Datasheet

Electromagnetic Flow Meter

LDG-SUP-A100

Supmea®

Committed to process automation solutions

Tel: 86-15868103947

E-mail: info@supmea.com

www.supmea.com

Datasheet

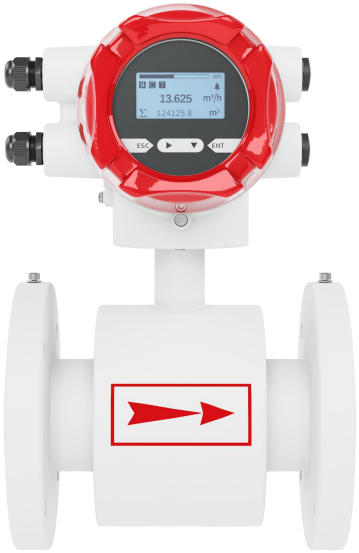
Electromagnetic Flow Meter
LDG-SUP-A100

The electromagnetic flowmeter is designed based on the Faraday electromagnetic induction principle and are used to directly measure the flow rate of conductive liquids in closed pipelines. During on-site monitoring and display, standard current signals, pulse signals, and RS485 digital signals can be output for recording, adjustment, and control, achieving automatic detection and control.

It can be widely used in industries such as tap water, chemical industry, coal, environmental protection, light textile, metallurgy, mining, etc.

Applications

- Sewage treatment
- HVAC industry
- Chemical industry
- Environmental protection
- Metallurgy
- Pharmaceutical
- Mining
- Tap water supply



Features

- 0.5%F.S measuring accuracy
- RS-485 modbus communication, 4-20mA output
- The grounding screws are available by default
- It can directly measure the flow rate of conductive liquids in closed pipelines.

Electromagnetic Flow Meter

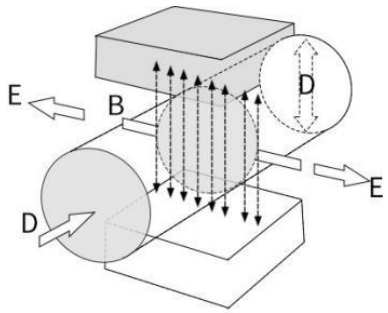
Principle

The measurement principle of magnetic flowmeters can be described as follows: when the liquid goes through the pipe at the flow rate of v with a diameter D, within which a magnetic flux density of B is created by an exciting coil, the following electromotive E is generated in proportion to flow speed v:

$$E=K\times B\times V\times D$$

Where:

E—Induced electromotive force
K—Meter constant
B—Magnetic induction density
V—Average flow speed in cross-section of measuring tube
D—Inner diameter of measuring tube

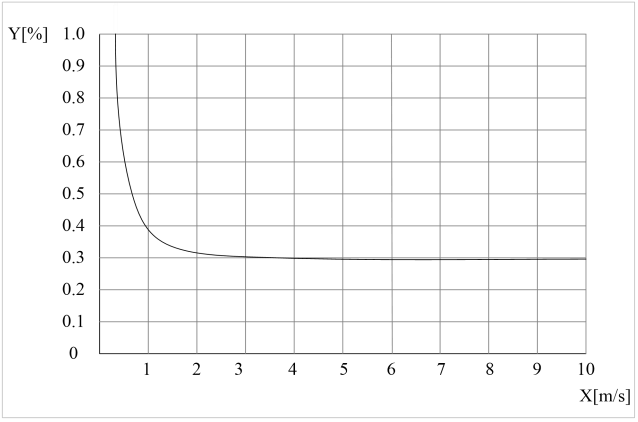


The induced voltage signal is detected by two electrodes and transmitted to the converter via a cable. After a series of analog and digital signal processing, the accumulated flow and real-time flow are displayed on the display of the converter.

Accuracy

Reference condition

(1) Medium: water
(2) Temperature: 20℃
(3) Pressure: 0.1MPa
(4) Stallation requirements: Inlet run≥10DN, Outlet run≥5DN



