



**Kaifeng Huabnag Instrument Co., Ltd.**

# Electromagnetic Flow Meter Catalog



2018F201-41



# Contents

Product description.....	1
Working principle.....	1
Features.....	1
Technical parameter.....	2
Selection principles.....	3
The main properties of electrode materials.....	4
Main properties of lining materials.....	5
Attentions for the Sensor Installation:.....	6
Precautions for installation of plug-in electromagnetic flow meter.....	7
Flow range table.....	9
Product Exhibition.....	10
Insert type electromagnetic flow meter.....	14
Electromagnetic water meter(Battery powered).....	15
Electromagnetic flow meter converter size.....	16
Electromagnetic flow meter sensor dimension drawing.....	17
Clamp Connection Sensor Size.....	18
Clamping sensor size.....	19
HBLD pipeline electromagnetic flow meter selection code.....	20
Insertion electromagnetic flow meter Selection code.....	22

## Product description

HBLD intelligent electromagnetic flow meter is a high-performance, high-reliability flow meter. Used to measure the volume flow of conductive liquid and slurry in closed pipes. Widely used in steel, electricity, petroleum, chemical industry, coal, metallurgy, papermaking, water supply and drainage, food, pharmaceutical industry, etc.

## Working principle

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.

## Features

- ✧ 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 LCD 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, rs-485, HART.
- ✧ 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.
- ✧ High-pressure electromagnetic flow sensor with PFA lining technology, resistant to high pressure and negative pressure, especially suitable for petroleum, chemical and other industries.
- ✧ Explosion-proof instruments can be used in corresponding explosion-proof places.

## Technical parameter

Item	Technical parameter	
Main power	AC220V 50HZ/DC24V/DC12V/3.3V battery power supply	
Power consumption	<15W (Supporting power consumption with sensors )	
Display and buttons	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	
Output signal	Analog output	Two-way 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 within 1~5000Hz. Open collector bidirectional output of transistor with photoelectric isolation. The external power supply is not greater than 35V, and the maximum current of the collector when it is turned on is 50mA
	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 <sup>3</sup> /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% or ±0.2% 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 IICT6Gb	

## Selection principles

The liquid to be tested must be a conductive liquid with a conductivity greater than  $5 \mu\text{s}/\text{cm}$ . If the conductivity is less than  $5 \mu\text{s}/\text{cm}$ , the flow meter can use double-core double shield with equipotential shield or high frequency converter. Must not contain too many ferromagnetic substances or bubbles. The abrasion should be selected according to the temperature, corrosiveness, pressure level, pressure level, lining material, electrode material and structure type of the medium

The caliber of the flow meter should usually be the same as the pipe diameter.

The electromagnetic flow meter for HBLD has a high range of 1500:1.

If the medium contains solid particles, the recommended flow rate is  $1\sim 3\text{m}/\text{s}$ . If the actual flow rate is too large and it is not easy to install, please choose a higher caliber to reduce the flow rate and reduce the wear on the lining and electrode.

If there is sediment in the pipeline, the recommended flow rate is  $2\sim 5\text{m}/\text{s}$ . If the actual flow rate is too small and it is not easy to replace the pipeline, choose a low caliber to increase the flow rate and reduce the impact of sediment on accuracy.

When the flow rate is too small and high-precision measurement is required, it is recommended to use a sensor with a smaller diameter to increase the flow rate and ensure high accuracy. For the above situation, variable diameter pipes should be installed upstream and downstream. Elbows with varying taper diameters shall not be greater than  $15^\circ$ , and the upstream length of straight pipes shall be greater than the 5D of the reducing pipe.

## The main properties of electrode materials

Electrode material	Corrosion resistance
<b>SUS316</b>	Used in industrial water, domestic water, sewage, corrosive media, widely used in petroleum, chemical, steel and other industrial sectors and municipal, environmental protection and other fields
<b>Hastelloy B (HB)</b>	It has good corrosion resistance to all concentrations of hydrochloric acid below the boiling point, and it is also resistant to non-oxidizing acids such as sulfuric acid, phosphoric acid, hydrofluoric acid, organic acids, alkali, non-oxidizing, salt solution.
<b>Hastelloy C (HC)</b>	It is resistant to corrosion by non-oxidizing acids, such as nitric acid, mixed acid, or a mixture of chromic acid and sulfuric acid, and is also resistant to corrosion by oxidizing salts such as $Fe^{+++}$ , $CU^{++}$ , or other oxidants. Such as the corrosion of hypochlorite solution above normal temperature and seawater.
<b>Titanium (Ti)</b>	It is resistant to the corrosion of seawater, various oxides and hypochlorites, oxidizing acids (including fuming sulfuric acid), organic acids, alkalis, etc., and it is not resistant to the corrosion of purer reducing acids (such as sulfuric acid and hydrochloric acid). If the acid contains oxidants (such as nitric acid, $Fe^{+++}$ , $Cu^{++}$ ), the corrosion is greatly reduced
<b>Kame (Ta)</b>	It has excellent corrosion resistance, very similar to glass, except for hydrofluoric acid, fuming sulfuric acid, and alkali, it can withstand almost all chemical media (including boiling point hydrochloric acid, nitric acid, sulfuric acid and aqua regia below 150 °C). Note: Not resistant to corrosion in alkali.
<b>Platinum/titanium alloy</b>	It is suitable for almost all chemical substances, but not for aqua regia and ammonium salts.
<b>Stainless steel coated with tungsten carbide</b>	Used for non-corrosive and highly abrasive media.

