

MAGNETIC FLOAT OPERATED GUIDED LEVEL TRANSMITTER "FGT"

It is a reliable technique for continuous level measurement of variety of liquids, chemically compatible with the transmitter MOC. The float is designed for variety of liquids and its unique self cleaning construction is well suited for even sticky or dirty liquids with no float hang-ups.

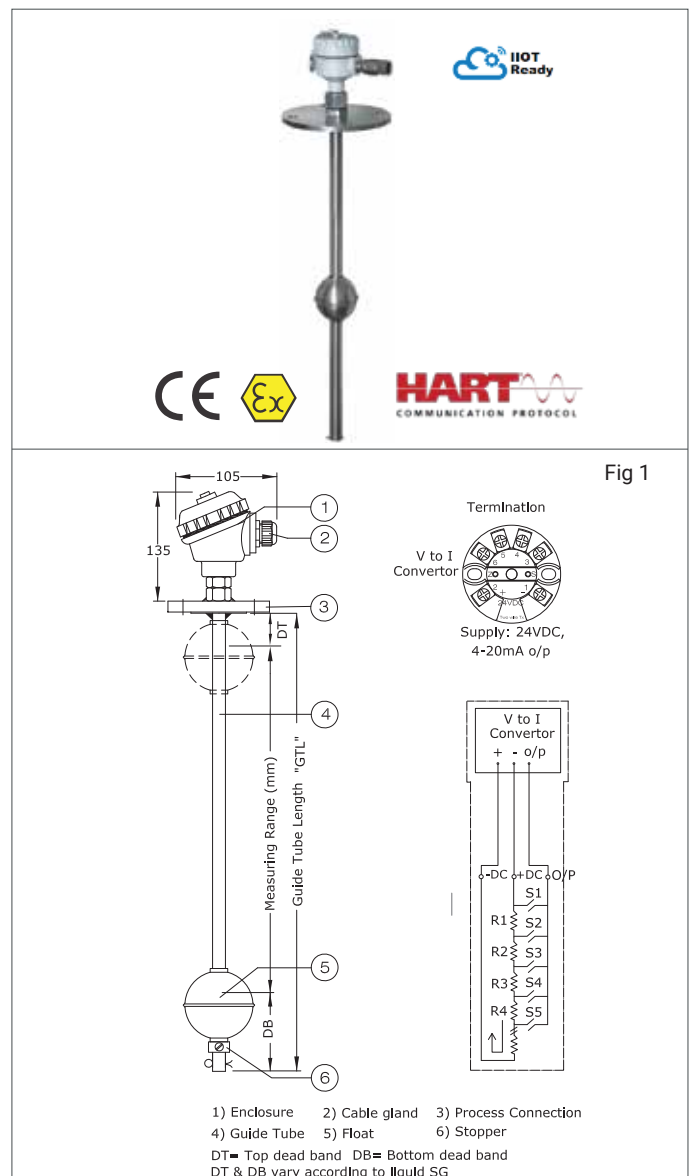
SALIENT FEATURES

- Factory calibrated, ready to install
- Liquid level or liquid/ liquid interface detection
- Customized lengths upto 4 meters
- Option of Integral Display
- Option of HART or RS 485 output
- Option of Zener Barrier for Intrinsic safety for hazardous area

CONSTRUCTION AND WORKING

It consists of a float & guide tube assembly in non-magnetic material, to achieve undisturbed flux. A PCB strip of closely spaced glass encapsulated reed switches and resistors is placed inside the guide tube fig.1.

During rise and fall of liquid level, the magnetic float moves and actuates a reed switch and develops a proportional voltage. The sensed voltage is fed to the transmitter located in the enclosure for conversion to a signal of 4-20 mA, to use with PLC or DCS. Alternatively, the signal can be transmitted to a display unit for remote indication or to a display unit integral with transmitter for local indication.

