



MF Series Electromagnetic Flow Meter

Working Principle of Electromagnetic Flowmeter

The working principle is based on Faraday's Law of Electromagnetic Induction, that is, when the conductive liquid flows through the electromagnetic flowmeter, the induced electromotive force will be produced in the conductor, and the induced electromotive force is directly proportional to the velocity of conductive liquid, magnetic flux density and width of conductor (inside diameter of flowmeter).

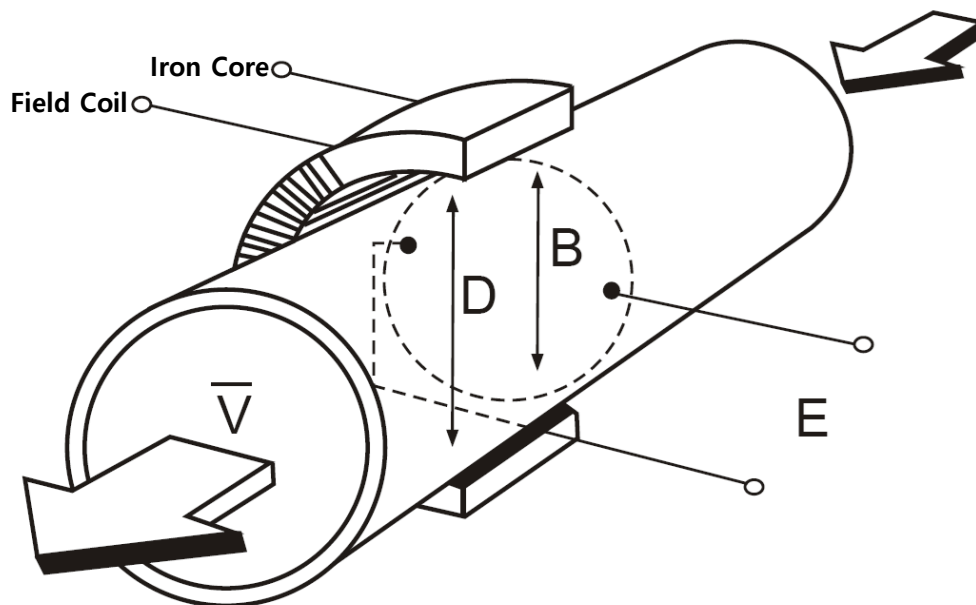
$$E = D * V * B$$

E : induced electromotive force

D : inside diameter of measuring pipe

V : Velocity

B : magnetic flux density



Operation Principle



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The electromagnetic flowmeter, as the product of long-term experience in the field of flux instrument, has the functions of rapid response and output noise elimination. Its design and quality control system have guaranteed the high accuracy and reliability of the product, and the application of lining makes the electromagnetic flowmeter applied more widely.

Features

- The stability of flux measurement has been improved
- Rapid response and high stability, even for highly concentrated serous fluid and fluid with low conductivity
- Electrode structure with high reliability
- Lining and built-in grounding electrode are both applicable
- Diameter from 100mm to 3200mm
- Both AC and DC power supplies are available
- Multi-functional Intelligent Converter
- When in power failure, EEPROM may protect the set parameters and accumulated values
- High-definition LCD Backlight Display

Technical Service and Matters That Need Special Attention

- For users to meet the required conditions, we can provide on-site commissioning.
- For delivery, you must carefully read the instruction manual and consider the instrument installation location.
- For specified operations, parameters, setup and maintenance , maintenance personnel must read in whole or part, and understand it.
In particular, operation requirements must comply with the instrument provisions, and we do not bear any responsibility of the consequences due to violations.
- Technical materials must be put in the file room for reference, and they are available from us or other agencies if lost.
- Under normal operation, we guarantee that every product is free from quality problems. We provide one year warranty for the product from the delivery date, and one-year repair and maintenance warranty for the parts and the product.
- The warranty is not applicable for the damage of the products caused by wrong selection of model, wrong operation, refitting, negligence, accident or the operation and treatment under normal conditions.
- The users shall record the data at least on daily basis when using the instrument, and enter into the agreement with the relevant units and individuals about the data processing when the instrument goes out of order. We bear no responsibility for the loss there form.
- Installing and using the flowmeter shall be deemed as your accepting the above terms.



