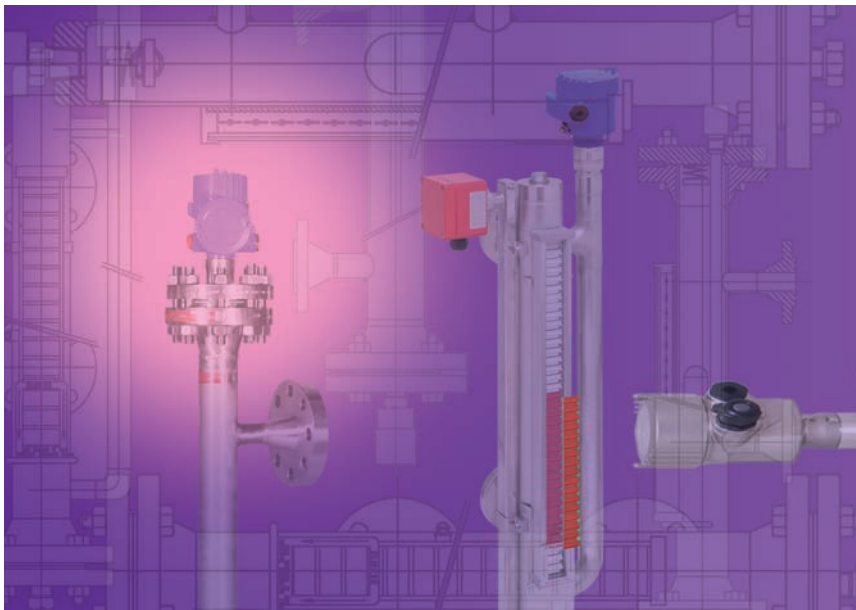


# LevelSure Gauges



The TC Fluid Control LevelSure combines the operation of conventional float operated magnetic level indication with the proven technology of reed chain transmitter, magnetostrictive transmitter or guided wave radar in one unit.

The user benefits from the local visual readout and from the 4-20mA signals provided from the guided wave, reed chain and magnetostrictive transmitters with resolution down to 0.8mm available.

The LevelSure is a completely self-contained unit for mounting to a tank or vessel with threaded, flanged or welded connections to suit customer specification. It is particularly useful in conditions where a high level of confidence is required in critical level readings and where redundancy is required. Typical applications are offshore, petrochemical, power generation and pharmaceutical industries.

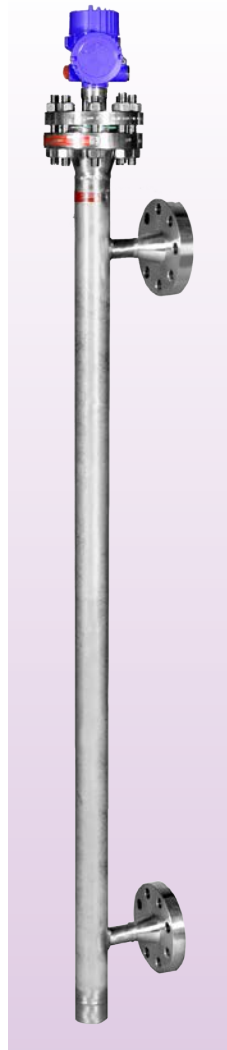
## Guided Wave Radar



By-Pass Mounting



Integral Mounting



Chamber Mounting

## Measuring Principles

Time Domain Reflectometry (TDR) - Microwave pulses are transmitted along a guide rod suspended from the top of the measuring chamber. As the pulses come in contact with the media, they are reflected back along the guide probe and are detected at the electronics in the head-shell. The time elapsed is evaluated to determine the liquid level with a measurement accuracy of  $\pm 3\text{mm}$ . Microwaves are generally not affected by process conditions. They are not sensitive to dust, vapours, foam or changes in liquid density. Even conditions such as steam environments do not influence the accuracy or reliability.

## Communications

HART • PROFIBUS • FIELDBUS

Options dependent on instruments used

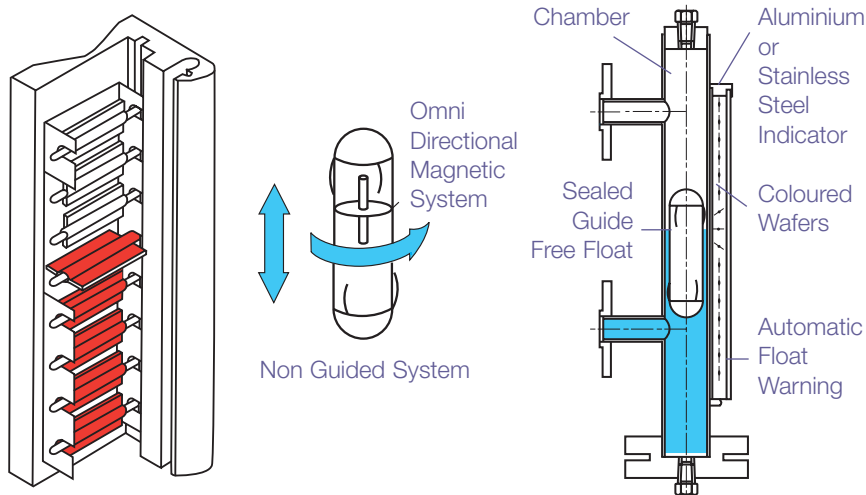


Exchangeable display and configuration module

## Approvals

Approvals dependent on instrument used. Please contact us for more information.