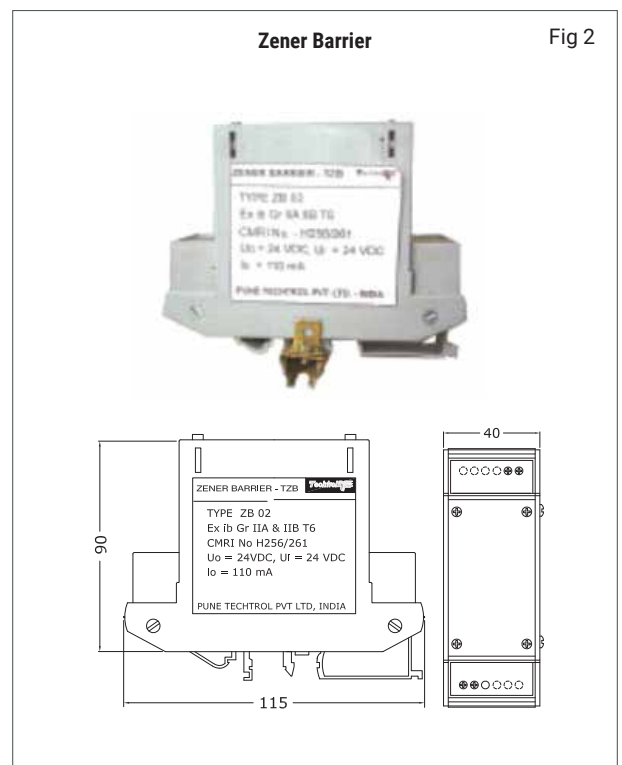


SPECIFICATIONS

Guide Tube Length (GTL)	: 0.5 to 4 mtrs max.
Measuring Range	: GTL - (DT + DB)
Resolution	: ±12 mm (standard), ±6 mm (high)
Installation	: Top
Enclosure	: Cast Al. IP66 or Ex d Gr. IIB or IIC T6, IP66 (CCOE certification available optionally) or ATEX Ex d Gr. IIB T6, IP66
Conduit Connection	: PG11 cable gland, polyamide or ½" NPT double compression cable gland, brass
Wetted Parts	: SS304/316/316L, PP or PVDF
Float	: SS316 x Ø75, Ø90; SS316L x Ø41; PP x Ø75; PVDF x Ø63
Liquid SG	: 0.65 to 1.2 depending on float size. (Refer table 1)
Interface Detection	: Min 0.2 difference between SG of upper and lower liquid (with SS316 x Ø75, Ø90 Float)
Process Connection	: Screwed, flanged or triclover ferrule
Supply	: 24 VDC (± 10 %)
Output	: 4-20 mA (2 wire) or 4-20 mA + HART (2 wire) or 1 to 5 VDC or RS-485 MODBUS RTU Serial Communication (Baud rate 9600, 19200, 38400; Slave ID: 1 to 7; Data: 0 to 4095)
Max. Load	: 400 Ohms (with current O/P)
Max. Temperature	: 70°C (PP), 100°C (PVDF), 150°C (SS)
Max. Test Pressure	: 2 kg/cm ² (PP/PVDF), 10 kg/cm ² (SS), 25 kg/cm ² (Optional)
Intrinsic Safety Approval	: Zener barrier for intrinsic safety to Ex ib Gr. IIB T6

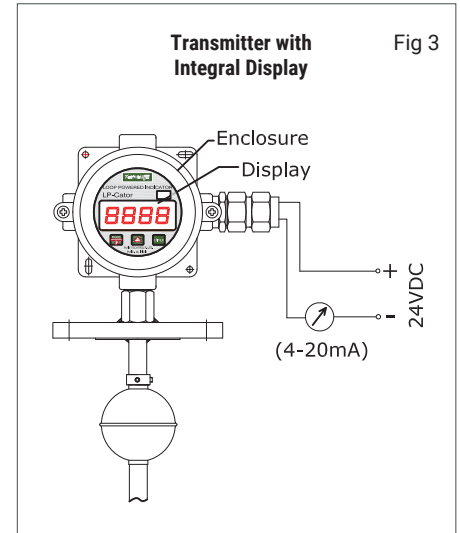
Zener barrier

Input Supply	: 24 VDC
Output	: 24 VDC/ 110 mA
Enclosure	: ABS (size 40 x 115 x 90 D mm)
Mounting	: DIN rail