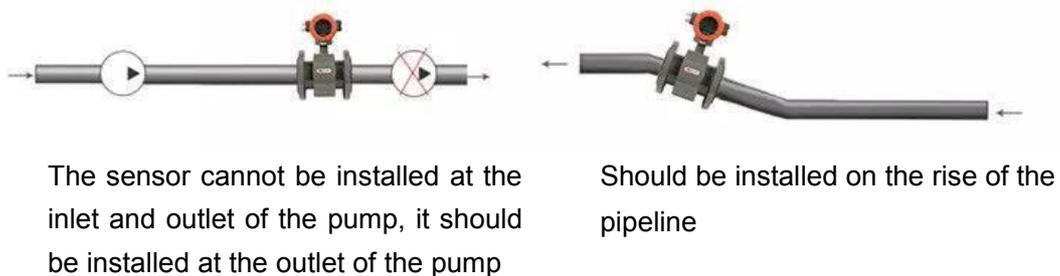
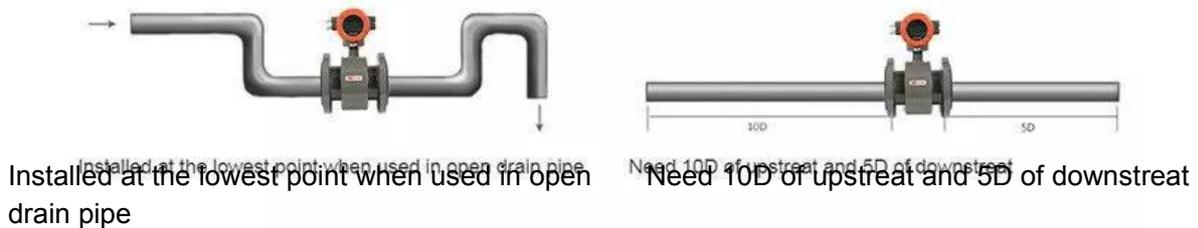
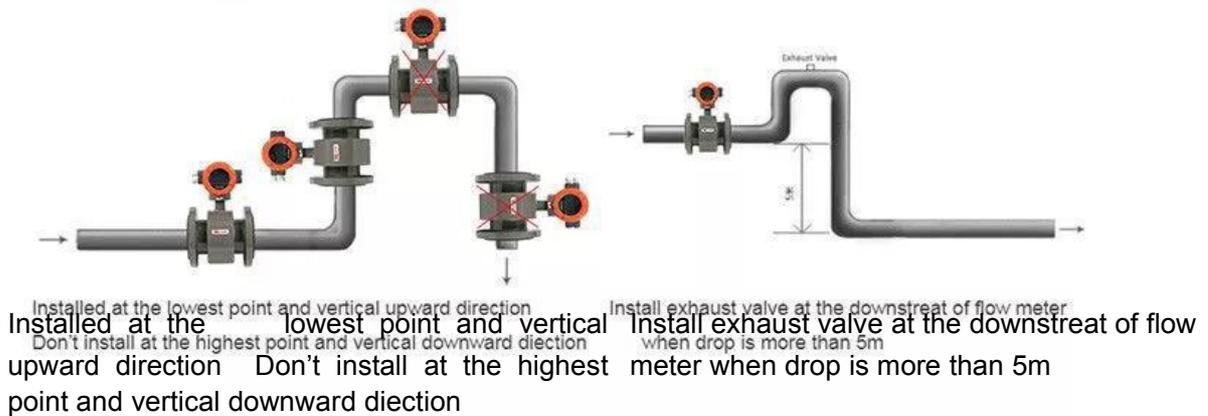
## Main properties of lining materials

Lining material	Main performance	Scope of application
<b>PTFE</b>	<ol style="list-style-type: none"> <li>1. A material with the most stable chemical properties in plastics, which is resistant to boiling hydrochloric acid, sulfuric acid, and aqua regia, as well as concentrated alkali and various organic solvents, and is not resistant to oxygen trifluoride, high flow rate liquid oxygen, liquid oxygen, ozone corrosion.</li> <li>2. Poor wear resistance</li> </ol>	<p>Strong corrosive medium such as concentrated acid and alkali</p> <p>Temperature range: -40°C~+170°C</p>
<b>PFA</b>	Corrosion resistance is the same as PTFE, strong resistance to negative pressure	Can be used in negative pressure, Temperature range: -40°C~+160°C
<b>F46</b>	<ol style="list-style-type: none"> <li>1. Corrosion resistance is the same as PTFE</li> <li>2. Can withstand low wear</li> <li>3. Strong ability to resist negative pressure</li> </ol>	Same as PTFE, can be used in low-abrasion media, Temperature range: -40°C~+160°C
<b>Neoprene</b>	<ol style="list-style-type: none"> <li>1. Excellent elasticity, high breaking force, and good wear resistance</li> <li>2. Resistant to the corrosion of general low-concentration acid, alkali and salt media, not resistant to the corrosion of oxidizing media</li> </ol>	<p>Water, sewage, weakly abrasive mud, ore slurry</p> <p>Temperature range: -20°C~+60°C</p>
<b>Polyurethane rubber</b>	<ol style="list-style-type: none"> <li>1. Has excellent wear resistance (equivalent to 10 times the natural rubber)</li> <li>2. Poor acid and alkali resistance</li> <li>3. Cannot be used in water mixed with organic solvents</li> </ol>	<p>Neutral and strong abrasive slurry, coal slurry, mud, etc.</p> <p>Temperature range: -20°C~+60°C</p>

Tip: The temperature here refers to the temperature resistance characteristics of the lining material, not the temperature resistance standard of the HBLD series electromagnetic flow meter. The specific temperature resistance depends on the environment, please consult our professional marketing consultants.

