GENERAL

Flowmag series electromagnetic flow meters are specializing in measuring conductive liquid (conductivity> 5μs/cm). These series flow meters have high applicability for low flow rate, sewage, acid and alkali liquid, low abrasive slurry. Our products have advance intellective-tech, field show and communicator. WMAG30 series electromagnetic flow meter

WMAG 30

APPLICATION

Electromagnetic flow sensors WMAG30 are precision measuring devices, suitable for determining the flow rate of nearly any electrically conductive fluid, but also for substances such as sludge, pulp and paste. Due to the magnetic field, the device can be used to measure flow rates up to 12 m/s (39.3 ft/s) and a minimum conductivity of 5 μS/cm, when using a synchronized static field. The entire measuring device comprises a flow sensor and a dedicated transmitter. Those can be delivered either separately or as a compact unit. The electromagnetic flow sensors WMAG30 are applied mainly in the following

- Water and sewage plants
- Chemical and pharmaceutical industry
- Food and beverage industry
- Mining, cement and mineral mate
- Pulp and paper industry , Energy industry
- Steel industry, public utilities

FEATURE

- Offer easy installation, User-friendliness operation.
- Widely used in various industry, thanks to wide choice of liner.
- Wide choice of electrode and lining, for almost every application.
- Reliable measurement under different working situation.

TECHNICAL DATA

Velocity range	0 ~ 12 m/s
Accuracy	± 0.5% of Reading
Reapeability	± 0.1%
Size	DN 6 to DN 2600 (1/8 Inch to 104 Inch)
Flange Standard	PN, ANSI, JIS, etc.
Body material	Carbon Steel or SUS304 or Stainless Steel 316L
Flange material	Carbon Steel or SUS304 or Stainless Steel 316L
Cover material of sensor	Carbon Steel or SUS304 or Stainless Steel 316L
Lining material	Rubber, PTFE, Polyurethane, PFA. Ceramic.
Electrode Material	316L, Titanium, Tantalum, Platinum.
Process connect	Flange (standard), Wafer or Clamp
Power supply	24VDC or 110VAC or 220VAC
Output signal	4-20mA and pulse
Alarm signal	High and low alarm output
Communction	Hart or RS485(modbus)
Display	LCD , flow rate and total flow
Unit	m3,liter, gallon
Fluid temperature	up to180 ℃

FLOWRANGE

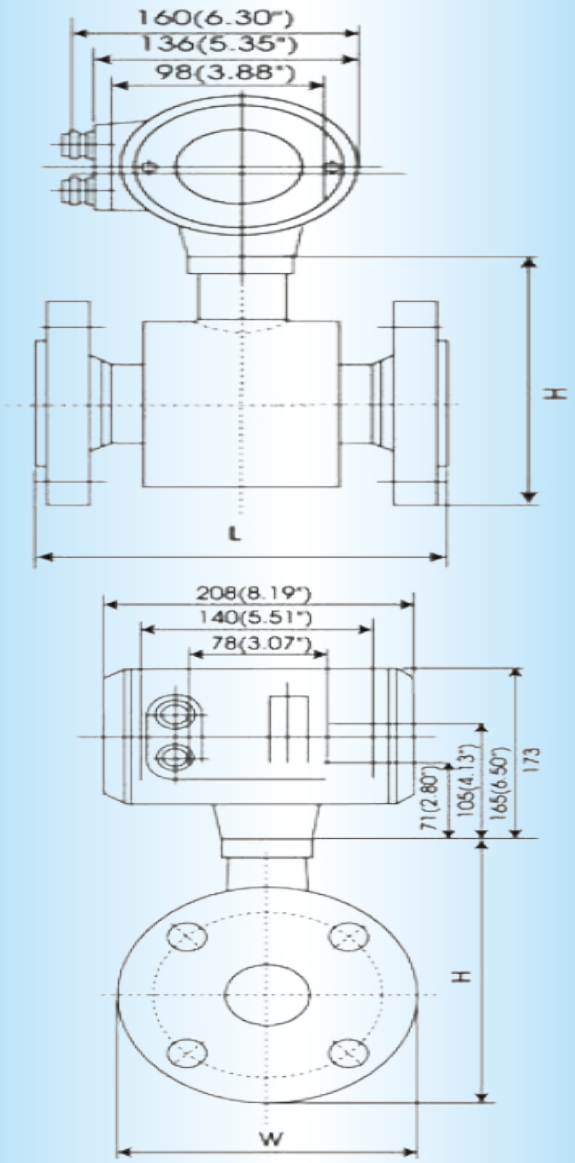
Size	Qmax(m³/h)	Qmax(m³/h)	Size	Qmin(m³/h)	Qmax(m³/h)	Size	Qmin(m³/h)	Qmax(m³/h)
DN 6	0.030	1.02	DN 65	3.584	119.456	DN 400	135.713	4523.76
DN 8	0.054	1.80	DN 80	5.429	180.950	DN 450	171.762	5725.38
DN 10	0.085	2.82	DN 100	8.482	282.735	DN 500	212.051	7068.37
DN 15	0.191	6.36	DN 125	13.253	441.773	DN 600	305.354	10178.46
DN 20	0.339	11.309	DN 150	19.085	636.154	DN 700	415.620	13854.01
DN 25	0.530	17.671	DN 200	33.928	1130.94	DN 800	542.851	18095.04
DN 32	0.869	28.952	DN 250	53.013	1767.09	DN 900	687.046	22901.53
DN 40	1.357	45.238	DN 300	76.338	1130.94	DN 1000	848.205	28273.50
DN 50	2.121	70.684	DN 350	103.905	3463.50	DN 1200	1221.41	40713.84

