Sensor Co.,LTD

# PRODUCT OVERVIEW

# FLOW MEASUREMENT

MAC Sensor Co.,LTD.
Changsha City,Hunan,China
http://www.macsensor.com
TEL: +86-731-89975636 / 89975645

# LD Electromagnetic Flow Meter

## PROFILE

LD electromagnetic flowmeter can be used to measure the volume flow of conductive fluid in a closed pipeline. It is widely applied in the flow measurement and control in the fields of chemical and petroleum industry, metallurgy industry, water and waste water, agriculture and irrigation, paper making, food and beverage industry and pharmaceutical industry

## FEATURES

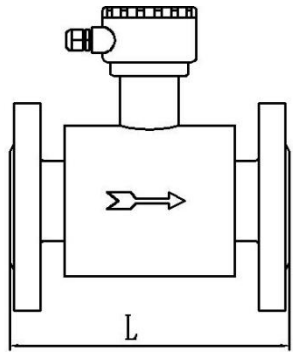
● Measurement not affected by the variation of flow density, viscosity, temperature, pressure and conductivity. High accuracy measurement is guaranteed according to the linear measurement principle.
● No obstacle in the pipe, no pressure-loss and lower requirement for straight pipeline.
● DN 6 to DN2000 covers a wide range of pipe size. A variety of liners and electrodes are available to satisfy different flow characteristic.
● High definition LCD display with backlight.
● RS485 or RS232 interface supports digital communication.
● Not only for general processes, but also for the measurement of ore pulp, mud, coal slurry, paper pulp and paste liquid
●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.
●High-pressure electromagnetic flow sensor with PFA lining technology, resistant to high pressure and negative pressure, especially suitable for petroleum, chemical and other industries.

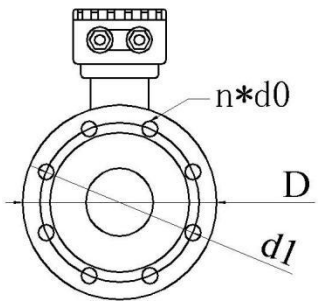
## TECHNCAL SPECIFICATION

| Parameter | LD | |
|---|---|---|
| DN size(mm) | 3, 6, 10, 15, 20, 25, 32, 40, 50, 65, 80, 100, 150, 200, 250, 300, 350, 400, 450, 500, 600, 700, 800, 900, 1000, 1200, 1400, 1600, 1800, 2000 | |
| Maximum flow speed | 15m/s | |
| Output signal | Analog output | Two-way, fully isolated 0-10mA/4-20mA<br>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 0.0001~1.0m³/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 |
| Power Supply | AC220V 50HZ/DC24V/DC12V/3.3V battery power supply | |
| Digital communication | Optional RS232C or RS485 serial communication interface, HART communication protocol | |
| Accuracy | 0.5% | |
| 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 | |
| IP rating | IP65 standard<br>IP68 by customized for the transmitter of the separated versions only | |

## DIMENSIONS

**Flange connection structure and installation 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 | 410 | 12*26 |
| 350 | 490 | 500 | 505 | 460 | 16*23 |
| 400 | 490 | 500 | 565 | 510 | 16*26 |
| 450 | 540 | 550 | 615 | 560 | 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 |

