

L21S/SR/ST – Glass Level Gauges

Type of code

Example: L21ST/1450/AANSI 3/4" 150Lb RF/EX

| | | | | | |
|------|---------------------------------------|----------------------------------------|---------------------|--------------------|----------------------------|
| Code | | | | | |
| 1 | Basic type | | | | |
| | L21 | | | | |
| 2 | Type of gauge | | | | |
| | S | Tubular level gauge | | | |
| | SR | Level gauge with reflex glasses | | | |
| | ST | Level gauge with transparent glasses | | | |
| 3 | Distance Centre-to-Centre | | | | |
| | x | Distance between flanges centres in mm | | | |
| 4 | Process connections | | | | |
| | STEP 1 | STEP 2 | STEP 3 | STEP 4 | STEP 5 |
| | - type of connect | - norm of flange | - nominal pipe size | - nominal pressure | - type of sealing surfaces |
| | A - horizontal | ANSI, ASME | 3/4" etc. | 150Lb etc. | RF etc. |
| | B - vertical | GOST | DN40 etc. | PN50 etc. | 1 etc. |
| | C - vertical inlet, horizontal outlet | EN | DN40 etc. | PN50 etc. | B1 etc. |
| | D - horizontal intel, vertical outlet | DIN, etc. | 3/4" etc. | 150Lb etc. | |
| 5 | Area classification | | | | |
| | NO | Non hazardous environment | | | |
| | EX | Hazardous environment | | | |

6. Other parameters must be specified in inquiry/order.

For example:

- Backlight
- Large chamber
- Connecting cocks
- Type of drain and vent
- Special type of connect

Description

EMKOMETER supplies many types of level gauges for many uses. Every gauge is for special application. It can be used for liquids and gases. Construction depends on type of media, operating pressure and temperature. Gauges are connected by flanges vertically to the side of the tank, in which levels should be monitored, or interface level of the liquid. It works on the principle of communicating vessels. Our main types of glass level gauges are transparent, reflex and classic glass level gauges.

Explosive atmospheres

Safety has been verified according to standards ČSN EN IEC 60079-0:2018, ČSN EN 60079-11:2012, testing institute FTZÚ certificate number **FTZÚ 02 ATEX 0453X**.

When using more than one sensor, it is necessary to use cabling to connected devices according to ČSN EN 60079-25:2011

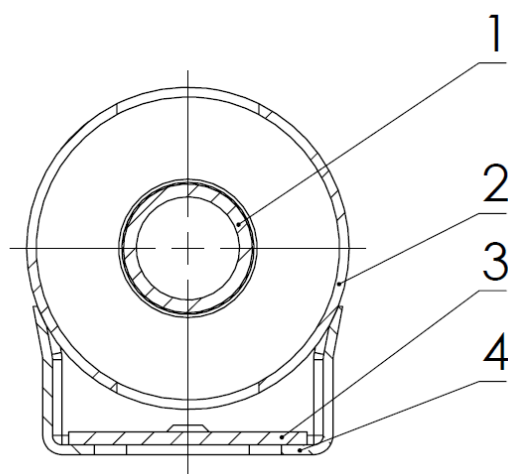
Measured medium and ambient temperature:

| Temperature class | Ambient temperature | Max. medium temperature |
|-------------------|---------------------------------------------------------|----------------------------------------------------------|
| T6 | $-40^{\circ}\text{C} \leq T_a \leq 80^{\circ}\text{C}$ | $-196^{\circ}\text{C} \leq T_m \leq 80^{\circ}\text{C}$ |
| T5 | $-40^{\circ}\text{C} \leq T_a \leq 95^{\circ}\text{C}$ | $-196^{\circ}\text{C} \leq T_m \leq 95^{\circ}\text{C}$ |
| T4 | $-40^{\circ}\text{C} \leq T_a \leq 130^{\circ}\text{C}$ | $-196^{\circ}\text{C} \leq T_m \leq 130^{\circ}\text{C}$ |
| T3 | $-40^{\circ}\text{C} \leq T_a \leq 130^{\circ}\text{C}$ | $-196^{\circ}\text{C} \leq T_m \leq 195^{\circ}\text{C}$ |
| T2 | $-40^{\circ}\text{C} \leq T_a \leq 130^{\circ}\text{C}$ | $-196^{\circ}\text{C} \leq T_m \leq 290^{\circ}\text{C}$ |
| T1 | $-40^{\circ}\text{C} \leq T_a \leq 130^{\circ}\text{C}$ | $-196^{\circ}\text{C} \leq T_m \leq 440^{\circ}\text{C}$ |

