



Features

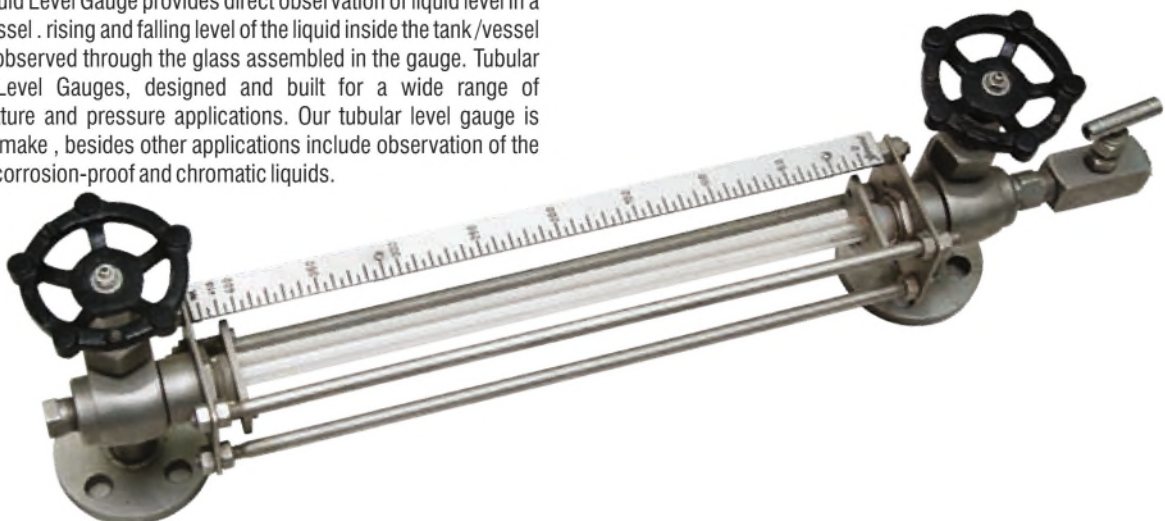
- Tubular level gauge applicable upto 25kg and upto 250 deg cent
- Forged bodies
- Toughened borosilicate glass with designs to suit pressure and temp rating
- For applicability in critical acidic, steam water, non acidic, and in high temperature zone
- IBR certified device available
- Available with C Channel options with SS, CS, MS with anticorrosion powder coat, MS
- NACE, H2S service compatibility applicable
- Level 1 radiographed body available
- Helium leak test proved design @ 10(-4) mbarlt/sec
- Special isolation offset construction available with both screwed and bolted
- CE applicability
- Also available with 1.6 to 4 mm lining PTFE / PFA with SS
- Applicable for refinery, petrochemical, chemical, power, radioactive, fertilizer, food, pharma, metal industry applications

Concept and Principle of operation

The tubular type level gauge is the simplest shape of direct reading level apparatus for low pressure up to 25 bar and maximum temperature of 250 °C .The gauge glass is built in the protective tube. Check balls inserted in the upper and lower valve to stop flow instantaneously when the glass is broken. The protector having a circular form is constructed to prevent glass breakage from external sources. For glass tube gauges only of center to center dimensions in excess of 2.000 mm, it is possible to manufacture any required c to c by using coupling in the middle of the gauge. Depending on the nature of the liquid, tubes made from various PFA, Acrylic or Vinyl tube are also available. Tubular glass with a linear red coating on the back is available to make level observation more clear.

This Liquid Level Gauge provides direct observation of liquid level in a tank/ vessel . rising and falling level of the liquid inside the tank/vessel can be observed through the glass assembled in the gauge. Tubular Liquid Level Gauges, designed and built for a wide range of temperature and pressure applications. Our tubular level gauge is used to make , besides other applications include observation of the level of corrosion-proof and chromatic liquids.

The most advantage of this type is for easy level reading of boiling liquids restricting in temperature application rating . When liquids are boiling, their bubbles make the surface level indistinct. The manual adjustment of isolation valve at the input of the media entering the chamber reduces the bubbling. Therefore the level gauge ease to read the level or bubbling liquids. It also provides advantages for highly dense and viscous liquids, as the body is made of seamless pipe. This level gauge is designed and manufactured for easy and accurate reading the liquid level of highly foamy liquids. The gauge has a relatively spacious internal area where foamy liquid is held from forming foams.



