

Electromagnetic Flange Type

BTU METERS

eFlow™ 800H SERIES



Size DN10 to DN1200



DESCRIPTION

eFlow 800H-series is flange type Electromagnetic Heat or BTU meter that can be used for measuring energy consumption in heating or cooling application for HVAC and other energy measurement and metering installations. The flow measurement principle is using Faraday's law of electromagnetic induction to measure flow rate of electrically conductive liquids like hot or cold water applications. Together with a pair of PT1000 temperature sensor the calculator or converter will calculate the energy consumption.

APPLICATION

- Residential or Commercial Buildings metering and submetering
- District heating / cooling
- Energy Management
- Green Energy Management
- HVAC

FEATURES

- No moving part therefore wear-free and maintenance-free
- High accuracy at $\pm 0.5\%$ value of reading
- Through flow design with unobstructed flow within the measuring pipe
- Low pressure drop
- Dual direction flow measurement function
- Can be used for leakage detection function
- Heating and cooling application
- Wide range of Output interface option of M-bus/Mod-bus/Pulse and others option interface
- Mounting of the electromagnetic flow sensor in any position
- Intelligent design and easy to use

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1.0 Flow Sensor Specifications

		eFlow 800H SERIES Electromagnetic BTU Meter
Size available (mm)		10, 15, 20, 25, 32, 40, 50, 65, 80, 100, 125, 150, 200, 250, 300, 350, 400, 450, 500, 600, 700, 800, 900, 1000, 1200
Flow range measurable	Minimum velocity	0- 0.25 m/s
	Maximum velocity	0-12 m/s
Material	Flange	Carbon steel (standard) other option available
	Coil housing	Carbon steel (standard) other option available
	Electrode & grounding	Stainless steel 316L
	Measuring tube	Stainless steel 304
Liner	Polyurethane	Available for size 25 - 600 mm (-10 to 60 °C)
	Neoprene	Available for size 50 - 2000 mm (-20 to 70 °C)
	FEP	Available for size 6 - 300 mm (-40 to 180 °C)
	PFA	Available for size 6 - 300 mm (-40 to 180 °C)
	PTFE	Available for size 25 - 800 mm (-40 to 180 °C)
Protection rating		IP67 or IP68 (submersible) other option available
Pressure rating		PN16 standard (optional PN25, PN40)
Maximum pressure		350 kg/cm
Liquid conductivity measurable		> 5µS/cm
Cable		2 x M18, other length available
Temperature	Ambient temperature	-25 to 65 °C
Connection type	Flange	DIN (standard) available in JIS and ANSI option
Grounding resistance		< 10 Ohm
Accuracy	≥ 0.5 m/s	±0.5% read out values
	< 0.5 m/s	±0.0025 m/s

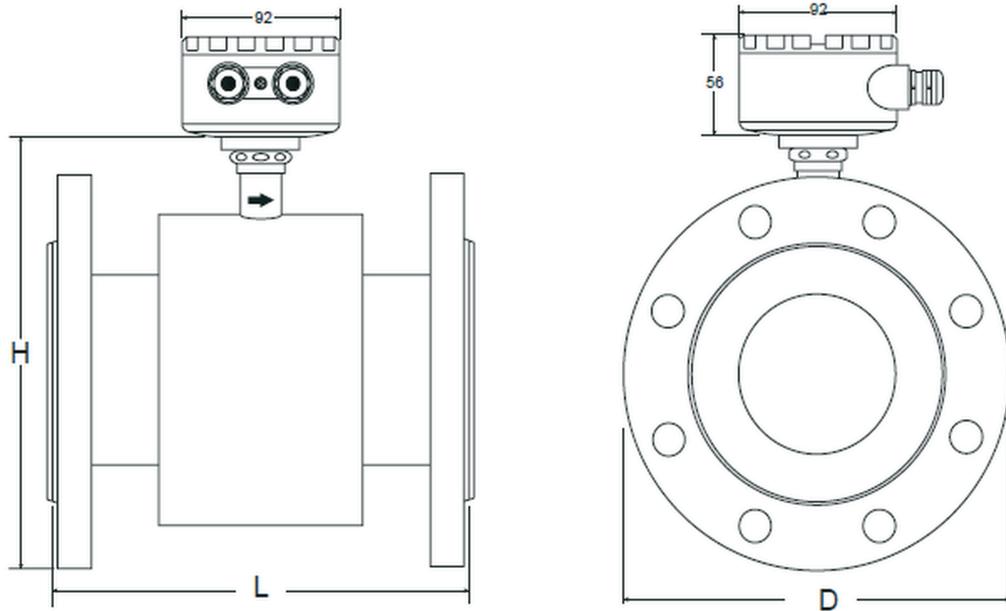
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2.0 Flow Sensor Dimension Specifications