Type of Gauges

Tubular Glass Level Gauge

These level gauges are for direct monitoring of the liquid level in pressure and non-pressure tanks. The level gauge must not be exposed to pressure surges, vibration and shock. It can be used below 16 bar and temperature range from - 30 °C to + 180 °C.

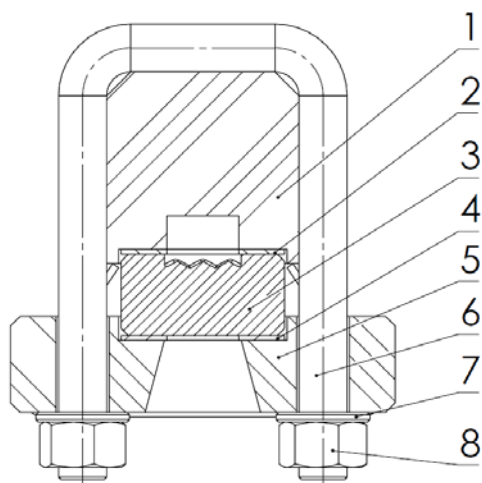


- 1) Glass body
- 2) Safety cover
- 3) Protective glass
- 4) Cover

Reflex Glass Level Gauges

Light is reflected by the prismatic grooves on glass and we can see, where the level of medium is. EMKOMETER supplies from 150 ANSI pressure class to 600 ANSI. These level gauges can be used for application with pressure below 35 bar.

Schematic picture:

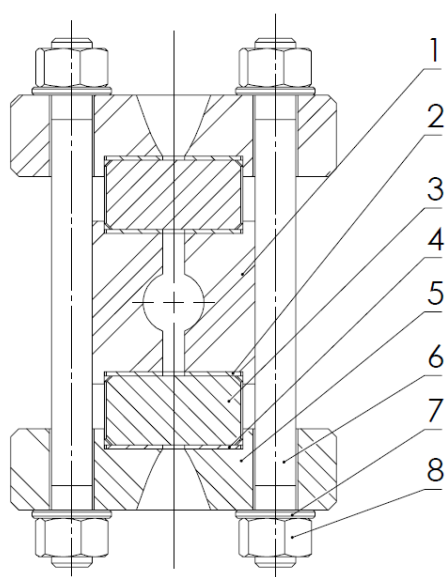


- 1) Body
- 2) Sealing gasket
- 3) Reflex glass
- 4) Cushion gasket
- 5) Pressure plate
- 6) Bolt
- 7) Washer
- 8) Nut

Transparent Glass Level Gauges

Medium is between two transparent glasses, pressed by two pressure plates. EMKOMETER supplies from 150 ANSI pressure class to 600 ANSI. These level gauges can be improved by mica shields for more types of medium and higher pressure and temperature. Another special improve can be light for better view of level in dark environment mounted on their rear side.

