



TRITON

SERIES

ELECTROMAGNETIC FLOWMETER



 www.nwiinstrumentation.com

 info@nwigroup.com.au

 1300 669 162

NWI
GROUP

ELECTROMAGNETIC FLOWMETER

01 MAGNETIC FLOW METER WORKING PRINCIPLE

Magnetic flowmeters rely on Faraday's Law of electromagnetic induction to measure liquid flow precisely.

A magnetic field is established within the flowmeter, inducing a voltage proportional to the liquid's velocity. Changes in the magnetic field caused by the liquid's conductivity are used to calculate flow velocity.

The resulting voltage signal is interpreted by an electronic transmitter to determine the flow rate accurately.

02 APPLICATIONS

- **Wastewater:** Includes transportation networks, sewage treatment plants, and management of sludges.
- **Chemical Industry:** Covers acid and alkali handling, dosing applications, and management of abrasive or corrosive substances.
- **Mining Industry:** Deals with substances containing a high solid content, such as ore or excavator mud.
- **Water:** Encompasses revenue metering, district metering, water abstraction, and leakage detection.
- **Pulp and Paper:** Involves handling pulp, pastes, sludges, and other caustic substances, as well as managing liquor, additives, bleaches, and colorants.
- **Food and Beverage:** Includes processes like mixing, dosing, and filling beverages under hygienic conditions, as well as applications in filling systems.



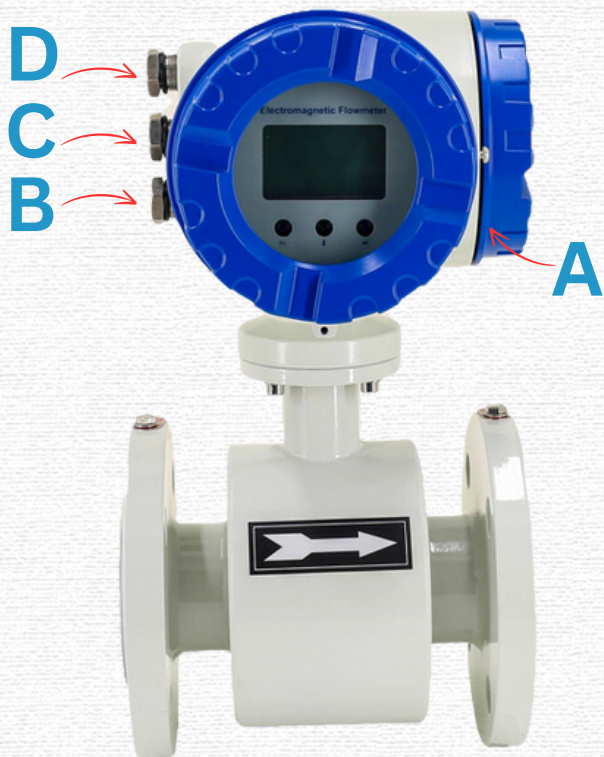
03 FEATURES

- Highly accurate with wide flow range.
- No moving parts.
- IP68 waterproof rating, submersible up to 3 meters.
- Bi-directional measurement capability.
- Various housing and flange materials available.
- Utilises advanced wire-winding for zero drift.
- Robust, fully welded, and potted construction.
- In-house wet calibration for all sizes.
- Enhanced accuracy with three electrodes.
- PTFE liner over 3mm thick for durability.

ELECTROMAGNETIC FLOWMETER



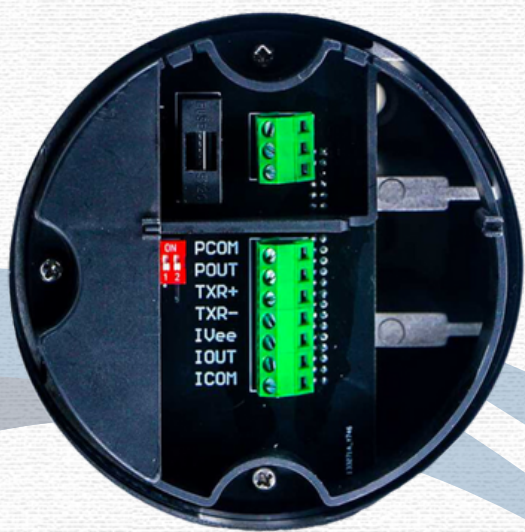
04 INSTRUMENT CONNECTION



CONVERTER CONNECTION

- A** Diagram showing the wiring arrangement within the modified wiring cavity.
- B** Diagram showing the power cable.
- C** Diagram showing the signal cable or fieldbus cable
- D** Optional

