



# Electromagnetic Flowmeter Datasheet

## ECC-LDG

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## Overview of Product

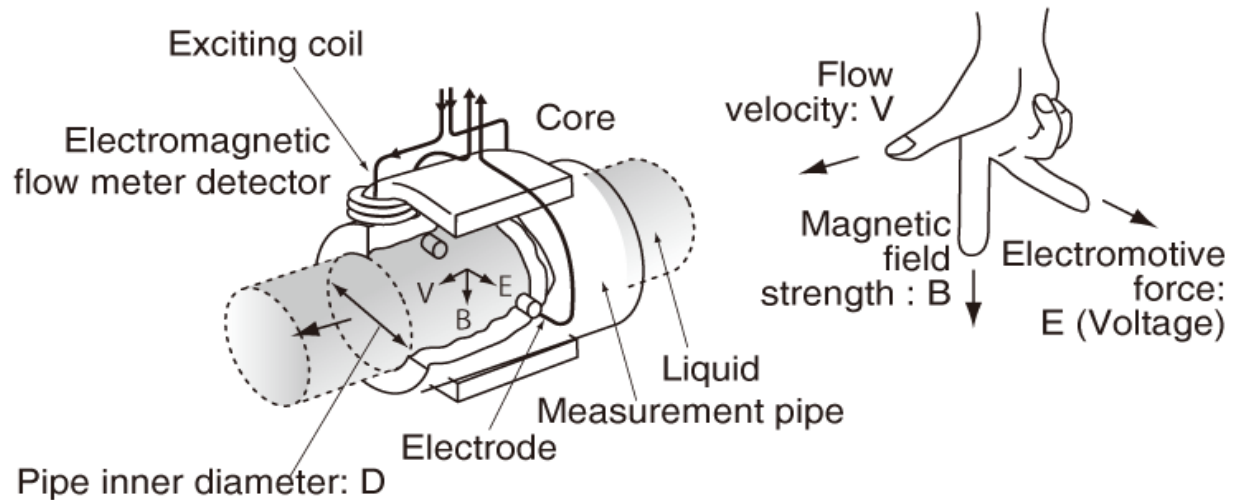
Electromagnetic flowmeters have been used throughout industries for more than 60 years carrying characteristics of obstruction-less, cost-effective and highly accurate volumetric flow measurement. A range of liner materials, electrode options and line sizes accommodate a wide variety of process applications including pulp and paper, metals and mining, water and wastewater, food and beverage, chemical and petrochemical.



## Features

- Measurement is not affected by the variation of flow density, viscosity, temperature, pressure and conductivity. Guarantee of high accuracy measurement according to the linear measurement principle.
- No obstacle and pressure-loss in the pipe, 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.
- Programmable low frequency square wave field excitation, improving measurement stability and reducing power consumption.
- Implementing 16 bits MCU, providing high integration and accuracy; full-digital processing, high noise resistance and reliable measurement; flow measurement range up to 1500:1.
- High definition LCD display with backlight.
- RS485 or RS232 interface supports digital communication.
- Intelligent empty pipe detection and electrodes resistance measurement diagnosing empty pipe and electrodes contamination accurately.
- SMD component and surface mount technology (SMT) are implemented to improve reliability.

