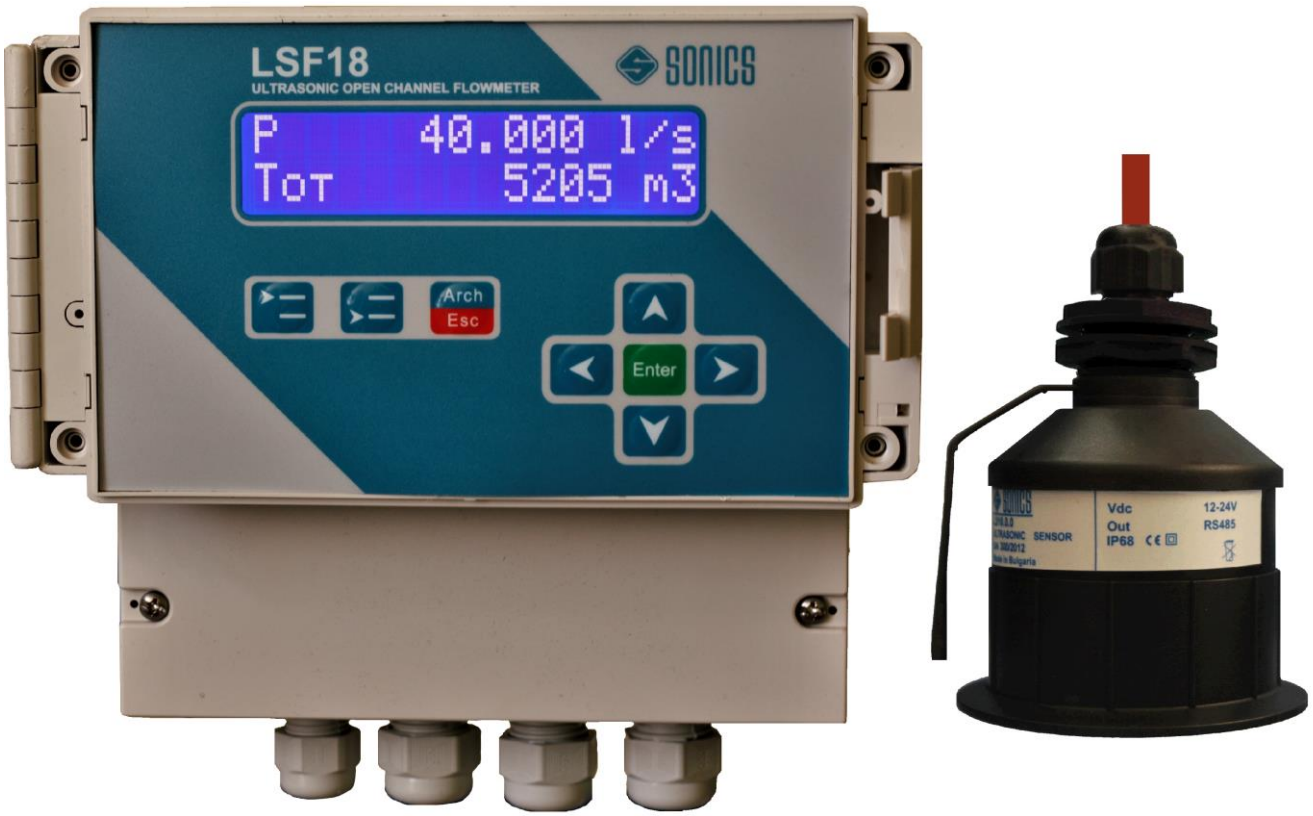
LEVELSONIC

Ultrasonic Flowmeter for Open Canals and Non-pressure Pipeline type LSF18



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APPLICATION

The ultrasonic flowmeters **LS10(F)** are used for accurate measurement of the level, flowrate and volumetric quantity of liquid fluids in open canals and non-pressure piping. The type and degree of pollution as well as the composition of the water do not affect the accuracy of the measurement.

Ultrasonic flowmeters are used for measurement of waste and processed water in water purification stations, irrigation etc.

PRINCIPLE OF MESUREMENT

The method applied is a classical one - the level is measured and then taking into account the calculated or established function level – flowrate (key curve) the flowrate is determined and the volumetric quantity is registered.

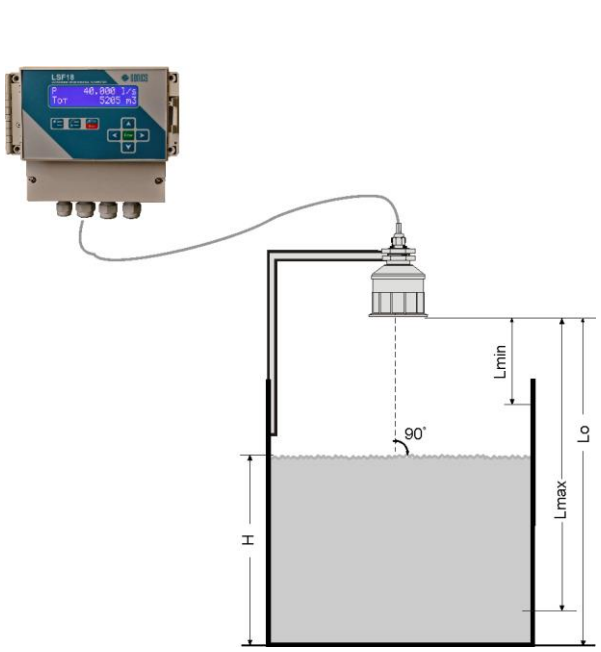
Flowrate measurement in open canals is carried out utilizing standardized weirs and methods.
The level – flowrate functional correlation is input in the form of a table up to 250 points.
The flowmeter measures the level and following a linear approximation establishes the transitory values of the flowrate which then are saved, integrated and visualized.

