

TRIFLEX LNI 250

THE NON-INTRUSIVE LEVEL SENSOR
FOR CONDUCTIVE PRODUCTS



Advantages

- Save time and costs in easy installation:
 - Single button setup.
 - No tank nozzles required.
- New FTC technology.
- Non-intrusive installation, no risks of leakage or overspill.
- Virtually no maintenance, no moving parts.
- Easy access maintenance without shutting down your processes, save time and costs!
- Fault detection according to Namur NE43 for fast error solving.
- Auto calibration, unaffected by product quality changes: reliable results ALL the time.
- Sensor status indication for easy reference.

Signal output

- The analog output is a passive 2-wire 4 - 20mA signal (loop powered) according to the measured level indication.
- One solid state relays, which is triggered by a high or low level alarm.

Applicability

- The Triflex LNI 250 is applicable for measuring conductive products with a $\epsilon_v \geq 4$.

Applications

- The Triflex LNI 250 is specially designed for non-intrusive level applications of bulk solid products. It is ideal for situations where it is undesirable or impossible to make an entry into a plastic or glass storage vessel or for aggressive or contamination sensitive products.

General information

Introduction

The Triflex LNI 250 is designed to measure the level on the outside of a non-metallic tank without physical contact with the product. The LNI 250 incorporates the unique FTC technology (Field Time Control). This is a new innovative technology where an electric field is generated between multiple transmitting electrodes and a receiving electrode. The cycle time of the FTC level sensor changes as soon as a product intervenes this electric field. Multiple electrodes are embedded to detect the level of relative high dielectric material ($\epsilon_v \geq 4$).

The Triflex LNI 250 transmitter does not require moving parts or product contact that may be subject to failure situations. Applications with a sensor with FTC Technology provide a more reliable and cost effective solution.

Operation

The Triflex LNI 250 series is non-intrusive, by attaching the level measurement to the outside of a non-metallic tank, there is no need to drill or cut the tank wall and there is also no contact with the product being measured. There are no moving parts and therefore no cleaning or maintenance requirements. It is not an optical system, so the tank/silo doesn't need to be transparent. This reliable non-invasive technology can be applied to many different products and once installed is easily to set up. Press the button once, while connected to an empty tank and the system is up and running.

Analog output signal

The analog output is a passive 2-wire 4 - 20mA signal (loop powered) according to the measured level indication.

Alarm output

The solid state output can be used as an alarm for either low or high level alarm. Default it is set on the 2nd transmitting electrode from below as a low level alarm.

It can however be factory set to any transmitting electrode segment required (option ZD).

LED indicator

On the front there is a Bi-Color LED which acts as a level and status information indicator. The Bi-Color LED is showing the level relative to the bottom of the device with color gradually changing from RED at 0% to GREEN at 100%. The LED is capable of flashing while maintaining the level information. Flashing can be either fast, this indicates a diagnostic error and slow, this indicates a process warning.

Easy one button operation

Pressing the button during normal operation stores the measurement values from the sensors as the initial situation. This should be performed with an empty vessel/container only. This information is kept during power down.

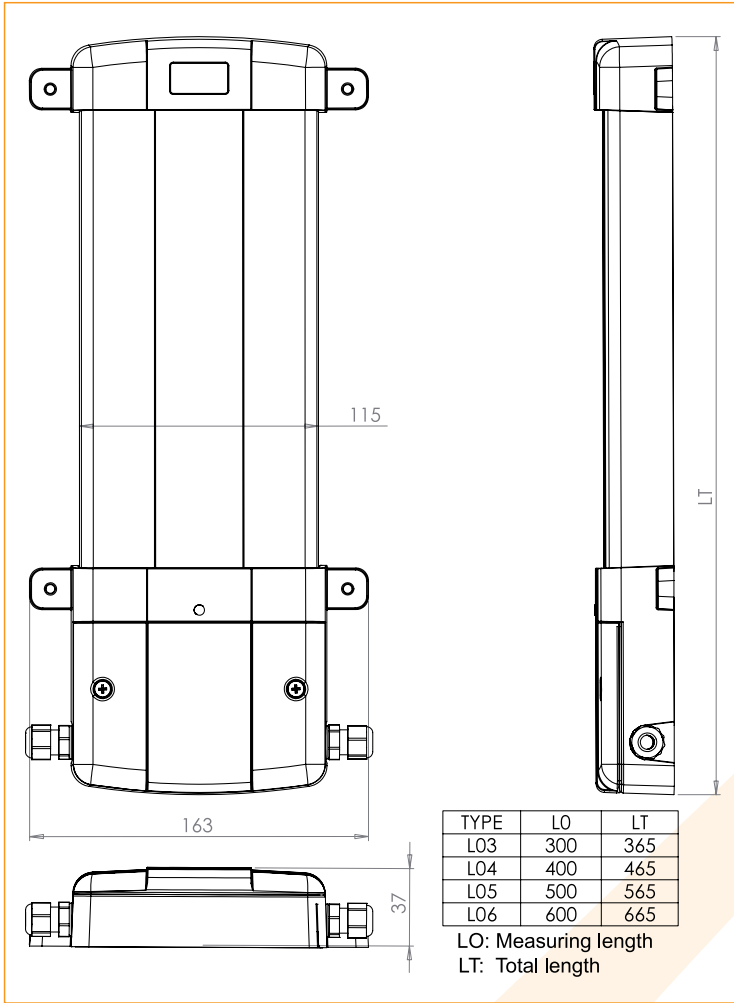
Mounting conditions

The LNI 250 must be placed directly and tight to the non metallic tank or vessel. There are two mounting options. There is a strap mounted possibility and an adhesive tape option.

