

Magnetic, Float Operated, Guided Level Transmitter "FGT"



SINCE 1984

It is a simple and reliable technique for continuous level indication and control of any liquid, chemically compatible with the (sensor) material, unaffected by electrical conductivity, temperature, pressure or viscosity. The float is designed for variety of liquids and its unique self cleaning construction is well suited for even sticky or dirty environments with no float hang-ups.

Outstanding Features :

- Continuous 'Float type' analog sensor, in materials, resistive to most liquids.
- Pre calibrated at factory - no field calibration required.
- 4-20 mA, 2 wire processed output signal.
- High resolution & repeatability.
- Liquid level or liquid / liquid interface detection.
- Adjustable, Multiple Alarm Relays.
- Customized lengths upto 4 meters.
- Intrinsically safe option available.

Construction & Operation :

It consists of a float & guide tube assembly in non-magnetic material to achieve undisturbed flux. A chain of closely spaced glass encapsulated reed switches & resistors are placed inside the guide tube (fig 1). During rise and fall of liquid level, the float moves & actuates a reed switch in the chain, through a magnet system within it and develops a proportional voltage. The operation is similar to a sliding resistance potentiometer. The sensed voltage is fed to the transmitter located in the enclosure for conversion to a signal of 4-20 mA, for use with PLC / DCS or Techtrol loop powered indicator (TLPI) or Techtrol level indicator controllers TLIC, TUIC and T-SCN (fig 2).

Specifications:

Measuring range	: GTL - (Top *D _T + Bottom *D _B)
(Span)	Min 270 mm (GTL 400 mm) Max 3770 mm (GTL 4000 mm)
Resolution	: a) Standard ±12 mm b) High ±6 mm
Installation	: Top
Enclosure	: Cast Al w proof to IP 66 or Ex proof to Gr IIA & IIB or IIC
Conduit conn	: Polyamide, PG 9 or Brass, ½" NPT
Wetted parts	: SS304, SS316 or PP, SS304 PVDF coating
Float	: Ø60, Ø75 & Ø90
Process connections	: 2-½" or 3" or 4" NB flanged to BS (option ANSI or DIN std) or Triclover flange (sanitary applications)
Output	: DC 4-20 mA (isolated) or 1 to 5 VDC (optional) or 4-20mA (HART) or RS485
Wiring system	: 2 wire
Max load	: 400 ohms
Max temperature	: 80°C (PP) / 100°C (metallic MOC), 150°C (optional)
Max test pressure	: 3 Kg/cm ² (PP) / 10Kg/cm ² (metallic MOC) 25 Kg/cm ² (optional)
Special feature	: Intrinsically safe to Ex ib Gr IIA-IIB T6 (with zener barrier 24VDC / 110mA)

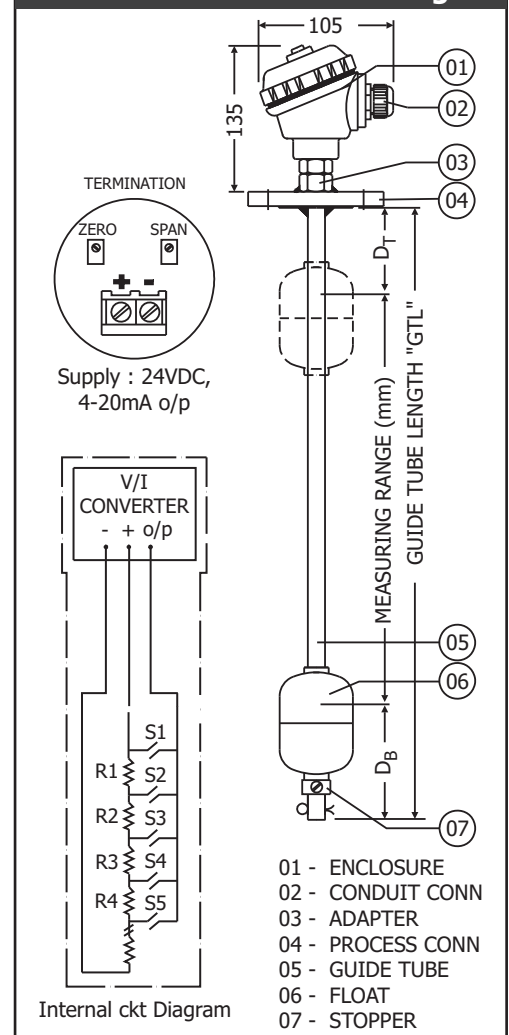
Float Selection Table :

MOC	Size (mm)	*D _T (mm)	*D _B (mm)	Min sp. gr.
SS316	Ø60 x 130	30	100	1.0
SS316	Ø75 x 72	30	100	0.9
SS316	Ø90 x 100	25	90	0.7
PP	Ø63 x 90	70	85	0.8
PP	Ø75 x 90	70	85	0.7
PP	Ø90 x 90	70	85	0.65