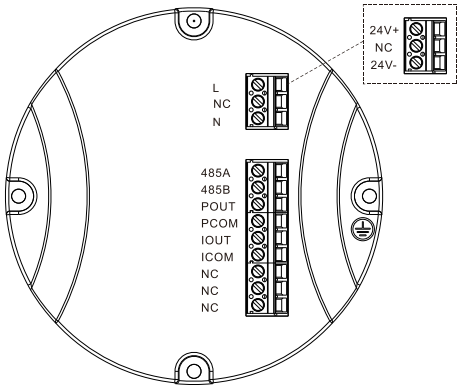
①X[m/s]：Velocity of flow

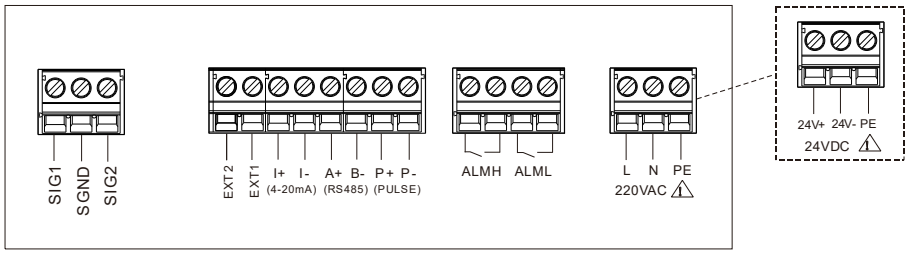
②Y[%]：Actual measured value deviation

Parameters		
Measured variable	Direct measured variables ： Flow velocity Calculated measured variables ： Volume flow , mass flow	
Velocity of flow	Typically Velocity of flow：0.5m/s~5m/s	
Nominal diameter	DN10~DN1000	
Range ratio	1:10	
Current output	Function	Measurement of volume and quality (in the case of constant density)
	Setting	Scope (4~20)mA Max 20mA Min 4mA
	Internal voltage	24VDC
	Loading	≤750Ω
Pulse output	Function	Set up Pulse output
	Pulse output	Basis：Fmax ≤ 5000 cp/s Output pulse width: 0.1ms ~2000ms (This value is lower than the maximum duty cycle, with a maximum duty cycle of 1:1 F_{max} ≤ 5000 cp/s Pulse coefficient：0.001~100000/unit
	Passive	U_{Outer} ≤ 30VDC
	Active	$U_{Internal}$ ≤ 24VDC I≤ 4.52mA
Communications	MODBUS-RTU RS485 communication protocol	
Supply voltage	100VAC~240VAC，50/60Hz；20VDC~28VDC	
Power consumption	≤15W	
Terminals	Screw type terminal block, maximum wire diameter 2.5mm^2	
Cable entries	M20*1.5 Cable gland	
Signal cable	Apply only to remote type	

Wiring

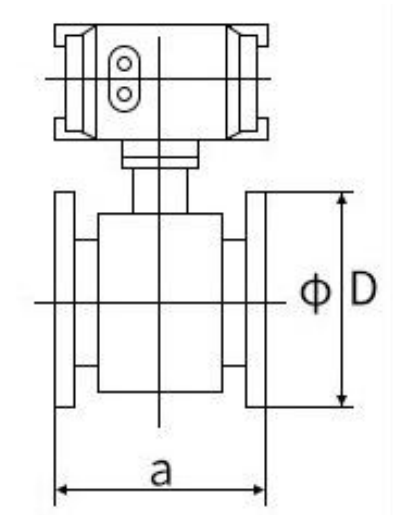
Terminal	Description
L，N	220V AC power supply
24V+、24V-	24V DC power supply
485A，485B	RS485 serial communication
IOUT，ICOM	(4~20)mA output
POUT，PCOM	Pulse output
⏚	Converter instrument protection grounding

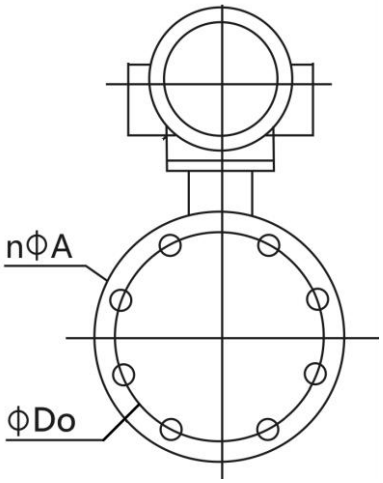




Terminal	Description
SIG1、SIG2、SGND	Sensor signal
EXT1、EXT2	Excitation signal
I+、I-	(4~20)mA output
A+、B-	RS485 serial communication
P+、P-	Pulse output
ALMH、ALML	Relay output （Optional）
L，N	220V AC power supply
24V+、24V-	24V DC power supply
PE	Ground