2.2 Flow Sensor Dimension Table Notes

eFlow 800H SERIES Electromagnetic BTU Meter		
Symbol	K	Bolt Diameter
	N	Number of holes
	M	Nut dimension
	•	Denote that the lining material is available for that nominal size
Pressure rating	≤ DN80	PN40
	DN 100 - DN150	PN16 (specify if pipeline pressure is higher)
	DN300 - DN1000	PN 10 (specify if pipeline pressure is higher)
	≥ DN1200	PN6 (specify if pipeline pressure is higher)
Note	All dimension only for DIN size connection	

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2.3 Flow Sensor Dimension Table

Nominal Diameter (mm)	Lining Material			Flow Range (m3/h)			Dimension			Connection Dimension			Weight Kg
	FEP	Ne	Pu	Nominal Flow (Qn)	Min. Flow (Qmin)	Max. Flow	L	D	H	K	N	M	
10	•			1	(0.01)	3	150	90	145	60	4	(M14)	(4)
15	•			2	(0.03)	4	150	95	155	65	4	(M14)	(4.5)
20	•			3	(0.06)	8	150	105	160	75	4	(M14)	(5.1)
25	•		•	5	(0.09)	12	150	115	166	85	4	(M14)	(5.5)
32	•		•	8	(0.14)	20	150	140	180	100	4	(M18)	(7)
40	•		•	12	(0.23)	30	150	150	190	110	4	(M18)	(7.7)
50	•	•	•	20	(0.35)	50	200	165	201	125	4	(M18)	(9.5)
65	•	•	•	30	(0.6)	80	200	185	220	145	8	(M18)	(11.5)
80	•	•	•	50	(0.9)	120	200	200	235	160	8	(M18)	(13)
100	•	•	•	80	(1.4)	200	250	220	254	180	8	(M18)	16
125	•	•	•	120	(2.2)	300	250	250	284	210	8	(M18)	21
150	•	•	•	180	(3.2)	450	300	285	314	240	8	(M22)	27
200	•	•	•	300	(5.6)	1000	350	340	369	295	12	(M24)	45
250	•	•	•	500	10	1200	400	405	430	355	12	(M24)	53
300	•	•	•	700	15	2000	450	460	480	410	12	(M24)	72
350		•		1000	20	2500	450	520	540	470	16	(M24)	75
400		•		1200	25	3000	500	580	600	525	16	(M27)	99
450		•		1600	30	4000	550	640	640	585	20	(M27)	207
500		•		2000	35	5000	600	715	700	650	20	(M30)	237
600		•		3000	50	6000	600	840	800	770	20	(M33)	318
700		•		4000	70	8000	700	910	910	840	24	(M36)	358
800		•		5000	90	10000	800	1025	1020	950	24	(M39)	408
900		•		6000	110	12000	900	1125	1120	1050	28	(M39)	457
1000		•		8000	140	16000	1000	1255	1230	1170	28	(M42)	610
1200		•		10000	180	20000	1200	1485	1390	1390	31	(M48)	1460

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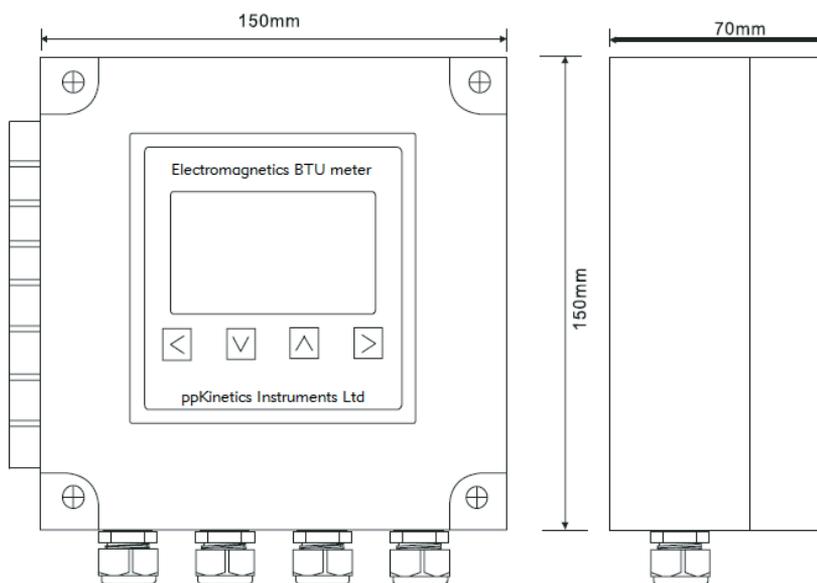
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3.0 Energy Calculator Specifications