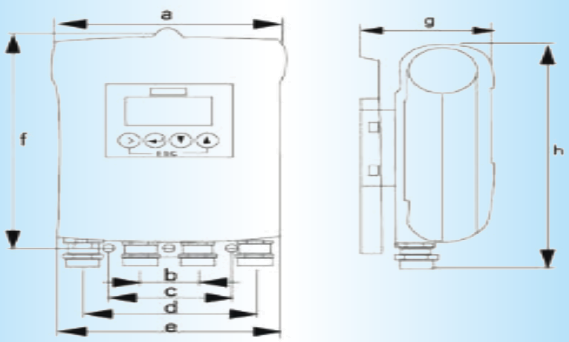
CORRESPONDING TABLE FOR SIZE AND LINING

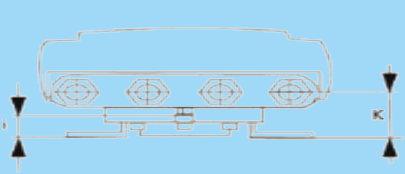
Size	Linner					
DN mm	Neoprene	PTFE	Polyurethane	PFA	Ceramic	PTFE&steel mesh
DN6~8	○	○	○	●	○	○
DN 10	○	●	○	●	●	○
DN 15	○	●	○	●	●	○
DN 20	○	●	○	●	●	○
DN 25	●	●	●	●	●	○
DN 32	●	●	●	●	●	○
DN 40	●	●	●	●	●	○
DN 50	●	●	●	●	●	○
DN 65	●	●	●	●	●	○
DN 80	●	●	●	●	●	○
DN 100	●	●	●	●	●	○
DN 125	●	●	●	●	●	○
DN 150	●	●	●	●	●	○
DN 200	●	●	●	●	●	●
DN 250	●	●	●	●	●	●
DN 200	●	●	●	●	●	●
DN 250	●	●	●	●	●	●
DN 300	●	●	●	●	●	●
DN 350	●	●	●	●	●	●
DN 400	●	●	●	●	●	●
DN 450	●	●	●	●	●	●
DN 500	●	●	●	●	●	●
DN 600	●	●	●	●	●	●
DN 700	●	●	●	○	●	●
DN 800	●	●	●	○	●	●
DN 900	●	●	●	○	●	●
DN 1000	●	●	●	○	●	●
DN1200	●	●	●	○	●	●
DN1400~2600	●	●	●	○	●	○

