FLOWSONIC

Ultrasonic flowmeters type FS

ISO 9001

Ultrasonic flowmeter type FS – Measuring Instrument Type – approval Certificate № 4289, № 3519 from the Bulgarian State Agency for and Metrology and Technical Surveillance.

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INTRODUCTION

The ultrasonic flowmeters FLOWSONIC type FS are used for measuring of the flow rate and the volume of continuous – phased liquids in pressure pipelines.
The principle of measurement and the construction of the flowmeters leads to an absence of any moving parts and hydraulic losses.
The parameters of the medium do not influence the accuracy of measuring.

Two modifications of the ultrasonic flowmeters are produced:

- **FS102** - for diameters up to 250 mm, with primary transducer for mounting , on the pipeline by means of a standard joints;
- **FS103** - for diameters from 250÷3000 mm, the ultrasonic sensors should be mounted directly on an existing pipeline.

The service the sensors should be done in working condition (under pressure).

The flowmeters can be used in water supply and irrigation, petroleum refining and food processing industry etc.

PRINCIPLE OF OPERATION

The ultrasonic flowmeters are a transit time type. The velocity of the fluid is proportional to the difference in transit times of the upstream and downstream acoustic energy. The microprocessors of the flowmeter convert the measured quantity into flow, volume and other quantities.
The coefficient of conversion velocity / flow can be determined:

- FS102 – by means of a standard system of calibration;
- FS103 – by measuring of the values of all quantities, with are functionally connected with the measuring of the flow.

FUNCTIONAL DATA

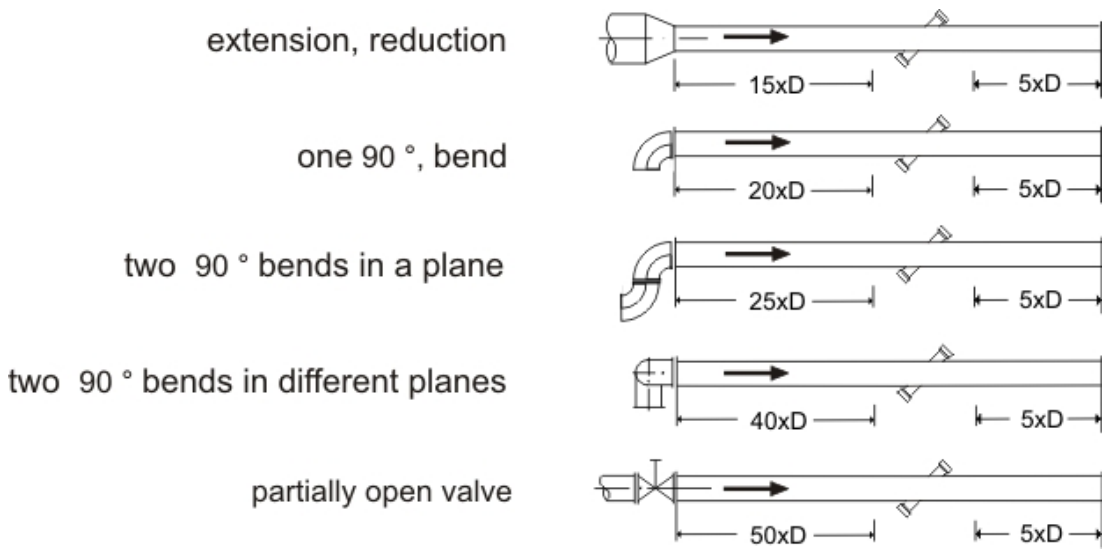
Indications:

- Flow rate – l/s, m^3/h, indication scale (0 – 100%);
- volume – l, m^3;
- the working time, resource of autonomous supply, clock/ calendar for real time;
- current condition (overrange, negative flow rate, main power operation, battery operation, errors etc.);
- records for volume quantity for the last 168 hours, 63 days, 24 months, 2 years;

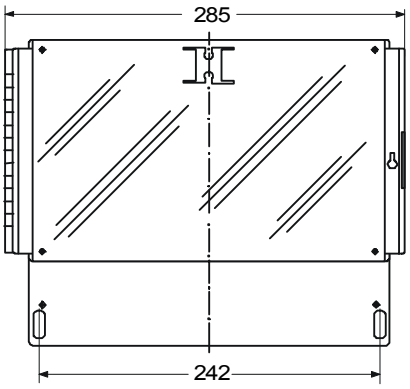
Outputs:

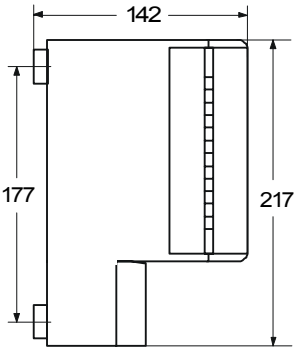
- analogue, frequency, serial RS485, remote counter, alarm;
- remote reporting by GSM (SMS).

INSTALLATION CONDITIONS

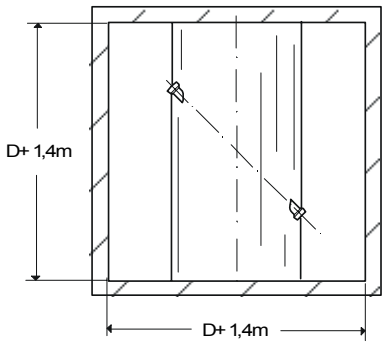


DIMENSIONS

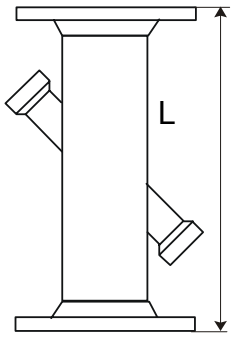




Secondary transducer
FS100



Minimum dimensions of the shaft for direct mounting FS103



Overall dimensions of the primary transducers FS102

D	L
50 ÷ 150	500
200	550
250	600

TECHNICAL DATA

Diameter of the pipeline FS102	25 ÷ 250 mm;
Diameter of the pipeline FS103	100 ÷ 4000 mm;
Working pressure	< 2,5 MPa; 6,3 MPa;
Temperature of the liquid	
❑ standard performance	(0 ÷ 70)° C;
❑ high temperature	(-10 ÷ 120)° C;
Ambient temperature	
❑ secondary transducer	(-10 ÷ 50)° C;
Protection class	
❑ primary transducer	IP68;
❑ secondary transducer	IP65;
Power supply	220V AC or 24V AC/DC
❑ build in accumulator	12V/1Ah;
❑ RTC accumulator	3,6 V/60 Ah
Materials	
❑ sensors/ primary transducer	12X18H9T;
❑ secondary transducer	ABS Cover: PC;

Errors

- FS102 – wet calibration ≤ 1%;
- FS103 – theoretically calibration ≤ 1,5%;

Alphanumeric display 2 x 16 LCD, backlight;

Outputs– galvanic isolated

- current / voltage
  or 0 ÷ 20 mA
  or 0 ÷ 5 V
  or 0 ÷ 20 mA
  or 0 ÷ 5 V
- frequency
  0 ÷ 10 kHz;
  or 0 ÷ 1 kHz;
- serial RS-485/ RS-232
- pulse ≤ 10Hz, 50ms;
- relay

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