Integral display

1) Enclosure	: Cast Al. IP65 or Ex d Gr. IIB T6, IP65
Indication Range	: 0 to 9999
Display	: 4 digit LCD
Programming	: Through keypad
Output	: 4-20 mA (2 wire)
Load	: 150 Ohm @ 24 VDC
2) Enclosure	: Aluminum IP66 or ATEX Ex d IIC IP66 T6 (CCOE Optional)
Display	: 14 digit, 2 line LCD
Indication	: 5 digit
Programming	: Local Operator Interface (with 2 buttons)
Output	: 4-20 mA with HART (2 wire)
Load	: 500 Ohms @ 24 VDC (including HART resistance)
Option	: ATEX (or CCOE) intrinsic safety to Ex ia IIC T6



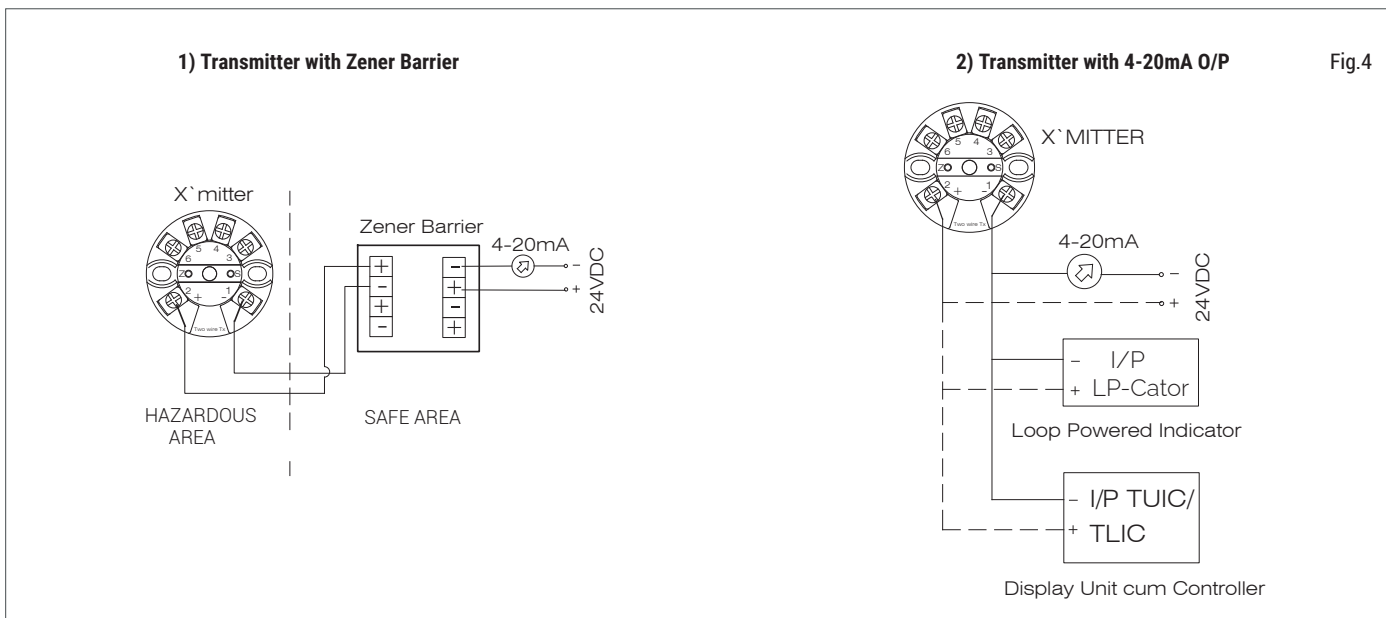
Level Control and Automation System using Wireless Technology for IIOT Applications is available on Demand

