



Level meter L11 – submersible level indicator

Manual, assembly, operation and maintenance guide

Level indicator L 11 is made for indication of level of liquids, liquid gases or interface of liquids.

Warning

- 1) It is not allowed to install and operate device in case of missing or damaged parts.
- 2) Device has to be used within the conditions specified by the identification plate and corresponding documentation.
- 3) Device cannot be used as a mean of supply of any other devices or mechanisms. Its equipment could be damaged.
- 4) If there is any danger present at the place of installation, corresponding signs has to be placed in accordance with regulations.
- 5) Operator has to wear protective clothes and has to be trained for the use of device. Manuals and datasheets including technical specifications has to be provided.
- 6) User of the device is responsible for taking precautions against unauthorized access and manipulation with the device.
- 7) If the device is passed to 3rd party, complete documentation has to be provided, including manuals, datasheets and drawings.

Unpacking

- 1) Packaging should be checked for any damage prior to assembly.
- 2) Unpack carefully the unit, check if all the equipment is at its place according to assembly drawing. All the equipment should be connected and should not require any additional assembly. In case of some required modification (e.g. position of the switches) please consult corresponding manual.
- 3) Any concealed damage must be immediately reported to the carrier

Assembly

- 1) Level indicator is assembled in vertical position the way label text is in horizontal position.
- 2) Label data should be checked before the assembly.
- 3) Geometrical accuracy of connected counter-piece should be verified in order not to put additional stress into the structure of level indicator.
- 4) The shape, structure and material should be verified in connection with measured medium characteristics, especially maximum pressure, temperature and corrosive effects.
- 5) It is suitable to place shut-off valves for possible maintenance between the level indicator and the tank (pipeline).
- 6) The assembly shall be done using connection screws. It is recommended to use fan-shaped pads to secure electrical connection. If the level indicator is equipped with grounding slug, this should be connected with the grounding system.
- 7) In case the float is supplied individually, it is necessary to put it onto the level indicator facing up. Float orientation requires increased attention. Upper part is indicated by an arrow.
- 8) If the float is already installed in level indicator, it is necessary to avoid any sudden position changes of level indicator, which could cause its possible damage.

Operation

It is necessary to avoid pressure shocks during operation.

Maintenance

Maintenance is focused on tightness control (especially connections) as well as cleaning the float and rod if needed.

Safety and health protection during operation

All regulations must be obeyed during assembly, operation and maintenance works. It is necessary to ensure appropriate protection against chemically aggressive and hot substances, or against outflow of high pressured liquids and gases, during any manipulation, for inst. by protective shield, gloves etc.

Instructions for explosive areas installation

In explosive areas it is necessary to obey all regulations and rules, for inst. degassing close to the drain hole, use of appropriate non-sparking tools etc.

All wiring operations must solely be carried out with the power disconnected. The special regulations including EN 60079-14 and local installation regulations must be observed.

SP4 positions sensor

The level sensor has a two-pole electrical connector. The level signal is included in the supply current. In addition, using HART compatible transducer, it can be communicated with the sensor via HART protocol.

Digital communication can also be used.

SP 4 acts as linear resistive sensor of the position. It is usually called linear R.

There are many possible variants of the transducers. Current version of the manuals including installation instructions is available for download at following websites and is always included in the supply.

All the technical parameters and instructions are included in corresponding manuals. Read the instruction manual before assembly.

Transducers are factory preset and calibrated.

PR Electronics

5331A, 5331D, 5102, 5131A, 5333A, 5333D, 5335A, 5335D, 5337A, 5337D, 5350A, 5350B, 5343A, 5343B, 6331A, 6331B, 6333A, 6333B, 6335A, 6335D, 6335D, 6337A, 6337D, 6350A, 6350B

<http://www.prelectronics.com/products>

Optional equipment (displays, power supplies etc.)

5715, 5714, 5531B, 5531A, 8335, 8501, 9420, 9107B, 9202B, 9116B, 5107B, 5105B, 5114B, 5115B, 5116B, 5131B, 5202B

Rosemount 248

<http://www2.emersonprocess.com/en-us/brands/rosemount/temperature/single-point-measurement/248/pages/index.aspx>

JSP

5310, 5311, 5315

<http://www.jsp.cz/en/products/transmitters/>

Limit switches

Parameters of the switch vary depending on the used switching element. They are always indicated in corresponding documentation and on the device and cannot be exceeded.

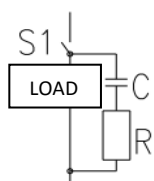
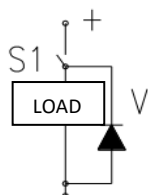
Ex ia

It can be connected to the intrinsically safe circuit with following parameters.

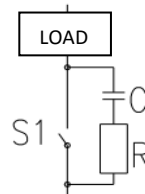
Max. input parameters

 $U_i = 30 \text{ V}$ $I_i = 100 \text{ mA}$, $L_i = 0$, $C = 0$

Recommended contact protection
for inductive load

 $U \sim \text{VAC}$  $U = \text{VDC}$ 

Recommended contact protection
for inductive or resistive loads

 $U \sim \text{VAC}$ nebo $U = \text{VDC}$ 

For physical and electrical characteristics, please consult corresponding datasheets and supplied documentation.

Special conditions

If titanium floats are used, care must be taken during the installation and the operation. These floats cannot cause any frictional and impact sparks.