Schematic picture:



- 1) Body
- 2) Sealing gasket
- 3) Transparent glass
- 4) Cushion gasket
- 5) Pressure plate
- 6) Bolt
- 7) Washer
- 8) Nut

Tubular Glass Level Gauges - L21S

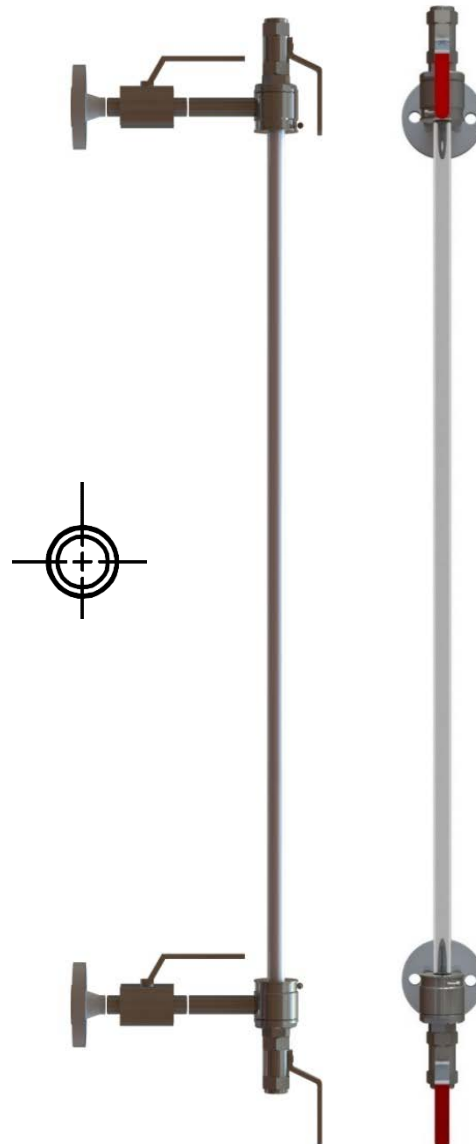
- without cover

These gauges are normally used in non-pressurized and non-dangerous fluid systems.

| Technical data | |
|-------------------------------|----------------|
| Service conditions | |
| Pressure max. | 16 bar |
| Temperature range | -30 to +200 °C |
| Pressure class | 150 (PN6-PN16) |
| Distance Centre-to-Centre (X) | to 3000 mm |

Possible accessories

- Connecting cocks
- Type of drain and vent
- Cover
- SPJ switch
- Float



Tubular Glass Level Gauges - L21S

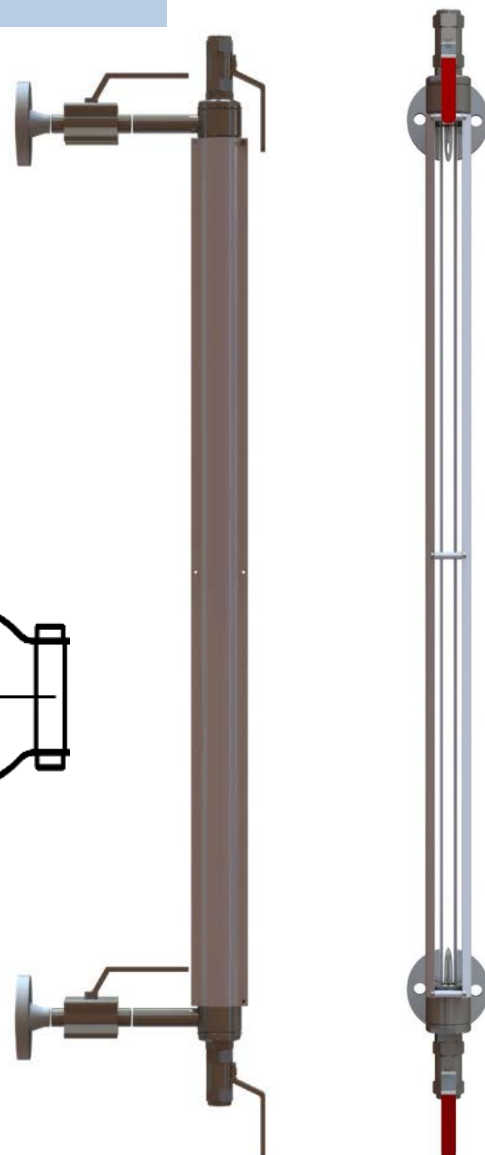
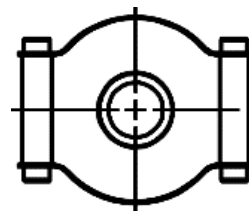
- with two covers on sides