### Attentions for the Sensor Installation:

- If the signal cable connected by split installation uses a customized dedicated cable, the shorter the cable, the better.
- The excitation cable can choose Yz medium-sized rubber sheathed cable, and its length is the same as the signal cable.
- Signal cables must be strictly separated from other power sources and cannot be laid in the same pipe.
- The signal cable and the excitation cable should be as short as possible, and the excess cables should not be rolled together. The excess cables should be cut off, and
- Re-solder the joints.
- When the cable mediates the sensor electrical interface, it is made into a U-shape at the port, which can prevent rainwater from penetrating into the sensor.



## Precautions for installation of plug-in electromagnetic flow meter

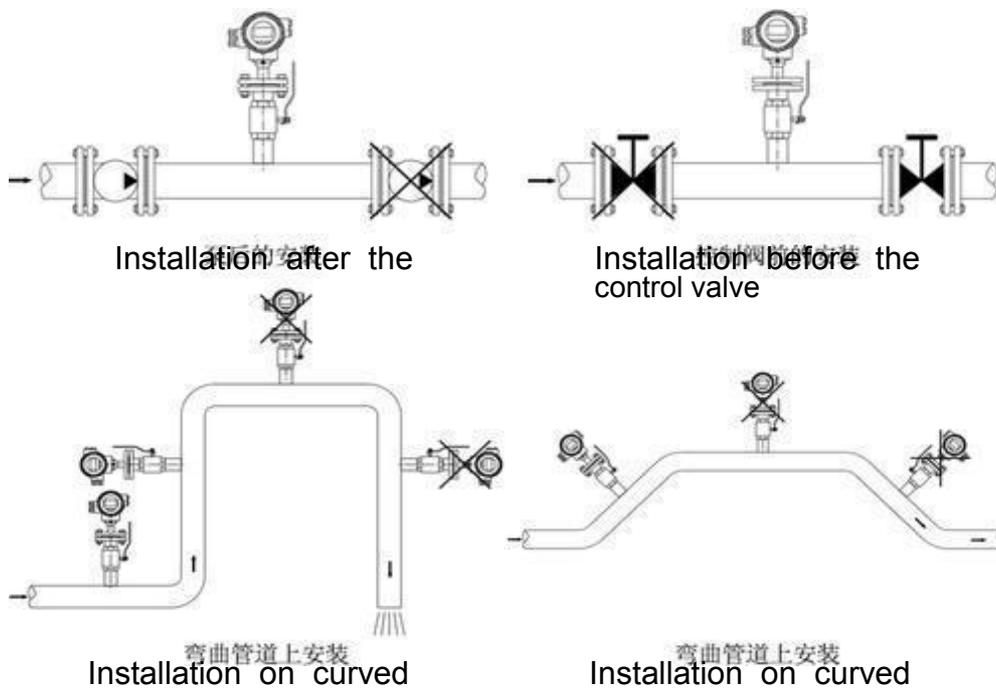
1. The plug-in electromagnetic flow meter should be as far away as possible from equipment with strong electromagnetic fields;
2. There should be no strong vibration at the installation site, the pipes are firmly fixed, and the ambient temperature does not change much;
3. The installation location must ensure that the pipeline is always filled with the measured fluid. The length of the upstream straight pipe section of the sensor installation pipeline is greater than  $8D$ , and the length of the downstream straight pipe section is not less than  $5D$ ;
4. Clean the welding slag and burrs of the installation base of the tested pipeline;
5. Install the DN80 ball valve on the base, pay attention to the long cavity of the ball valve upwards, check that the ball valve switch is normal; install the compression screw seat kit on the ball valve, loosen the positioning screw and compression nut, insert the sensor insertion rod through the ball valve into the pipeline under test. The insertion depth of the sensor is 3mm beyond the base. After meeting the requirements, tighten the positioning screw and compression nut. At the same time, note that the sensor direction sign is consistent with the fluid flow direction.
6. The opening of the tested pipe is larger than the base pipe, and the depth of the opening of the base pipe inserted into the tested pipe is that the welding joints on both sides are flat
7. Plug-in electromagnetic flow meter adopts stainless steel electrode flat welding, after welding, ensure that the flange surface is parallel to the pipe axis
8. Connect the power supply and other connections with the converter mark according to the instructions of the plug-in electromagnetic flow meter. After power-on, check the meter display to confirm that the measured tube is full of fluid and the flow rate is zero. Check the meter display should be zero
9. After the fluid in the measured tube is flowing and stable, check the meter display, then turn the sensor direction to maximize the displayed value, and lock the positioning screw and compression nut
10. For occasions where the flow range is large and the fluid velocity is lower than the minimum flow rate required by the flow meter for a long time, it should be considered to reduce the

process pipeline or use two large and small flow meters installed in parallel

11. Plug-in electromagnetic flow meters should be installed on vertical process pipes just like ordinary electromagnetic flow meters. Covering can prevent suspended solids from settling on the electrodes, and at the same time make the oil in the fluid rise outside the measurement range of the electrodes. When installing on the horizontal process pipeline, the electrode of the sensor should be on the horizontal axis to avoid the interference of the electrode due to the air bubble, resulting in measurement errors

12. Vertical installation, when the sensor is inserted into the pipeline, the angle between the vertical diameter of the pipeline section and the pipeline should be less than  $5^\circ$ , which is suitable for measuring the cleaning medium with small pipeline vibration

13. It is installed obliquely. The angle between the axis of the sensor and the axis of the pipeline to be measured is  $45^\circ$ . It is suitable for the measurement of liquid flow with a large pipe diameter and the measurement medium contains other impurities. This installation method has small water resistance and is not suitable for tangling.



