WALLMOUNTED ULTRASONIC FLOW METER BTU Smart Flow Meter

Product Introduction

SAITEC Ultrasonic Flow Meter is a wall mounted, transit-time ultrasonic flow and BTU meter, with clamp on transducer for non-invasive liquid flow measurement. Easy to use, it is ideal for installation in existing systems when

shutdowns are impractical. For BTU/Energy applications both clamp-on and insertion RTDs are available.

SAITEC Series ultrasonic flow meter is designed to work with clamp-on transducers to enable the flow of a liquid within a closed pipe to be measured accurately without needing to insert any mechanical parts through the pipe wall or protrude into the flow system. Using ultrasonic transit time techniques, it is controlled by a micro-processor system which contains a wide range of data that enables it to be used with pipes with an outside diameter ranging from 15mm up to 6000mm (depending on model) and constructed of almost any material. The instrument will also operate over a wide range of fluid temperatures.



Dimensions





expansion bolts or normal nails.



DIN-rail mounting by using rail fixing clamps

Feature

- ▶ High Accuracy, Accuracy better than 1%
- It is easy to install without breaking the pipe
- The main unit is installed in the wall, instrument box and distribution box, and the protection level reaches IP67
- Wide Measurement Range, Measurement range from DN15~DN6000mm
- Non invasion measurement. Can achieve measurement with clamp on sensors
- LCD display, LCD display can display the instant flow, total flow, flow velocity and working condition
- Configure with dual power 8~36VDC and 85~ 264 VAC
- Support SD card memory
- Available with clamp on or insertion RTDs for BTU/Energy application
- Temperatures of up to 160°C

Wiring Diagram



To get more smart a meter

Technical Parameter

Measuring Principle	Transit time ultrasonic
Pipe Size	S2 transducer: DN15~DN100 (½" ~ 4") M2 transducer: DN50~DN700 (2"~ 28") L2 transducer: DN300~DN6000 (12"~ 240")
Pipe Material	Carbon Steel, Stainless Steel, Cast Iron, Ductile Iron, Copper, PVC, Aluminum
Display	2 line LCD with backlight
Engineering Units	Flow Unit: cubic Meter, Liter, US Gallon, Million US Gallon, Cubic feet, US liquid barrel, Imperial liquid barrel, Oil barrel Heat Unit: GJ, KC, KWh, BTU
Time units	Second, Minute, Hour, Day
Accuracy	±1 of reading (0.5 ~ 5 m/s)
Data logger	SD card optional
Repeatability	±1% of reading
Communication	RS485 - Modbus RTU / ASCII
Keypad	16 key with tactile action
Response Time	0-999 seconds,user chose
Flow Velocity	0.5-10 m/s
Temperature	Transmitter: -30°C~60°C Transducer: -30°C~90°C standard, -30°C~160°C optional
Max.Cable Length	100 meter
Power Consumption	Less than 5W
Power Supply	24VDC and -85 ~264VAC 50/60HZ
Data Storage	Operation parameters,totalization
Output	One way 4-20mA analog, electric resistance: 0~1k, accuracy: 0.1% One way OCT pulse One way Relay
Input	3 ways 4~20 mA analog, accuracy: 0.1%
Protection	Converter and Sensor: IP65; Sensor: IP68 optional

Tranducer Installations



VORTEX FLOW METER DIGITAL - RS485 MODBUS

FMDV SERIES DN25~300

Product Introduction

SAITEC intelligent vortex flow meter measure flow rate by detecting the frequency at which alternating vortex are shed from a bluff body inserted into the flow stream. The meter accuracy measures small volumes/wide ranges of liquids, gases and steam.

Vortex flow meter is widely used in petroleum, chemical, metallurgy, thermal, textile, paper and other industries for superheated steam, saturated steam, compressed air and general gases (oxygen, nitrogen, hydrogen, natural gas, gas, etc.), water and liquid (Such as: water, gasoline, alcohol, benzene, etc.) measurement and control.

