

Technical data.



Purpose

The ULM-31A1 radar level transmitter is designed for reliable non-contact measurement of liquids or bulk materials level. It is used to measure the level of both neutral and aggressive products. It does not come in contact with the measured product, and is fitted with a protected antenna. It is the optimum option for technological accounting systems, for measurements in difficult conditions, where low cost is important.

Advantages.

- No contact with the product - the level transmitter does not require maintenance
- High measurement accuracy
- Protected high sensitivity planar antenna - provides for reliable measurement in difficult conditions and optimum protection against condensate formation
- No additional temperature error.

Operating principle.

The level transmitter emits a continuous frequency-modulated electromagnetic wave towards the measured product in the microwave range. The reflected wave returns to the transmitter antenna where it mixes with the radiated wave. The resulting frequency corresponds to the distance to the measured product. The measured distance is subtracted from the installation height, thereby the reservoir filling level is defined. The guaranteed accurate allocation of the resulting frequency provides

for an accurate and reliable level measurement, regardless of the reflection strength from the product.

Basic technical data.

Measurement range	0.6 – 30 m
Maximum absolute error	±3mm
Measuring beam width	9°
Connection.....	flange
Ambient temperature.....	-40 .. +50 °C
Electrical connection	4-wire
Digital interface	RS485 (Modbus RTU)
Analog interface	4-20mA/HART
Discrete output	2 contact relay groups
Wireless interfaces	Bluetooth
Power voltage	20-36 V DC
Version	General purpose industrial
Weight	below 4 kg

Body.

The body is made of aluminum with anodized protective coating with a powder painting. Degree of protection against dust and moisture IP65.

Materials.

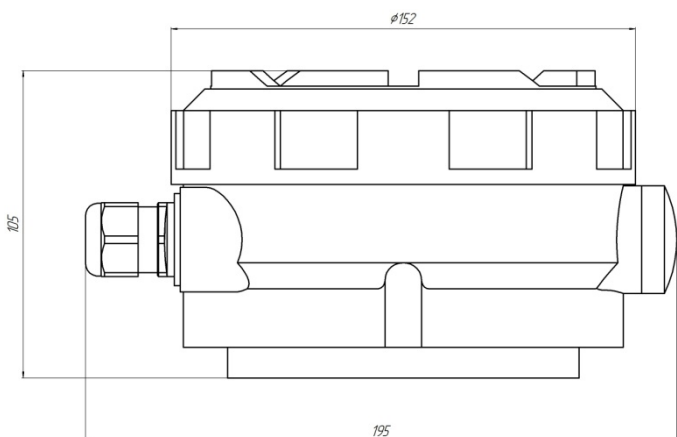
The parts of the transmitter contacting with the medium of the tank are made of PTFE-4 and stainless steel.

Communications.

The ULM-31A1 level transmitter is equipped with a wide range of different digital and analog interfaces:

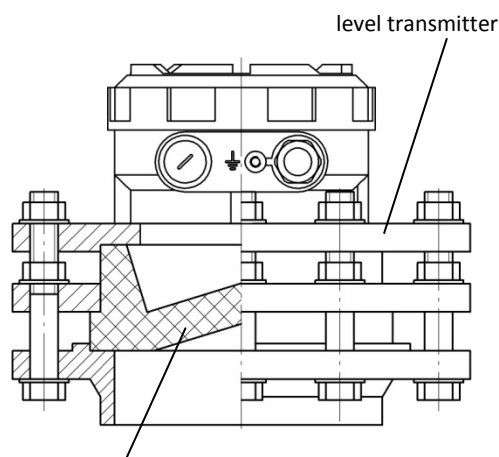
- Digital interfaces (Modbus, HART) are used for integration into process control systems.
- The Bluetooth wireless interface allows you to configure, diagnose and verify the level transmitter in the place of installation, using a conventional smartphone. There is no need for a local display.
- The 4-20mA typical analog interface provides compatibility with automation systems

ULM-31A1 level transmitter (custom index of the level gauge ULM4.02.000-01). Overall dimensions.



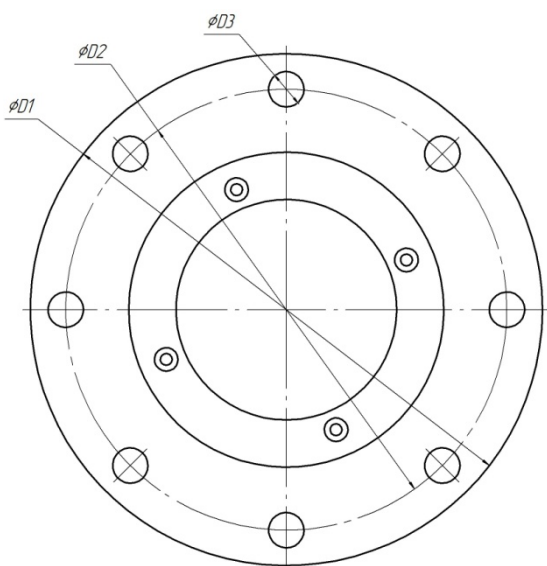
Method of installation of the ULM-31A1 level transmitter with an insulating radio-transparent gasket.

This method of installation is used to measure the level of aggressive and superheated products - it allows to completely isolate the internal volume of the tank from the level transmitter and the environment.



Insulating gasket (PTFE-4, PTFE, ceramics)

Mounting (transitional) flange of the ULM-31A1 level transmitter. Installation dimensions in accordance with GOST 12821-80.



According to the order, the ULM level transmitters may be equipped with different installation (transition) flanges, in accordance with different standards (GOST, DIN, ANSI, etc.) Request them when placing an order.

Typical flanges for the delivery of the ULM level transmitters comply with GOST 12821-80, DN150 size.

Flange	D1, mm	D2, mm	D3, mm
DN150, PN6	260	225	18
DN150, PN16	280	240	22