3.1 Calculator Technical Data

		eFlow 800H SERIES Electromagnetic BTU Meter
LCD display		8 digits, 4 lines,
Readings and units	Instantaneous (current)	Flow-rate (m ³ /h), Heat consumption (kW)
	Total (cumulative)	Flow (m ³), Heat consumption (kW.h)
	Temperature (°C)	Supply water temperature (T1), Return water temperature (T2) and supply/return temperature difference (ΔT)
Installation		Remotely or separately for wall installation design
Temperature	Operating range	0 - 95°C (standard), optional with max 180°C
	Sensor type	PT1000
Output interface		4 - 20 mA or frequency / pulse
		RS485 supporting ModBus or Modbus ASCII or Hart protocol

3.2 Calculator Dimension



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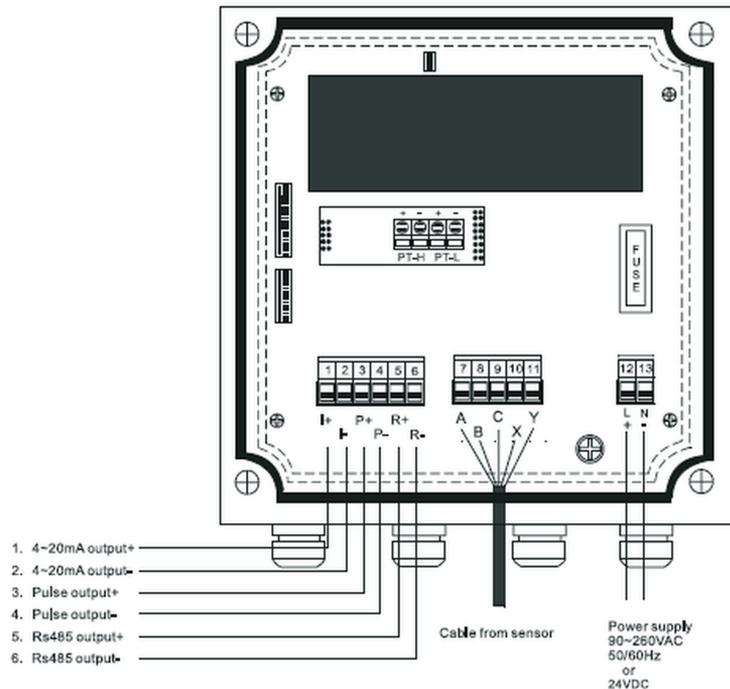
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3.2 Energy Calculator Specifications (continue)

3.3 Calculator Electrical Connection



4.0 The Temperature Sensors Specifications

		eFlow 800H SERIES Electromagnetic BTU Meter
Temperature sensor type		2 wire PT1000, platinum resistance class A
Temperature range		0 - 150 °C
Working humidity		< 95% rh
Pressure rating		PN16 or PN25
Enclosure material		Stainless steel 316L
Probe diameter		6 - 12 mm
Wire length (AL)	DN15 - DN50	5 m standard optional customise length
	≥ DN65	10 m standard optional customise length
Insertion mode	DN15 - DN50	Direction insertion to pipeline
	≥ DN65	Using thermowell

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3.0 Ordering information

E - 800H - F - DN -

Electromagnetic type			
BTU meter series (Calculator type)			
Flange Type			
Meter size			
DN10 (3/8")	0010	DN250 (10")	0250
DN15 (1/2 ")	0015	DN300 (12")	0300
DN20 (3/4 ")	0020	DN350 (14")	0350
DN25 (1 ")	0025	DN400 (16")	0400
DN32 (1 1/4 ")	0032	DN450 (18")	0450
DN40 (1 1/2 ")	0040	DN500 (20")	0500
DN50 (2")	0050	DN600 (24")	0600
DN65 (2-1/2")	0065	DN700 (28")	0700
DN80 (3")	0080	DN800 (32")	0800
DN100 (4")	0100	DN900 (36")	0900
DN125 (5")	0125	DN1000 (40")	1000
DN150 (6")	0150	DN1200 (48")	1200
DN200 (8")	0200		
Electrode material			
1. Stainless steel 316L (Default)	5. Tantalum		
2. Hastelloy B	6. Platinum		
3. Hastelloy C	7. Tungsten Carbide		
4. Titanium	8. Other (please specify)		
Liner material			
1. Neoprene	4. PU		
2. FEP	5. PFA		
3. PTFE			
Output interface option			
1. Default RS485 (ModBus)	5. 4 - 20 mA		
2. RS485 (ASCII)	6. 0 - 10 mA		
3. Active frequency	7. Hart		
4. Passive frequency	8. Other (please specify)		
Power supply			
1. 24 VDC	2. 230 AC		
3. 85V AC to 265V AC			

Notes: Standard Grounding Ring for all model