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**KAIFENG KAMBODA INDUSTRIAL
INSTRUMENT CO., LTD**

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LD Electromagnetic Flow Meter



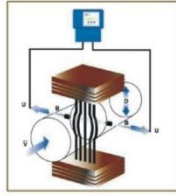
Features

For pipes DN3...DN3000
Suitable for all conductive liquids
No moving parts
Near zero pressure drop
High accuracy $\pm 0.5\%$ of reading standard or better $\pm 0.2\%$
220V, 24V, 12V, 3.6V powered supply
Wide range in communication RS485, RS232, Modbus, Hart, GPRS



Application

Environmental treatment industry (sewage treatment,)
Chemical industry (petroleum smelting, fertilizer manufacturing, papermaking)
Heating and water supply (steam metering, hot water metering, drinking water metering, etc.)
Agricultural irrigation (smart farmland irrigation, river water metering, etc.)
Food and beverage industry (beer, milk, juice, edible oil and other production industries)
Pump and Valve Calibration Laboratory (Calibration Equipment)



Measuring principle

The measuring principle of the electromagnetic flowmeter (Magmeter) is based upon the Faraday's Law of Electromagnetic induction; whereby a voltage is induced by an electrical conductor passing through a magnetic field. The following equation is applicable to the induced voltage: $U = kBVVD$ where, U Induced voltage, k Instrument constant, B Magnetic field strength, V Velocity of the conductor, D Conductor width. In electromagnetic flowmeter, the medium acts as the electrical conductor when flowing through the meter tube, the induced voltage is proportional to the average flow velocity (the faster the flow rate, the higher the voltage). The induced voltage is picked up by a pair of electrodes (mounted in the meter tube) and transmitted to a flow transmitter to produce various standardized output signals. Using the pipe cross-sectional area, the flow volume is calculated by the transmitter.

Technical specifications

Item	Parameter
DN size	3...3000mm
Structure type	Integral, remote
Working pressure	PN6, PN10, PN16, PN40, etc.
End connection	flange (std.), clamping, wafer, threaded
Flange standard	DIN (std.), ANSI, JIS, EN, etc.
Electrode material	SS316 (std.), Hastelloy B, Hastelloy C, Ta, Ti, platinum-iridium alloy
Lining material	Neoprene (std.), PTFE, PFA, polyurethane, F46, etc.
Measuring pipe material	SS304 (std.), SS346 optional
Body material	Carbon steel (std.), SS304/304L/316/316L
Measuring range	0.01m/s...10m/s
Accuracy	±0.5% FS (std.), 0.2% optional
Repeatability	±0.2% of span
Display unit	m³/h, m³/s, l/h, l/m, l/s, g/h, g/m, g/s, etc.
Power supply	220V AC 50Hz, 24VDC, 12VDC, 3.6V battery powered
Protection class for sensor	IP67, IP68 optional
Protection class for converter	IP65
Alarm	Upper limit, lower limit, empty pipe
Output signal	4-20mA, pulse, frequency
Communication	RS485 Modbus (std.), RS232 Modbus, HART, GPRS, Profibus
Display	Backlight LCD, display positive & negative instantaneous flow and total flow
Explosion-proof	Exdmb IIC T6 (optional)

Flow range table

DN size in/mm	0.01m/s - Min flow/m³/h	About 5m/s - Calibrated flow/m³/h	15m/s - Max flow/m³/h
10	0.0028	1.5	4.2412
15	0.0064	3	9.5426
20	0.0113	5	16.9646
25	0.0177	7	26.5072
32	0.0290	12	43.4294
40	0.0452	20	67.8584
50	0.0707	30	106.0288
65	0.1195	50	179.1886
80	0.1810	70	271.4336
100	0.2827	120	424.1150
125	0.4418	180	662.6797
150	0.6362	250	954.2588
200	1.1310	450	1696.4600
250	1.7671	700	2650.7188
300	2.5447	1000	3817.0351
350	3.4636	1400	5195.4089
400	4.5239	1800	6785.8401
450	5.7256	2300	8588.3289
500	7.0686	2800	10602.8752
600	10.1788	4000	1526.1403
700	13.8544	5500	20781.6354
800	18.0956	7200	27143.3605
900	22.9022	9100	34353.3157
1000	28.2743	11000	42411.5008
1200	40.7150	12000	61072.5612
1400	55.4177	16000	83126.5416
1600	72.3823	20000	108573.4421
1800	91.6088	27000	137413.2627
2000	113.0973	34000	169646.0033

