DATASHEET

FLOW

Electromagnetic Flow Meter

PWF-E1200/E1220 Series

Features

- Measurement is not affected by fluid density, viscosity, temperature, pressure and conductivity.
- No obstacles in the measuring pipe, no pressure-loss, low requirement for straight pipe section.
- LCD converter with backlight can be easily displayed and read in the sun or in a dark room.
- Various outputs: 4-20mA, pulse, frequency, RS485, HART, PROFIBUS.
- Converter has self-diagnosis alarm output, no-load detection alarm output, flow upper and lower limit alarm, batch control(need to be customized) and other alarm output functions.
- A variety of liners, electrodes and converter are available to satisfy different flow characteristic.
- Applicable for mud, coal slurry, ore pulp, paper pulp and paste liquid flow measurement.
- No Moving parts: Maintenance free.
- Explosion-proof instruments can be used in hazardous areas.

Applications

The measuring principle of electromagnetic flow meter is based on the electromagnetic induction law of Farady. Electromagnetic flow meter can be used to measure the volume flow of conductive fluid in a closed pipeline. It is widely applied in the flow measurement and control in the fields of chemical and petroleum industry, metallurgy industry, water and waste water, agriculture and irrigation, paper making, food and beverage industry and pharmaceutical industry.

Technical parameter

Item	Technical Parameter
Pipe Diameter Range	DN6-DN2000
Installation Form	Integrated sensor and converter are installed together; Separate sensor and converter are installed individually (with a standard 10m cable).
Connection Method	Flanged, threaded, clamps, SMS
Pressure Rating	0.6MPa, 1.0MPa, 1.6MPa, 4.0MPa
Medium Conductivity	≥10μs/cm
Temperature	Operating medium temperature: 0℃~+120℃(150℃ in short time) Ambient temperature: -25℃~+60℃ Storage temperature: -40℃~+70℃
Accuracy	±0.5% F.S., optional ±0.3%F.S.
Signal Output & Communication	Standard: Pulse/Frequency output + 4-20mA+ RS485 Modbus Optional: RS232C, HART, GPRS, Profibus DP, Profibus PA
Power Supply	AC220V 50HZ/DC24V/DC12V/3.3V battery power supply
Power Consumption	<15W (Supporting power consumption with sensors)
Display And Buttons	Can display instantaneous flow, accumulated flow and alarm in Chinese and English. Four membrane touch switches for data setting.
Counter	Forward total, reverse total
Lining Material	Hard rubber, PTFE, PUR, F46, FEP, Ceramic
Electrode Material	Depending on the medium: available with 316L, Hastelloy B, Hastelloy C, tantalum, titanium, platinum, stainless steel tungsten carbide, and ceramic
Housing Material	Painted carbon steel or stainless steel housing
Enclosure Material	Cast aluminum
Protection Class	IP65(Typical); IP68 can be customized for the sensor only when split/remote type
Explosion-Proof Mark	Ex d ia [ia Ga] q IIC T6 Gb
Quantitative Control	Type 1: Flow meter + quantitative control totalizer + control valve Type 2: Flow meter + quantitative control cabinet
Printing Function	Optional
Pressure Measurement	Optional

Appearance and Installation

Dimensions of Converter, shown as Fig 3.

