

# Techtrol Displacer Torque Tube Level X'mitter - DTT

'DTT' is an accurate and smart transmitter, for level and interface level measurement of liquids.

## Construction & Operation : (Fig. 1)

It consists of a displacer suspended from one end of an operating lever, the other end of which is connected to a torque tube, which in turn is connected to a lever assembly fitted with magnetic system. The enclosure houses a sensor and signal processing electronics. This assembly can be mounted internally w/o cage or externally with cage.

The change in liquid level causes the operating lever to rotate torque tube proportionately to the change in buoyant force acting on displacer. This rotation is transferred to lever assembly causing angular displacement to change the magnetic field, which is sensed by sensor and converted into 4-20 mA o/p through signal processing electronics.

## Salient Features :

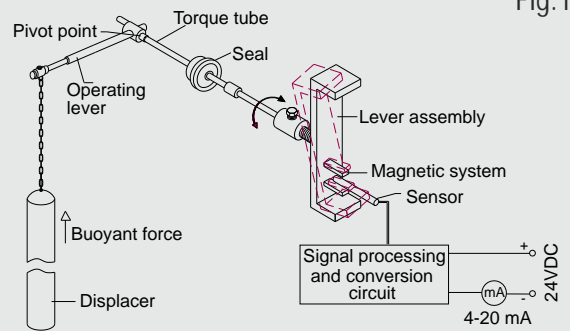
- ☑ Level and interface level measurement
- ☑ Proven torque tube technology
- ☑ Enclosure - Cast Al IP 65 or Exd. IIC T6
- ☑ With radiating fins for high temp (400°C)

## Specifications :

Displacer	: SS316L
Torque Tube	: Inconel 600
Torque Tube Hsg/	: CS (A-106) or SS304/ SS316
Wafer Body	
External Cage	: CS (A-106), SS304/ SS316
Process Conn. MOC	: CS(A-105), SS304/ SS316
Process Conn. Size	
Int. Mtg. :	3" NB ANSI Flange 150#/300 #
Ext. Mtg. :	1"NB ANSI Flange 150#/300 # or 1" Weld Socket 3000#
Enclosure	: Cast Al. WP IP65 or Exd. IIC T6
Conduit Conn.	: M20
Measuring Ranges	: 356, 813, 1160, 1219, 1524, 1829, 2134, 2438, 2743, 3048 mm
Density Range	: 0.3 to 1.6 g/cm <sup>3</sup> (level measurement)
Min Diff. in Density	: 0.1 (interface level measurement) between Liquids
Accuracy	: ±0.5% FSD
Output	: 4-20 mA, 4-20mA with HART (optional)
Power Supply	: 24 VDC
Wiring System	: 2 Wire
Display	: Backlit LCD
Max. Load	: 600 Ohms at 24 VDC
Max. Temp.	: 150°C or 400°C with radiating fins
Max. Pressure	: upto 60 Kg/cm <sup>2</sup>