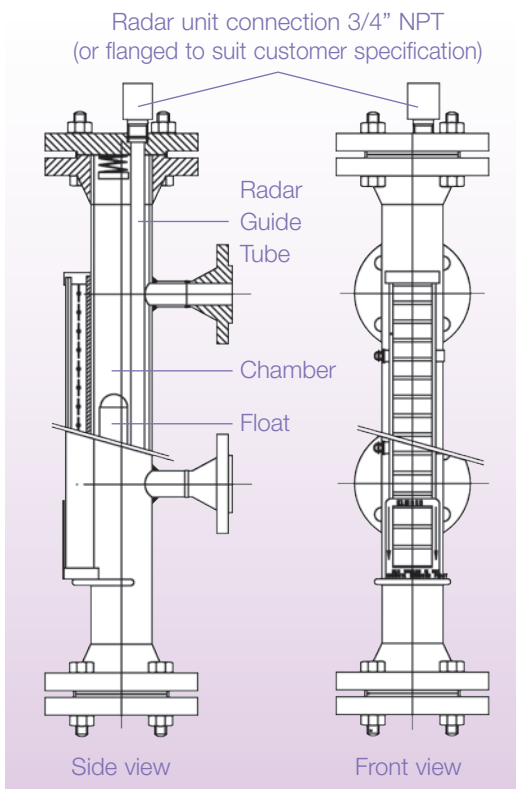
## LevelSure Gauges Mechanical Operation



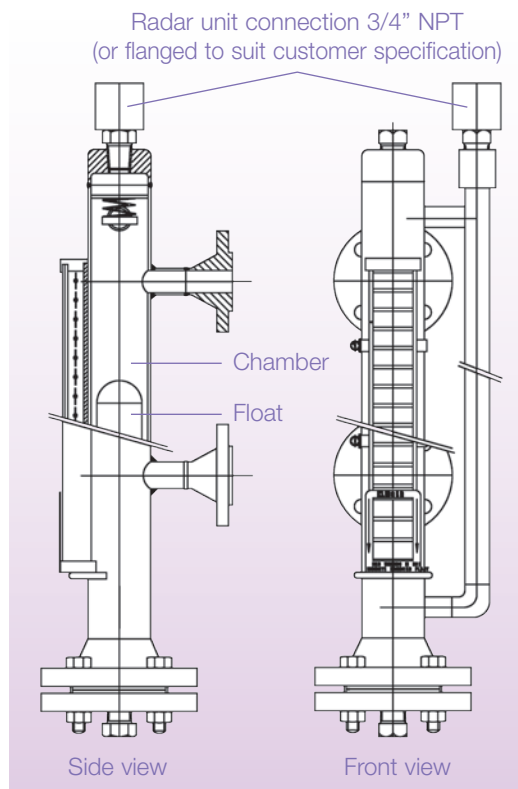
The TC Fluid Control Magnetic Gauge is designed so that the liquid being measured is enclosed within a sealed chamber. A stainless steel, titanium or plastic float fitted with a permanent omni-directional magnet moves freely inside the chamber and actuates the magnetic wafers within the indicator. As the float rises or falls with the liquid level each wafer rotates 180° and so presents a contrasting colour. Those wafers above the float show white, whilst those level and below show red – the indicator then presents a clearly defined and accurate level of the liquid in the chamber.

**The wafers resist accidental disturbance (e.g. vibration) due to their edge magnetisation and mutual attraction.**

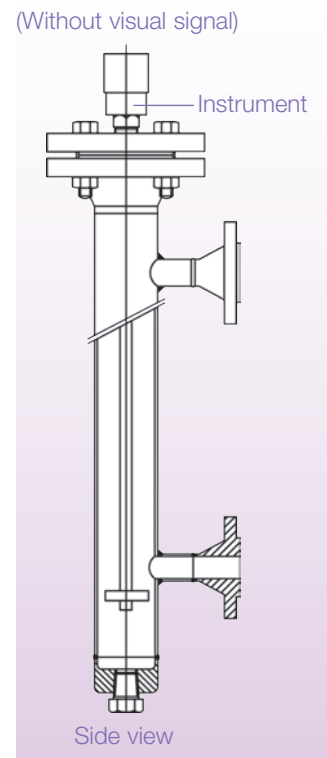
### Integral mounting



### By-Pass mounting



### Chamber mounted level instrument (Without visual signal)



## Specification


### Standard Chamber Materials


<b>Body:</b>	Austenitic stainless steel to suit customers requirements.
<b>Flanges:</b>	Austenitic stainless or carbon steel depending upon application.
<b>Float:</b>	Austenitic stainless steel, titanium, glass or corrosion resistant plastic.
<b>Display Housing:</b>	Aluminium Alloy 6063T6 or stainless steel outer housed.
<b>Ratings:</b>	Process Pressures up to 400 bar (5800 psi) saturated steam pressure up to 180 bar. Temperatures up to 450°C. Higher temperatures on application.
<b>Length:</b>	Length To suit customer requirement, (maximum single section length 6m).

### Special Body/Flange Material

Alloy 825, Titanium, Hasteloy, Sanicro 28/Duplex, Monel 400, 6mo/F44  
Others on request.

### Approvals - LevelSure Gauges

 PRESSURE EQUIPMENT DIRECTIVE 97/23/EC CATEGORY IV  
Type Approval COV 0312119/TEC Module B  
Certificate of Conformity COV 0312785/01 Module D

 II 1/2 Gc T1-T6 SIRA 04 ATEX 6126  
ATEX Protection concept - Constructional Safety 'c'.

Note: this approval is not available on all options, contact design office for information.

### Approvals - Transmitters/Radar

FM, CSA, GOST, ATEX, IEC, Exia and Exd

Marine Approvals on request

SIL2 Compliance on request