## Working Principle



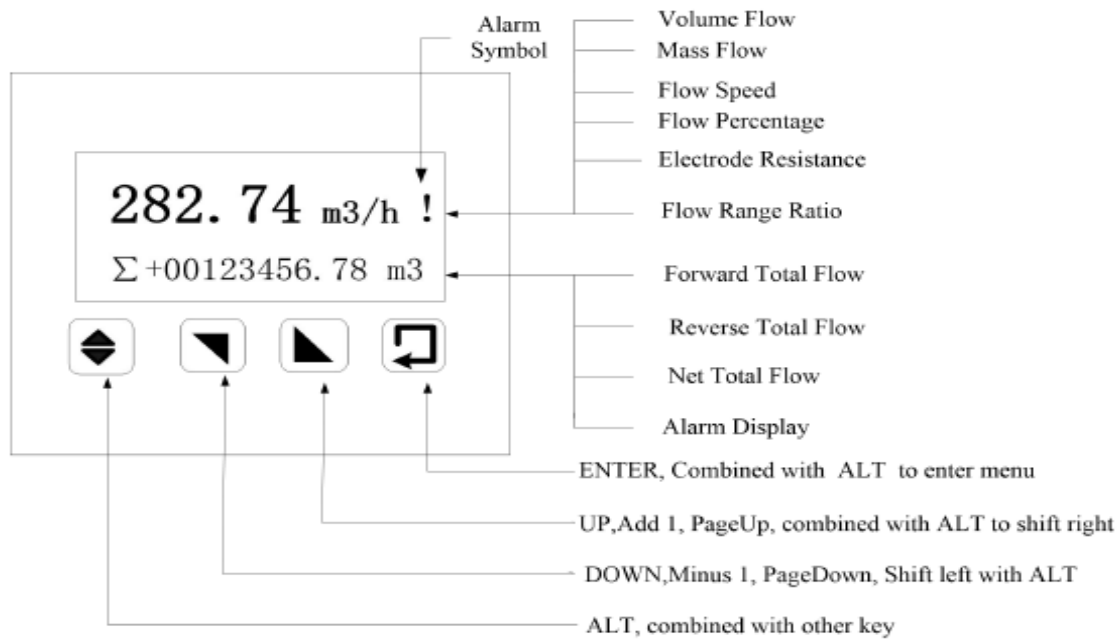
- The measuring principle of electromagnetic flowmeter is based on the electromagnetic induction law of Faraday.
- The sensor is mainly composed of measuring tube with isolated lining, a pair of electrodes installed by penetration of the measuring tube wall, a pair of coils and iron core to produce working magnetic field.
- When the conductive fluid flows through the measuring tube of the sensor, the voltage signal in direct proportion to the average flow velocity of the fluid will be induced on the electrodes.
- The signal is amplified and treated by the transmitter to realize various display functions.

## Technical Specifications

<b>Maximum Flow Speed</b>	15m/s
<b>DN Size</b>	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
<b>Accuracy</b>	0.5%, 0.2%
<b>Nominal Pressure</b>	4.0MPa(DN0-150) 1.6MPa(DN200-600) 1.0MPa(DN700-1200) 0.6MPa(DN400-2000) Or other specified by order
<b>Electrode Material</b>	Stainless steel containing Mo Stainless steel coated with carbonized tungsten, Hastelloy B Hastelloy C Titanium Tantalum Platinum-iridium alloy
<b>Flange Material</b>	Carbon steel
<b>Grounding Ring</b>	Stainless steel
<b>Inlet Protection Ring</b>	Carbon steel, Stainless steel
<b>Ambient Temperature</b>	Sensor: -25°C to + 60°C Converter: -25°C to + 60°C.
<b>Relative Humidity</b>	5% to 90%
<b>Maximum Fluid Temperature</b>	Compact type: 60°C Remote type: Teflon 150°C Neoprene 80°C; 120°C Polyurethane 70°C
<b>Fluid Conductivity</b>	≥ 5mS/cm