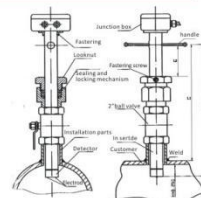
LD Insertion Electromagnetic Flow Meter

Features

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



Dimensions





Specification

Cable Entry : 2 XPG11	Measuring Range : 1 ~ 10 m/s ² bi-direction
Size : 150-2000mm	Conductivity : to be more than 50 uS/cm
Temperature up to 70 deg C	Connection : Weld, Flange
Pressure up to 1.6Mpa	Wetted part : SS304
Resistance excitation Coil: 50-70 ohm (std)	Protection : IP65 (convector) / IP 67 (sensor)
Materials (std):	Accuracy : +/-2.5% of reading
Transmitter housing : Aluminium	Power supply : 12VDC, 24 VDC, 220 VAC, 3.6V battery
Probe : 304SS	Outputs: 4-20mA, Pulse, frequency
Detector housing : PVC	Communication: RS485 Modbus (std), RS232 Modbus, HART, GPRS, Profibus
Electrode : 316L	

LUGB Vortex Flow Meter



Features

1. Simple structure, no moving parts.
2. High accuracy, high reliability, no need of field debugging.
3. Capable of remote transmission of flow signal, able to make network with computer to implement central administration.
4. Unique design of amplify board, applicable to both gas and liquid



Specification

Accuracy grade: 1.0%, 1.5%
 Size DN15 to DN600 pipe line
 Pressure grade: PN10, PN16
 Measuring medium temperature: -40℃~350℃
 Power supply: 12-24V DC
 Multi-choice in flange: DIN, GB, ANSI, JIS, etc
 Output signal: Standard current, 4~20mA.
 Voltage pulse, low level ≤ 1V, high level ≥ 6V, load resistor > 150 Ω

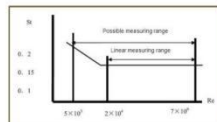


Fig.2

Measuring Principle

When the fluid flows through vortex generator (the triangular prism) in the pipeline, as partial flow rate go up, a vortex pattern appears, the vortex alternatively appears as two columns, it is called Karman Vortices. The discharge rate of Karman Vortex Street is related to the width of triangular prism and the flow rate of the fluid, but have nothing to do with parameters like fluid temperature and pressure. It can be expressed by the formula as: $f = StV/d$
 Therein:
 f—the frequency of Karman Vortex Shedding
 St—Strouhal Number
 V—velocity
 d—width of the triangular prism
 It can be seen in the formula that the instantaneous flow can be worked out through measuring
 Karman Vortex shedding frequency. Therein, Strouhal Number St is unknown. Fig.2 shows the relationship between Strouhal Number St and Reynolds number Re. In the flat part where $St=0.17$ in fig.2, the discharge frequency of vortex is in proportion to flow rate, this part is the measuring range of vortex flow sensor. As long as the frequency f is measured, the flow rate can be worked out, then the volume flow can be worked out too. The rate of measured pulses and volume flow is defined as the instrument constant (K), expressed by the formula as: $K = N/Q (1/m^3)$
 Therein: K—instrument constant N—pulses no. Q—volume

Flow range table

DN size (mm)	Liquid		Gas	
	Std. Measuring range (m³/h)	Extended Measuring range (m³/h)	Std. Measuring range (m³/h)	Extended Measuring range (m³/h)
15	0.8~6	0.5~8	6~40	5~50
20	1~8	0.6~12	8~50	6~60
25	1.5~12	0.8~16	10~80	8~120
40	2.5~30	2~40	25~200	20~300
50	3~50	2.5~60	30~300	25~500
65	5~80	4~100	50~5000	40~800
80	8~120	6~160	80~800	60~1200
100	12~200	8~250	120~1200	100~2000
125	20~300	12~400	160~1600	150~3000
150	30~400	18~600	250~2500	200~4000
200	50~800	30~1200	400~4000	350~8000
250	80~1200	40~1600	600~6000	500~12000
300	100~1600	60~2500	1000~10000	600~16000
400	200~3000	120~5000	1600~16000	1000~25000
500	300~5000	200~8000	2500~25000	1600~40000
600	500~8000	300~10000	4000~40000	2500~60000