These gauges are normally used in non-pressurized and non-dangerous fluid systems. Measuring glass tube is protected by a two safety covers from stainless steel on sides.

| Technical data | |
|-------------------------------|----------------|
| Service conditions | |
| Pressure max. | 16 bar |
| Temperature range | -30 to +200 °C |
| Pressure class | 150 (PN6-PN16) |
| Distance Centre-to-Centre (X) | to 3000 mm |

Possible accessories

- Connecting cocks
- Type of drain and vent
- SPJ switch
- Float



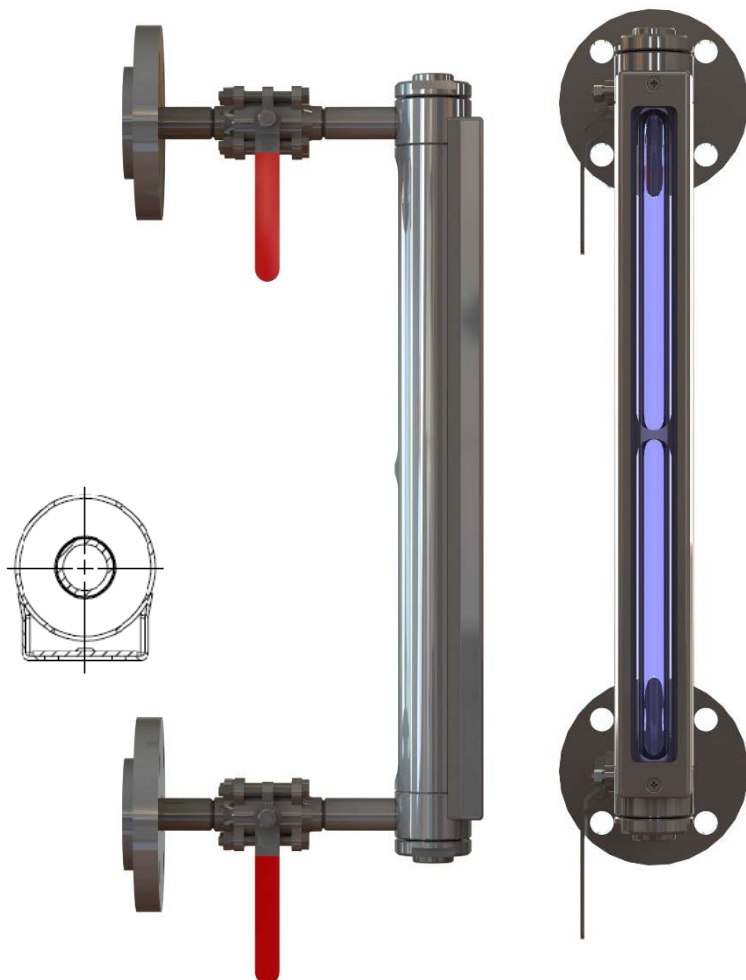
Tubular Glass Level Gauges - L21S

Measuring glass tube is protected by a safety cover from stainless steel and glass shield.

| Technical data | |
|-------------------------------|----------------|
| Service conditions | |
| Pressure max. | 16 bar |
| Temperature range | -30 to +200 °C |
| Pressure class | 150 (PN6-PN16) |
| Distance Centre-to-Centre (X) | to 3000 mm |