## Flow range table

Flow rate table							
m3/h / m/s mm	0.5	1	2	3	4	5	15(maximum)
10	0.14	0.28	0.27	0.85	1.13	1.41	4.24
15	0.32	0.64	1.27	1.91	2.54	3.18	9.54
20	0.57	1.13	2.26	3.39	4.52	5.65	16.96
25	0.88	1.77	3.53	5.30	7.07	8.84	26.51
32	1.45	2.90	5.79	8.69	11.58	14.48	43.43
40	2.26	4.52	9.05	13.57	18.10	22.62	67.86
50	3.53	7.07	14.14	21.21	28.27	35.34	106.03
65	5.97	11.95	23.89	35.84	47.78	59.73	179.19
80	9.05	18.10	36.19	54.29	72.38	90.48	271.43
100	14.14	28.27	56.55	84.82	113.10	141.37	424.12
125	22.09	44.18	88.36	132.54	176.71	220.89	662.68
150	31.09	63.62	127.23	190.85	254.47	318.09	954.26
200	56.55	113.10	226.19	339.29	452.39	565.49	1696.46
250	88.36	176.71	363.43	530.14	706.86	883.57	2650.72
300	127.23	254.47	508.94	763.41	1017.88	1272.35	3817.04
350	173.18	346.36	692.72	1039.08	1385.44	1731.80	5195.41
400	226.19	452.39	904.78	1357.17	1809.56	2261.96	6785.84
450	286.28	572.56	1145.11	1717.67	2290.22	2862.78	8588.33
500	353.43	706.86	1413.72	2120.58	2827.43	3534.29	10602.88
600	508.94	1017.88	2035.75	3053.63	4071.50	5089.38	15268.14
700	692.72	1385.44	2770.88	4156.33	5541.77	6927.21	20781.64
800	904.78	1809.56	3619.11	5428.67	7238.23	9047.79	27143.36
900	1145.11	2290.22	4580.44	6870.66	9160.88	11451.11	34353.32
1000	1413.72	2827.43	5654.87	8482.30	11309.73	14137.13	42411.50
1200	2035.75	4071.50	8143.01	12214.51	16286.02	20357.52	61072.56
1400	2770.88	5541.77	11083.54	16625.31	22167.08	27708.85	83126.54
1600	3617.11	7238.23	14476.46	21714.69	28952.92	36191.15	108573.44
1800	4580.44	9160.88	18321.77	27482.65	36643.54	45804.42	137413.26
2000	5654.87	11309.73	22619.47	33929.20	45238.93	56548.67	169646.00
2200	6842.39	13684.78	27369.56	41054.33	54739.11	68423.89	205217.66
2400	8143.01	16286.02	32572.03	48858.05	65144.07	81430.08	244290.24
2600	9556.72	19113.43	38226.85	57340.71	76453.71	95567.13	206701.40
2800	11083.54	22167.90	44334.15	66501.23	88668.31	110835.39	332506.16
3000	12723.45	25446.90	50893.80	76340.70	101787.60	127234.50	381703.50

## Product Exhibition

### Technical parameter



Integrated electromagnetic Flow meter

Applicable medium	Various conductive liquids;
Caliber range	DN3-DN3000 (DN3\DN4 is flange clamping type)
Lining type	Polychloroprene rubber, PTFE, F46, PFA, silicon fluoride, polyurethane rubber;
Electrode type	316L, Ha B, Ha C, titanium, tantalum, platinum-iridium alloy, stainless steel tungsten carbide
Pressure range	0.6~42Mpa; (high pressure needs to be customized)
Temperature resistance	-25~80℃;
Accuracy	±0.5%, can be customized ±0.3%, ±0.2%;
Protection level	Sensor IP65\IP67\IP68 (optional), converter IP65
Output type	Frequency, pulse, 4-20mA, RS485, Modbus protocol; Hart protocol (optional), Profibus DP (optional):
Power supply	85~250V, 45~63Hz, 20VDC --- 36VDC

### Technical parameter



Split electromagnetic Flow meter

Applicable medium	Various conductive liquids;
Caliber range	DN3-DN3000
Lining type	Polychloroprene rubber, PTFE, F46, PFA, silicon fluoride, polyurethane rubber;
Electrode type	316L, Ha B, Ha C, titanium, tantalum, platinum-iridium alloy, stainless steel tungsten carbide
Pressure range	0.6~42Mpa; (high pressure needs to be customized)
Temperature resistance	-25~80℃;
Accuracy	±0.5%, can be customized ±0.3%, ±0.2%;
Protection level	Sensor IP65\IP67\IP68 (optional), converter IP65
Output type	frequency, pulse, 4-20mA, RS485, Modbus protocol; Hart protocol (optional), Profibus DP (optional)
Power supply	85~250V, 45~63Hz, 20VDC --- 36VDC

**Technical parameter**



Electromagnetic cold heat meter

Applicable medium	Heat metering in residential districts, office buildings, enterprises and institutions, central heating, heating and air conditioning;
Caliber range	DN10-DN3000
Lining type	Polychloroprene rubber, PTFE, F46, PFA, silicon fluoride, polyurethane rubber;
Electrode type	316L, Ha B, Ha C, titanium, tantalum, platinum-iridium alloy, stainless steel tungsten carbide
Pressure range	0.6-10Mpa;
Temperature resistance	-25~80℃;
Accuracy	±0.5%
Protection level	Sensor IP65\IP67\IP68 (optional), converter IP65
Output type	Frequency, pulse, 4-20mA, RS485, Modbus protocol; Hart protocol (optional), Profibus DP (optional);
Power supply	85~250V, 45~63Hz, 20VDC --- 36VDC