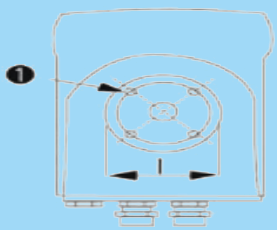
DIMENSION

DN 10-2600









SIZE DATA

Size (mm)	Standard Pressure (Mpa)	Dimension L (mm)	Dimension H(mm)	Dimension W (mm)	Weight (kg)
6	4.0	150	152	90	4
8	4.0	150	152	90	5
10	4.0	200	152	90	6
15	4.0	200	154	95	6
20	4.0	200	158	105	7
25	4.0	200	164	115	5
32	4.0	200	184	140	6
40	4.0	200	189	150	7
50	4.0	200	194	165	11
65	4.0	200	204	185	9
80	4.0	200	212	200	14
100	1.6	250	258	220	15
125	1.6	250	273	250	19
150	1.6	300	303	285	27
200	1.0	350	361	340	34
250	1.0	400	408	395	48
300	1.0	500	458	445	58
350	1.0	500	510	505	78
400	1.0	600	568	565	101
450	1.0	600	618	615	111
500	1.0	600	671	670	130
600	1.0	600	781	780	165
700	1.0	700	898	895	248
800	1.0	800	1012	1015	331
900	1.0	900	1114	1115	430
1000	1.0	1000	1225	1230	507
1200	0.6	1200	1417	1405	555
1400	0.6	1400	1619	1630	765
1600	0.6	1600	1819	1830	1035
1800	0.6	1800	2027	2045	1470
2000	0.6	2000	2259	2265	1860
2200	0.6	2200	2469	2475	2085
2400	0.6	2400	2673	2685	3310
2600	0.6	2600	2887	2905	3875

Dimensions [mm]											Weight [kg]
a	b	c	d	e	f	g	h	i	k	l	
161	40	87.2	120	155	241	95.2	257	19.3	39.7	Φ72	1.9

MODEL RABLE

WMAG30	Size	Pressure	Lining	Electrode	Power	Display	Cable	Detail description
	6							DN6
								-
	2600							DN2600
		6						PN0.6 Mpa
		10						PN1.0 Mpa
		16						PN1.6MPa
		25						PN2.5MPa
		40						PN4.0MPa
			3A					Polyurethane lining
			2A					PTFE lining
			1A					Rubber lining
				Pt				Platinum
				Ta				Tantalum
				Ti				Titanium (Standard)
				SS				Stainless Steel 316L
					0			220V.AC
					1			24V.DC
						OO		Integral type, IP65
						10		Split type, IP65
						11		Split type, IP68
							/N	No cable (integral type)
							/**m	**meter cable (split type)

BTU Measuring System (Remote Only)

GENERAL

Flowma BTU Measurement System is used to measure individual energy consumption in any liquid heating/cooling systems. This system is also used to measure performance of energy saving system or the loss of efficiency which is directly tied to loss of revenue.

The Flowma BTU Measurement System is supplied complete with electromagnetic flow meter and temperature probes.

The system real-time detects the temperature of supply and return pipe. It also monitors the instantaneous flow rate according to Heat Exchange of Thermodynamics principle. The Flowma BTU meter automatically integrates energy consumption and transfers it to the computer. The consumption volume can be checked by a tenant or operator with no worries. It provides real time information such as instantaneous temperature, flow rate, energy consumption, and others.

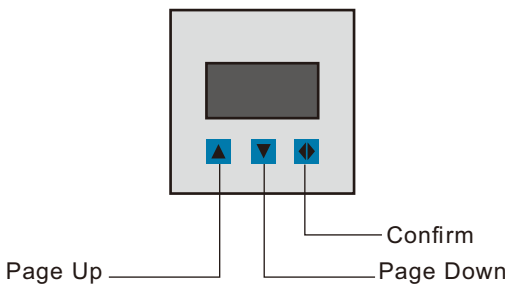
Measuring Principle

Flowma BTU meter calculates energy consumption by flow rate and temperature difference, the formula is:

$$Q = \int_{\tau 0}^{\tau 1} q_m \Delta h \, d\tau = \int_{\tau 0}^{\tau 1} \rho \, q_v \Delta h \, d\tau$$

