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SEMPAL S10F

Ultrasonic Water Meter

Data Sheet

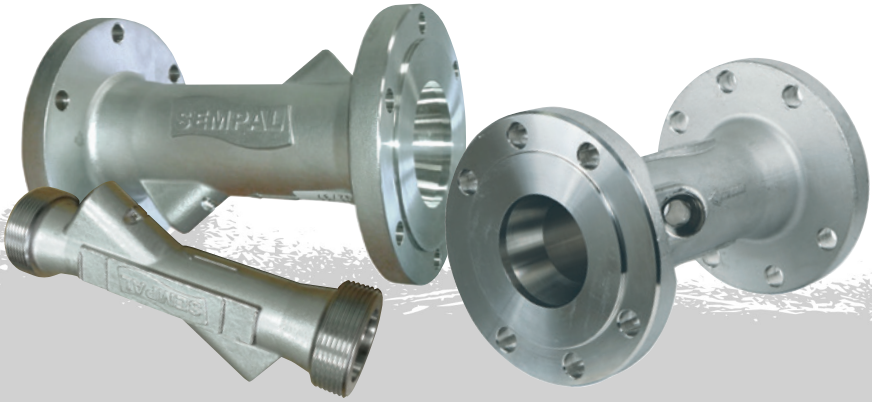
Accurate water consumption measurement for water stations, industry, housing, office and public buildings.

- Measurement of volume/mass, temperature and pressure (in specific variants) of the water;
- ultrasonic transit time principle, no moving parts;
- hourly data history for 100 days;
- daily data history for 3 years;
- protected against non-authorized access;
- long-term stable work;
- bi-directional flow measurement;
- water temperature and pressure measurement;
- displaying of errors; the system of a self-controlling with the possibility of error codes logging;
- data collection via USB. The data are collected on USB flash.
- possibility of connection to PC, modems. Free software for remote data collection and analysis, also available for tablets and smartphones on Android.
- reserve pair of flow sensors in all flowmeters with DN 200mm and more for service without stopping the flow of water;
- MTBF of S10F water meter - 50,000 hours, MTBF of Calculator – 100,000 hours;
- the warranty period – 4 years.

Technical data

Nominal diameters DN	20 – 1200 mm
Measured flow rates	0,06 – 50000 m^3/h
Medium temperature range	0,1...150 ^0C
Ambient operating temperature	for calculator - under 55^0C for flow meter and sensors – under 70^0C
Nominal pressure PN	16 bar (for DN20 – DN600) and 25 bar (for DN700 – DN1200)
Power supply	24VAC/36VAC/220VAC ± 15%, 50 Hz
Power consumption	7 W
Reserve supplying	up to 15 hours
Interfaces	RS-232 (builtin), RS-485 and M-Bus (external module)
Display indication	LCD, 8-digit. Information: volume, flow rate, mass, medium temperature, errors, date
Material	flow metering section – stainless steel; meter housing - aluminum alloy; flanges – stainless steel.
Protection class	Calculator IP65/Flow Sensor IP68
Accuracy class (OIML R49)	1 or 2 (upon customer's request)
Climatic Environment class (OIML R49)	B-C
Pulse outputs	2 pulse outputs, max. frequency 1000 Hz, max. voltage 3.3 V
Design	The calculator and the flow sensor are connected via cable; available configurations with and without temperature and pressure sensors
Pressure sensors	External power, 4-20mA output
Max. cable length from sensors to calculator	Up 100 meterswith and without temperature and pressure sensors
In special order	- flowmeter with lock-chambers, for service without stopping water flow - hermetic flow metering section and temperature sensors for using water meter in flooded zones - set of equipment for mounting flow sensors directly into the pipeline with DN 200 mm and more

DN mm	**Min. flow** m^3/h	**Transition flow** m^3/h	**Nom. flow** m^3/h	**Max. flow** m^3/h	**Dynamic range**	**Pressure loss Δp at Nom. flow** bar	**Overall length** mm	**Connection on meter**
20	0,05	0,08	6,3	7,9	160	0,62	160 200	G1B DN20
25	0,08	0,128	10	12,5	160	0,62	160 200	G1 DN25
32	0,16	0,25	25	31,3	200	0,33	180 200	M48×2 DN32
40	0,25	0,40	40	50,0	200	0,23	200 220	G2 DN40
50	0,39	0,63	63	78,8	200	0,22	180	DN50
65	0,63	1,00	100	125,0	200	0,22	200	DN65
80	1,00	1,60	160	200,0	200	0,22	210	DN80
100	1,56	2,50	250	312,5	200	0,22	230	DN100
125	2,50	4,0	400	500,0	200	-	265	DN125
150	3,94	6,30	630	787,5	200	-	315	DN150
200	6,25	10	1000	1250	200	-	540	DN200
250	10	16	1600	2000	200	-	620	DN250
300	15,63	25	2500	3125	200	-	680	DN300
400	25	40	4000	5000	200	-	820	DN400
500	39,38	63	6300	7875	200	-	970	DN500
600	62,50	100	10000	12500	200	-	1110	DN600
800	100	160	16000	20000	200	-	1360	DN800
1000	156,25	250	25000	31250	200	-	1550	DN1000
1200	250	400	40000	50000	200	-	2000	DN1200