1. Instrument size error ± 2mm
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.

## Model Code Selection Table

| Product Code | Type | | | |
|---|---|---|---|---|
| LD | Integrated Electromagnetic Flow Meter | | | |
| LD-S | Split Electromagnetic Flow Meter | | | |
| LD300-P | Insertion Electromagnetic Flow Meter | | | |
| **Code No.** | **Nominal Diameter** | **LD** | **LD-S** | **LD300-P** |
| 6 | DN6mm | ☑ | ☑ | ☐ |
| 10 | DN10mm | ☑ | ☑ | ☐ |
| 15 | DN15mm | ☑ | ☑ | ☐ |
| 20 | DN20mm | ☑ | ☑ | ☐ |
| 25 | DN25mm | ☑ | ☑ | ☐ |
| 32 | DN32mm | ☑ | ☑ | ☐ |
| 40 | DN40mm | ☑ | ☑ | ☐ |
| 50 | DN50mm | ☑ | ☑ | ☐ |
| ... | … | ☑ | ☑ | ☐ |
| 100 | DN100mm | ☑ | ☑ | ☑ |
| 200 | DN200mm | ☑ | ☑ | ☑ |
| 250 | DN250mm | ☑ | ☑ | ☑ |
| 300 | DN300mm | ☑ | ☑ | ☑ |
| … | … | ☑ | ☑ | ☑ |
| 2000 | DN2000mm | ☑ | ☑ | ☑ |
| 3000 | DN3000mm | ☑ | ☑ | ☑ |
| **Code No.** | **Power Supply** | | | |
| A | 85V~265V AC | ☑ | ☑ | ☑ |
| D | DC 24V | ☑ | ☑ | ☑ |
| **Code No.** | **Nominal Pressure** | | | |
| Y1 | 0.6MPa | ☑ | ☑ | ☑ |
| Y2 | 1.0MPa | ☑ | ☑ | ☑ |
| Y3 | 1.6MPa | ☑ | ☑ | ☑ |
| Y4 | 2.5MPa | ☑ | ☑ | ☑ |
| Y5 | 4.0MPa | ☑ | ☑ | ☑ |
| Y7 | 16MPa(limited DN10-150) | ☑ | ☑ | ☐ |
| Y8 | 20MPa(limited DN10-50) | ☑ | ☑ | ☐ |
| Y9 | 25MPa(limited DN10-50) | ☑ | ☑ | ☐ |
| **Code No.** | **Communication Output** | | | |
| R | 0~10mA.DC | ☑ | ☑ | ☑ |
| M | 4~20mA.DC | ☑ | ☑ | ☑ |
| C | Pulse+4-20mA | ☑ | ☑ | ☑ |
| T | RS485 MODBUS RTU | ☑ | ☑ | ☑ |
| Q | RS-232C | ☑ | ☑ | ☑ |
| A | 4-20mA+RS485 MODBUS | ☑ | ☑ | ☑ |
| H | 4-20mA.DC HART protocol | ☑ | ☑ | ☑ |
| G | GPRS wireless communication | ☑ | ☐ | ☑ |

| Code No. | Lining Material | | | |
|---|---|---|---|---|
| X2 | Soft rubber | ☑ | ☑ | ☐ |
| X3 | Polychloroprene rubber | ☑ | ☑ | ☐ |
| X4 | Polyurethane rubber | ☑ | ☑ | ☐ |
| X5 | Teflon | ☑ | ☑ | ☐ |
| X6 | F46 poly perfluoro ethylene ally | ☑ | ☑ | ☑ |
| **Code No.** | **Electrode Material** | | | |
| B1 | Stainless steel containing molybdenum | ☑ | ☑ | ☑ |
| B2 | Hastelloy B alloy (HB) | ☑ | ☑ | ☑ |
| B3 | Hastelloy C alloy (HC) | ☑ | ☑ | ☑ |
| B4 | Titanium Ti | ☑ | ☑ | ☑ |
| B5 | Tantalum Ta | ☑ | ☑ | ☑ |
| B6 | Platinum Pt | ☑ | ☑ | ☑ |
| **Code No.** | **Housing material** | | | |
| F1 | Carbon steel | ☑ | ☑ | ☐ |
| F2 | Stainless steel | ☑ | ☑ | ☑ |
| F3 | Other materials | ☑ | ☑ | ☐ |
| **Code No.** | **IP Rating** | | | |
| P1 | IP65(standard) | ☑ | ☑ | ☑ |
| P2 | IP68(By customized) | ☐ | ☑ | ☐ |

**Selection code definition**

Model Code: LD50DY3MX5B1F1P1

| LD | 50 | D | Y3 | M | X5 | B1 | F1 | P1 |
|---|---|---|---|---|---|---|---|---|
| Type | Diameter | Supply | Pressure | Output | Lining | Electrode | Housing | IP |

Note: "☑" means the option is available, " ☐" mean not available.



HUNAN MACSENSOR COMPANY LIMITED
TEL: +86-731-89975645
FAX: +86-731-89975645
E-mail: info@macsensor.com
www.macsensor.com