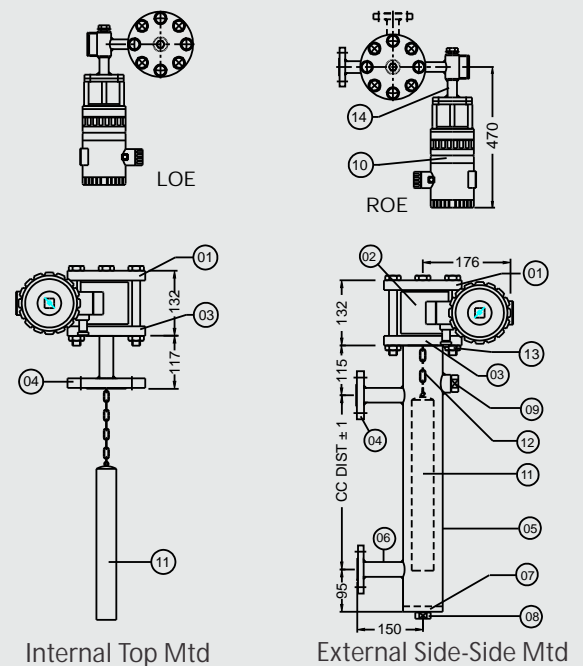


Fig.1



## Dimensional Drawings :

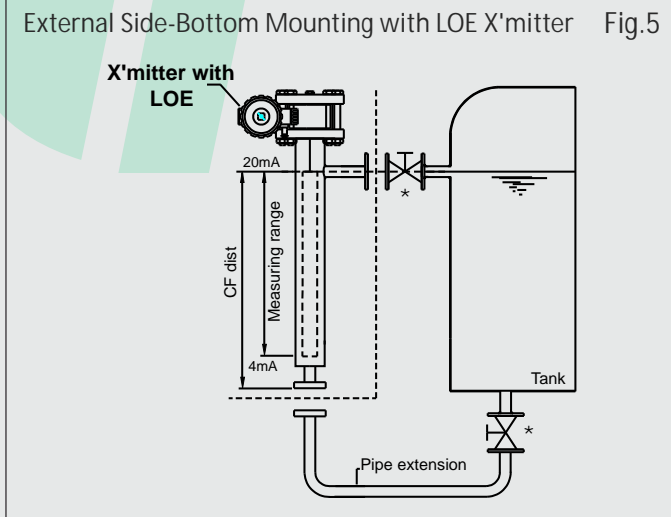
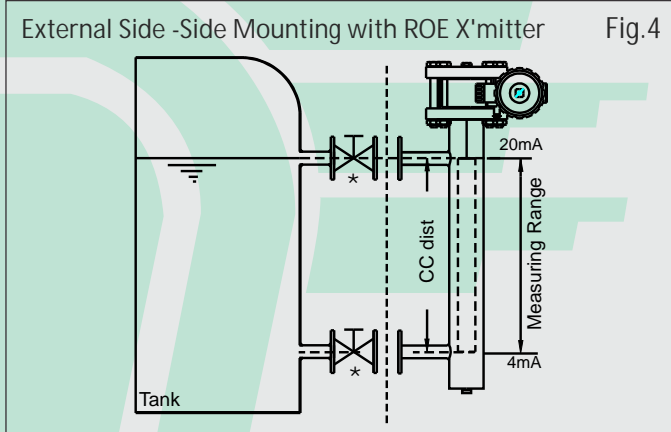
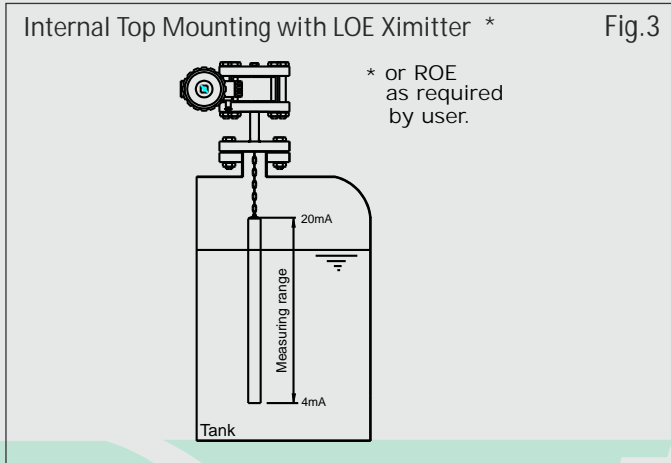
Fig.2



- |                                   |                         |
|-----------------------------------|-------------------------|
| 01) Top holding flange            | 08) Drain plug          |
| 02) Wafer body                    | 09) Vent plug           |
| 03) Bottom holding flg (Internal) | 10) X'mitter encl.      |
| 03) Cage flange (External)        | 11) Displacer           |
| 04) Process conn.                 | 12) Chain               |
| 05) External cage                 | 13) Bolts & Nuts        |
| 06) Extension                     | 14) Torque tube housing |
| 07) End cap                       |                         |

## Installations :

- Displacer transmitter enclosure is either left oriented (LOE) or right oriented (ROE) of tank.



For right side tank mounting, the x'mitter enclosure should be ROE & left side tank mounting, it should be LOE.

\* Isolation valves should be provided for safety and easy removal of x'mitter for repairs / maintenance.

## Applications :

Feed Water Heaters, Condensate Drip Pits, Receivers, Flash Tanks and Knock out Drums

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Custom built specs./options available on demand.

We reserve the right to modify design and specifications without prior notice.

## Model Identification :

Area Classification	DTT-
WP IP65	J
Ex-P Exd IIC	E
Intrinsically safe Exia	S
Torque Tube Housing MOC	M
CS (A-106)	N
SS304	S
SS316	S
Measuring Range (Displacer Length)	
356	A
813	B
1160	C
1219	D
1524	E
1829	F
2134	G
2438	H
2743	I
3048	J
Temperature	
150°C	S
400°C	T
Enclosure Orientation	
LOE	L
ROE	R
Installation	
Internal (Top)	1
External (Side - Side)	2
External (Side - Bottom)	3
Others	0
External Cage	
Without	W
CS (A-106)	1
SS304	2
SS316	3
Others	0
Process Connection	
3" NB ANSI 150# Flange - Internal	D
3" NB ANSI 300# Flange - Internal	E
1" NB ANSI 150# Flange - External	F
1" NB ANSI 300# Flange - External	G
1" Weld Socket 3000# Flange - External	H
Others	O
Cage Vent x Drain	
Without	W
Plug x Plug	1
Plug x Valve (Globe)	2
Others	0

All dimensions in mm except specified

## Ordering Information :

Model No, Liquid & its sp.gr, Optg. Temperature & Pressure (CC/CF distance should be provided for external cage)g



R A T E D  
NSIC-CRISIL SE1A