**Technical parameter**



Integrated electromagnetic flow meter

Applicable medium	Conductive liquid
Caliber range	DN6-DN100
Lining type	PTFE, F46, PFA;
Electrode type	316L, Ha B, Ha C, titanium, tantalum, platinum-iridium alloy, stainless steel tungsten carbide
Pressure range	0.6-4.0Mpa;
Temperature resistance	-25~80℃;
Accuracy	±0.5%
Protection level	Sensor IP65\IP67\IP68 (optional), converter IP65
Output type	Frequency, pulse, 4-20mA, RS485, Modbus protocol; Hart protocol (optional), Profibus DP (optional)
Power supply	85~250V, 45~63Hz, 20VDC --- 36VDC

**Technical parameter**



Electromagnetic Flow meter  
(measure pressure)

Applicable medium	When measuring pressure when measuring flow;
Caliber range	DN10-DN600
Lining type	Ppolychloroprene rubber, PTFE, F46, PFA, silicon fluoride, polyurethane rubber;
Electrode type	316L, Ha B, Ha C, titanium, tantalum, platinum-iridium alloy, stainless steel tungsten carbide
Pressure range	0.6-10Mpa; (high pressure needs to be customized)
Temperature resistance	-25~80℃;
Accuracy	±0.5%
Protection level	Sensor IP65\IP67\IP68 (optional), converter IP65
Output type	Frequency, pulse, 4-20mA, RS485, Modbus protocol; Hart protocol (optional), Profibus DP (optional)
Power supply	85~250V, 45~63Hz, 20VDC --- 36VDC

**Technical parameter**

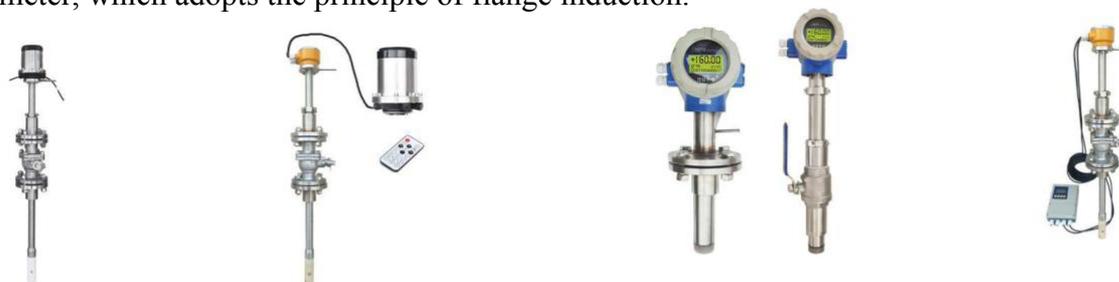


Applicable medium	Food and wine industry
Caliber range	DN15-DN200
Lining type	PTFE, F46, PFA;
Electrode type	316L, Ha B, Ha C, titanium, tantalum, platinum-iridium alloy, stainless steel tungsten carbide
Pressure range	0.6-4.0Mpa;
Temperature resistance	-25~80℃;
Accuracy	±0.5%
Protection level	Sensor IP65\IP67\IP68 (optional), converter IP65

Clamp electromagnetic Flow meter	Output type	Frequency, pulse, 4-20mA, RS485, Modbus protocol; Hart protocol (optional), Profibus DP (optional)
	Power supply	85~250V, 45~63Hz, 20VDC --- 36VDC

## Insert type electromagnetic flow meter

HBLD/C Insert type electromagnetic flow meter is a new flow meter developed on the basis of pipeline electromagnetic flow meter. It retains the advantages of pipeline electromagnetic flow meter, and it is difficult to install pipeline electromagnetic flow meter for pipeline. Defects such as large cost, according to the Nikurads (NIKURADS) principle, the average flow velocity of the fluid is measured by the electromagnetic method to obtain the volume flow of the fluid. In particular, after adopting pressure opening and pressure installation technology, the Insert type electromagnetic flow meter can be installed without water, and can also be installed on cast iron pipes and cement pipes. The successful development of the Insert type electromagnetic flow meter provides a new method for the detection of fluid flow. Its working principle is the same as that of electromagnetic flow meter, which adopts the principle of flange induction.



Applicable scene	Closed pipeline
Caliber range	DN100-DN3000
Lining type	ABS, PTFE;
Electrode type	316L, Ha B, Ha C, titanium, tantalum, platinum-iridium alloy, stainless steel tungsten carbide
Pressure range	0.6-1.6Mpa;
Temperature resistance	-25~80℃;
Accuracy	±1.5%, ±2.0%, ±2.5%
Protection level	sensor IP65\IP67\IP68 (optional), converter IP65
Output type	frequency, pulse, 4-20mA, RS485, Modbus protocol; Hart protocol (optional), Profibus DP (optional)
Structure form	simple type, threaded ball valve type, flange ball valve type
Power supply	85~250V, 45~63Hz, 20VDC --- 36VDC, 3.6V battery power supply (DN100-1000)
Straight pipe section requirements	front 5DN, rear 3DN
Sensor material	304, 316 (optional)
Structure form	Integrated type, split type

## Electromagnetic water meter(Battery powered)

The HBLD electromagnetic water meter is powered by an internal battery. It is suitable for situations where the field grid cannot be reached and the grid is difficult to lay. It is especially suitable for the monitoring, calculation and settlement of the tap water supply system. The HBLD battery-powered electromagnetic flow meter converter uses an ultra-low power circuit technology to design an efficient and reliable excitation circuit and signal processing using multi-stage amplification and anti-interference processing to ensure that the converter has high reliability and stability and saves power supply costs. At the same time to achieve accurate measurement.