* D_T = Top Dead Band
* D_B = Bottom Dead Band
based on water (sp.gr.1)

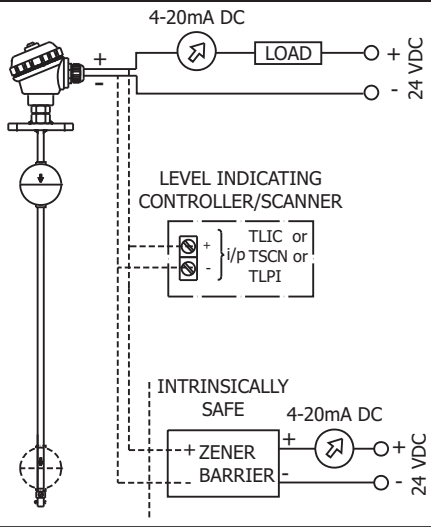


Construction : Fig. 1



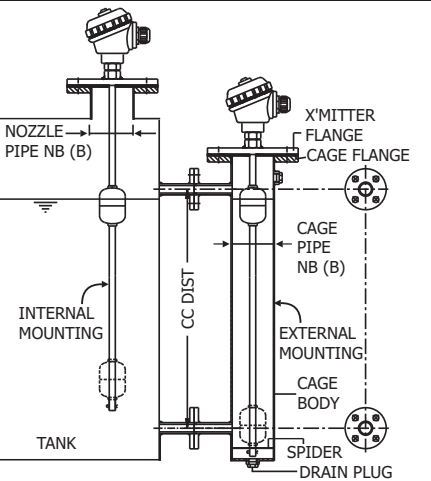
Wiring

Fig. 2



Installation :

Fig. 3



Internal mounting

External mounting

The transmitter is install vertically from top & can be mounted internally & externally to suit the application. External mounting is adopted to overcome limited space within the tank or where mechanical devices like stirrers operate or where isolation tank is required for regular servicing. The transmitter is pre calibrated in the factory and comes ready for installation.

Ordering information :

Specify Model No. x GTL x Measuring Range alongwith Liquid Name & Sp. Gr. and Optg. Temp & Pressure

Model Identification No. FGT :

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x GTL (mm)

Enclosure

- Cast Al, W.Proof IP-66 x PG9 _____ **J**
- Cast Al, Ex-proof Gr.IIA & IIB x 1/2"NPT _____ **E**
- Cast Al, Ex-proof Gr. IIC x 1/2"NPT _____ **F**
- Others _____ **O**

Wetted Parts (Float, Flange, Guide tube)

- SS 304 _____ **N**
- SS 316 _____ **S**
- PP _____ **P**
- Others _____ **O**

Float x Flange Size

- Ø60 x 2-1/2"NB (max 1.5 mtrs GTL) _____ **1**
- Ø75 x 3"NB (max 4 mtrs GTL) _____ **2**
- Ø90 x 4"NB (max 4 mtrs GTL) _____ **3**
- Others _____ **O**

Flange Rating

- ANSI 150# RF Flange _____ **1**
- BS-10 T 'D' Flange _____ **2**
- Others _____ **O**

Resolution

- Standard _____ **S**
- High _____ **H**

Output

- 4-20mA _____ **1**
- 4-20mA with HART protocol _____ **2**
- 1-5 VDC _____ **3**
- RS 485 (modbus) _____ **4**

Special Features

- None _____ **W**
- Intrinsically Safe _____ **I**

Display type

- Not Provided _____ **W**
- Integral, Loop Powered Indicator (ref TLPI cat) _____ **I**
- Dual (Integral + Remote) Loop Power Indicator (ref TLPI cat) _____ **D**
- Remote Loop Powered Indicator (ref TLPI cat) _____ **L**
- Remote Indicator Controller (ref TLIC cat) _____ **C**
- Remote Universal Indicator Controller (ref TUIC cat) _____ **U**
- Remote Scanner (ref TSCN cat) _____ **S**

Accessories

- Without _____ **W**
- External Cage _____ **C**
- Counter Flange with Nuts, Bolts & Gasket _____ **F**
- Still Well _____ **S**
- Others _____ **O**

Applications / Service : Storage Tanks for Oil, Fuel, Chemicals, Pure / Industrial

Water, Critical Inventory, Pressurized Vessels, Interface Applications and Waste Water Treatment Plant, Tank Gauging System for Ships, Nitric Acid, 98% H2SO4, 33% HCL, Diesel, Water, Mineral / Lube Oil, Solvents

All dimensions in mm, except specified.

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