05 WIRING



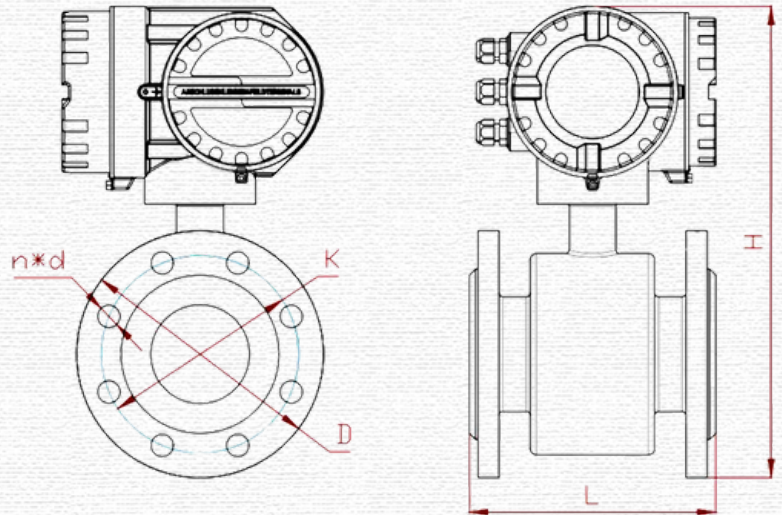
Sensor	SGND	Signal ground
	SIG 2	Signal 2
	EXT-	Field current -
Current output	IOU+	Current output +
	ICOM-	Current common -
Pulse or frequency output	POUT+	Frequency (pulse) output (+)
	PCOM-	Frequency (pulse) output (-)
Digital output	DOU+	Digital output (+)
	DCOM-	Digital output (-)
Communication interface	TXR+	Communications output (RS485+)
	TXR-	Communications output (RS485-)

ELECTROMAGNETIC FLOWMETER

NWI
GROUP

06 INSTALLATION DIMENSIONS

Flange						
Diameter (mm)	L (mm)	D (mm)	K (mm)	H (mm)	Bolt	n*d (mm)
15	200	95	65	301.5	M12*50	4*φ14
20	200	105	75	308.5	M12*50	4*φ14
25	200	115	85	318	M12*50	4*φ14
32	200	140	100	333	M16*70	4*φ18
40	200	150	110	339.5	M16*70	4*φ18
50	200	165	125	353	M16*70	4*φ18
65	200	185	145	368.5	M16*70	4*φ18
80	200	200	160	383.5	M16*70	8*φ18
100	250	220	180	404	M16*70	8*φ18
125	250	250	210	432	M16*70	8*φ18
150	300	285	240	458.5	M20*90	8*φ22
200	350	340	295	515.5	M20*90	12*φ22
250	450	405	355	584	M24*110	12*φ26
300	500	460	410	626.5	M24*110	12*φ26
350	550	520	470	681	M24*110	16*φ26
400	600	580	525	741	M27*130	16*φ30
450	600	640	585	791	M27*130	20*φ30
500	600	715	650	856.5	M30*140	20*φ33
600	600	840	770	972	M33*170	20*φ36
700	700	910	840	1058	M33*180	24*φ36
800	800	1025	950	1166.5	M36*210	24*φ39
900	900	1125	1050	1266.5	M36*220	28*φ39
1000	1000	1255	1170	1381.5	M39*250	28*φ42