Special Application

More severe demands may often be required on liquid level gauges in terms of resistance to corrosion, and this is accomplished by lining or coating all wetted parts. The most important aspect of this process is the preparation of the metal substrate.



Technical Specifications: Table-1 Material of Construction

| | |
|-----------------------------------|---|
| Type | Tubular |
| End Blocks | Carbon steel, SS304, SS304L, SS316, SS316L, Monel, Titanium, Inconel 600, Hastelloy C, PolyPropylene, PTFE lining of 1.6 mm to 4 mm on SS, others on request, subject to Pressure and temperature condition |
| Packing Material | PTFE |
| Glass Protection C Channel | SS, MS, CS, MS with anticorrosion powder coat |
| Fasteners | SS, ASTM A 193 Gr B7 |
| Scale | Alluminium, Acrylic and SS engraved in mm |

Technical Specifications: Table-2 Technical data

| | |
|---|--|
| Heavy walled borosilicate glass | Upto 300 deg cent |
| Connection orientation | Vertical, right, left, back |
| Glass width | 16 mm, 19 mm and 25 mm |
| Operating pressure applicable as input | 25 kg, higher depending on temp |
| Shell test applicable, pressure | 40 kg at 20 deg cent |
| Shell test applicable, temperature | Max 400 deg cent depending on selected MOC |
| Isolation valve | Screwed bonnet offset construction with auto ball check arrangement, bolted bonnet construction with high temperature and pressure available |
| Centre to centre distance | Max upto 3000 mm applicable with desired accuracy and visibility |
| Vent /drain | 1/2" plugged / 1/2" needle valve / 1/2" ball valve / 1/2" globe valve |
| Process connection | 15 to 50 mm flanged / upto 25mm screwed / socket weld, but weld, tricolor and others on request |

Technical Specifications: Table-3 Indicative weights in kgs with C Channel

| Tubular level gauge visible length in mm | With isolation valve (upto 1" RF flange) and with handle with drain and vent plug (upto 300# body) | Add on for ball valve replacing the drain & vent plug |
|--|--|---|
| 300 | 10 | 2 |
| 600 | 16 | 2 |
| 1000 | 30 | 2 |
| 2000 | 46 | 2 |
| 3000 | 80 | 2 |

Technical Specifications: Table-4 Indicative weights in kgs with Tie Rods

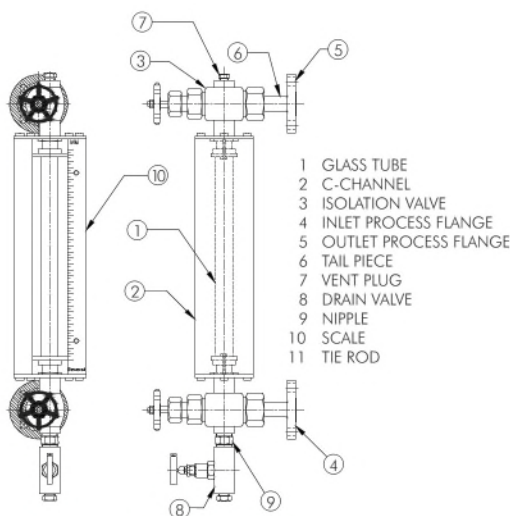
| Tubular level gauge visible length in mm | With isolation valve (upto 1" RF flange) and with handle with drain and vent plug (upto 300# body) | Add on for ball valve replacing the drain & vent plug |
|--|--|---|
| 300 | 6 | 2 |
| 600 | 11 | 2 |
| 1000 | 20 | 2 |
| 2000 | 35 | 2 |
| 3000 | 56 | 2 |

Construction and dimensional cross sectional overview

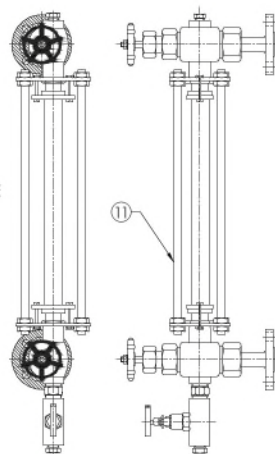
The gauge consists of a body having machined to have a liquid where high temperature are liable to occur, the glass is heavy borosilicate glasses are used. These tubular gauges preferably used for all applications with the simplest solution keeping the temperature and pressure rating known.