Table 1 - Float selection

Float MOC	Float Size Ø x L (mm)	Min. SG	Resolution (mm)	DT (mm) at SG 1	DB (mm) at SG 1	GTL Max. (mtr)	Max Temp °C	Max Pressure kg/cm ²	Process Connection Size
SS316 L	Ø41 x 50	≥0.65	± 12	25	45	1.5	150	10	2"(50) NB Flanged, Screwed or Triclover
SS304/316	Ø75 x 85	≥0.8	± 12, 6	35	75	4	150	10	3" (80) NB Flanged
SS304/316	Ø90 x 90	≥0.6	± 12, 6	45	65	4	150	10	4" (100) NB Flanged
PP	Ø75 x 90	≥0.7	± 12, 6	70	75	4	70	2	3" (80) NB Flanged
PVDF	Ø63 x 120	≥1	± 12, 6	70	115	4	100	2	3" (80) NB Flanged
	Ø63 x 170	≥0.8	± 12, 6	110	125	4	100	2	3" (80) NB Flanged

Float selection is based on type of liquid, its specific gravity, max temperature, pressure and tank nozzle ID.

TERMINATION AND WIRING



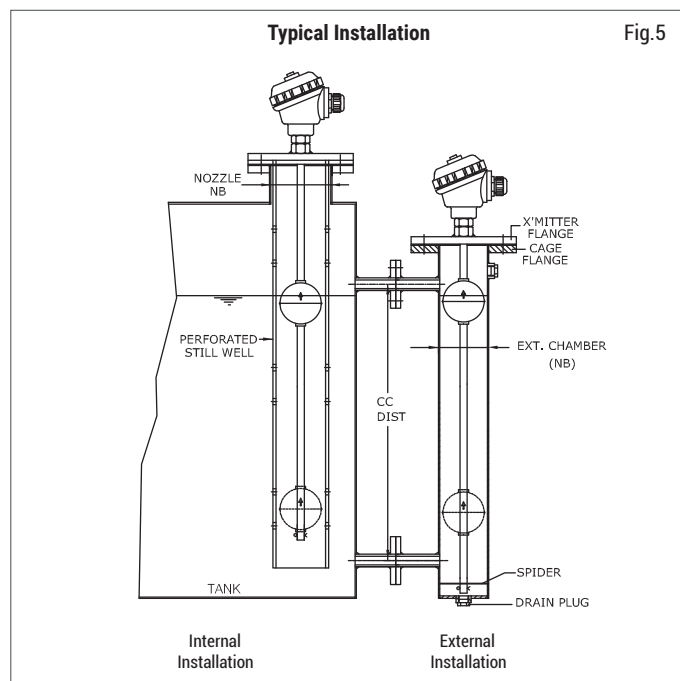
INSTALLATION

1. Internal Installation

Transmitter is top mounted on the tank. A stillwell with perforation is recommended for liquids under turbulence. For fitment of stillwell, ensure that NB of tank nozzle is greater than the diameter of stillwell.

2. External Installation

Transmitter is top mounted on a chamber, external to the tank. This installation is adopted on the tank, containing mechanical devices like stirrers, ladders & other internals or to overcome space limitation in the tank.



APPLICATIONS

Storage/ process tanks of Water, Oils, Lube Oil Fuels, Chemicals, Nitric Acid, 98% H₂SO₄, 33% HCL, Critical Inventory, Pressurized Vessels, Interface Applications, WTPs, STPs, ETPs, Nuclear Power Plants and Tank Gauging System for Ships.