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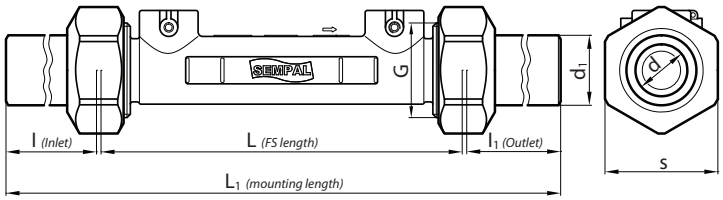
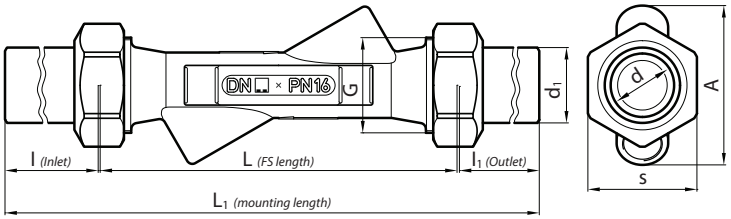
Dimensioned sketches

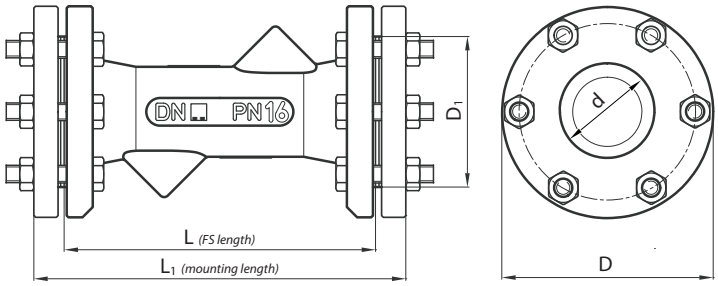
Standart size	L	L_1	d	d_1	l	l_1	G	s	note
DN 20	160	280	20	25	59	59	G1"-A	41	
DN 25	160	509	23	31	230	115	G1¼"-A	50	



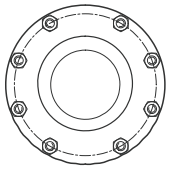
Standart size	L	L_1	d	d_1	l	l_1	G	s	A	note
DN 32	180	662	320	160	32	38	M48x2	55	79	2%
		992	480	230						1%
DN 40	200	802	400	200	23	31	G2"-A	70	85	2%
		1102	600	300						1%



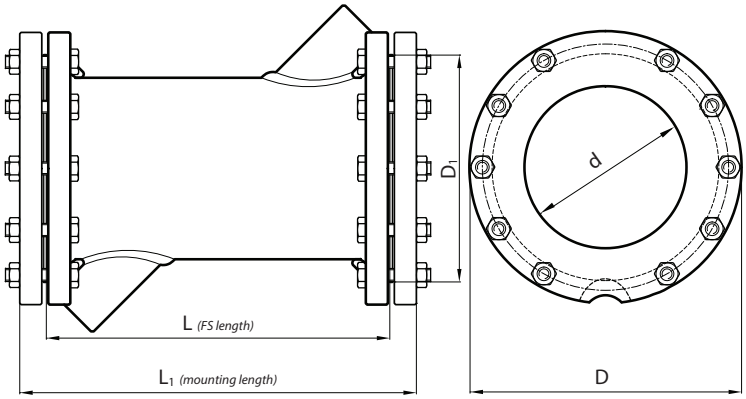
DN	d	D	D_1	L	L_1	**Bolt** M10x50 (items per flange) quantity	note
50	50	122	87	180	230	6	
65	65	144	109	200	250		
80	80	155	120	210	260		
100	100	184	149	230	280	8	see fig. 2



FS-100 flange view



Standart size		d	D	D_1	L	L_1	**Bolt** (items perflange)		note
DN	**PN**						size	quantity	
125	**16**	119...131	210	175	265	274	M10x50	10	
150		143...156	236	195	315	359	M12x50		



