OFFICINE OROBICHE

LEVEL TRANSMITTER
TLT Series



DESCRIPTION

The TLT Series Level Transmitter is used for measuring liquid levels in storage or process tanks with top-mounting installation. It consists of a magnetic float that operates reed contacts or a magnetostrictive probe housed inside the stem, transmitting its position via a 4-20 mA signal. It is suitable for non-adhesive and non-viscous fluids. Upon request, it can measure the interface between two fluids.

APPLICATIONS

- Chemical and petrochemical
- Oil & Gas On and Off-shore
- Power plants
- Machine construction
- Naval construction
- Water treatment

TECHNICAL SPECIFICATIONS

- Liquid density ≥ 0.6 kg/dm³, lower values upon request
- Process Temperature: -196 / +450 °C, higher upon request
- Pressure ≤ 120 barg, higher upon request
- Length up to 4 m, longer upon request
- Accuracy: ± 10 mm for reed version, ±0.3 mm for magnetostrictive version
- Ambient Temperature: reed version -40 / +60 °C, magnetostrictive version -20 / +85 °C, heater option -55 / +85 °C
- Output: 4/20 mA (2-wire), HART® 7 option
- Explosion-proof option Ex d or intrinsically safe Ex i
- Loop-powered 10...32 Vdc (28 Vdc max for Ex i), 25 mA
- Max load: (V - 8)/0.023 Ω
- Probe material: reed version SS316, magnetostrictive version SS316Ti (SS316L upon request)
- SIL 2 option
- PROFIBUS PA or FOUNDATION FIELDBUS option (reed version only)
- Display option

HOUSINGS

The housing of the **Reed Version** is available in **Standard** or **Ex d** format. The material can be die-cast **Aluminum** or **SS316**. As an accessory, a two-wire, 4-digit, 7-segment, LCD local **display** can be provided, mounted inside a dedicated housing with a window.

	Standard	Ex d	Display
Aluminum			
SS316			

The enclosure of the **Magnetostrictive Version** is available in **Standard** format (models MG and MX) or with a **display** (models MG+I, MX+I, MD+I, MG+ILT, MD+ILT). The enclosure material for the Standard Magnetostrictive Version is SS303 (SS316L as an option). The enclosure material for the Magnetostrictive Version with display is SS316.



Standard Version



Display Version

Available electrical connections:

- 1/2” NPT F
- M20 x 1.5 ISO
- 1/2” GAS F (upon request)
- Dual electrical entry option (reed version only)
- Cable gland as an option
- Reducers and adapters upon request

MATERIALS

The connection is available in the following materials:

Table A

	CODE
SS 316/316L dual grade	J or JL
Alloy C276	HC
Alloy 400	MO
Alloy 825	825
Alloy 625	625
Alloy 20	20
Super austenitic UNS S31254 (F44)	F44
Titanium	TI
Carbon Steel	A or LF2

The float is available in the following materials:

Table B

	CODE
SS 316L	2L
Titanium	TI
Alloy C276	HC
Alloy 625	625

The probe stem is made of SS316 for the reed version, SS316Ti (or SS316L as an option) for the Standard Magnetostrictive version, and SS316Ti for the Magnetostrictive version with display.

CONNECTIONS

The TLT Series Level Transmitter is top-mounted with the following connections:

- Flanged
  - ASME B16.5
  - EN 1092/1
- Threaded
  - NPT-M
  - GAS-M

It is necessary to check the clearance of the float through the nozzle. The float can also be installed from inside the tank.

APPROVALS

On request the following approvals are available:

For **Reed Version**:
ATEX Explosion-proof: II 2G Ex db IIC T6 Gb / II 2D Ex tb IIIC T85°C Db
ATEX Mechanical: II 2G Ex h IIC/IIB TX Gb / II 2D Ex h IIIC TX Db
EAC CU-TR-012: 1Ex d IIC T6 Gb / Ex tb IIIC T85°C Db
IECEx Explosion-proof: Ex db IIC T6 Gb / Ex tb IIIC T 85 °C Db
PED 2014/68 UE, module H
IEC 61508 SIL 2

For **Magnetostrictive Version**:
MX & MX+I Models
ATEX Intrinsically Safe: II 1 G Ex ia IIC T6…T1 Ga
II 1/2 G Ex ia IIC T6…T1 Ga/Gb
II 2 G Ex ia IIC T6…T1 Gb
II 2 D Ex ia IIIC TX °C Db
IECEx Intrinsically Safe Ex i

MD+I & MD+ILT Models
ATEX II 1/2 G Ex ia/db IIC/B T6…T1 Ga/Gb
II 2 G Ex db ia IIC/B T6…T1 Gb
II 2 D Ex ia tb IIC/B TX °C Db
IECEx Intrinsically Safe Ex i or Explosion-proof Ex d
PED 2014/68 UE, module H
IEC 61508 SIL 2

VERSIONS

Table D

CODE	TYPE	DESCRIPTION
N	Reed	Standard safe area
EX		Intrinsically safe Ex i
XD		Explosion-proof Ex d
HR		HART Safe area
HX		HART Intrinsically safe Ex i
HD		HART Explosion-proof Ex d
FX		Fieldbus Intrinsically safe Ex i
FD		Fieldbus Explosion-proof Ex d
PX		Profibus Intrinsically safe Ex i
N+I		Standard safe area with display
EX+I		Intrinsically safe Ex i with display
XD+I		Explosion-proof Ex d with display
HR+I		HART Safe area with display
HX+I		HART Intrinsically safe Ex i with display
HD+I		HART Explosion-proof Ex d with display
FX+I		Fieldbus Intrinsically safe Ex i with display
FD+I		Fieldbus Explosion-proof Ex d with display
PX+I		Profibus Intrinsically safe Ex i with display
MG	Magnetostrictive	HART IP68 safe area
MX		HART Intrinsically safe Ex i
MG+I		HART IP68 safe area, with display
MX+I		HART Intrinsically safe Ex i, with display
MD+I		HART Explosion-proof Ex d, with display
MG+ILT		HART IP68 safe area, low temperature, with display
MD+ILT		HART Explosion-proof Ex d, low temperature, with display

MODEL CODE

TLT	NNNN	AA	BB	C			DD	XX
	Measuring Range	Connection Material See Table A	Float Material See Table B	25 barg	63 barg	Others	Version See Table D	Variations from Standard*
				Ø 52	Ø 52HP			
				4	5	X		

* These digits are written only if they're applicable

Example: TLT.1500.JL.2L.4.N

To request a quotation please state:

- Fluid density
- Operating and design conditions
- Range and connections type
- Accessories
- Safe or classified area

Our technical and commercial departments are available to discuss any variation or customization not mentioned in this catalogue.

Officine Orobiche S.r.l.

Via Paglia, 22 - 24050 Zanica (Bergamo) - Italy
Tel. +39 035 4530 211

www.officineorobiche.it
info@officineorobiche.it