MF Series Electromagnetic Flow Meter



MF-7000

Integral Type

MF-8000

Square-headed Split Type

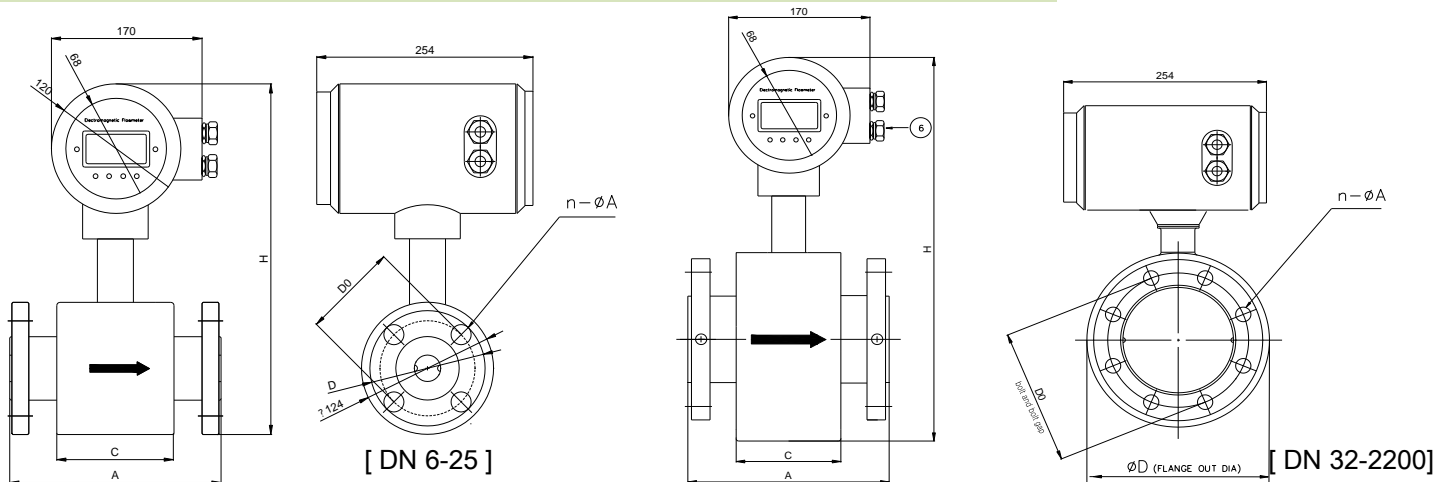
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Model No.	DN 10 ~ 3200
Excitation Type	Constant Flux Square wave Excitation
Installation Form	Split Type
Linig material	Chloroprene Rubber : -10 to +80°C Polyurethane Rubber : -10 to +80°C PTFE Rubber , F46 : -10 to +150°C
Material of Electrode	316L , HC , HB , Titanium , Tantalum, Platiniridium, Tungsten Carbide
Grounding	Built-in Grounding Elevctrode (Above DN25)
Medium	Conductive Liquid
Grade of Accuracy	0.2% , 0.5% , 1.0%
Conductivity of medium	> 5 μ s/cm
Velocity	<15 m/s
Pipe Conection	Flange Connection
Temperature of Medium	Chloroprene Rubber : -10 to + 60°C ; PTFE Rubber : -10 to +120°C Polyurethane Rubber : -10 to +80°C ; F46 Rubber : -10 to +150°C
Rated Voltage	4MPa, 1.6MPa , 1.0MPa
Category of Shielding	IP65 , IP68
Output Signal	4-20mA Current , Pluse , Alarm beyond upper and lower limits
Cable Interface	G1/2 Female Thread
Communication	RS485 Communication Protocol RS232 Communication Protocol(Optional)
Display of Monitor	Transient Flux Alarm Display , Percentage , Velocity , Forward and reverse Intergrated Flux and Total Intergrated Flux
Power Supply	220V AC , 24V DC , 3.6V Battery Power Supply
Type of Application	General Type , Waterproof Type



