

## X59T-LT Tank Thermometer Interface

### Product Sheet

Drop-in replacement for ENRAF 762 VITO LT Interface\*

Connects to all ENRAF gauges with VITO compatible option boards

Based on Exalon Delft proven X62T-VT Universal Tank Thermometer Interface

Galvanic isolated transmitter inputs

IP65 Enclosure

No maintenance required

### Connect

The X59T-LT Tank Thermometer Interface is a special version of the X62T-VT. Both interfaces are suitable for connection of the VITO Honeywell-Enraf MTT thermocouple temperature probes. The main difference is the X62T-VT supports both the 9 or 16 spots MTT probes and the X59T-LT is limited to the 9 spot versions only.

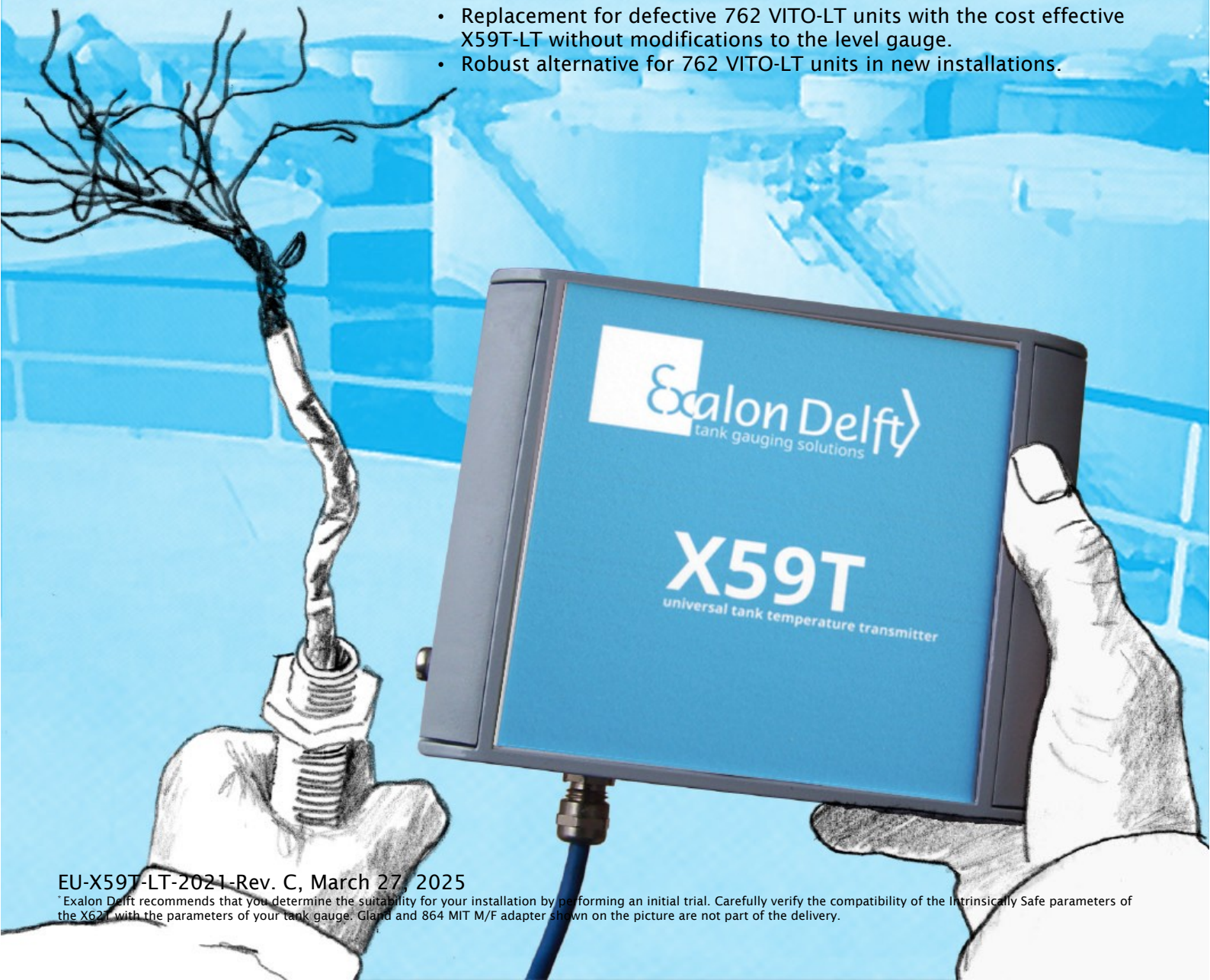
The X59T implements all Honeywell-Enraf 762 VITO manufacturer specific commands and is fully compatible with all Honeywell-Enraf gauges with VITO option boards. This way you can easily replace a defective 762 VITO LT by a X59T-LT with minimal effort or use the X59T-LT as preferred interface in new installations.

The X59T-LT has 12 combined force/sense inputs re-configured to measure:

- Enraf® 767 VITO LT
- Enraf® 768 VITO LT + water

### Application

- Replacement for defective 762 VITO-LT units with the cost effective X59T-LT without modifications to the level gauge.
- Robust alternative for 762 VITO-LT units in new installations.



