SFX-800

- electromagneəc flow meter
- 0.5% F.S measuring accuracy
- RS-485 Modbus communicaəon, 4-20 mA output
- measuring the flow of fluid in the forward and reverse direcəons
- una ected by the temperature, pressure, density of the liquid
- no pressure loss
- readings that are una ected by changes in density or viscosity

The electromagneəc flow meter SimFlux SFX-800 is designed based on the Faraday electromagneəc inducəon principle and are used to directly measure the flow rate of conducəve liquids in closed pipelines. During on-site monitoring and display, standard current signals, pulse signals, and RS-485 digital signals can be output for recording, adjustment, and control, achieving automaəc detecəon and control. It can be widely used in industries such as tap water, chemical industry, coal, environmental protecəon, light texəle, metallurgy, paper making, etc.

APPLICATIONS

- Tap water
- Chemical industry
- Coal
- Environmental protecəon
- Light texəle
- Reservoirs

OPERATING PRINCIPLE

The operaəng principle of electromagneəc flowmeter is based on Faraday's law of electromagneəc inducəon. The two electromagneəc coils at the upper and lower ends as shown in Figure 1 generate a constant or alternaəng magneəc field. When the conducəve medium flows through the electromagneəc flowmeter, the induced electromoəve force can be detected between the leD and right electrodes on the wall of the flowmeter tube. The magnitude of the induced electromoəve force is proporəonal to the electrically conducəve medium flow rate, the magneəc inducəon density of the magneəc field, and the width of the conductor (the inner diameter of the flowmeter measuring tube), and the flow rate oDhe medium can be obtained by calculaəon. The induced electromoəve force equaəon is as follows:

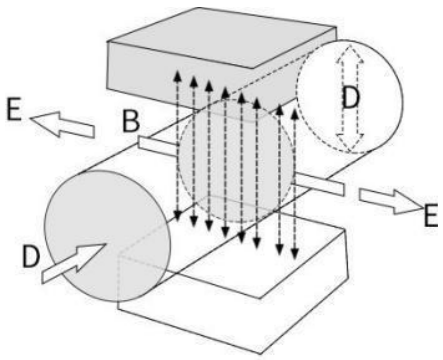

Fig. 1

$$E=K\times B\times V\times D$$

where:
E - induced electromoəve force
K - meter constant
B - magneəc inducəon density
V - average flow speed in cross-secəon of measuring tube
D - inner diameter of measuring tube

When measuring the flow, the fluid flows through a magneəc field which is perpendicular to the flow direcəon. The flow of conducəve fluid induces a potenəal proporəonal to the average flow velocity, thus requiring the conducəvity of the measured flowing liquid to be higher than the minimum conducəvity. The induced voltage signal is detected by two electrodes and transmiǧed to the converter via a cable. ADer a series of analog and digital signal processing, the accumulated flow and real-əme flow are displayed on the display of the converter.

TECHNICAL DATA

Input			
Measured variable	direct measured variables: flow velocity calculated measured variables: volume flow, mass flow		
Velocity of flow	typically velocity of flow: 0.5 m/s - 5 m/s		
Nominal diameter	DN10 - DN1000		
Flow range	Nominal diameter	Min value (m^3/h)	Max value (m^3/h)
	DN10	0.14	1.4
	DN15	0.32	3.2
	DN20	0.56	5.6
	DN25	0.88	8.8
	DN32	1.4	14
	DN40	2.3	23
	DN50	3.5	35
	DN65	6	60
	DN80	9	90
	DN100	14	140
	DN125	22	220
	DN150	32	320
	DN200	56	560
	DN250	88	880
	DN300	127	1270
	DN350	173	1730
	DN400	226	2260
	DN450	286	2860
	DN500	353	3530
	DN600	509	5090
	DN700	693	6930
	DN800	905	9050
	DN900	1150	11500
	DN1000	1410	14100
Range ratio	1:10		