Feature

- Without moveable mechanical components, corrosion resistance, stable and reliable performance
- Low power consumption, and can be powered with the built-in battery or external power supply.
- > Anti vibration, anti-interverence digital circuit board
- High sensitivity, high temperatures sensor
- High stability and accuracy
- Anti-vibration detection
- Welding, advanced welding technology, durable structure, welding seam
- Optional for temperature and pressure compensation to enhance the accuracy.
- Triangular prism. integrally forged triangular prism, more out stable and safe.

Flow Range

GAS (Ai	FLOW RANGE r, 0°C, 1AMT)	LIQUII (2	D FLOW RANGE 20°C, Water)
Nom. Diameter	Measurement Range (Nm³/h)	Nom. Diameter	Measurement Range (m³/h)
25	9~80	25	1~12
40	18~180	40	3~40
50	3~300	50	4~50
65	46~460	65	8~100
80	70~700	80	13~130
100	110~1100	100	20~200
125	150~1500	125	30~300
150	200~2000	150	50~500
200	400~4000	200	80~800
250	600~6000	250	130~1400
300	1000~10000	300	200~2000

Spesification

Measured Medium	: Liquid, Gas, Steam
Medium Temp	: -40°C~+200°C,40°C~+380°C
Nominal Pressure	: 1.6 ~ 6.4 MPa
Accuracy	: 1.0%
Material	: SUS304, SS316 Optional
Flow Range	: Liquid:0.4-7.0m/s; Gas:4-60m/s
	Steam:5-70m/s
Pressure Loss Coeff	.: Cd≤2.6
IP Grade	: IP65
IEP ATEX	: II 1G Ex ia IIC T5 Ga
Ambient Condition	: Ambiet Temp40°C-65°C
	Relative Humidity:≤85%
Power Supply	: 12-24VDC or 3.6V battery
Output Signal	: Pulse, 4-20mA

: RS485 - Modbus RTU



Size (DN) mm	Pressure (MPa)	L mm	D Ømm	C Ø mm	Н	N-d0	Wight (kg)
25	1.6/2.5/4/6.3	65	25	85	357.5	4-M12	6
40	1.6/2.5/4/6.3	75	40	110	401	4-M16	6
50	1.6/2.5/4/6.3	75	50	125	404	4-M16	6
65	1.6/2.5/4/6.3	75	65	145	419	8-M16	6.5
80	1.6/2.5/4/6.3	75	80	160	423	8-M16	7
100	1.6	90	100	190	443	8-M20	7.5
125	1.6	110	125	220	456	8-M24	12
150	1.6	115	150	250	507.5	8-M24	18
200	1.6	135	200	310	558.5	12-M24	30
250	1.6	150	250	370	585.5	12-M27	40
300	1.6	165	300	430	610	16-M27	55





Comm.Protocol

Product Introduction

The measuring principle of electromagnetic flow meter is based on Faraday's law of electromagnetic induction. The sensor is mainly composed of a measuring tube with an insulating lining, a pair of electrodes installed by inserting the measuring tube wall, a pair of coils and an iron core to generate a working magnetic field. When a conductive fluid flows through the measuring tube of the sensor, a voltage signal proportional to the average flow rate of the fluid will be induced on the electrode. The signal is operationally amplified and processed to achieve various display functions.

Electromagnetic flowmeter was developed on long-cultivated technology for flow measure. LDG family has extended its application range with such model as integrated and remote. Through constant development and improvements, electromagnetic flow meter has become more accurate and reliable and widely used in the industrial instrumental field. We provides wide range of electromagnetic flow meters, all fulfilling the highest demands in terms of accuracy and reliability in industries such as water and waste water, food and beverage, mining, pulp and paper.

Feature

- Measurements are not affected by fluid density, viscosity, temperature, pressure and conductivity.
- No obstacles in the measuring tube, no pressure loss, low requirements for straight pipe section. The OLED backlight type converter can be easily displayed and read in the sun or in a dark room.
- In harsh environments, parameters can be set via infrared touch buttons without opening the cover of the converter (need to be customized).
- Flow meter with bidirectional measurement system, built-in three totalizers : positive total, reverse total and total difference.
- It has various forms of output: current 4-20mA, pulse, frequency, RS485.
- The 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.
- Not only for general processes, but also for the measurement of ore pulp, mud, coal slurry, paper pulp and paste liquid.