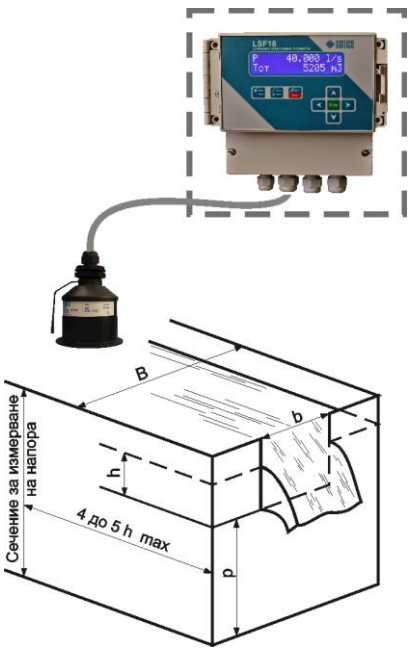
FUNCTIONALITY

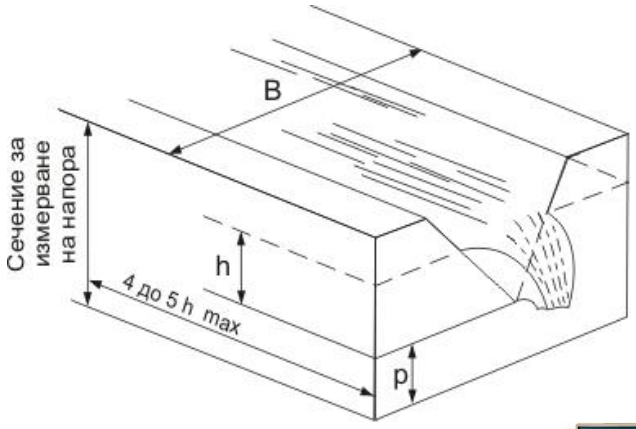
LS10(F) can be used with all types of standardized flowrate equipment for open canals:

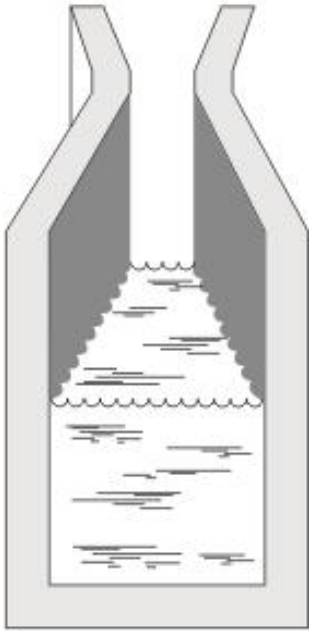
- Thin-walled weirs;
- Specific profile weirs;
- Canals with known cross section and incline;
- Parshall flume etc.

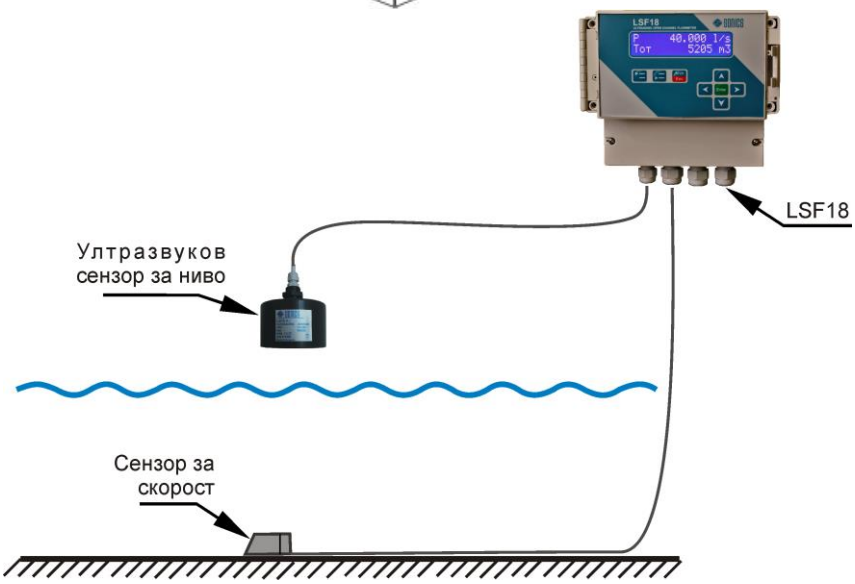
The setting of the key curve in a table form as well as the linear approximation between the points allows for interpreting of any random correlation (for example experimentally established level – flowrate correlations).
The flowmeter consists of a ultrasonic level sensor LS10.0 and an electronic unit LS10.1(F). The sensor can be set up as far as 1.2 km from the electronic unit. The parameters (base distance, level – flowrate table, limit values etc.) are input by means of the keypad and LCD. There is a function allowing for remote calibration. The display shows current information regarding the level, flowrate, temperature, volumetric quantity, real time clock (winter/summer daylight saving time automatic adjustment), data logger, status, input status etc.
The hourly volumetric quantities and maximum levels for the past two years are saved in the data logger. The last 20 events are saved by date, hour and duration in the event data logger. The history data base can provide information about the registered quantities for any given period if the user inputs the initial and final date and hour. The access to the initial parameters and service settings is encoded.
The users have at their disposal four relay outputs, the on/off values of which can be set by means of software. The analog output has three current ranges and two voltage ones. The users can select the flowrate values for the analog output limit values. The ultrasonic flowmeter can be connected to a network through RS485 or to a PC through RS232.