Dimension

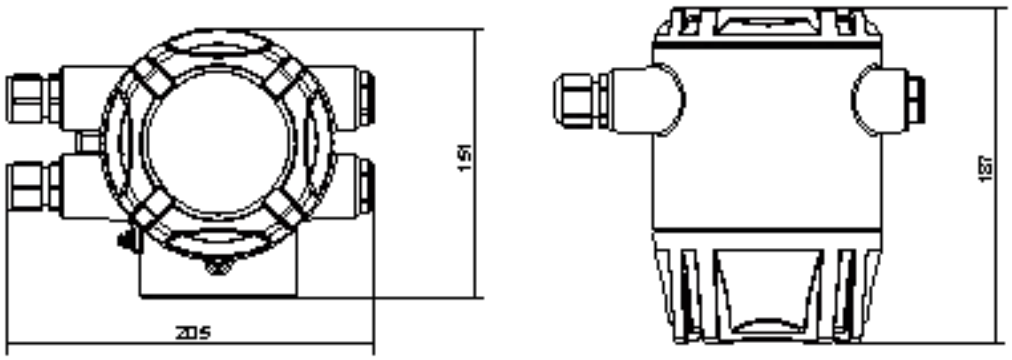




Sensor Dimensions

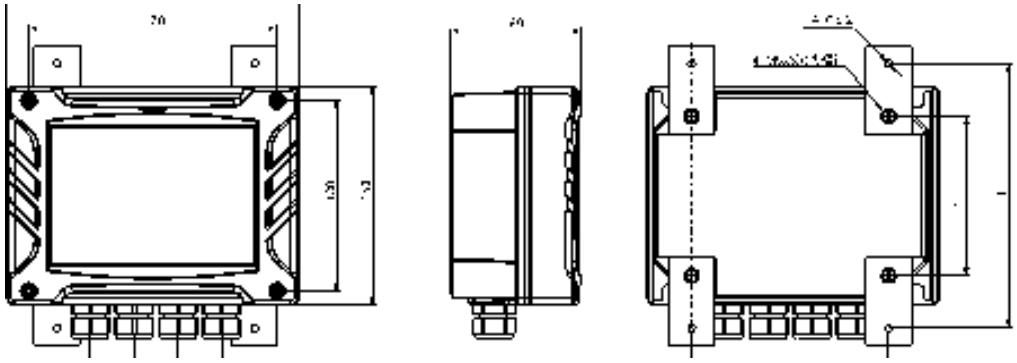
DN	a	D	Do	n*A	Pressure resistance
10	200	90	60	4*14	1.6MPa
15	200	95	65	4*14	1.6MPa
20	200	105	75	4*14	1.6MPa
25	200	115	85	4*14	1.6MPa
32	200	135	100	4*18	1.6MPa
40	200	145	110	4*18	1.6MPa
50	200	160	125	4*18	1.6MPa
65	200	180	145	4*18	1.6MPa
80	200	195	160	8*18	1.6MPa
100	250	215	180	8*18	1.6MPa
125	250	245	210	8*18	1.6MPa
150	300	280	240	8*23	1.6MPa
200	350	335	295	12*23	1.6MPa
250	450	405	355	12*25	1.6MPa
300	500	440	400	12*23	1.0MPa
350	550	500	460	16*23	1.0MPa
400	600	565	515	16*25	1.0MPa
450	600	615	565	20*25	1.0MPa
500	600	670	620	20*25	1.0MPa
600	600	780	725	20*30	1.0MPa
700	700	895	840	24*30	1.0MPa
800	800	1015	950	24*33	1.0MPa
900	900	1115	1050	28*33	1.0MPa
1000	1000	1230	1160	28*36	1.0MPa

Integrated



Unit:mm

Remote



Unit:mm

Ordering code

LDG-SUP-A100-10-J-B-MC-K-AA-M3-N6-WA-00-1-0													Description
LDG-SUP-A100	-	-	-	-	-	-	-	-	-	-	-	-	
Nominal Diameter	10												DN10(3/8")
	15												DN15(1/2")
	20												DN20(3/4")
	25												DN25(1")
	32												DN32(1.25")
	40												DN40(1.5")
	50												DN50(2")
	65												DN65(2.5")
	80												DN80(3")
	1C												DN100(4")
	1E												DN125(5")
	1G												DN150(6")
	2C												DN200(8")
	2G												DN250(10")
	3C												DN300(12")
	3G												DN350(14")
	4C												DN400(16")
	4G												DN450(18")
	5C												DN500(20")
	6C												DN600(24")
	7C												DN700(28")
	8C												DN800(32")
	9C												DN900(36")
	A0												DN1000(40")
Thread Type Standard		J											JB/T 81 flange
		D											GB/T9124 flange
		G											Clamp
		I											ISO2852 Clamp
		X											Others
Nominal Pressure			B										PN10
			C										PN16
			X										Others
Process Connection Material and Body Material				MC									Carbon Steel
				M1									304SS
				XX									Others
Accuracy					K								0.5 Class

Output and Power Supply	AA						4-20mA+Pulse+RS485, 220VAC
	AM						4-20mA+Pulse+RS485, 24VDC
	AC						Pulse+4-20mA+RS485+SPST, 220VAC
	AP						Pulse+4-20mA+RS485+SPST, 24VDC
Electrode Material		M3					316LSS
		MF					Hastelloy B
		MG					Hastelloy C
		T1					Ti
		T2					Ta
		MH					Platinum Iridium Alloy PT
		MJ					WC
Lining Material			N6				PTFE
			N1				Chloroprene Rubber
			N2				Polyurethane
			N7				Teflon F46/FEP
Electrical Interface, Housing Material, and Protection Level				WA			Integrated Type, M20×1.5 Cable Gland, Aluminum Alloy, IP65
				W7			Integrated Type, M20×1.5 Cable Gland, Aluminum Alloy, IP66/67
				WC			Remote Type, M20×1.5 Cable Gland, Aluminum Alloy, IP68
Cable Length for the Remote Type					00		0m
					10		10m
					15		15m
					20		20m
					25		25m
					30		30m
					XX		Others
Language						1	Chinese
						2	English
						3	Russian
						4	Spanish (Brazil)
						5	Portuguese (Brazil)
						X	Others
Additional Certification							0 None
							C CCEP