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Outline Dimension of Integral Flowmeter



DN	Rated pressure	Instrument outline dimension(mm)			Flange connection size(mm)		
		A	H	C	D	D0	n X A
6	4.0	102	252	62	76	58	4- ϕ 7
10		150	322	82	90	60	4- ϕ 14
15		150	322	82	95	65	4- ϕ 14
20		150	322	78	105	75	4- ϕ 14
25		150	312	78	115	85	4- ϕ 14
32		150	327	74	135	100	4- ϕ 18
40		150	35	74	145	110	4- ϕ 18
50		200	354	86	160	125	4- ϕ 18
65		200	366	92	180	145	8- ϕ 18
80		200	385	92	195	160	8- ϕ 18
100	1.6	250	406	114	215	180	8- ϕ 18
125		250	436	114	245	210	8- ϕ 18
150		300	465	136	280	240	8- ϕ 23
200		350	518	156	335	295	8- ϕ 23
250		400	570	202	390	350	12- ϕ 23
300		500	620	230	440	400	12- ϕ 23
350	1.0	500	675	278	500	460	16- ϕ 23
400		600	733	320	565	515	16- ϕ 25
450		600	782	374	615	565	20- ϕ 25
500		600	835	388	670	620	20- ϕ 25
600		600	940	408	780	725	20- ϕ 30
700		700	1048	520	895	840	20- ϕ 30
800		800	1160	580	1010	950	24- ϕ 34
900		900	1260	660	1110	1050	28- ϕ 34
1000		1000	1370	720	1220	1160	28- ϕ 34
1200		1200	1585	1130	1405	1340	32- ϕ 34
1400	0.6	1400	1810	1260	1630	1560	36- ϕ 36
1600		1600	2040	1450	1830	1760	40- ϕ 36
1800		1800	2250	1640	2045	1970	44- ϕ 39
2000		2000	2460	1820	2265	2180	48- ϕ 42



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Flowmeter Model Description

Specification

Name	Specification code	Description
Instrument type	MF-7000	
Measured pipe diameter	xxx	For example : 100A : DN100
Converter type	I	Integral type
	S	Split type
Electrode form	1	Standard stationary type
Electrode material	0	Stainless steel (316L)
	1	Platinum Pt
	2	Hastelloy B (HB)
	3	Tantalum Ta
	4	Titanium Ti
Lining material	5	Hastelloy C (HC)
	C	Chloroprene rubber
	P	Polyurethane rubber
	T	F4 (PTFE) polyperfluoroethylene
Rated pressure	F	F46 (FEP) polyperfluoroethylene-propylene
	4.0	DN10-80
	1.6	DN100-150
	1.0	DN200-1000
	0.6	DN1100-2000
Working temperature of medium	0.25	DN2200
	E	<60°C
Grounding	H	<120°C
	1	Built-in grounding electrode
Grade of protection	0	IP65
	1	IP68
Case material	0	Carbon steel
	1	Stainless steel
Power supply	0	220VAC
	1	24VDC

For example : 100-I-1-0-T-1.6-E-1-1-0-0-0

Note : Integral type flowmeter DN 100 has a fixed stainless steel electrode and PTFE rubber lining, with A rated pressure of 1.6Mpa, a temperature less than or equal 60°C centigrade.