Notes:

- Q: Heat consumption or cool consumption (unit: J)
- q_m: Unit weight of water passed flow meter (unit: kg/h)
- q_v: Unit volume of water passed flow meter (unit:m^3/h)
- ρ: Density of water (unit: kg/ m^3)
- Δh: Enthalpy of water (unit: J/kg)
- τ:Time (unit: h)



Modes of Operation

When the water or other liquid passes through the pipe line, the flow meter measures the instantaneous flow rate ‘q’ and sends it to the Flowma BTU meter then the temperature sensor measures the return pipe temperature ‘T1’ and supply pipe temperature ‘T2’ and also sends it to BTU meter.

According to above formula, BFG BTU meter integrates the cooling or heat consumption. If T1>T2, integrates cooling consumption, otherwise integrates heat consumption. Finally, the BFG BTU meter stores the data and displays on LCD.

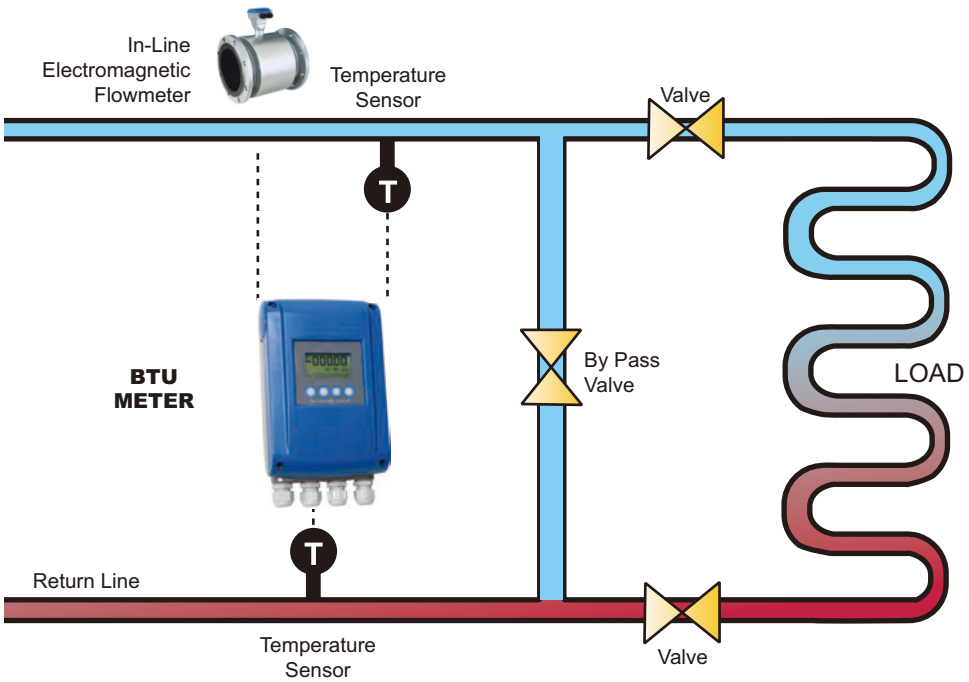
Feature

- Complies with OIML R75 and EN1434 standards.
- Real time display of supply / return water temperature, instantaneous flow rate, cooling consumption value, heating consumption value, instantaneous power, total flow rate etc.
- Four different units of measurements available: MJ, GJ, kW h/h, MWh/h
- Password protection available.
- RS485 Communication protocol.
- Matched pair of 3-wire Temperature sensor PT1000, for higher resolution and better accuracy.