Field display LCD vortex flow meter

LUGB-Z Integral T&P compensation type
Digital 2-line LCD, 8-digit display.
Low flow cutoff easily setting by user
Two-wire type 4-20mA output.
Online temperature & pressure compensation, artificial density compensation.
12-36V DV or 3.6V lithium battery power.
Integral type vortex flow meter with T & P compensation makes installation more convenient.



LUGB-M LCD display type
Digital 2-line LCD, 8-digit display.
Low flow cutoff easily setting by user
Online split temperature & pressure compensation, artificial density compensation. 12-36V DV or 3.6V lithium battery power.



LUGB insertion type
Suitable for pipe size DN200 above.
Designed for measuring of superheated steam, saturated steam, common gas liquid.
Field display and remote output are selectable.
Easy installation, competitive price.



LWGQ Gas Turbine Flow Meter



Features

Widely used in natural gas, nitrogen gas, compressed air, etc.
To request the medium with clean, better to install the filter 180 degrees rotatable head, and easy installation and maintenance
Good repeatability, 0.05%-0.2% for short period
Temperature and pressure compensation available

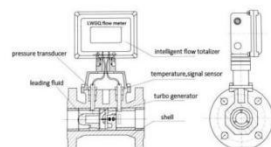
Technical data

Output	pulse, 4-20mA, RS485, HART
Accuracy	±1.0% ; 1.5%
Repeatability	±0.5%
Operating temperature	-20...+60℃
Fluid temperature	-20...+80℃
Body material	S5304, S5316
rotor material	Aluminum alloy, plastic ABS
Bearing material	S5304

Measuring principle

The operation of the International Gas Turbine Meter is based on the measurement of the velocity of gas. The flowing gas is accelerated and conditioned by the meters straightening section. The straightening vanes prepare the gas flow profile by removing, undesired swirl, turbulence and asymmetry before the gas flows to the turbine wheel. The dynamic forces of the flowing fluid cause the rotor to rotate.

The turbine wheel is mounted on the main shaft, with special high precision, low friction ball bearings. The turbine wheel has helical blades that have a known angle relative to the gas flow. The conditioned and accelerated gas drives the turbine wheel with an angular velocity that is proportional with the gas velocity.



Flow range table

DN	Standard flow range		Extended flow range		Pressure grade		Connection mode
	Code	m3/h	Code	m3/h	Standard	Option	
25	S	2.5-25	W	4-40	1.6	2.5, 4.0	Flange(Thread)
40	S	5-50	W	6-60	1.6	2.5, 4.0	Flange(Thread)
50	S1	6-65	W1	5-70	1.6	2.5, 4.0	Flange
	S2	10-100	W2	8-100			
65	S	15-200	W	10-200	1.6	2.5, 4.0	Flange
80	S1	13-250	W	10-160	1.6	2.5, 4.0	Flange
	S2	20-400					
100	S1	20-400	W	13-250	1.6	2.5	Flange
	S2	32-650	W				
125	S	25-700	W	20-800	1.6	2.5	Flange
150	S1	32-650	W	80-1600	1.6	2.5	Flange
	S2	50-1000	W				
200	S1	80-1600	W	50-1000	1.6	-----	Flange
	S2	130-2500	W				
250	S1	130-2500	W	80-1600	1.6	-----	Flange
	S2	200-4000	W				
300	S	200-4000	W1	130-2500	1.6	-----	Flange
			W2	320-6500			

LWGY Liquid Turbine Flow Meter



Features

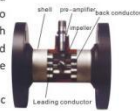
Specially designed for water, diesel, gasoline and other fluid measurement and control systems.
Applicable sizes 4~200mm.
Good repeatability, 0.05%~0.2% for short.
Wide measuring range, 1:10 for small size and 1:20 for large size.
Compact structure, easy installation and maintenance.
Suitable for high pressure measuring.