Standart size		d	D	D_1	L	L_1	A	d_1	Bolt (items perflange)		Eyebolt (2 items)	note
DN	PN								size	quantity		
200	16	205	335	295	540	598	111	22	M20x90	12	M12xH7	
250		255	405	355	620	680	140	26	M24x100			
300		310	460	410	680	740	168			16		
350		360	520	470	740	804	195					
400		410	580	525	820	892	220	30	M27x110			
500		510	710	650	970	1062	278	33	M30x140	20	M20xH7	
600		610	840	840	1110	1206	330	36	M36x150			
700		690	910	910	1240	1340	372	39	M36x150	24		
800		795	1020	1020	1360	1464	430		M36x160			
900		900	1120	1120	1500	1614	486		M36x170	28	M24xH7	
1000		1000	1255	1255	1550	1672	540	45	M42x180			
1200		1200	1485	1390	2000	2148	648	52	M48x220	32	M30xH7	
700	25	690	960	960	1240	1356	372	45	M42x170	24		
800		795	1075	1075	1360	1492	430		M42x190			
900		900	1185	1185	1500	1648	486	53	M48x220	28		
1000		1000	1315	1315	1550	1720	540	56	M52x250			

1 - path flow measuring sections (FS)

Fig. 1. Embodiments (1&2) FS-200...1000 with standby flow sensors (FIS)

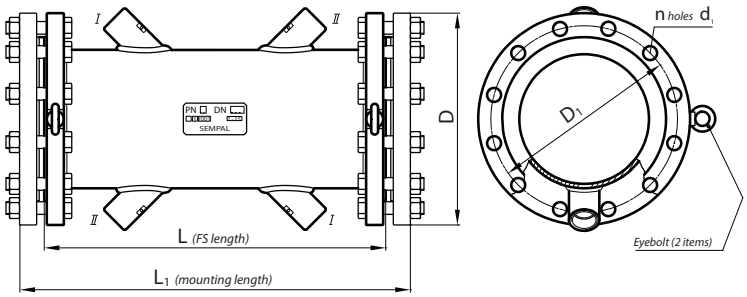
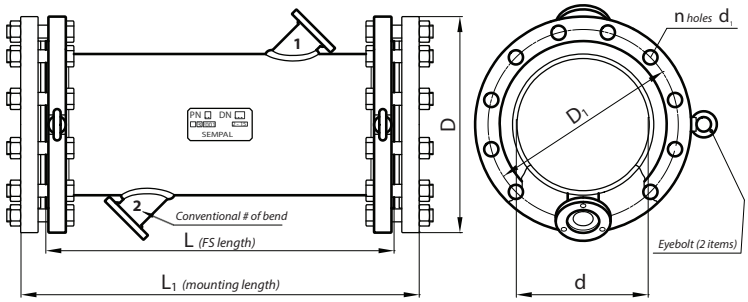


Fig. 2. Embodiment FS-200...1000 with flow sensors lock chamber (FIS)



2 - path flow measuring sections (FS)

Fig. 1. Embodiments (4&5) FS-200...1200 with standby flow sensors (FIS)

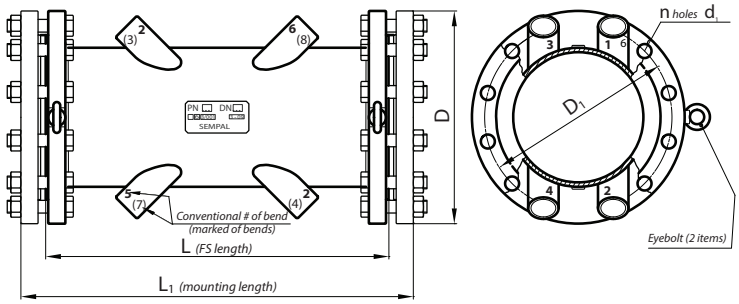
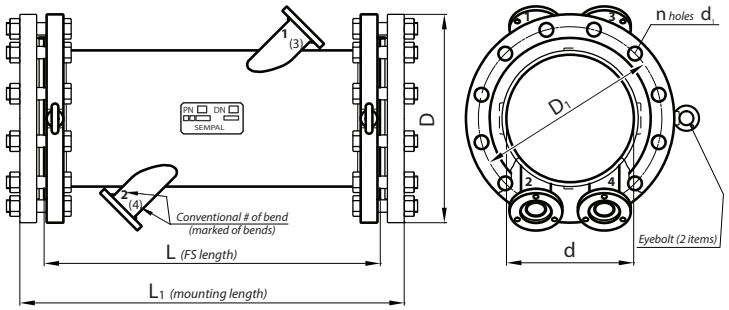
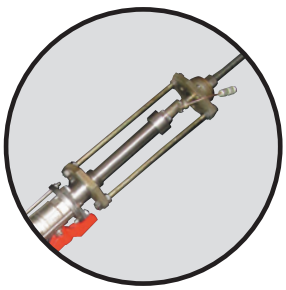


Fig. 2. Embodiments (6) FS-200...1200 with FIS with chamber gate





The assembly is designed for the removal of the flow sensors (when it is needed), their repair, replacement, or cleaning without dewatering the pipe

Ultrasonic flow sensors made of high-strength titanium:

- high measuring accuracy impurities in water
- self-cleaning from rust in water

Flow sensors with encapsulation for moisture protection and against mechanical distortions

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