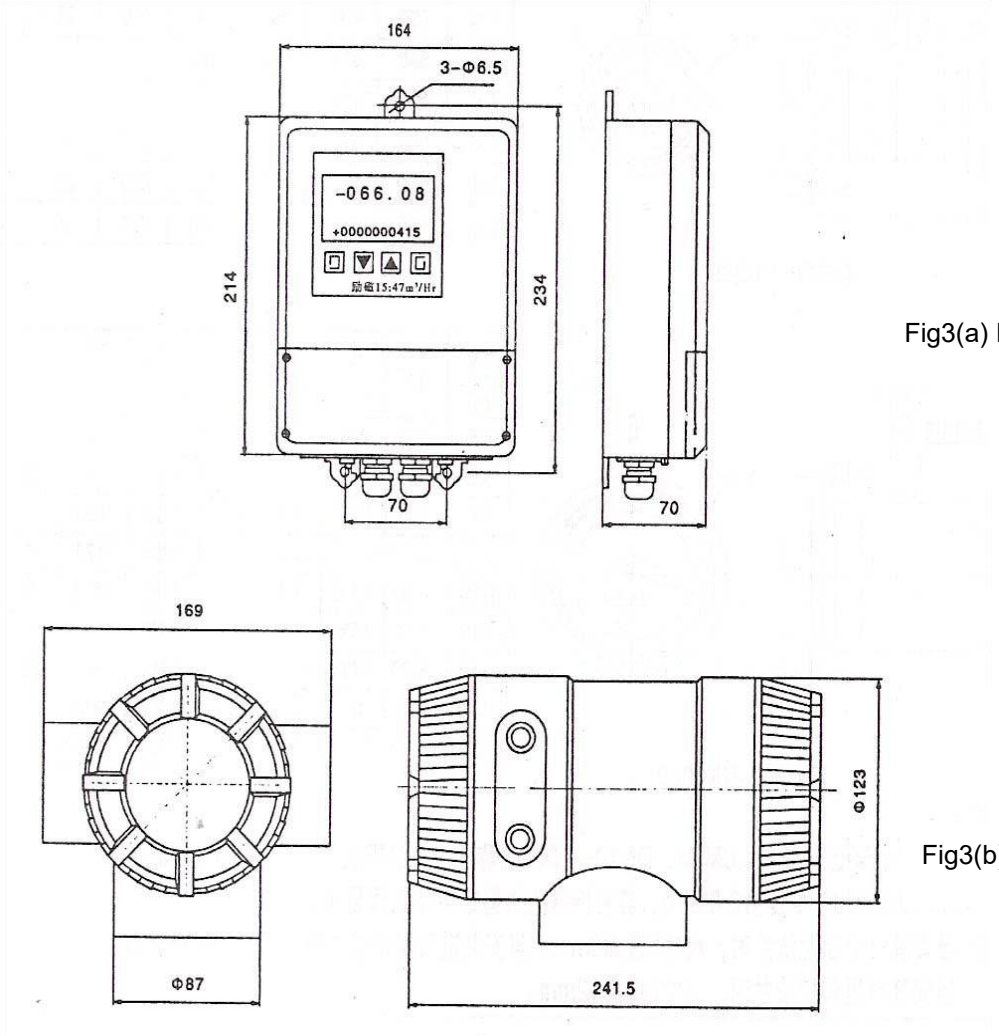
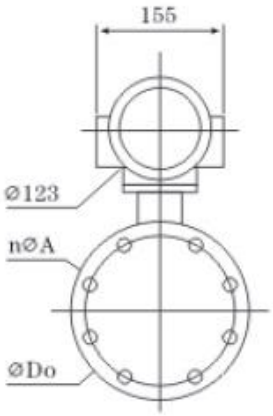