Technical data

Output	pulse, 4-20mA, RS485, HART
Accuracy	±1.0%, ±0.5% of rate
Repeatability	±0.5%
Operating temperature	-20...+60℃
Fluid temperature	-20...+120℃
Body material	SS304, SS316
rotor material	2Cr13, Alloy-CD4mCu
Bearing material	Tungsten carbide

Measuring Principle

Fluid entering the meter first passes through an inlet flow straightener that reduces its turbulent flow pattern. Fluid then passes through the turbine, causing the turbine to rotate at a speed proportional to fluid velocity. As each turbine blade passes through the magnetic field generated by the meter's magnetic pickup, an AC voltage pulse is generated. These pulses provide an output frequency that is proportional to volumetric flow.



Flow range table

DN (mm)	Standard flow range (m³/h)	Extended flow range (m³/h)	Standard connection & Pressure grade	Special pressure grade (Mpa) (flange clamping)
4	0.04-0.25	0.04-0.4	thread/6.3Mpa	10,16,25
6	0.1-0.6	0.06-0.6	thread/6.3Mpa	10,16,25
10	0.2-1.2	0.15-1.5	thread/6.3Mpa	10,16,25
15	0.6-6	0.4-8	thread/6.3Mpa flange/2.5Mpa	4,0.6,3,10,16,25
20	0.8-8	0.45-9	thread/6.3Mpa flange/2.5Mpa	4,0.6,3,10,16,25
25	1-10	0.5-10	thread/6.3Mpa flange/2.5Mpa	4,0.6,3,10,16,25
32	1.5-15	0.8-15	thread/6.3Mpa flange/2.5Mpa	4,0.6,3,10,16,25
40	2-20	1-20	thread/6.3Mpa flange/2.5Mpa	4,0.6,3,10,16,25
50	4-40	2-40	flange/2.5Mpa	4,0.6,3,10,16,25
65	7-70	4-70	flange/2.5Mpa	4,0.6,3,10,16,25
80	10-100	5-100	flange/2.5Mpa	4,0.6,3,10,16,25
100	20-200	10-200	flange/1.6Mpa	2.5,4,0.6,3,10,16,25
125	25-250	13-250	flange/1.6Mpa	2.5,4,0.6,3,10,16
150	30-300	15-300	flange/1.6Mpa	2.5,4,0.6,3,10,16
200	80-800	40-800	flange/1.6Mpa	2.5,4,0.6,3,10,16

Classification of turbine flow meter

LWGY-N basic type sensor
12-24V DC power supply
3-wire pulse signal output
High level ≧ 8V, low level ≧ 0.8V
Signal transmission distance ≧ 1000m

LWGY-A transmitter
24V DC power supply
Digital local LCD display
2-wire 4-20mA output
Signal transmission distance ≧ 1000m

LWGY-B field display flow meter
3.0V 10AH lithium battery (4-year working life)
Digital local LCD display
None signal output

LWGY-C field display flow meter
24V DC power supply
Digital local LCD display
Output 4-20mA standard with 2-wire, 3-wire and 4-wire current signal 1-5V voltage signal
RS485, HART communication is optional



TUF-2000 Ultrasonic Flow Meter



2000H hand-held type 2000P portable type

Features

Ideal for non-contact measurement.
For pipes 15-6000mm temporary measurement.
High accuracy ±1%, good repeatability 0.2%.
Easy installation, just fix the sensors on the pipe outer wall.
Built-in rechargeable battery, as long as 12h working time.
2000H type is small size, convenient to carry, accurate measurement.
2000P type with built-in SD card and printer, can provide data printed service.
Widely used in water supply, heat supply, chemical industry, machinery and energy resources.