Split / Remote Electromagnetic Flowmeter

Dimensions

DN	L(PTFE)	L(Rubber/PFA/ F46	D	d1	n*d0
10	193	/	90	60	4*14
15	193	/	95	65	4*14
20	193	/	105	75	4*14
25	193	/	115	85	4*14
32	193	/	135	100	4*18
40	193	200	145	110	4*18
50	193	200	160	125	4*18
65	243	250	180	145	4*18
80	244	250	195	160	8*18
100	244	250	215	180	8*18
125	244	250	245	210	8*18
150	290	300	280	240	8*23
200	341	350	335	295	12*23
250	441	450	405	355	12*26
300	490	500	460	400	12*26
350	490	500	565	515	16*23
400	490	500	565	515	16*26
450	540	550	615	565	20*26
500	540	550	670	620	20*26



ELECTROMAGNETIC FLOWMETER

DIGITAL - RS485 MODBUS - 4~20mA

Technical Parameter

Main Power	AC220V 50HZ/DC24V/DC12V/3.3V or battery power supply					
Power Consumption		<15W (Supporting power consumption with sensors)				
Display and buttons	Display in flow and ove	Display in Chinese and English, can display instantaneous flow, accumulated flow and alarm display (excitation open circuit alarm, empty pipe alarm, flow over limit alarm). Four membrane touch switches for data setting				
Counter		Forward total, reverse total				
	Analog output	Two-way, fully isolated 0~10mA/4~20mA Load resistance: 0~1.5kΩ when 0~10mA; 0~750Ω when 4~20mA				
	Frequency output	Forward and reverse flow output, the upper limit of output frequency can be set				
Output signal	Alarm Output	Two-way open collector alarm output with photoelectric isolation transistor. The external power supply is not greater than 35V, and the maximum current of the collector when it is turned on is 250mA. Alarm status: fluid empty pipe, excitation disconnection, flow overrun				
	Pulse Output	Forward and reverse flow output, the output pulse upper limit can reach 5000CP/S. Pulse equivalent is 0.0001~1.0 m ³ /P. The pulse width is automatically set to 20ms or square wave. Open collector output of transistor with photoelectric isolation. The external power supply is not greater than 35V, and the maximum current of the collector when conducting is 50mA				
Matching accuracy	±0.5% of indicated value, optional ±0.3% of indicated value					
Damping time constant	Continuous variable from 0~100s (90%) time grading optional					
Communication	Optional RS232C or RS485 serial communication interface, HART communication protocol					
Loss of power	The internal design of the instrument has a power-off clock, which can store 16 power-off records (10 years) (need to be customized)					
Protection class	IP65					
Explosion-proof mark	Ex d ia [ia Ga] q IIC T6 Gb					

Product Introduction

The measuring principle of electromagnetic flow meter is based on Faraday's law of electromagnetic induction. The sensor is mainly composed of a measuring tube with an insulating lining, a pair of electrodes installed by inserting the measuring tube wall, a pair of coils and an iron core to generate a working magnetic field. When a conductive fluid flows through the measuring tube of the sensor, a voltage signal proportional to the average flow rate of the fluid will be induced on the electrode. The signal is operationally amplified and processed to achieve various display functions. Electromagnetic flowmeter was developed on long-cultivated technology for flow measure. LDG family has extended its application range with such model as integrated and remote. Through constant development and improvements, electromagnetic flow meter has become more accurate and reliable and widely used in the industrial instrumental field. We provides wide range of electromagnetic flow meters, all fulfilling the highest demands in terms of accuracy and reliability in industries such as water and waste water, food and beverage, mining, pulp and paper.