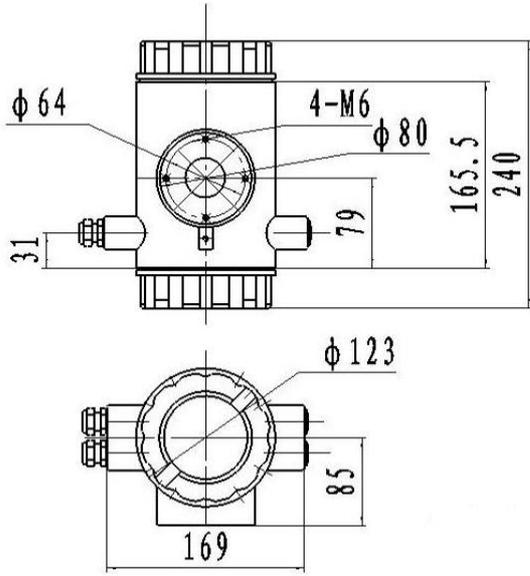
The HBLD electromagnetic water meter has GPRS and CDMA wireless data transmission functions; it has RS485modbus protocol (external power supply or battery power supply) communication function to realize remote data collection and management. It adopts stainless steel case and infrared remote control to achieve IP68 sealing protection design, and can be used in wet places such as underground.



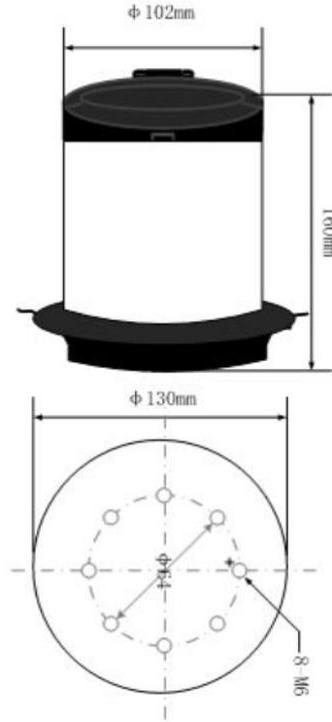
### Technical parameter

Applicable scenarios	areas that cannot be reached by the field grid, suitable for tap water supply systems
Caliber range	DN3-DN300
Lining type	Neoprene, PTFE
Lining type	316L, Ha B, Ha C, titanium, tantalum, platinum-iridium alloy, stainless steel tungsten carbide
Pressure range	0.6-4.0Mpa
Temperature resistance	-25~80°C
Accuracy	±0.5%1.5%
Protection level	IP68
Output type	pulse (for supporting external power supply), 4-20mA (only supporting external power supply), RS485 interface, GPRS wireless remote transmission (full Netcom SIM card),SD Card
Power supply	3.6V battery power supply
Sensor material	carbon steel, 304 (customized), 316 (customized)
Structure form	Integrated type, split type
Special functions can be selected	dual power supply\cold heat\pressure

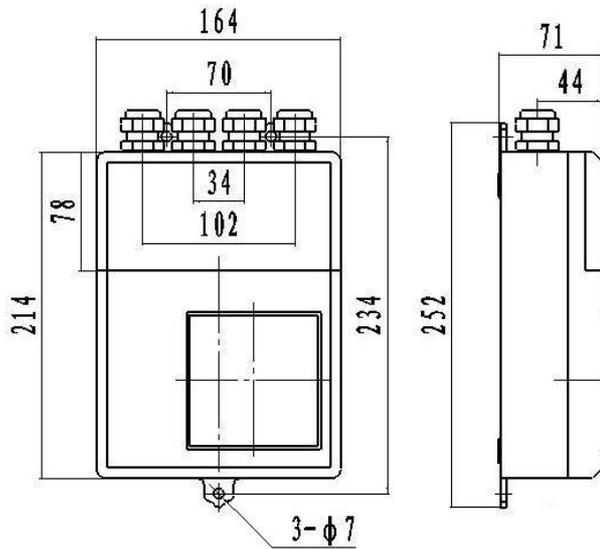
## Electromagnetic flow meter converter size



Integrated electromagnetic flow converter

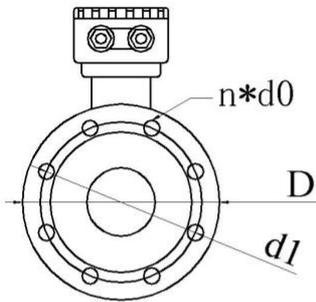
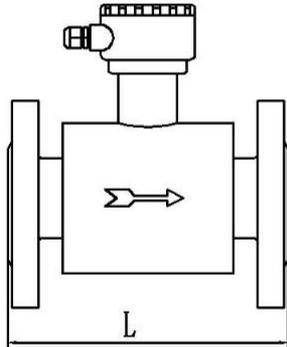