Size and fittings

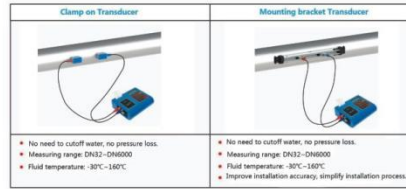


Mounting bracket transducer



Clamp on transducer

Measuring diagram



Parts description

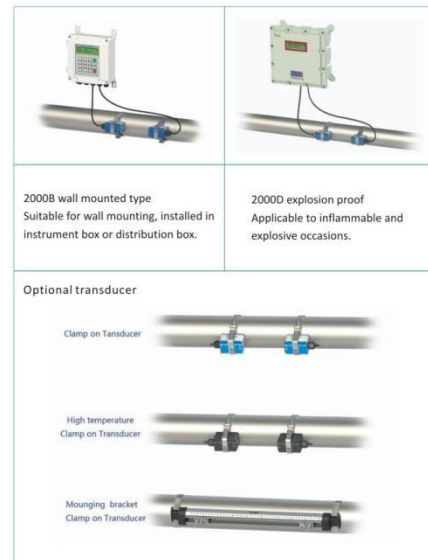





Ultrasonic flowmeter TUF2000 series







Optional transducer

Types	Spec	Model	Measurange(mm)	Temperature	Size
Clamp on	Small	TS-2	DN15-100	-30~90℃	42×25×32mm
	Medium	TM-1	DN50-700	-30~90℃	69×39×44mm
	Large	TL-1	DN300-6000	-30~90℃	97×54×53mm
High temperature clamp on	Small	TS-2-HT	DN15-100	-40~160℃	45×25×32mm
	Medium	TM-1-HT	DN50-700	-40~160℃	64×39×44mm
	Large	TL-1-HT HS	DN300-6000	-40~160℃	97×54×53mm
Mounting bracket clamp on	Small	HS	DN15-100	-30~90℃	318×59×85mm
	Medium	HM	DN50-300	-30~90℃	568×59×85mm
	Extended	EB-1	DN300-700	-30~90℃	118×59×49mm
High temperature mounting bracket clamp on	Small	HS HT	DN15-100	-40~160℃	318×59×110mm
	Medium	HM-HT	DN50-300	-40~160℃	568×59×110mm
	Extended	EB-1-HT	DN300-700	-40~160℃	188×59×49mm



	2000B insertion type No need to cut off the pipeline, no pressure drop.
	2000B insertion proof Available to adopt hot tapping. Measurement stability and reliability.
	2000D inline type Standard pipe type Low starting flow rate High measurement accuracy No pressure loss.

	2000D pipe type π pipe type
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Optional transducer			
Photos			
Inline type	Flange	Flange	Thread
Accuracy	± 0.5%	± 0.5%	± 0.5%
IP class	IP68	IP68	IP68
Caliber	DN40-1000	DN45-32	DN45-32
Medium temp	-30℃-160℃	-30℃-160℃	-30℃-160℃

LUBX Gas Precession Vortex Flow Meter



Features

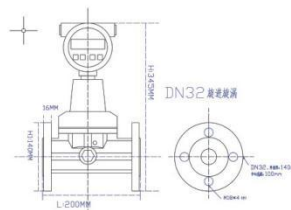
Widely used in natural gas, nitrogen gas, compressed air, etc.
To request the medium with clean, better to install the filter 180 degrees rotatable head, and easy installation and maintenance
Good repeatability, 0.05%~0.2% for short period
Temperature and pressure compensation available

Technical data

Output	pulse, 4-20mA, RS485, HART
Accuracy	$\pm 1.0\%$; $\pm 1.5\%$
Repeatability	$\pm 0.5\%$
Operating temperature	$-20^{\circ}\text{C} \sim +60^{\circ}\text{C}$
Fluid temperature	$-20^{\circ}\text{C} \sim +80^{\circ}\text{C}$
Body material	Cast aluminum alloy
Connection	Flange
Type	with pressure & temperature compensation

Measuring principle

The intelligent gas precession vortex flowmeter integrates the detection functions of flow, temperature and pressure, and can automatically compensate for temperature, pressure and compression factor. It is an ideal instrument for gas measurement in petroleum, chemical, electric power, metallurgy and other industries.
No mechanical moving parts, not easy to corrode, stable and reliable, long life, long-term operation without special maintenance;
The intelligent LCD display can directly display the volume flow rate in the working state, the volume flow rate in the standard state, the accumulated flow rate, the flow rate, the medium temperature, the medium pressure and other information.



