



Electromagnetic flowmeter

Datasheet

SUP-LDG

Electromagnetic flowmeters have been used throughout industries for more than 60 years, They are often selected because they are obstructionless, cost-effective and provide 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. 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.
- *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 the reliability.

Working principles

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.

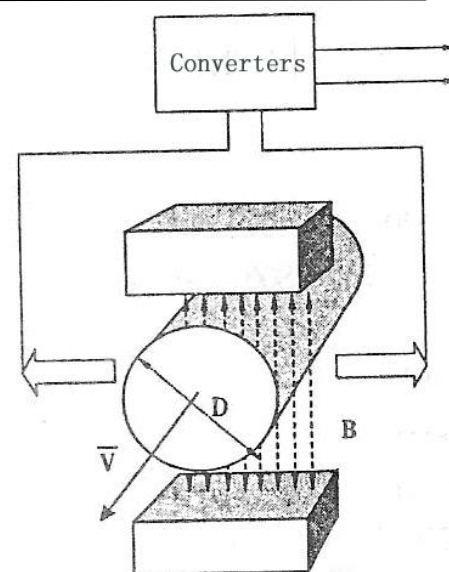
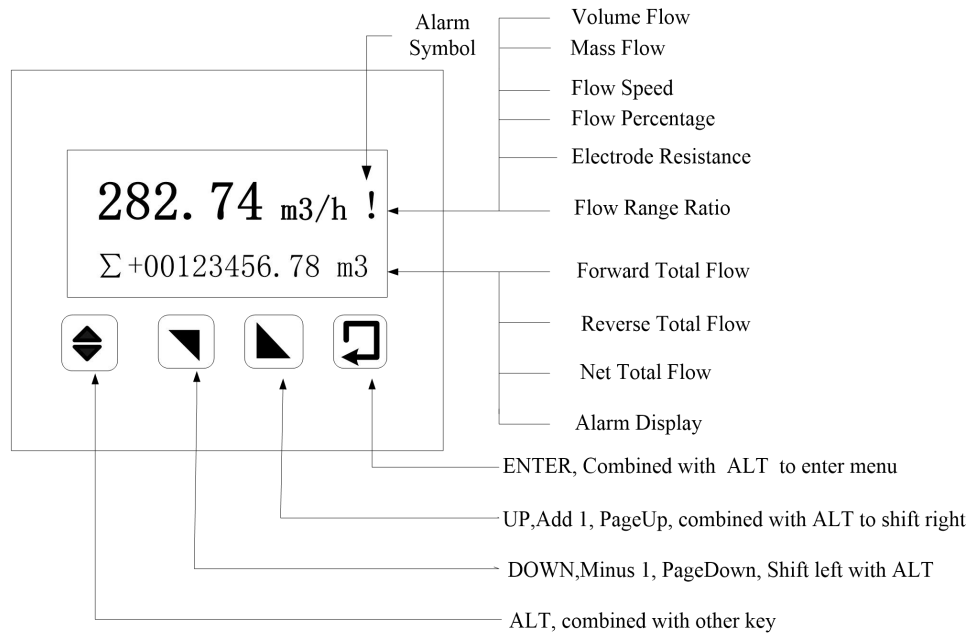