Output	
Current output	function: measurement of volume and quality (in the case of constant density) setting: scope 4-20 mA (max 20 mA, min 4 mA) internal voltage: 24V DC loading: ≤ 750 Ω
Pulse output	basis: $F_{max} \leq 5000$ cp/s output pulse width: 0.1 - 2000 ms (this value is lower than the maximum duty cycle, with a maximum duty cycle of 1:1 pulse coefficient: 0.001 - 100000 /unit passive: $U_{Outer} \leq 30V$ DC active: $U_{Internal} \leq 24V$ DC; $I \leq 4.52$ mA
Communications	RS-485 serial / Modbus RTU, Hart communication protocol (optional)
Relay (remote type optional)	2 channels SPST, 250VAC/3A

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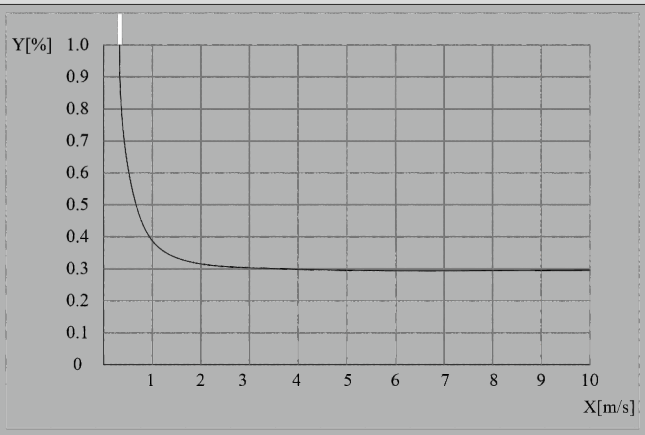
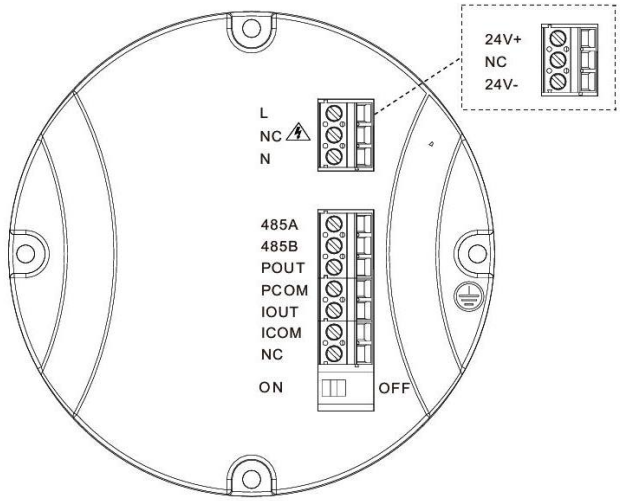
Power supply	
Supply voltage	100V AC - 240V AC; 50/60Hz 20V DC - 28V DC
Power consumption	≤ 15 W
Performance characterisəcs	
Reference operating conditions	medium: water temperature: 20°C pressure: 0.1 MPa installation requirements: inlet run ≥ 10DN, outlet run ≥ 5DN
Accuracy	measurement value ± 0.5% (flow velocity 0.5 m/s - 5 m/s)
Repetitiveness	0.16%
Maximum measured error	 X[m/s]: velocity of flow Y[%]: actual measured value deviation
Process	
Medium temperature range	chloroprene rubber (CR): -10°C - +70°C polyurethane rubber (PU): -10°C - +60°C PTFE/FEP: -10°C - +120°C
Pressure rating (high pressure can be customized)	DN10 - DN250: PN < 1.6 MPa DN300 - DN1000: PN < 1.0 MPa note: if there are differences in the selection of individual specifications, the label shall prevail, and high-voltage can be customized)
Conductivity	≥ 50 µS/cm
Buried depth	not deeper than 5 meters (only for remote type sensors with IP 68 protection)
Immersion depth	not deeper than 3 meters (only for remote type sensors with IP 68 protection)
Terminals	screw type terminal block, maximum wire diameter 2.5 mm^2
Cable entries	M20x1.5 cable gland
Signal cable	apply only to remote type
Environment	
Ambient temperature	integrated type: -10°C - +55°C remote type: -20°C - +60°C
Storage temperature	-20°C - +55°C
Ingress protection	integrated type: standard IP 65; high protection IP 66 / IP 67 option (cable requirements: choose armored shielded cable, core: diagonal 2 * 2 * 0.75 or 1.5 * 2/2.5 * 2; wire diameter 8 mm - 12 mm) remote type: IP 65 sensor; IP 68 converter