Flow range table

DN	Standard flowrange	Presure grade		Connection mode
	m3/h	Standard	Option	
15	1. 5-12	1.6	2.5,4.0	Flange
20	2-15	1.6		
25	3-30	1.6		
32	6-60	1.6		
40	7-70	1.6		
50	10-130	1.6		
65	20-300	1.6	2.5	
80	30-400	1.6		
100	70-800	1.6		
125	90-1000	1.6		
150	190-1900	1.6		
200	240-3600	1.6		

Thermal Gas Mass Flow Meter



Features

Widely used in air, compressed air, N₂, O₂, CO₂, natural gas, nitrogen gas, etc.
Requires media to be clean and dry.

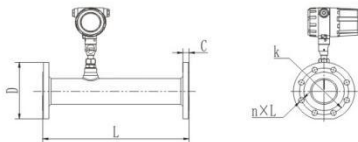
Units of instantaneous flow: Nm³/h, NM³/min, L/h, L/min, T/h, T/min, Kg/h, Kg/min

Technical data

Output	pulse, 4-20mA, RS485, HART
Accuracy	±1.0%; 1.5%
Repeatability	±0.5%
Operating temperature	-20...+60℃
Fluid temperature	-20...+80℃
Body material	Cast aluminum alloy
Connection	Flange/insertion
Type	Compact/split

Measuring principle

Thermal gas mass flow meter is designed on the basis of thermal dispersion, and adopts method of constant differential temperature to measuring gas flow. It has advantages of small size, easy installation, high reliability and high accuracy, etc.
The meter contains two platinum resistance temperature sensors. The thermal principle operates by monitoring the cooling effect of a gas stream as it passes over a heated sensor. Gas flowing through the sensing section passes over two sensors one of which is used conventionally as a temperature sensor, whilst the other is used as a heater. The temperature sensor monitors the actual process values whilst the heater is maintained at a constant differential temperature above this by varying the power consumed by the sensor. The greater the gas velocity, the greater the cooling effect and power required to maintain the differential temperature. The measured heater power is therefore a measure of the gas mass flow rate.



Flow range table

DN	Standard flowrange (Air)	Pressure grade		Connection mode
	Nm ³ /h	Standard	Option	
15	0-65	1.6	2.5, 4.0	Flange/threaded
20	0-145	1.6		
25	0-175	1.6		
32	0-290	1.6		
40	0-450	1.6		
50	0-700	1.6		
65	0-1200	1.6	2.5	Flange/insertion
80	0-1800	1.6		
100	0-2800	1.6		
125	0-4400	1.6		
150	0-6300	1.6		
200	0-10000	1.6		
250	0-17000	1.6	2.5	Insertion
300	0-25000	1.6		
400	0-45000	1.6		
500	0-70000	1.6		
600	0-100000	1.6		
700	0-135000	1.6		
800	0-180000	1.6		
900	0-220000	1.6		
1000	0-280000	1.6		

Variable Area Flow Meter



Features

All stainless steel design
Wide turn-down ratio 10:1
Small volume, large , convenient operation
Long work life, low straight pipe condition required
2-line LCD display instantaneous and accumulated flow
Can be used in flammable, explosive and dangerous situations

Technical Specification

Measuring range	water (20℃) 1-200000l/h air(20℃) 0.03-4000m ³ /h
Turn-down ratio	10:1(std.),20:1 special order
Accuracy	±1.5%(std.), ±1.0%
Pressure grade	DN15-50 4.0Mpa(std.) DN65-200 1.6Mpa
Media temperature	Standard type, -40℃~100℃ High temp type, 100℃~450℃
Media viscosity	DN15 η<5mPa.s DN25 η<250mPa.s DN50~150 η<300mPa.s
Ambient temperature	long transmission type, -40~185℃ LCD display type, -30~+80℃ Field pointer type, -40~100℃

Oval Gear Flow Meter



Features

Simple structure, reliable operation.
Suitable to high viscosity medium measurement.
High accuracy, large flow range and good reparability.
Flow state does not affect the accuracy of measurement.

Our other products



Our qualifications



Our equipment