07 MEASUREMENT METHOD



**Bi-directional
measurement**
Easy to install

ELECTROMAGNETIC FLOWMETER

08 TECHNICAL DATA

Diameter	PTFE: DN2.5-DN1000
	Rubber: DN50-DN3000
Flow Direction	Forward; Reverse
Repeatability Error	±0.1%
Accuracy	±0.5% of rate; ±0.2% of rate
Medium Temperature	Rubber liner: -20...+60°C
	PTFE liner: -20...+120 °C
	PFA: -20...+180°C
Velocity	0.3-10m/s
Ambient Temperature	-20...+60 °C
Relative Humidity	5%~95%
Power Consumption	<20W
Protection	IP 65; IP 68 (Remote Type)

09 APPLICATIONS SUITABLE FOR ELECTRODE MATERIALS

Electrode Material	Application
SS316L	Applicable in water, sewage and low corrosive medium; Widely used in industries of petrol, chemistry, carbamide etc.
Hastelloy B	Having strong resistance to hydrochloric acid of any consistence which is below boiling point. Resistable against vitriol, phosphate, hydrofluoric acid, organic acid etc which are oxidable acid, alkali and non-oxidable salt.
Hastelloy C	Be resistant to oxidable acid such as nitric acid, mixed acid as well as oxidable salt such as Fe ⁺⁺⁺ , Cu ⁺⁺ and sea water
Titanium	Applicable in seawater, and kinds of chloride, hypochlorite salt, oxidable acid (including fuming nitric acid), organic acid, alkali etc. Not resistant to a pure reducing acid (such as sulphuric acid, hydrochloric acid) corrosion. But if acid contains antioxidant (such as Fe ⁺⁺⁺ , Cu ⁺⁺) is greatly reduce corrosion
Tantalum	Having strong resistance to corrosive mediums that is similar with glass. Almost applicable in all chemicals mediums except for hydrofluoric acid, oleum and alkali
Platinum-iridium	Almost be applicable in all chemical mediums except fortis, ammonium salt

ELECTROMAGNETIC FLOWMETER



010 TECHNICAL DATA

Diameter		Flow Rate (m ³ /h)		
		V=0.3m/s	V=6m/s	V=10m/s
mm	Inch	Min	Calibrated	Max
2.5	1/10"	0.0053	0.106	0.177
4	1/8"	0.014	0.271	0.452
6	1/4"	0.03	0.6	1
10	3/8"	0.1	1.7	3
15	1/2"	0.2	4	6
20	3/4"	0.3	7	11
25	1"	0.5	11	18
32	1-1/4"	0.9	17	29
40	1-1/2"	1	27	45
50	2"	2	42	71
65	2-1/2"	4	72	120
80	3"	5	109	181
100	4"	8	170	283
125	5"	13	265	442
150	6"	20	382	636
200	8"	34	679	1131
250	10"	53	1060	1767
300	12"	76	1527	2545
350	14"	104	2078	3465
400	16"	136	2714	4524
450	18"	171	3435	5726
500	20"	212	4241	7069
600	24"	305	6107	10179
700	28"	415	8310	13850
800	32"	542	10860	18100
900	36"	662	13740	22900
1000	40"	848	16962	28270