Feature

- ▶ Applicable sizes 150~3000mm
- Deperating pressure: ≤1.6MPa(230psi)
- Velocity range of 1~10m/s (3-36 fps)
- Accuracy ±2.5%
- Hot-tap sensor can be installed and retracted process piping
- Conductivity of measured medium: ≥50µ s/cm
- Electrode materials: SUS316L, Hastelloy B, Hastelloy C, Ta, Ti, etc.
- The max. distance between sensor and converter: ≤50m (165feet)

Specification

cable entry : 2 X PG 11
size : 150-2000mm
temperature up to 70°C

bing Ta, Ti, etc. 165feet) Implementation

DN(n	nm)	0.5(m/s)	1.0(m/s)	1.5(m/s)	2.0(m/s)	2.5(m/s)	3.0(m/s)
30	0	127.2	254.4	381.6	508.8	636.0	763.2
35	0	173.1	346.2	519.3	692.4	865.5	1038.6
40	0	286.2	572.3	858.3	1144.6	1430.8	2574.9
50	0	353.3	706.5	1059.8	1413.2	1766.5	2119.8
60	0	508.7	1017.0	1526.0	2034.0	2544.0	3052.0
70	0	682.4	1385.0	2047.0	2730.0	3412.0	4094.0
80	0	904.3	1808.0	2713.0	3617.0	4522.0	5126.0
90	0	1145.0	2290.0	3435.0	4580.0	5725.0	6870.0
100	00	1413.0	2826.0	4239.0	5652.0	7065.0	8478.0
120	00	2034.0	4068.0	6102.0	8136.0	10170.0	
140	00	2770.0	5540.0	8310.0	11080.0	13850.0	
_							



OVAL GEAR FLOWMETER ANALOG OR DIGITAL - RS485 MODBUS - 4~20mA

Product Introduction

Oval gear flow meter is one of positive displacement flow meter and is mainly composed of meter shell, oval gear rotor and converter. It is an instrument used for continuous or discontinuous metering and control of liquids in the pipeline. It has advantages of large metering range, excellent accuracy, small pressure loss and high viscosity adaptability etc;

▶It has good performance on measuring high-temperature and highviscosity liquids. It is applicable to the calibration and metering of crude oil, chemical, chemical fiber, traffic, commerce, food, medicine and health, scientific research and military etc.



Dimensions









DN10~DN40





DN150, DN200

Structure



DN50~DN100

DN	L	Н	А	В	D	D1	Ν	Ø
10	150	100	165	210	90	60	4	14
15	170	118	172	226	95	65	4	14
20	200	150	225	238	105	75	4	14
25	260	180	232	246	115	85	4	14
40	245	180	249	271	145	110	4	18
50	340	250	230	372	160	125	4	18
65	420	325	270	386	180	145	4	18
80	420	325	315	433	195	160	8	18
100	515	418	370	458	215	180	8	18
150	540	515	347	557	280	240	8	23
200	650	650	476	720	335	295	12	23

Above oval gear flow meter drawing is DIN PN16 flange, other standards can be provided on request. (A) Cast iron type; Cast iron high viscosity type; High temperature cast iron type; Other cast iron type (Units:mm)

 Counter
Signal output
Precision regulator (DN50 and above only)
Sealing the coupling

5 Front cover

6 Flat

7 Oval gear

8 Shell

9 Rear cover

OVAL GEAR FLOWMETER DIGITAL - RS485 MODBUS - 4~20mA

Technical Parameter

Transmitter Type	Pointer with zero returning, Pointer display with Output, LCD display
Medium	Fuel Oil Petroleum Petroleum Products Vegetable Oil Food Chemical
Accuracy	±0.2% ±0.5%
Nominal Diameter	DN8~DN200 (1"~4")
Nominal Pressure	1.6~6.3MPa
Medium Temperature	-20 °C~+250 °C
Medium Viscosity	2~10000mPa.s
Power Supply	12VDC 24VDC
Output Signal	Pulse 4~20mA RS485
Display	Accumulative Flow, Single Measurement(Mechanical Dial) Remote transmission of total and instantaneous flow
Error Adjustment	Changing Gear Adjustment
Level Of Protection	IP65
Explosion Proof	Flame-proof Type, ExdIIBT4
Ambient Temperature	-20°C ~+55°C
Sensor Material	Cast Iron Cast Steel Stainless Steel
Sensor Connection	Flange, Thread, Tri-clamp

Accuracy Flow Meter Error And Pressure Loss Curve





Flow-error curve

To get more smart a meter