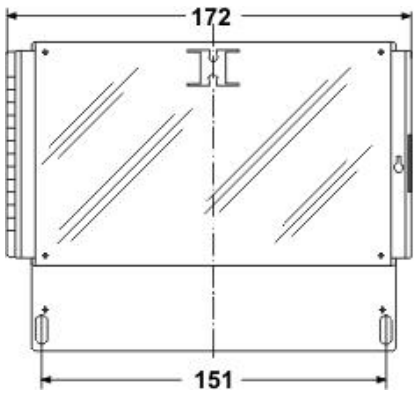


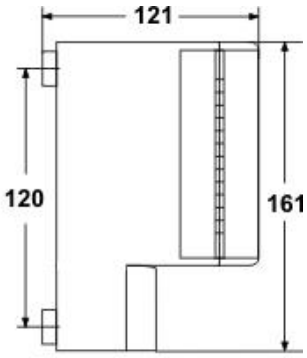


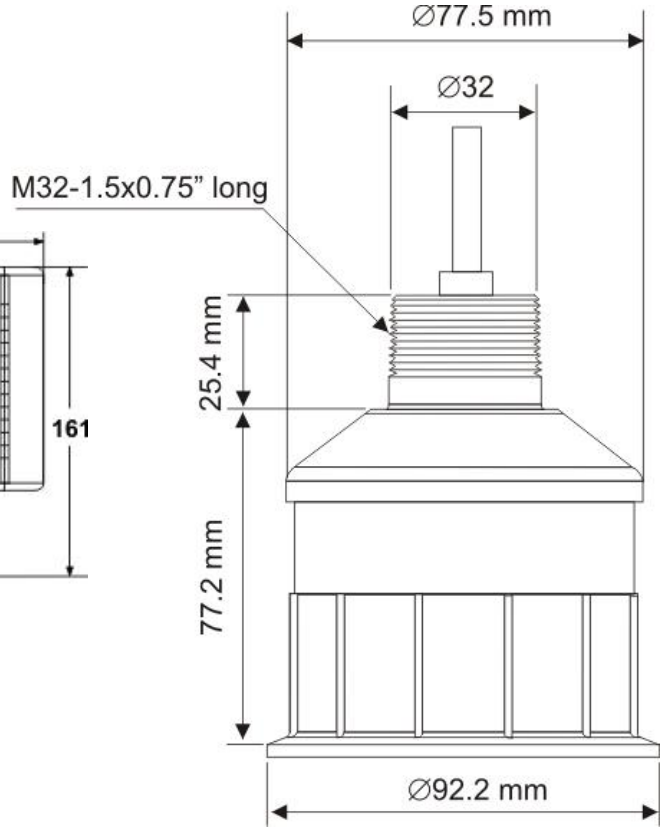




OVERALL DIMENSIONS







TECHNICAL SPECIFICATIONS

Sensor LS10.0.N

- measuring range	(0,3 ÷ 6)m;
- operating frequency	75 kHz;
- temperature range	(-20 ÷ 70)° C;
- accuracy	± 0,1 % of measured distance ± 2 mm;
- resolution	1 mm;
- degree of protection	IP68;
- signal cable	4-core shielded;
- interface	RS 485;
- protocol	ProSonics;
- material	PVC/ PE;
- power consumption	max 0,5W;

Electronic unit LSF18

- display	2 x 16 digits, matrix LCD, back-light
- readings	mm, %, status, ° C, l/s, m^3, m^3/h, m^3/s;
- functional push buttons	8 pcs;
- curve linearization – level/flowrate, level/volume	250 points;
- history	2 years;
- power supply	230V/AC;
- power consumption	6W;
- ambient temperature	(-20 ÷ 50)° C;
- material	ABS Cover: PC;
- degree of protection	IP65;
- analog output (galvanically isolated)	0/4-20mA,0-24mA, 0-5/10V;
- relay outputs	4;
- digital outputs	RS-485/ RS-232.