The tubular level gauge is assembled firmly with heavy toughened borosilicate glass with tie rods or C Channel, special packing arrangement is made to ship larger CCD with tie rods and or with C Channel , as the delicacy with glass oriented design is subjected to damage in transit.

The most advantage of this type is that it has no invisible sections (dead band). Our standard overlapped section is 10 mm as minimum and the gauge is so designed that supporting brackets can be equipped to protect a long multiple connected gauge from distortion of fall down. The scale plate to mount alongside the gauge may be available on request by customers to observe the liquid level more accurately.



With 'C' Channel



With Tie Rods



With 'C' Channel



With Tie Rods



Auto ball check arrangement to enable glass protection from excess energy and for use in special service applicable in Tubular level gauge, to enable tight sealing concept



Hydro test bench and calibration test bench applicable with helium leak test for gauges for perfect tight sealing feature

Ordering Information

TULG-1000-25F150-S4-16MST-SPP-AL-NA-Z



| Centre to Centre Distance | |
|---------------------------|--|
| 1000 | Indicate the required Centre to Centre Distance in mm. |

| Process Connection | | | | |
|--------------------|--------|------|------|--------|
| Flanged Connection | | | | |
| Code | Size | Code | Code | Size |
| 15 | 1/2" | F | 150 | 150#RF |
| 20 | 3/4" | | | |
| 25 | 1" | | | |
| 40 | 1 1/2" | | | |
| 50 | 2" | | | |

| Screwed Connection | | | | |
|--------------------|--------|------|----------------|--|
| Code | Size | Code | Threading Type | |
| 1/2" | 1/2" | S | NPTM | |
| 3/4" | 3/4" | | BSPM | |
| 1" | 1" | | NPTF | |
| 1 1/2" | 1 1/2" | | BSPF | |

| MOC of Wetted Parts | |
|---------------------|-------------|
| C | CS |
| S4 | SS 304 |
| S4L | SS 304L |
| S6 | SS 316 |
| S6L | SS 316L |
| P | PP |
| X | Special MOC |

| Glass Tube | |
|------------|------------|
| 16 | 16 mm O.D. |
| 19 | 19 mm O.D. |

| Glass Protection | |
|------------------|-------------------------------|
| MST | M.S. Tie Rods |
| SST | SS Tie Rods |
| MSC | MS Powder Coated 'C' Channels |
| SSC | SS 'C' Channels |

| Special Features | |
|------------------|--|
| PCS | P.T.F.E. Lined CS, Flange Orientation Top - Bottom* |
| PS4 | P.T.F.E. Lined SS 304, Flange Orientation Top - Bottom* |
| PS4L | P.T.F.E. Lined SS 304L, Flange Orientation Top - Bottom* |
| PS6 | P.T.F.E. Lined SS 316, Flange Orientation Top - Bottom* |
| PS6L | P.T.F.E. Lined SS 316L, Flange Orientation Top - Bottom* |

* Without Isolation Valves & Drain / Vent

| Calibrated Scale engraved in mm | |
|---------------------------------|-----------|
| AL | Aluminium |
| SS | SS |
| AC | Acrylic |

| Drain | |
|-------|-------------------|
| P | 1/2" Plugged |
| N | 1/2" Needle Valve |
| B | 1/2" Ball Valve |

| Vent | |
|------|-------------------|
| P | 1/2" Plugged |
| N | 1/2" Needle Valve |
| B | 1/2" Ball Valve |

| Isolation Valves | |
|------------------|------------------------------------|
| S | Screwed Bonnet Offset Construction |
| N | Without Isolation Valves |