Battery-powered electromagnetic flow converter



Split electromagnetic flow converter

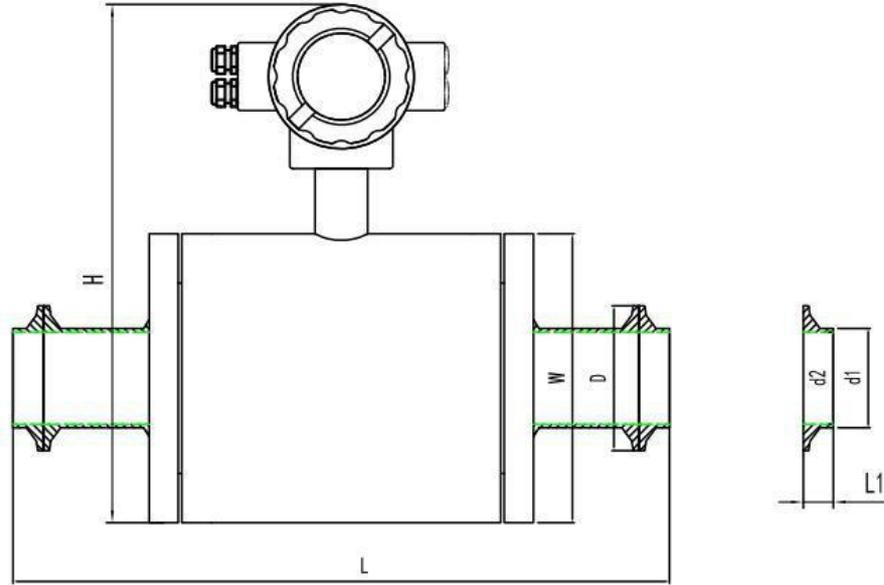
### Electromagnetic flow meter sensor dimension drawing



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	500	460	16*23
400	490	500	565	515	16*26
450	540	550	615	565	20*26
500	540	550	670	620	20*26
600	590	600	755	705	20*25
700	690	700	860	810	24*25
800	790	800	975	920	24*30
900	890	900	1075	1020	24*30
1000	990	1000	1175	1120	28*30
1200	1190	1200	1400	1340	32*34
1400	1390	1400	1620	1560	36*34
1600	1590	1600	1820	1760	40*34
1800	1790	1800	2046	1970	44*41
2000	1990	2000	2265	2180	48*48
2200	2190	2200	2475	2390	52*48

(1) Instrument size error  $\pm 2\text{mm}$  (2) The rated flange pressure of this table DN10-DN300: 1.6MPa  
 DN350-DN500: 1.0MPa ,DN600-DN2200: 0.6MPa (3) Other flange standards are customized.

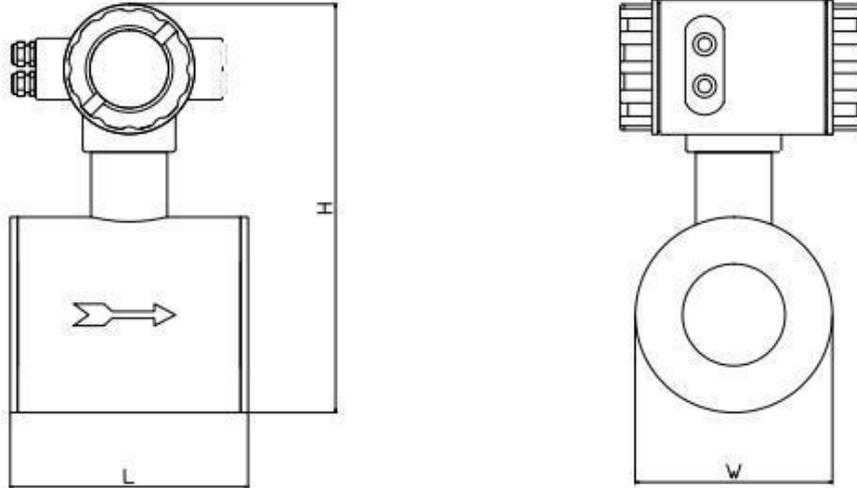
## Clamp Connection Sensor Size



Nominal diameter (DN)	15	20	25	32	40	50	65	80	100	125
L ( mm )	267	267	267	267	267	267	287	287	287	287
H ( mm )	320	330	330	340	345	345	360	380	400	430
W ( mm )	105	115	115	125	130	130	145	165	185	215
D ( mm )	50.5	50.5	50.5	50.5	64	77.5	91	106	119	145
d1 ( mm )	19.05	25.4	34.8	34	45	57	70	85	108	133
d2 ( mm )	16.05	22.4	28.8	31	42	53	66	81	104	128
L1 ( mm )	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5

The lining material of this connection type can be selected: PTFE/F46/PFA

### Clamping sensor size



Nominal diameter (mm)		3	4	6	8	10	15	20	25
Dimensions (mm)	H	318	318	318	318	318	318	318	318
	W	88	88	88	88	88	88	88	88
	L	115	115	115	115	115	115	115	115

Nominal diameter (mm)		40	50	65	80	100	125	150	200
Dimensions (mm)	H	318	332	350	368	388	418	442	495
	W	88	102	120	138	158	188	212	265
	L	115	115	135	135	135	135	175	195