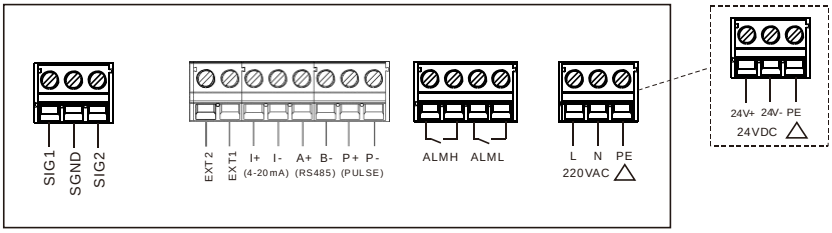
WIRING TERMINALS

1. Integrated type: sensor and converter are integrated in structure.



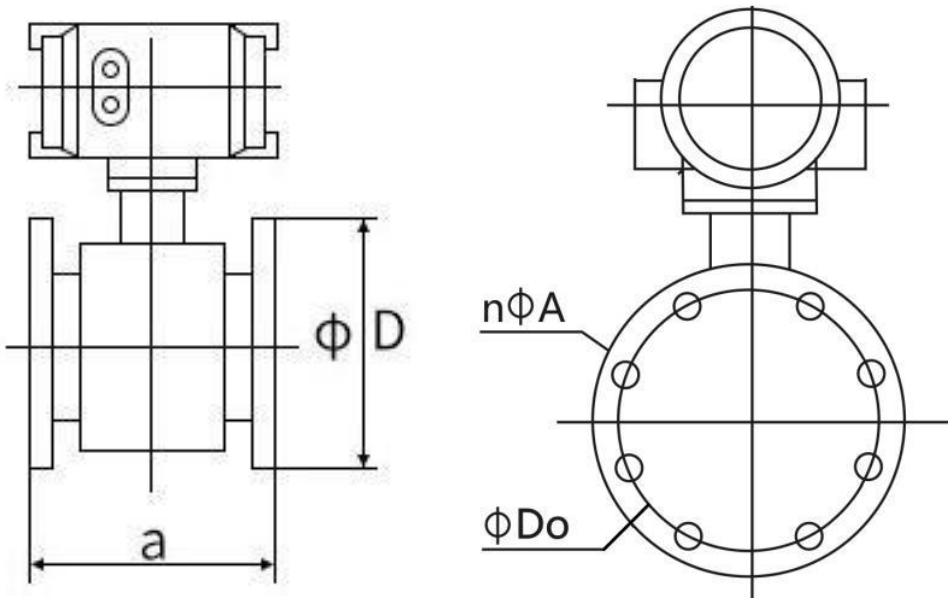
Terminal	Descripəon
L, N	220V AC power supply
24V+, 24V-	24V DC power supply
485A, 485B	RS-485 serial communicaəon
IOUT, ICOM	(4..20) mA output
POUT, PCOM	Pulse output
⏚	Converter instrument protecəon grounding

2. Remote type: sensor and converter are installed separately and connected through signal cables.



Terminal	Descripəon
SIG1, SIG2, SGND	Sensor signal
EXT1, EXT2	Excitaəon signal
I+, I-	(4..20) mA, output
A+, B-	RS-485 serial communicaəon
P+, P-	Pulse output
ALMH, ALML	Relay output (Opəonal)
L, N	220V AC power supply
24V+, 24V-	24V DC power supply
PE	Ground

