resistant in according ENI specification.
- Power supply: 12 VDC/battery.
- RS485 serial port/antenna.
- I.S. circuits to wire to an intrinsically safe barrier active (BRA-SI) or passive (BRA-SIP) (only for RS485 Serie).

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I.S. probes XMT-SI-485 LOG Serie

PATENTED

This Magnetostrictive probe belongs to the same family of **XMT-SI-485** with **data logger functionality** which is automatically activated the external power supply and/or data go off.

When external power supply is present, as the normal case, probe works as usual replying to the polling protocol.

When the power/data go off, an internal battery is automaticall connected to the electronic and starts to store movement data into its internal memory keeping lately available for download.

This option is available both for the new probes and for the old probe as a retrofit.



XMT-SI-RF

XMT-SI-RS485

XMT-EXd



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