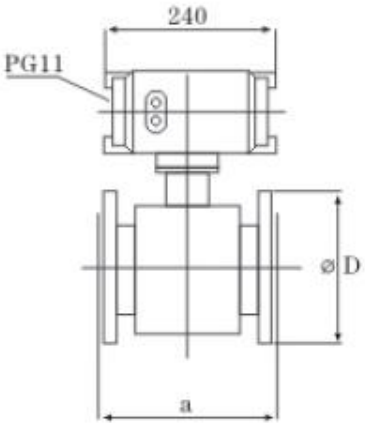
Fig3(a) Remote-type

Fig3(b) Compact-type converter

Flange connection structure and installation dimensions

Unit: mm





DN	A(PTFE)	A(Rubber)	D	Do	n*A
10	194	200	90	60	4*14
15	194	200	95	65	4*14
20	194	200	105	75	4*14
25	194	200	115	85	4*14
32	194	200	140	100	4*18
40	194	200	150	110	4*18
50	194	200	165	145	4*18
65	244	250	175	145	4*18
80	244	250	200	160	8*18
100	244	250	220	180	8*18
125	244	250	250	210	8*18
150	290	300	285	240	8*22
200	340	350	340	295	8*22
250	440	450	395	350	12*22
300	490	500	445	400	12*22
350	490	500	505	460	16*22
400	490	500	565	515	16*26
450	540	550	615	565	20*26
500	540	550	670	620	20*26
600	590	600	780	725	20*30
700	690	700	895	840	24*30
800	790	800	1015	950	24*33
900	890	900	1115	1050	28*33
1000	990	1000	1230	1160	28*36
1200	1190	1200	1405	1340	32*33
1400	1390	1400	1630	1560	36*36
1600	1590	1600	1830	1760	40*36
1800	1790	1800	2045	1970	44*39
2000	1990	2000	2265	2180	48*42
2200	2190	2200	2405	2315	52*45

Part Selection Table

Parts	Code No.	Description
Model	PWF-E1200	Integrated Type Electromagnetic Flow Meter
	PWF-E1200S	Segregate Type Electromagnetic Flow Meter
	PWF-E1220	Sanitary Integrated Type Electromagnetic Flow Meter
	PWF-E1220S	Sanitary Segregate Type Electromagnetic Flow Meter
Nominal Diameter	6	DN6mm
	10	DN10mm
	15	DN15mm
	20	DN20mm
	25	DN25mm
	32	DN32mm
	40	DN40mm
	...	...
	150	DN150mm
	200	DN200mm
	250	DN250mm
	300	DN300mm
	...	...
	1000	DN1000mm
	...	...
	2000	DN2000mm
Power Supply	S1	DC 24V (Typical)
	S2	AC 85V~265V (Typical)
	S3	DC 12V (By customized)
	S4	Battery
Communication Output	T1	4-20mA+Pulse+Frequency+RS485 Modbus RTU+High/low value alarm(typical)
	T2	T1+HART
	T3	T1+RS232C
	T4	GPRS wireless communication
	T0	No output (For battery supply only)
	T5	4-20mA
	T6	Pulse
	T7	RS485 Modbus RTU
	T8	NB wireless communication
	T9	PROFIBUS DP Protocol
	T10	PROFIBUS PA Protocol
Working Pressure	P1	0.6MPa
	P2	1.0MPa
	P3	1.6MPa
	P4	2.5MPa

	P5	4.0MPa
	P6	16MPa(DN10-DN150)
	P7	20MPa(DN10-DN50)
	P8	25MPa(DN10-DN50)
Working Temperature	**C1**	-25~70℃
	C2	-25~100℃
	C3	-25~150℃
Lining Material	**L1**	Polychloroprene rubber
	L2	Polyurethane rubber
	L3	Teflon
	L4	F46 polyperfluoroehyleneally
	L5	PFA
	L6	Ceramic
Electrode Material	**E1**	316L Stainless steel
	E2	Titanium Ti
	E3	Tantalum Ta
	E4	Stainless steel coated with carbonized tungsten
	E5	Hastelloy B
	E6	Hastelloy C
	E7	Platinum Pt
Material of Sensor Housing and Flange	**M1**	Carbon steel
	M2	SUS304 Stainless steel
	M3	316L Stainless steel
	M0	By customized
Protection Level	**65**	IP65 (Typical)
	67	IP67(For segregate type only: sensor IP67, transmitter IP65)
	68	IP68(For segregate type only: sensor IP68, transmitter IP65)
Grounding Ring	**G0**	Without
	G1	One pair of grounding ring, material is same as electrode's
Accuracy	**A1**	0.5%F.S.(Typical)
	A2	0.3%F.S. (By customized)
Explosion Proof	**X0**	Without
	X1	Ex d ia q IIC T6 Gb
Cable Length	**000**	None Cable
	010	10 meters cable (Typical for segregate type)
	X	X meters cable