DIMENSIONS



DN	a	D	Do	n*A	Pressure resistance
10	200	90	60	4*14	1.6 MPa
15	200	95	65	4*14	1.6 MPa
20	200	105	75	4*14	1.6 MPa
25	200	115	85	4*14	1.6 MPa
32	200	135	100	4*18	1.6 MPa
40	200	145	110	4*18	1.6 MPa
50	200	160	125	4*18	1.6 MPa
65	200	180	145	4*18	1.6 MPa
80	200	195	160	8*18	1.6 MPa
100	250	215	180	8*18	1.6 MPa
125	250	245	210	8*18	1.6 MPa
150	300	280	240	8*23	1.6 MPa
200	350	335	295	12*23	1.6 MPa
250	450	405	355	12*25	1.6 MPa
300	500	440	400	12*23	1.0 MPa
350	550	500	460	16*23	1.0 MPa
400	600	565	515	16*25	1.0 MPa
450	600	615	565	20*25	1.0 MPa
500	600	670	620	20*25	1.0 MPa
600	600	780	725	20*30	1.0 MPa
700	700	895	840	24*30	1.0 MPa
800	800	1015	950	24*33	1.0 MPa
900	900	1115	1050	28*33	1.0 MPa
1000	1000	1230	1160	28*36	1.0 MPa

ORDERING

SFX-800-□□-□-□-□□-K-□□-□□-□□-□□-□□-□

Nominal diameter	
DN10 (3/8")	10
DN15 (1/2")	15
DN20 (3/4")	20
DN25 (1")	25
DN32 (1.25")	32
DN40 (1.5")	40
DN50 (2")	50
DN65 (2.5")	65
DN80 (3")	80
DN100 (4")	1C
DN125 (5")	1E
DN150 (6")	1G
DN200 (8")	2C
DN250 (10")	2G
DN300 (12")	3C
DN350 (14")	3G
DN400 (16")	4C
DN450 (18")	4G
DN500 (20")	5C
DN600 (24")	6C
DN700 (28")	7C
DN800 (32")	8C
DN900 (36")	9C
DN1000 (40")	A0
Process connecɔon	
flange EN1092-1:2007	L
ISO 2852 clamp	I
ANSI B16.5 flange	A
JIS B2220 flange	S
other	X
Nominal pressure	
PN6	A
PN10	B
PN16	C
PN25	D
PN40	E
PN63	F
JIS 10K	J
Class 150	G
other	X
Process connecɔon material and body material	
carbon steel	MC
304 stainless steel	M1
other	XX
Accuracy	
0.5 class	K
Output and power supply	
4-20mA + pulse + RS-485, 220V AC	AA
4-20mA + pulse + RS-485, 24V DC	AM
4-20mA + HART + pulse + RS-485, 220V AC	AE
4-20mA + HART + pulse + RS-485, 24V DC	AN
4-20mA + pulse + RS-485 + SPST, 220V AC	AC
4-20mA + pulse + RS-485 + SPST, 24V DC	AP
4-20mA + HART + pulse + RS-485 + SPST, 220V AC	CE
4-20mA + HART + pulse + RS-485 + SPST, 24V DC	CF

SFX-800-□□-□-□-□□-K-□□-□□-□□-□□-□□-□-□-□-□□

Electrode material							
316L stainless steel	M3						
Hastelloy B	MF						
Hastelloy C	MG						
Ti	T1						
Ta	T2						
Plaənum Iridium Alloy PT	MH						
WC	MJ						
Lining material							
PTFE		N6					
Chloroprene rubber (CR)		N1					
Polyurethane rubber (PU)		N2					
Teflon F46/FEP		N7					
Electrical interface, housing material and protecəon level							
Integrated type, M20×1.5 cable gland, aluminum alloy, IP65			WA				
Integrated type, M20×1.5 cable gland, aluminum alloy, IP66/67			W5				
Remote type, M20×1.5 cable gland, aluminum alloy, IP68			WC				
Cable length for the remote type							
0 m				00			
10 m				10			
15 m				15			
20 m				20			
25 m				25			
30 m				30			
other				XX			
Language							
English					2		
Russian					3		
Spanish					4		
Korean					5		
Other					X		
Addiəonal cerəficaəon							
None						0	
CCEP						C	
UL						U	
NSF						N	
Accessories							
Paired with Carbon Steel Flange							PB
Paired with 304SS Flange							PC
Paired with SS316L Grounding Ring							PE