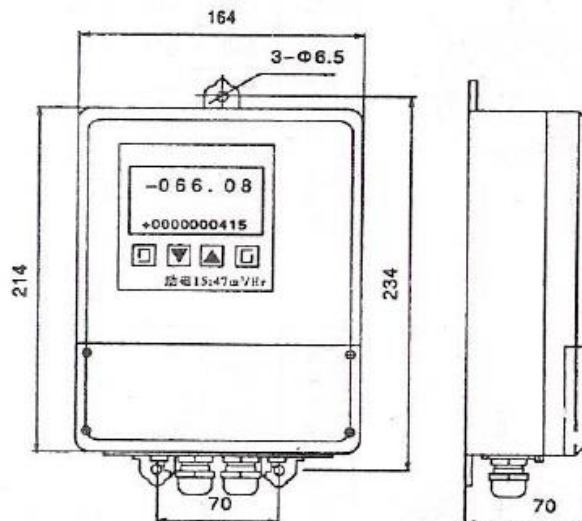
## Keypad and Display

- Remote-type key and Display



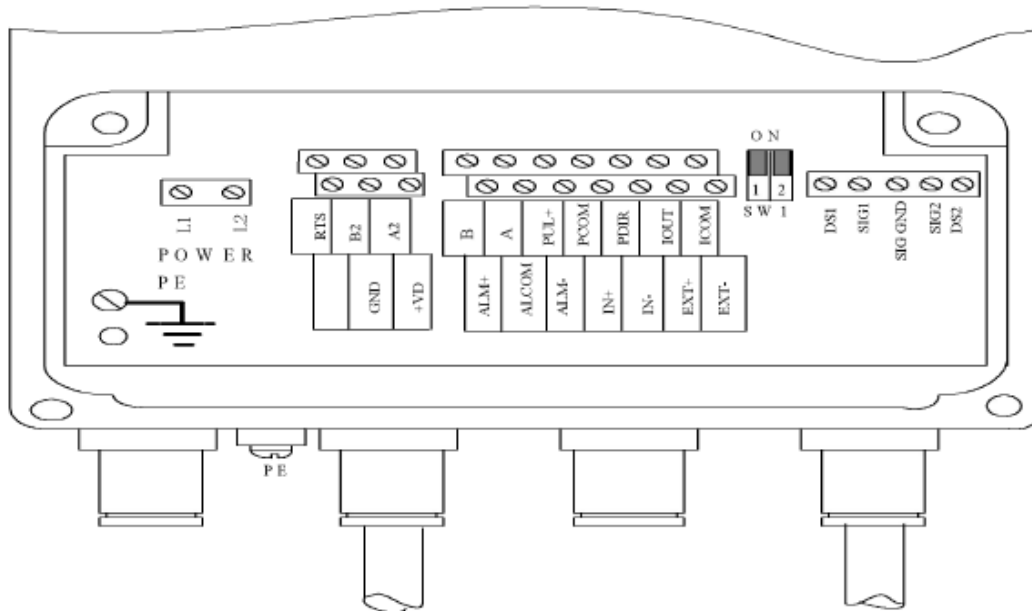
## Dimensions

- Remote-type Converter



## Remote-type Wiring

- Terminal Blocks and Marks



DS1	Shield drive 1
SIG1	Signal input 1
SIG GND	Signal Ground
SIG2	Signal input 2
DS2	Shield drive 2
EXT+	Coil excitation +
EXT-	Coil excitation -
IOUT	Current output +
ICOM	Current output -
PUL+	Frequency/pulse output +
PCOM	Frequency/pulse output -
PDIR	Flow direction indicator +
ALM-	Low alarm output +
ALM+	High alarm output +
ALCOM	Alarm output -
A	RS485 communication A
B	RS485 communication B
IN+	Input contact +
IN-	Input contact -
L1(+)	220V(24V +) input
L2(-)	220V(24V -) input

## Ordering Code

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converter	1													Integrated type	
	2													separated type	
		B													0.50%
lining			1												Neoprene (CR)
			2												Polyurethane Rubber (PU)
			3												Polytetrafluoroethylene (F4/PTFE)
			4												Teflon (F46/FEP)
			5												Copolymer (PFA)
Electrodes			1												316L stainless steel
			2												Titanium alloy
			3												Hastelloy B
			4												Hastelloy C
			5												Tantalum alloy
			6												Platinum iridium electrodes
			7												Tungsten carbide
shell			1												carbon steel
			2												304 stainless steel
			3												316L stainless steel

Pressure grade	P1	4.0MPa (DN10~150 )
	P2	1.6MPa (DN15~150)
	P3	1.0MPa (DN200~DN600)
temperature grade	T1	≤60°C(CR/PU)
	T2	≤120°C(PTEP/FEP)
power supply mode	E1	220VAC
	E2	24VDC
	E3	Lithium battery
	1	Pulse signal
	2	4-20mA
	3	RS-485
	4	HART
Protection grade	1	IP65
	2	IP68