Specification of Display

Operating Voltage:	85 - 250 VAC, 45 - 63Hz
Temperature Range:	0 - 199.9 °C
Matched with Temperature Sensor:	PT1000
Flow Rate Range:	(0 - 99999)m³/h
Cooling Consumption Accumulated Range:	(0 – 999999999)m³
Heating Consumption Accumulated Range:	(0 – 999999999)m³
Communication Interface:	RS-485
Communication Rate:	300 - 38400 bps
Dimension:	214 mm x 164 mm x 71 mm
System Accuracy (Including flowmeter, temperature sensors):	< +/-2%

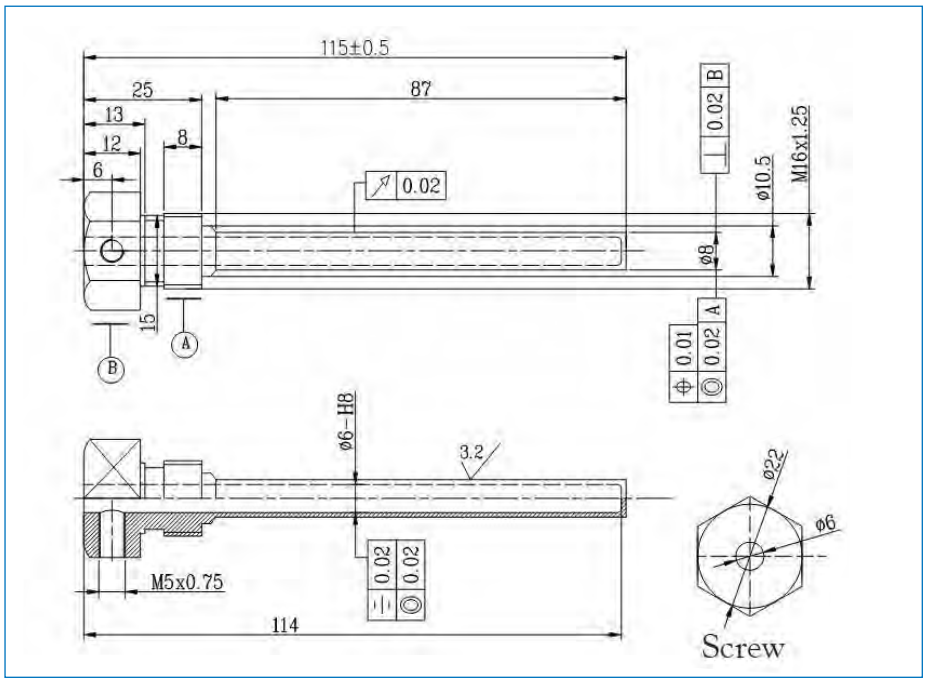
BTU Measurement Syste



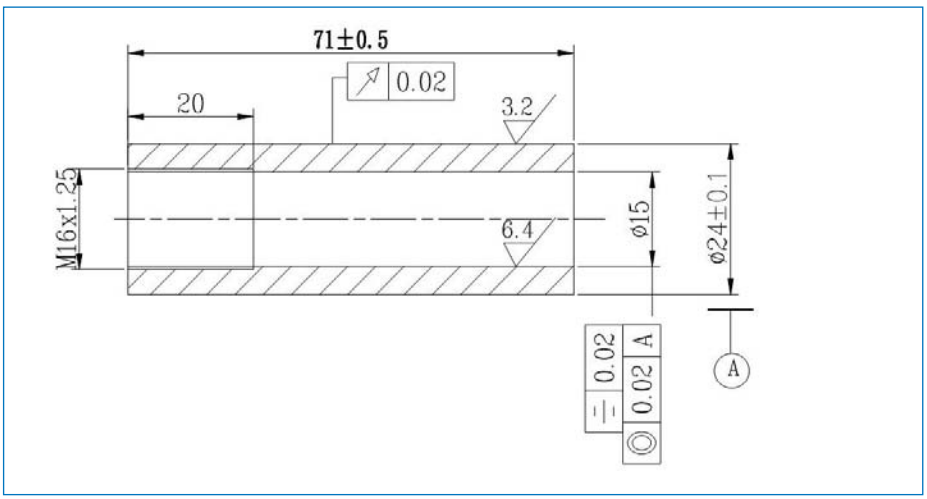
Temperature Sensor

Type:
3-wire PT1000 Temperature sensors
Location:
1 x Supply Line and 1 x Return Line
Complete with:
Thermowell and Socket Weld

Thermowell



Socket Weld



PT1000 Temperature Sensor with Thermowell and Socket Weld