Figure one: Principle of Electromagnetic Flowmeter

Technical Specification

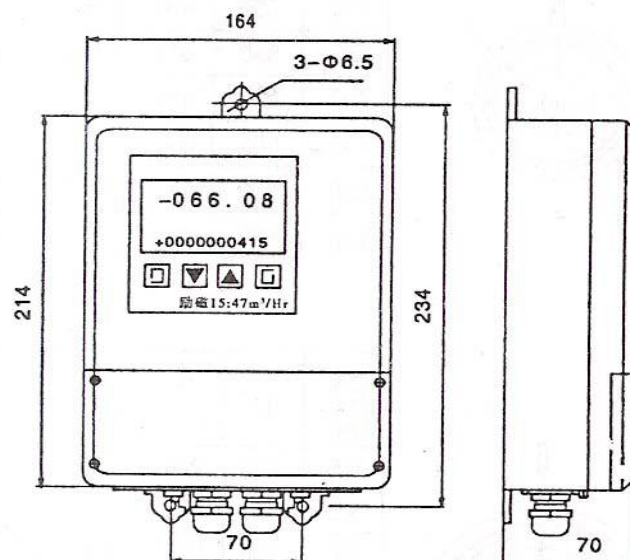
Maximum flow speed	15m/s
DN size	3, 6, 10, 15, 20, 25, 32, 40, 50, 65, 80, 100, 150, 200, 250, 300, 350, 400, 450, 500, 600, 700, 800, 900, 1000, 1200, 1400, 1600, 1800, 2000
Accuracy	0.5%, 0.2%
Nominal Pressure	4.0MPa(DN0-150) 1.6MPa(DN200-600) 1.0MPa(DN700-1200) 0.6MPa(DN400-2000) Or other specified by order
Electrode material	stainless steel containing Mo stainless steel coated with carbonized tungsten, Hastelloy B Hastelloy C Titanium Tantalum Platinum-iridium alloy.
Flange material	Carbon steel
Grounding ring	Stainless steel
Inlet protection ring	Carbon steel, stainless steel
Ambient temperature	sensor: -25°C to + 60°C; converter: -25°C to + 60°C.
Relative humidity	5% to 90%;
Maximum fluid temperature:	Compact type: 60°C Remote type: Teflon 150°C Neoprene 80°C; 120°C Polyurethane 70°C
Fluid conductivity	≥ 5mS/cmm

Keypad and Display



Remote-type key and display

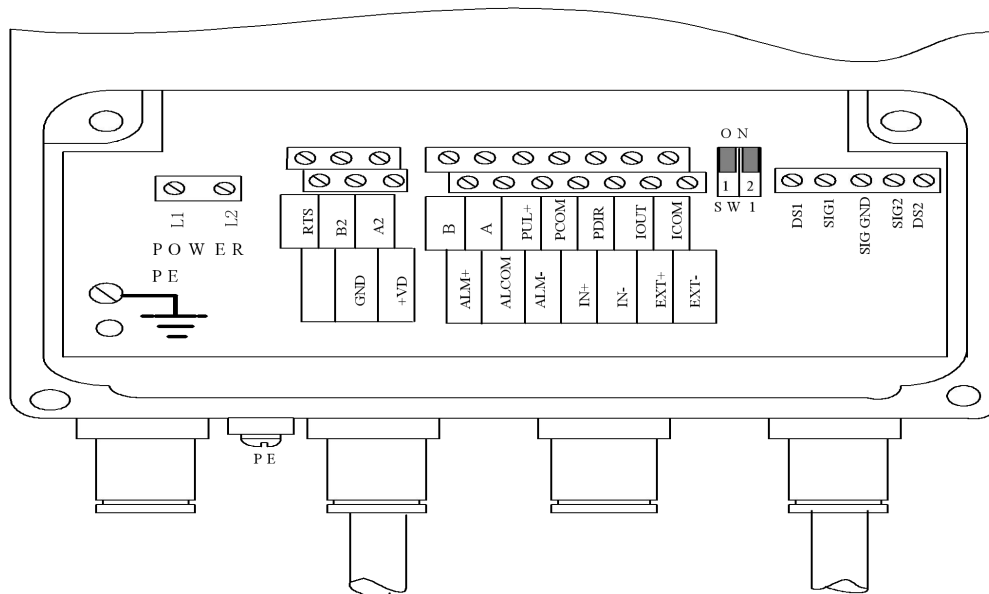
Dimension



Remote-type converter

Remote-type Wiring

1. Terminal blocks and marks



2. The definition of terminals and their marks for remote type converter is given as below:

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

LDG	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	explanation
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		
						1							IP65	
Protection grade					2							IP68		



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