LIQUID FLOW RATE MEASUREMENT – Palmer-Bowlus flume + FLOWBOX flow meter

ASSUMPTIONS

The liquid flow rate measurement with Palmer-Bowlus flume and water rise method in circular channels is based on the actual liquid level measured by the ultrasonic sensor (radar sensor, optional) at the hydraulic structure converted into the value of flow ratio by the ultrasonic flow meter (for ex. FLOWBOX).

The basic condition to apply the method is to provide, undisturbed and laminar flow in a measuring flume and free outflow of liquid from the measuring flume.

APPLICATION

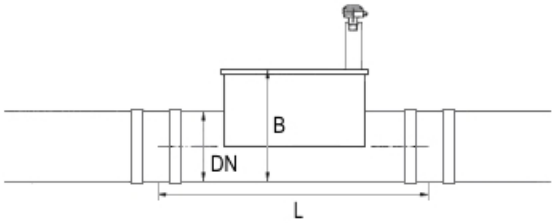
Palmer - Bowlus flume, in accordance with ISO 4359:1983 "Liquid flow measurement in open channels. Rectangular, trapezoidal and U-shaped flumes" is one of the metering flumes intended for flow measurement in ducts with gravity flow. It is recommended for circular channels with gravity flow and unpressurized lines. The flume provides a close relation between liquid level and flow rate in a duct or a pipeline. The actual liquid level is measured by the ultrasonic sensor (radar sensor, optional) and converted into the flow ratio by the ultrasonic Flow meter (for ex. FLOWBOX).

FEATURES

- optimum measuring accuracy of the flow rate
- standard flume dimensions
- easy installation in circular channels or pipelines
- easy flume installation

Caution! We also offer Palmer-Bowlus flumes in specialised versions dedicated to various applications (inter alia: with side measuring stack for foamy liquid; with vernier; in hermetic antiodor version, in version with additional measurement – for ex. pH value).

THE FAMILY OF PALMER-BOWLUS FLUMES

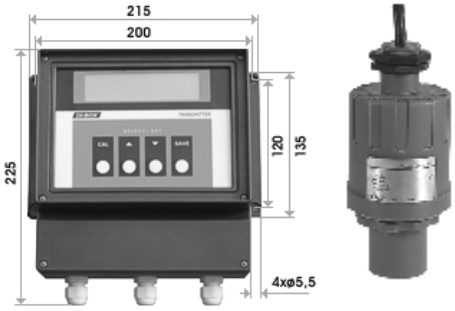


Typ koryta	DN	Q nom m³/h	B	L
ZPB 100	Ø 110	12	155	800
ZPB 160	Ø 160	45	210	800
ZPB 200	Ø 200	70	250	1190
ZPB 250	Ø 250	130	305	1190
ZPB 300	Ø 315	220	368	1400
ZPB 400	Ø 400	450	450	1500
ZPB 500	Ø 500	730	550	1700
ZPB 600	Ø 630	980	685	2000
ZPB 800	Ø 800	1700	860	2600
ZPB 1000	Ø 1000	4380	1050	3500

dimensions in mm

FLOWBOX FLOW METER

The FLOWBOX Flow meter is intended for measurement of liquid level and volume in vessels and flow rate measurement in gravitational pipelines. 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.



FLOWBOX FLOW METER FEATURES

- Readout: momentary flow rate, total flow rate
- Current outputs: 0-20mA, 4-20mA
- Impulse output - adder
- Digital outputs RS232C/485 - Modbus (on request)
- Accuracy ± 0,1% of range
- Supply: ~230 V, 50 Hz or battery supply
- Power input <10 VA
- Ambient temperature: transmitter: -10 to+55 C, sensor: -30 to+60 C
- Housing protection rating: transmitter: IP65, sensor: IP68
- Housing material: transmitter: ABS, sensor: PP, PVDF
- Weight: ~1,5kg
- Automatic temperature compensation
- Narrow ultrasonic beam
- Ex version (on request)

FLOWBOX FLOW METER – OPTIONAL VARIANTS

- Flow meter with data logger
- Flow meter with an additional measurement - FLOWBOXplus
- Flow meter in battery version - FLOWBOXbat
- Flow meter with remote data transmission

DI-BOX

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See more: http://www.flowmeter-flowbox.eu/liquid-flow-rate-measurement-with-palmer-bowlus-flumes.htm