Possible accessories

- Connecting cocks
- Type of drain and vent
- Cover
- SPJ switch
- Float



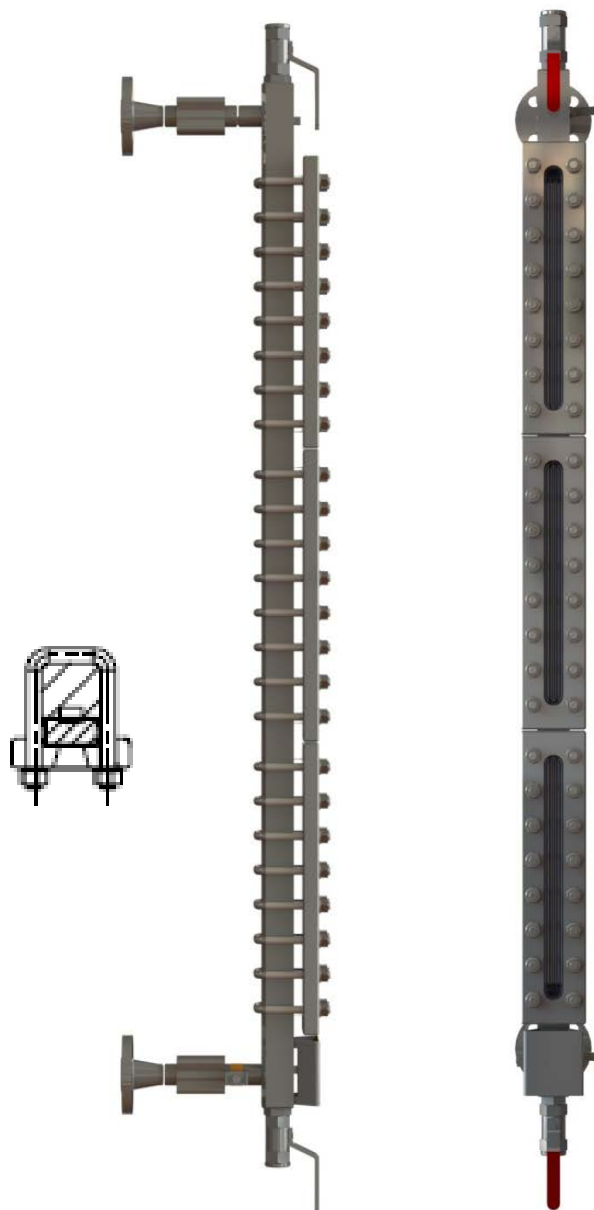
Reflex Glass Level Gauges - L21SR

Reflex version can be used for media with significant glass attack (saturated steam, HPHW, alkalis...) with pressure below 35 bar and temperature below 253 °C. For media with no significant glass attack can be used for temperature below 430 °C and pressure below 400 bar (temperature depends on the pressure - higher temperature means lower pressure and conversely).

| Technical data | |
|-------------------------------|-----------------------------|
| Pressure max. | 400 bar |
| Temperature max. | 430 °C |
| Pressure class | 150-600 (PN16-PN100) |
| Distance Centre-to-Centre (X) | min. 140 mm to max. 3000 mm |

