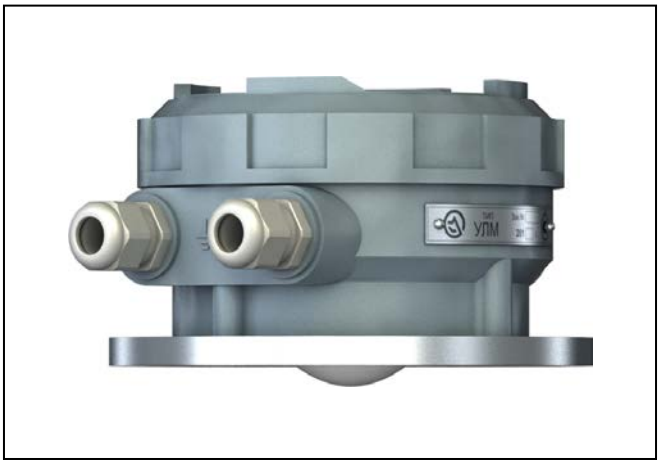
LIMACO
Radar
Level Transmitters

ULM-31A1-HF-LC

Non-Contact Radar Level Transmitter

Technical Data.



Purpose

ULM-31A1-HF-F-LC is the maximum low-priced radar level transmitter intended to measure liquid levels. **HIGH-FREQUENCY NON-CONTACT RADAR LEVEL TRANSMITTER AT THE PRICE OF AN ULTRASONIC TRANSMITTER!**

The level transmitter operating frequency of **120-140 GHz is the highest operating frequency among the mass-produced level transmitters!** It is used for measuring the levels of both neutral and aggressive products. It does not contact the measured medium and has the protected antenna. It perfectly suits for applications to measure liquid levels, where the guaranteed stability of readings is important and where the level transmitter price is critical.

Principle of Operation.

The level transmitter is installed in the upper part of the tank with controlled product (on the tank roof) and emits a continuous frequency modulated electromagnetic wave in the microwave range in the direction of the product. The reflected wave returns to the level transmitter antenna. Following the FMCW principle, the level transmitter calculates the distance from the installation location to the product. The measured distance is deducted from the installation height; thus, the tank filling level is determined. The use of the FMCW principle ensures an accurate and reliable level measurement regardless of the amplitude of the reflected signal.

ULM-31A1-HF-F-LC Advantages.

- LOW PRICE
- High measurement accuracy - **±5 mm**.
- Ultra-high operating frequency **120-140 GHz**.
- **No dependence on vapors and dust concentration**.
- Narrow measuring beam - 5^0.
- Ultra-high stability of measurements.
- No contact with the product – the level transmitter does not require servicing.
- The protected antenna provides reliable measurement in complicated conditions and the best protection against vapors and dust.
- Analog interface – 4-20 mA
- Digital Interface
  RS485 (Modbus RTU)/HART.
- Wireless interface Bluetooth

Basic Technical Characteristics

Measuring range	0.6–15 m
Maximum absolute error	±5 mm
Temperature error	none
Measuring beam width	5^0
Connection	flange, from DN50
Ambient temperature	-40°C to +50°C
Electrical connection	four-wired
Digital interface	RS485 (Modbus RTU)/ HART
Analog interface	4-20 mA
Wireless interface	Bluetooth
Supply voltage	20-36 VDC
Version	general purpose industrial
Weight	4 kg max

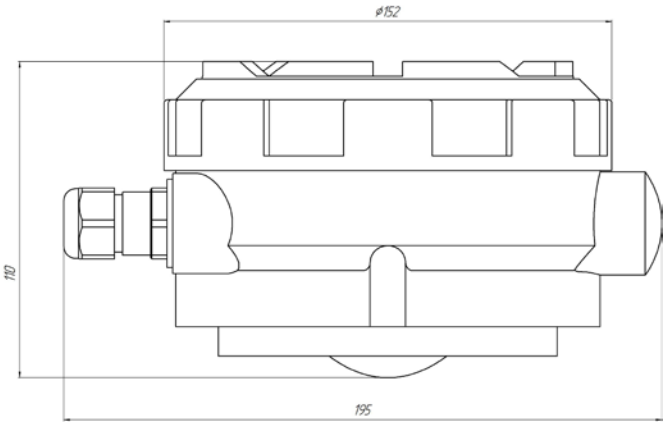
Casing.

The casing is made of aluminum with anodized protective powder-painted coating, or of **plastic**. Dust and moisture protection rating is IP65.

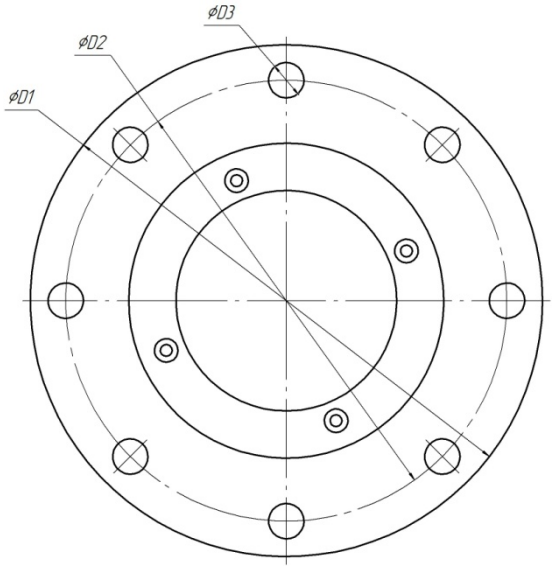
Materials.

The level transmitter components contacting the tank medium are made of poly-tetra-fluoro-ethylene (PTFE) and stainless steel. The level transmitter can be insulated from the tank inner space by means of additional radio transparent gasket made of fluorine plastic (PTFE) or of ceramics.

ULM-31A1-HF-F-LC Level Transmitter. Overall Dimensions.



Location of Fixing Holes on the Mounting (Adapter) Flange of the ULM-31A1-HF-F-LC Level Transmitter.



Depending on the order, the ULM level transmitters can be completed with various installation (adapter) flanges as per different standards (GOST, DIN, ANSI, etc.). Request them while placing an order.

Common-type flanges (adapter flanges) for supply of the ULM level transmitters comply with GOST 12821-80.

Flange	D1 (mm)	D2 (mm)	D3 (mm)	Number of holes
DN50, PN6 (adapter)	**140**	**110**	**14**	**4**
DN50, PN16 (adapter)	**160**	**125**	**18**	**4**
DN100, PN6	**205**	**170**	**18**	**4**
DN100, PN16	**215**	**180**	**18**	**8**
DN150, PN6	**260**	**225**	**18**	**8**
DN150, PN16	**280**	**240**	**22**	**8**