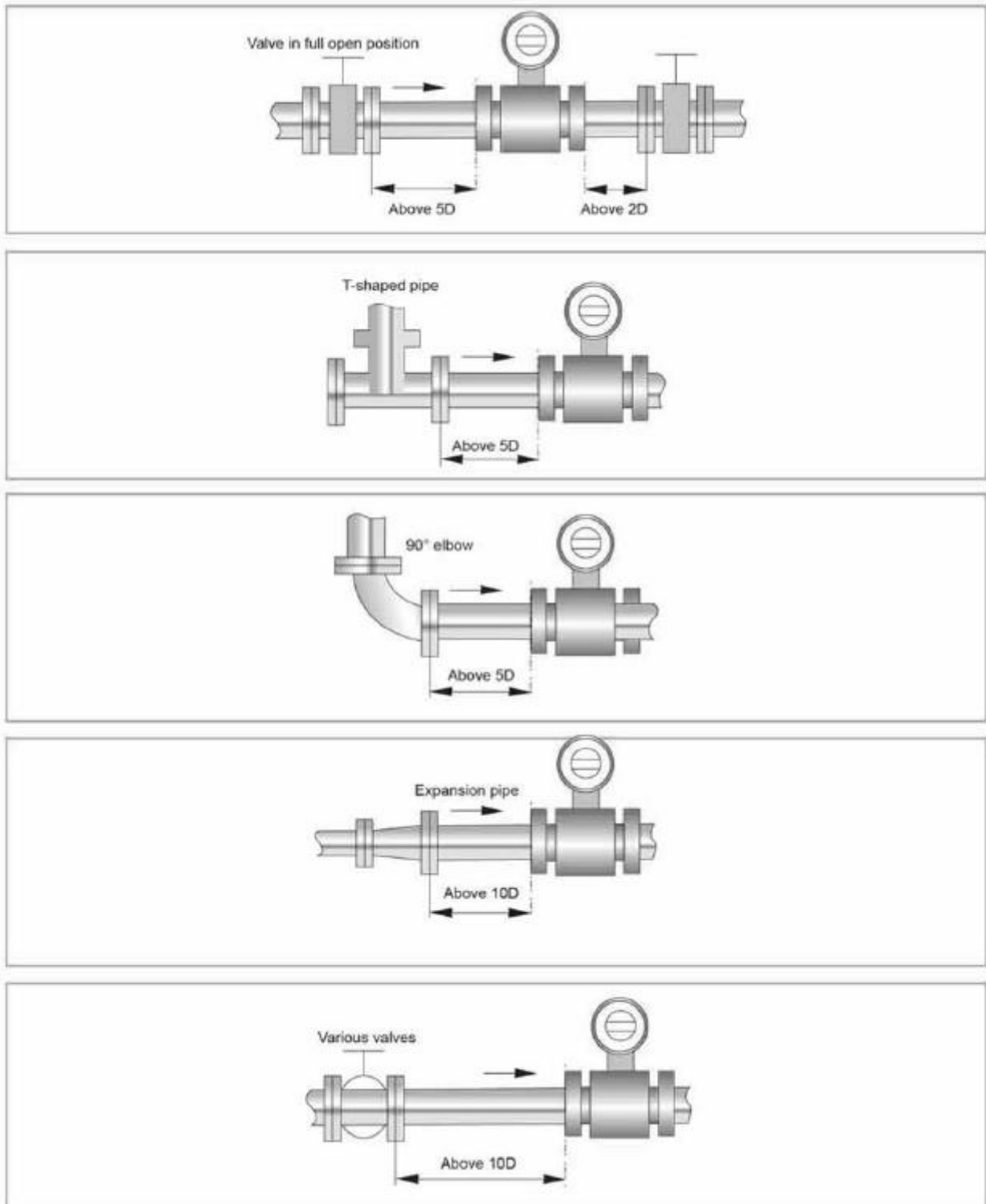
And protection grade of IP65 . Case material and flange are made carbon steel, with mounting companion flange, it is powered by 220v AC power supply.



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Length of Straight Pipe Segment

To guarantee the up stream pipeline condition required for achieving high measurement precision of electromagnetic flowmeter, pipeline condition as shown in following figure are recommended according to standards above and measured data of pipeline condition.



Minimum Length of Required Straight Pipe Segment