Possible accessories

- Connecting cocks
- Type of drain and vent



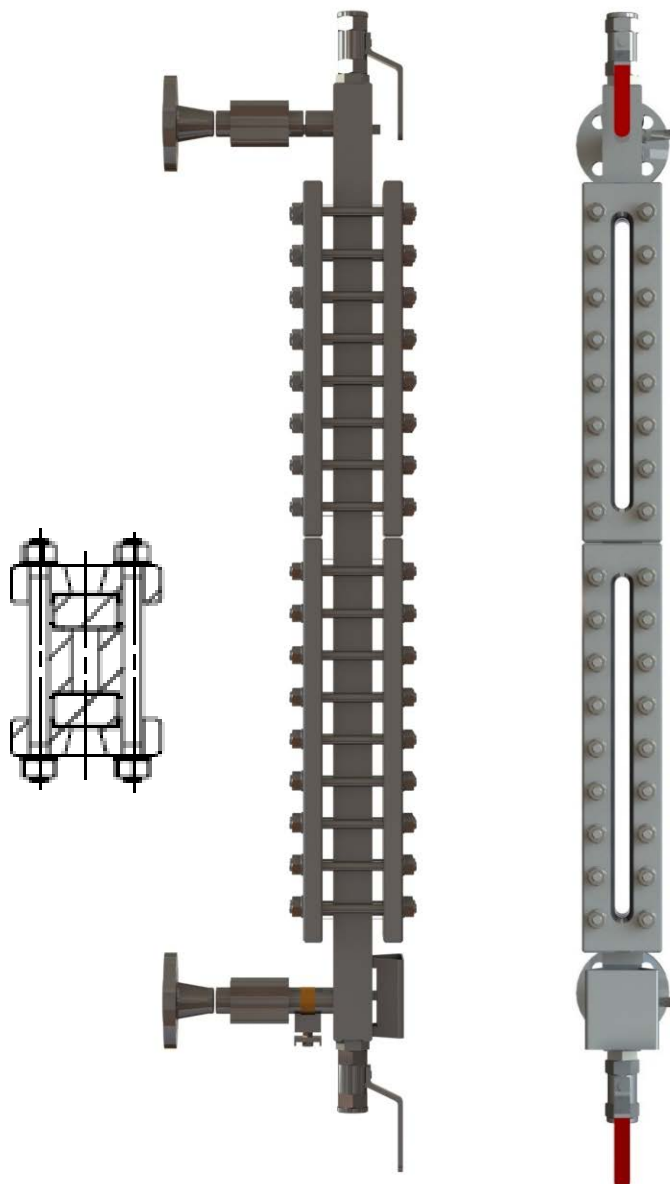
Transparent Glass Level Gauges - L21ST

Transparent version can be used for media with significant glass attack (saturated steam, HPHW, alkalis...) with pressure below 35 bar and temperature below 356 °C. For media with no significant glass attack can be used for pressure below 430 °C and below 400 bar (temperature depends on the pressure - higher temperature means lower pressure and conversely). For steam with pressure up to 35 bar or for media which cause rapid wear of glass must be used mica shields.

| Technical data | |
|-------------------------------|-----------------------------|
| Pressure max. | 400 bar |
| Temperature max. | 430 °C |
| Pressure class | 150-600 (PN16-PN100) |
| Distance Centre-to-Centre (X) | min. 140 mm to max. 3000 mm |

Possible accessories

- Backlight
- Connecting cocks
- Type of drain and vent



Large Chamber

This special version can be made like reflex and transparent gauges.

Reflex version

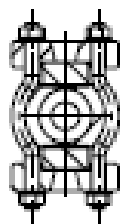
Reflex version can be used for media with significant glass attack (saturated steam, HPHW, alkalis...) with pressure below 35 bar and temperature below 253 °C. For media with no significant glass attack can be used for pressure below 430 °C and below 400 bar (temperature depends on the pressure - higher temperature means lower pressure and conversely)

| Technical data | |
|-------------------------------|-----------------------------|
| Pressure max. | 400 bar |
| Temperature max. | 430 °C |
| Pressure class | 150-600 (PN16-PN100) |
| Distance Centre-to-Centre (X) | min. 140 mm to max. 3000 mm |

Transparent version

Transparent version can be used for more media with significant glass attack because these gauges can be improved by mica shields.

| Technical data | |
|-------------------------------|-----------------------------|
| Pressure max. | 400 bar |
| Temperature max. | 430 °C |
| Pressure class | 150-600 (PN16-PN100) |
| Distance Centre-to-Centre (X) | min. 140 mm to max. 3000 mm |



L21ST - with backlight

| Technical data | |
|-------------------------------|-----------------------------|
| Pressure max. | 400 bar |
| Temperature max. | 430 °C |
| Pressure class | 150-600 (PN16-PN100) |
| Distance Centre-to-Centre (X) | min. 140 mm to max. 3000 mm |