# Measurement and Installation

## Temperature

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Measuring principle	The X59T temperature inputs consists of a large multiplexer, a stable current source, A/D converter, and precision reference and test sources for voltage and resistance. The configuration of multiplexers and measurement sequences is completely handled by the X59T and depends only on the configured probe type. For the X59T-LT the probe type is fixed to the MTT 9 spot type probe, and selectable capacitive water probe.
MTT probe type	Enraf 767/768 VITO LT MTT probes are constructed of multiple type T (CuNi - Cu) thermocouples with an additional high accuracy Pt100 built in for cold junction compensation.
Sensor order stored in EEPROM	The X59T-LT is a standalone measurement device that automatically determines the connection of the MTT wiring and stores this into it's EEPROM instead of recalculating it at each system start. This eliminates lengthy startup times at power-up or gauge reset events.
762 VITO LT emulation	The X59T-LT measures and calculates spot temperature independently of the host. To enable 762 VITO LT emulation these spot temperature are then converted back into the 762 manufacturer specific commands that allow the gauge to calculate the spot temperatures as well as Product and Vapor Temperature.

## Water bottom level

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Capacitance measurement	The capacitive inputs of the X59T are automatically enabled when a capacitive water probe is connected and disabled when a 5nF capacitor is connected, similar to 762 VITO LT behavior.
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## Installation features

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Galvanic separation	All transmitter inputs are galvanically separated from the gauge VITO connection.
Lightning protection	The sensors connected to the X59T-LT may be installed into Zone 0. When the wires connecting the X59T-LT and the boundary of Zone 0 are shorter than 1 m, no additional surge protection is required. An internal 90V surge protection device connected to the local structure protects the VITO host connection wires. When testing the isolation from ground of the gauge VITO wires using voltages above 70 V, it will be necessary to temporarily disconnect the surge protection device's ground wire.
Molded module	The internal X62U module is molded in Polyurethane to protect the circuitry from corrosion so that it's lifetime is maximized. Naturally as for all transmitters regardless of Ingress Protection rating in high humidity environments some build-up of water inside the enclosure may occur over time. If this is the case regular inspection and if necessary draining is recommended for error free operation.
Entries	The enclosure entries are compatible with PG16 and Enraf 862 G1/2 M/F probe adapter. When replacing a 762 VITO LT an Exalon Delft G1/2 M/F adapter can be ordered to connect the MTT to the X59T-LT enclosure.
Enclosure	The enclosure of the X59T-LT is IP65 depending on proper installation.

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## Mechanical

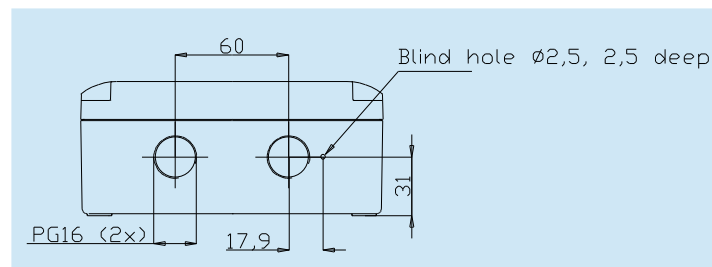
Cable entry	Suitable for PG16 glands and adapters (not part of delivery)
Thermometer connection	G1/2 suitable for connection to Enraf 864 MIT or Exalon Delft M/F adapter (not part of delivery)
Dimensions (X59T enclosure)	160 x 130 x 70 mm (l x w x h) See ordering options below.

## Environmental

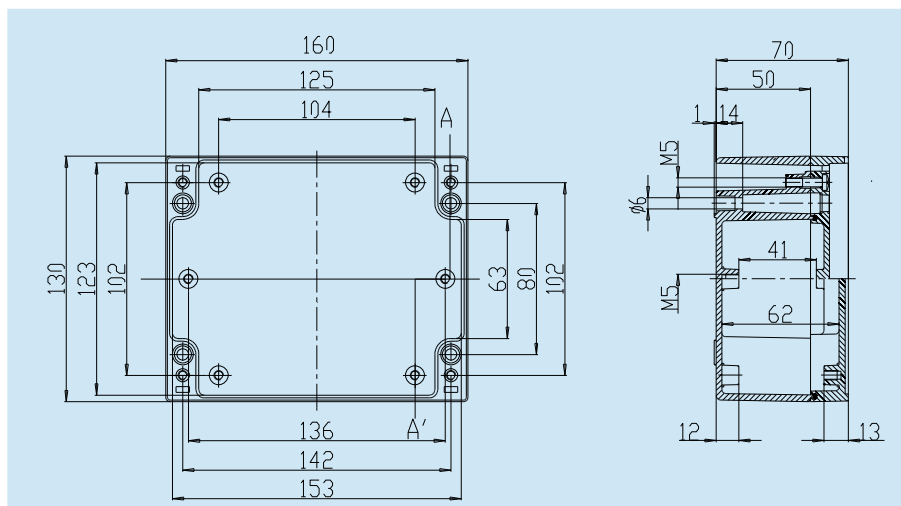
Operating temperature	-40 °C ... +60 °C
Ingres Protection	IP65 with proper installation
Loop voltage	12V ... 24V @ 5,5 mA 14V ... 24V @ 17,5 mA
Safety	II 2(1) G Ex ia IIB T4 according to ATEX for connection to an ATEX certified power supply with Ex d [ia] or [Ex ia] only
Input parameters	Supply/Output circuit: $U_i = 30V$ , $I_i = 270\text{ mA}$ , $P_i = 1.2W$ , $C_i = 5nF$ , $L_i = 0$ Sensor/Input circuit: $U_o = 5.9V$ , $I_o = 62mA$ , $P_o = 92mW$ , $C_o = 900\mu F$ , $L_o = 30mH$
Lightning protection	According to NEN-EN-IEC 60079-25
Galvanic separation	60V according to NEN-EN-IEC §6.3.3 and Table 5 Withstands 500 V isolation test.

## Temperature (excluding sensor)

Range	-200 °C / +250 °C
Accuracy	$\pm 0.1\text{ °C}$ (typical, reference conditions)
Resolution	$\pm 0.05\text{ °C}$



X59T-LT/H Entries



Enclosure



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