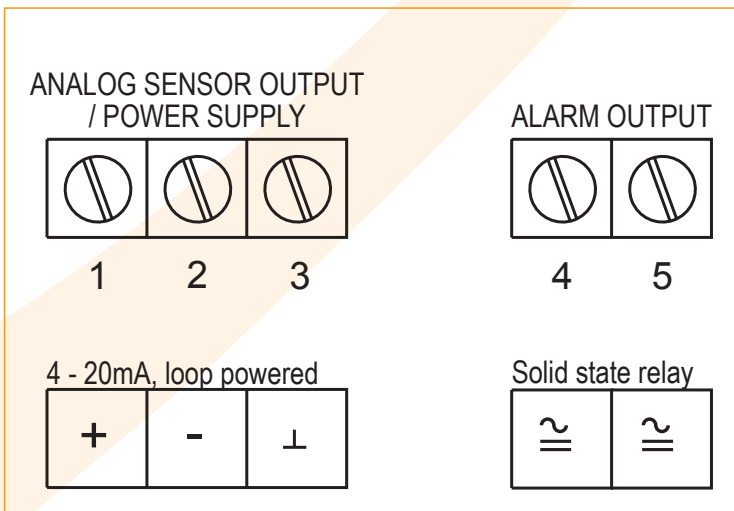
Triflex LNI 250



Dimensions enclosures



Terminal connections



Technical specification

Enclosure

Material	Galvanised aluminum and ABS / PA.
Dimensions	365 / 465 / 565 / 665 x 163 x 37mm H x W x D.

Power requirements

Power supply	12 – 34V DC.
Lift-off	~ 11V DC.
Voltage@4mA	~ 11V DC.
Min. operating	~ 9V DC.
Voltage@20mA	~ 9V DC.

Operating specifications

Temperature	-40°C to +80°C (-40°F to +178°F).
Max. load resistance	550 ohm.
Sensor resolution	15mm.
Response time	1 second.

Sensor output

Analogue output	2-wire 4 - 20mA (loop powered). conform to Namur NE43. 4 - 20mA (0-100%).
Current signalling	3.8mA (saturating below -1.25%). 20.5mA (saturating above 103%). 3.6mA (fault current low value). 21mA (fault current high value).
Alarm output	Solid state 50V AC/DC.
Non-trip current	39mA (at 25°C).
Min. trip current	59mA (at 25°C).

Data protection

Type	Non volatile backup of all settings.
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Length options

Type L03	Measuring length: 300mm. Total length: 365mm. Segments: 20 pcs. (0.8mA / segment).
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Applicability

LNI250	Relative high dielectric products: $\epsilon_v \geq 4$
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Applicability example

Acetone	$\epsilon_v = 20.7$
Corn	$\epsilon_v = 5.0 - 10.0$
Glycol	$\epsilon_v = 37.0$
Hydrochloric Acid	$\epsilon_v = 4.12$
Nylon	$\epsilon_v = 4.0 - 5.0$
Syrup	$\epsilon_v = 50.0 - 80.0$
Water	$\epsilon_v = 4.0 - 88.0$

Accessory

ATSo1	Triflex software management tool (Linux based)
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Ordering information

Model	Ordering Code	Description
LNI 250		Triflex LNI 250 Level transmitter.
Type	Lo3	Measuring length: 300mm - Total length: 365mm – Sensor segments: 20 pcs.
Approval	XX	Safe Area.
Options	ZX	No options.
	ZB	Sensor tape mounted preassembly.
	ZC	Sensor strap mounted preassembly.
	ZD_ _	Customer set alarm*.
	ZE	Bottom-up assembly.

* default alarm is at 2nd electrode from below as low alarm. If you require the alarm at another electrode, just add the electrode number from below to the ordering code e.g. ZDo4 is the alarm at the 4th electrode from below.

General overview



- Connector 1: Analog output loop powered, ground & high/low level alarm output.
- Connector 2: Designated for factory setup and diagnostics (do not connect to a network device). This connector can be used to operate MODBUS type communication with the device.
- Bi-Color LED: Indicates level and status information.
- Push-button: - Stores the measurement value at calibration.
- Shows the set-up mode NE43 conditions (burn out low / high / none).

Specifications are subject to change without notice.

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