

The **ULTRASONIC FLOWBOX FLOW METER** is intended for measurement of liquid level and volume in vessels and flow rate measurement in gravitational channels. The ultrasonic method eliminates sensor contact with aggressive (acids, bases) or contaminated (wastewater) medium. The measuring set includes M1600 Microprocessor transmitter, ultrasonic level sensor and connecting cable.

METHOD OF OPERATION

The flow meter measures ultrasonic beam passage time between the sensor and the surface of measured liquid. The distance to medium surface is measured. The value can be used to read the liquid level or with a formula for over 20 flumes and weirs to determine the liquid flow rate.

FLOWBOX FLOW METER DESIGN

- M1600 Transmitter or M2160 Transmitter (two channels version)
- Ultrasonic level sensor



FLOWBOX FLOW METER FEATURES

- Flow measurement in gravitational pipelines with:
 - Palmer-Bowlus flume
 - Venturi flume
 - Parshall flume
 - measuring weirs
- Readout: momentary flow rate, total flow rate
- Current outputs: 0-20mA, 4-20mA
- Impulse output - adder
- Digital outputs RS232C/485 - Modbus (optional)
- Accuracy $\pm 0,1\%$ of range
- Sensor accuracy: $\pm 0,25\%$ of measuring range
- Supply: ~ 230 V, 50 Hz or battery supply
- Power input < 10 VA
- Ambient temperature: - transmitter: -10 do +55 C, sensor: -30 do +60 C
- Housing protection rating: - transmitter: IP65
- Housing material: - transmitter: ABS, sensor: PP, PVDF
- Weight: $\sim 1,5$ kg
- Automatic temperature compensation

FLOWBOX FLOW METER – OPTIONAL VARIANTS

- Flow meter with data logger
- Flow meter with an additional qualitative measurement of a parameter of the liquid (pH, oxygen, redox, conductivity) - FLOWBOXplus
- Flow meter in battery version - FLOWBOXbat
- Flow meter with remote data transmission module based on cell phone technology GSM or radio transmission.
- It's possible to select any compilations of the above-mentioned functionalities in one flow meter.

SPECIFICATION OF ULTRASONIC SENSORS

- Narrow ultrasonic beam
- Measuring range: 0,25-4 m
- Accuracy: $\pm 0.25\%$ of measuring range
- Ambient temperature: -30 °C to +60 °C
- Automatic temperature compensation
- Sensor material: PP, PVDF
- Protection rating: IP65 (IP68 on request)
- Ex version (on request)



CONNECTING CABLE

Joints Ultrasonic sensor with M1600 Transmitter

- 2 wires in a shield - LiYCY 2 x 0,35 shield

WATER RISE WITH

- Palmer-Bowlus ZPB flume
- Parshall P flume
- Venturi KPV flume
- Khafagi-Venturi flume
- Measuring weir