ELECTROMAGNETIC FLOWMETER



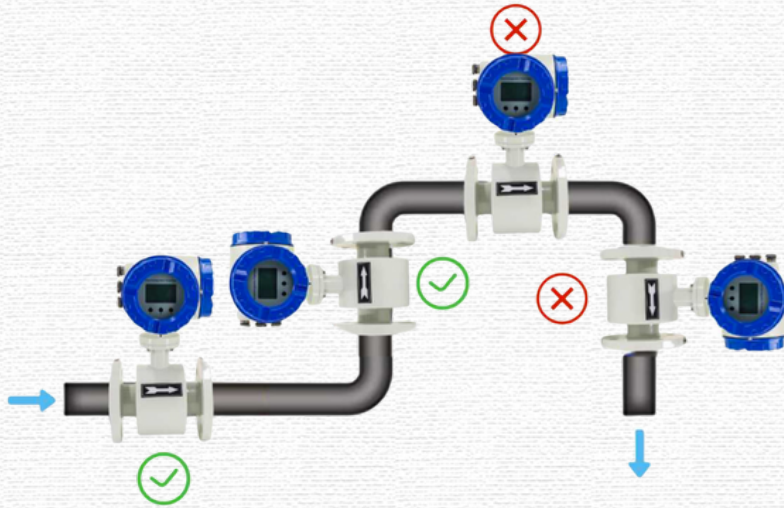
011 MODELS

Model	Suffix Code												Description
LDG-	①	②	③	④	⑤	⑥	-⑦	⑧	⑨	⑩	⑪	⑫	Electromagnetic Flow Meter
Type	B												B type
	A												A type (ATEX)
	H												Energy Meter (PT1000 temperature sensors)
Diameter	XXX												Stand for diameter 0006: DN6; 0015: DN15 0100: DN100; 2200: DN2200
Structure		S											Compact Type with local display
		L											Remote Type; 10 meters cable default
Electrode Material			M										SS316L
			T										Titanium
			D										Tantalum
			H										Hastelloy C
			P										Platinum-Iridium
Signal Output					0								No Output
					1								4-20mA / Pulse
Liner Material						X							Rubber
						P							Polyurethane
						F							PTFE
						A							PFA
Power Supply							-0						110-240V AC
							-1						24V DC (20-36V DC)
							-2						Battery Power Supply
Communication								0					No Communication
								1					Modbus RS485
								2					HART
								3					GPRS
Sensor Grounding									0				No Grounding
									1				Grounding Ring
									2				Grounding Electrode
Connection										DXX			D16: DIN PN16 Flange ; D25: DIN PN25 Flange...
										AXX			A15: ANSI150# Flange; A30: ANSI 300# Flange...
										JXX			J10: JIS 10K Flange; J20: JIS 20K Flange...
										XXX			On request
Body Material											CS		Carbon Steel
											S4		Stainless Steel 304

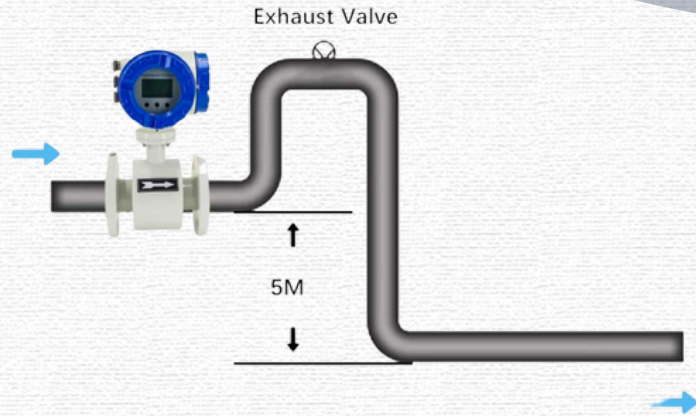
ELECTROMAGNETIC FLOWMETER



012 INSTALLATION



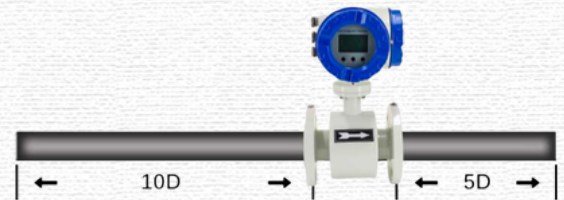
Install the flow meter at a lower level and vertically upwards from the horizontal pipe. Avoid installing it at the highest or vertically downwards point of the pipe.



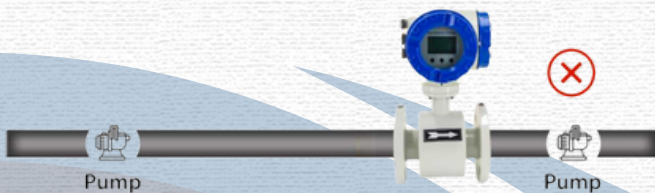
Install an exhaust valve downstream when the drop exceeds 5 meters.



When used in an open drain pipe, install the meter at the lowest point.



Requires 10 times the pipe diameter (10D) upstream and 5 times the pipe diameter (5D) downstream.



The flowmeter should not be installed at the pump inlet; rather, it should be installed at the outlet.



Install in the upward direction.





TRITON

S E R I E S

 www.nwiinstrumentation.com

 info@nwigroup.com.au

 1300 669 162