## HBLD pipeline electromagnetic flow meter selection code

Electromagnetic flowmeter type					
Pipeline electromagnetic flowmeter		HBLD			
Electromagnetic cold heat meter		HBLD/R			
Sanitary electromagnetic flowmeter		HBLD/S			
Nominal diameter		See Caliber code table			
Coding	Caliber	Coding	Caliber	Coding	Caliber
030	3	125	125	901	900
060	6	150	150	102	1000
100	10	201	200	122	1200
150	15	251	250	142	1400
200	20	301	300	162	1600
250	25	351	350	182	1800
320	32	401	400	202	2000
400	40	451	450	222	2200
500	50	501	500	242	2400
650	65	601	600	262	2600
800	80	701	700	282	2800
101	100	801	800	302	3000
Nominal pressure	0.6MPa			06	
	1.0MPa			10	
	1.6MPa			16	
	Other pressures are compiled as above			X	
Lining material	Neoprene			1	
	PTFE			2	
	F46			3	
	PFA			4	
	Polyurethane rubber			5	
	Silicone rubber			6	
	ceramics			7	
Electrode material	Molybdenum-containing stainless steel			1	
	Hastelloy B			2	
	Hastelloy C			3	
	titanium			4	
	Tantalum			5	
	Platinum-iridium alloy			6	
	Stainless steel coated with tungsten carbide			7	
	Monel			8	
Connection method	Flange connection			A	
	Clamping type			B	
	Clamp connection			C	
	Threaded connection			D	

Body material	Standard	1
	304SS	2
	316L	3
Housing protection	IP65	1
	IP67	2
	IP68(Sensor IP68, sensor IP65)	3
Explosion-proof mark	None	1
	Exd ia[ia Ga] q IIC T6 Gb	2
Annex	None	0
	Matching flanges and fasteners	1
	Ground ring	2
	Ground electrode	3
Electrode form	Fixed	A
	Scraper	B
Structure	Integrated	EH
	Split type	ER
Power	85-265V AC 45-400Hz	1
	11-40V DC	2
	3.6V battery power supply	3
	Solar power supply	4
output type	Frequency, pulse/4-20mA, process control type	MG
	Frequency, pulse/4-20mA/RS485, Modbus protocol	MA
	Frequency, pulse/4-20mA/HART protocol	MB
	Frequency, pulse/4-20mA/RS485, HART protocol	MC
	Frequency, pulse/4-20mA/RS485, Profibus DP	MD
	Frequency, pulse/4-20mA, RS232	ME
	GPRS wireless communication	MF

Selection example:

Pipeline electromagnetic flowmeter, DN50, 1.6, MPA, PTFE lining, 316L  
Electrode, 220V power supply, 4-20MA, RS485, on-site display integrated  
HBLD5001621A110AEH1MA

Hygienic electromagnetic flowmeter, DN50, 1.6MPa, PTFE lining, 316L electric  
Pole, 220V power supply, 4-20MA, RS485, integrated on-site display,  
304 material, clamp connection  
HBLD/S5001621C2110AEH1MA"

The electromagnetic flowmeter has more special functions, and the respective functions and codes are added after the selection code:

1. Power-off timer function	<b>DD</b>	5. Slurry type	<b>JY</b>
2. Batch control function	<b>PL</b>	6. Pressure display type	<b>YL</b>
3. Dual current output	<b>SD</b>	7. Dual power supply	<b>SG</b>
4. Process-controlled	<b>GC</b>		

## Insertion electromagnetic flow meter Selection code

### HBLD/C-

Nominal diameter See path code table		
Nominal pressure	0.6MPa	06
	1.0MPa	10
	1.6MPa	16
	Other pressures are compiled as above	
Lining material	ABS	1
	PTFE	2
	F46	3
	PFA	4
Electrode material	Molybdenum-containing stainless steel	1
	Hastelloy B	2
	Hastelloy C	3
	titanium	4
	Tantalum	5
	Platinum-iridium alloy	6
Connection method	Simple flange ball valve	A
	Screw ball valve	B
	Flange ball valve	C
Body material	304SS	1
	316L	2

Ousing protection	IP65	1
	IP67 (sensor IP67, sensor IP65)	2
	IP68 (sensor IP68, sensor IP65)	3
Explosion-proof mark	None	1
	Exd ia[ja Ga] q IIC T6 Gb	2
Annex	None	0
	Install the base	01
Structure	Integrated	EH
	Split type	ER
Power	85-265V AC 45-400Hz	1
	11-40V DC	2
	3.6V battery power supply	3
Output type	Frequency, pulse/4-20mA, process control type	MG
	Frequency, pulse/4-20mA/RS485, Modbus protocol	MA
	Frequency, pulse/4-20mA/HART protocol	MB
	Frequency, pulse/4-20mA/RS485, HART protocol	MC
	Frequency, pulse/4-20mA/RS485, Profibus DP	MD
	Frequency, pulse/4-20mA, RS232	ME
GPRS wireless communication		MF

Selection examples:

Insert electromagnetic flowmeter

DN200, 1.6, MPA, PTFE

Lining, 316L electrode, 220V power supply, 4-20MA, RS485, threaded ball valve connection, integrated type

HBLD/C2011611B1101MA

Caliber code table					
Coding	Caliber	Coding	Caliber	Coding	Caliber
030	3	125	125	901	900
060	6	150	150	102	1000
100	10	201	200	122	1200
150	15	251	250	142	1400
200	20	301	300	162	1600
250	25	351	350	182	1800
320	32	401	400	202	2000
400	40	451	450	222	2200
500	50	501	500	242	2400
650	65	601	600	262	2600
800	80	701	700	282	2800
101	100	801	800	302	3000



*Survive by quality, seek development by integrity*

**Kaifeng Huabang Instrument Co., Ltd.**

KAIFENG HUABANG INSTRUMENT CO.,LTD

Factory Address: North Shanghe Road ,Kaifeng City, Henan, China

Phone: 86-0371-26680208 /+86-13323654627 (WhatsApp)

Sales executive: Mr. Jason Wang

Sales service email: sales003@hbmeter.cc

Website: www.hbmeter.cc