MODEL IDENTIFICATION

		FGT-							
1. Enclosure x Conduit Connection (refer table2)									
Cast Al. IP66 x PG 11 Cable Gland	J								
Cast Al. IP66 x ½" NPT DC Cable Gland	K								
Cast Al. IP66 x ½" NPT (F) Cable Entry	L								
Cast Al. Ex d Gr. IIB, T6, IP66 x ½" NPT DC Cable Gland	E								
Cast Al. Ex d Gr. IIC, T6, IP66 x ½" NPT DC Cable Gland	F								
Cast Al. Ex d Gr. IIB, T6, IP66 x ½" NPT (F) Cable Entry	M								
Cast Al. Ex d Gr. IIC, T6, IP66 x ½" NPT (F) Cable Entry	N								
Cast Al. ATEX Ex d Gr. IIC T6, IP66 x ½" NPT DC Cable Gland	S								
Cast Al. ATEX Ex d Gr. IIC T6, IP66 x 1/2" NPT (F) Cable Entry	T								
Cast Al. IP65 x ½" NPT DC Cable Gland (Integral Display x 4-20mA o/p)	I								
Cast Al. Exd IIB T6, IP65 x 1/2" NPT DC Cable Gland (Integral Display x 4-20mA o/p)	H								
Others	O								
2. Wetted Parts (Float + Guide Tube) x Float Size									
SS316L x Ø41 (Resolution ±12 mm; GTL 1.5 mtrs max)	1								
SS304 x Ø75	2								
SS316 x Ø75	3								
PP x Ø75	4								
SS304 x Ø90	5								
SS316 x Ø90	6								
PVDF x Ø63	7								
Others	0								
3. Process Connection MOC									
SS304	N								
SS316	S								
SS316L	L								
PP with CS Cladding	P								
PVDF	V								
Others	O								
4. Process Connection Type (refer table 1)									
2" NB ASME 150# Flange	A								
2" BSP (M) Screwed	B								
3" NB ASME 150# Flange	C								
4" NB ASME 150# Flange	D								
2" Triclover Ferrule	E								
Others	O								
5. Resolution									
Standard ± 12 mm	S								
High ± 6 mm	H								

6. Output					
4-20 mA (2 wire)		1			
4-20 mA with HART (2 wire)		2			
1 to 5 VDC		3			
RS - 485 MODBUS RTU Serial Communication		4			
7. Intrinsic Safety Approval					
Without			W		
Ex ib IIB T6 (with Zener Barrier) (4-20mA, w/o integral display)			I		
ATEX Ex ia IIC T6			A		
Others			O		
8. Display Type					
Not Provided				W	
With Integral Display (refer table 2)				I	
Loop Powered Indicator (LP- Cator)				L	
Level Indicator Controller (TLIC)				C	
Universal Indicator Controller (TUIC)				U	
Others				O	
3. Accessories					
Not Provided					W
External Chamber					C
Counter Flange + Nuts & Bolts (CS Zink pltd.) + CAF Gasket					F
Stillwell					S
Others					O

Note: 1. Refer respective catalogs of ECT for external chamber, LP-Cator, TLIC and TUIC
2. Refer table 2 for combinations of enclosures with output and integral display

Table 2 - Combination of Enclosure x Output x Integral Display

Combinations ↓	Enclosure →	I (IP65)	J/K/L (IP66)	E/M/H (Ex d IIB)	F/N (Ex d IIC)	S/T (ATEX IIC)
	4-20 mA		-	Provided	Provided	Provided
4-20mA + HART		-	Provided	Provided	Provided	Provided
4-20mA + Intrinsic Safety		-	Provided	Provided	-	-
4-20mA + HART + Intrinsic Safety		-	Provided	-	-	Provided
4-20mA + Integral Display		Provided	-	Provided	-	-
4-20mA + HART + Integral Display		-	Provided	-	-	Provided
4-20mA + Intrinsic Safety + Integral Display		--	Provided	-	-	Provided
4-20mA + HART + Intrinsic Safety + Integral Display		-	Provided	-	-	Provided

ORDERING INFORMATION

Model No. x Guide Tube Length x Measuring Range x Liquid & its SG and Operating Temp & Pressure

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