

FLOW METER

MEASUREMENT & AUTOMATION TECHNOLOGY

전자 유량계 Electro Magnetic Flow Meter

Electromagnetic flow meter

○ SUMMARY

Electromagnetic Flowmeter 는 자장 내 유체가 흐를 때 발생하는 기 전력이 유속에 비례한다는 페레데이 법칙을 응용하여 발생된 기 전력을 측정관내 설치된 1대 이상의 전극에서 검출하여 유량으로 계산할 수 있는 신호(DC 4-20mA)Pulse신호로 변환하는 유량계이다.

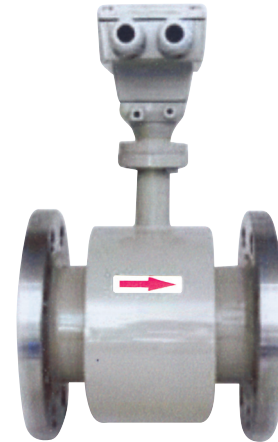
The Electromagnetic Flowmeter can be used to accurately measure the flowrate of liquids, paper pulp, slurry and mineral slurry which has an electrical conductivity greater than $5\mu\text{s}/\text{cm}$. EKFM-100 is a flow measurement system in a Compact Design which integrates the primary and signal converter. The EKFM-200 is a flow measurement system consists of a flowmeter primary and remote mounted converter.



EKFM-100



EKFM-200 / Monitor



EKFM-200/ Body

○ MODEL CODE

EKFM	Type		
	100	Combined type (일체형)	Display : Flowrate, Totalizer Output : DC 4-20mA, Pulse,
EKFM	200	Separate type (분리형)	Display : Flowrate, Total Output : DC 4-20mA, Pulse,

○ STANDARD SPECIFICATION

Size	10mm(3/8")-600(24")
Connection	Standard JIS10K Flange
Accuracy	$\pm 0.5\%$ F.S.
Power	AC 110/220V DC 24V (Option)
Frequency	60Hz \pm 2Hz (50Hz 겸용)
Display	LCD Display Flowrate : 5-digit Display Total : 9-digit Display with Back light
Output	Analog : 4-20mA (Isolated) Pulse : DC15V(Open collector Pulse) Digital : RS485 (Option)

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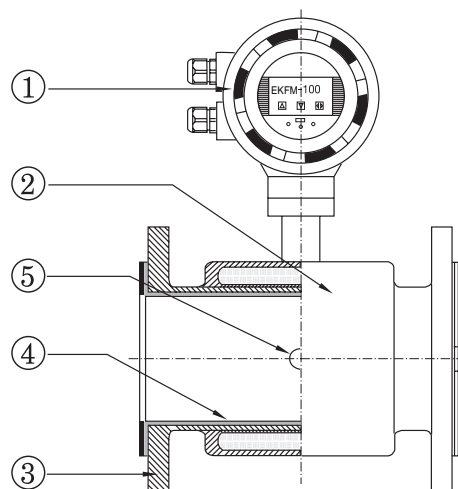
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○ SPECIFICATIONS

Model	EKFM-100	EKFM-200
Type	일체형 (Combined Type)	분리형 (Separate Type)
Size	10mm(3/8")-600(24")	
Process connection	Flange type - Standard JIS10K RF (Option, KSD4308, ANSI150#, DIN16BAR)	
Measuring range	0.3m/s - 12m/s	
Flow velocity	0.3m/s - 12m/s	
Accuracy	±0.5%F.S. (0.3m/s - 12m/s)	
Fluid temperature	Teflon (-10℃ ~ 160℃) Hard rubber (-10℃ ~ 60℃)	
Ambient temperature	-10℃ ~ 60℃	
Conductivity	5 μ s/cm 이상	
Power supply	AC 85 - 250V (50~60Hz) DC 24V - (Option)	
Power consumption	15VA	
Display	LCD Display Flowrate : 5-digit Display Total : 9-digit Display With Back light	
Output	Analog : 4-20mA (isolated) Pulse : DC 15V (Open collector pulse) Digital : RS485-(Option)	
Protection class	IP65/IP68	
Special feature	① Self check ② Empty pipe ③ Reverse flow enable ④ Data logging ⑤ Error message	
Electrode signal cabel		Standard length 10m (max, 30m)

○ STANDARD MATERIAL

No.	Description	Material	
		Normal	Option
1	Head	Cast Aluminum	
2	Body	SUS304(STD)	
3	Flange	SUS304(STD)	
4	Lining	PTEE(Teflon) Hard rubber	
5	Electrode	SUS316L	Platinum Titanium Tantalum Hastelloy-C



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In the normal industry application, it is better to set the measured medium speed as 2~4m/s, under the special situation, the minimum speed should be more than 0.2m/s and maximum speed less than 8m/s, if there are solid granules in liquid, the usual speed should be less than 3m/s for purpose to avoid the over-attribution between lining and electrical poles. for viscid liquid, the speed can choose as 2m/s, the fast flow speed makes for the automatic elimination of obstructive substances glued on poles, therefore improve the inspection's preciseness.

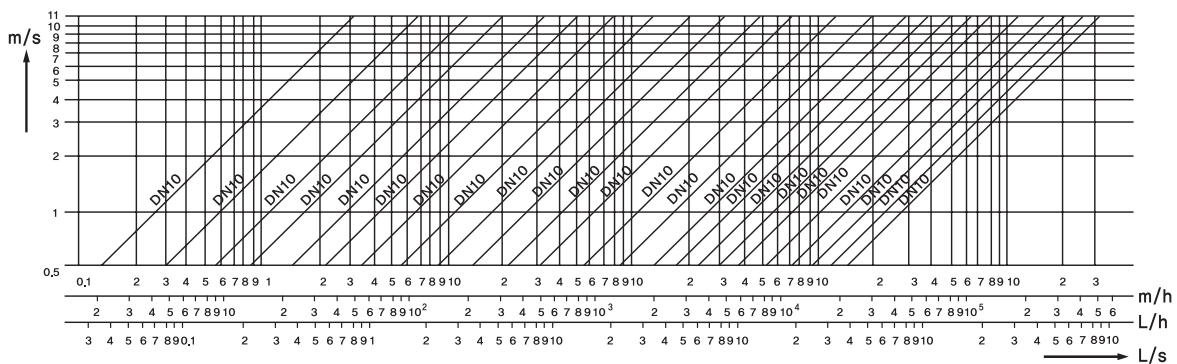
FLOW RATE SELECTION

SIZE	Usual full range flow volume selection (m3/h)
10	0,16, 0,2, 0,25, 0,3, 0,4, 0,5, 0,6, 0,8, 1,0, 1,2, 1,6, 2,0, 2,5
15	0,4, 0,5, 0,6, 0,8, 1,0, 1,2, 1,6, 2,0, 2,5, 3,0, 4,0, 5,0, 6,0
20	0,6, 0,8, 1,0, 1,2, 1,6, 2,0, 2,5, 3,0, 4,0, 5,0, 6,0, 8,0, 10,0, 12,0
25	1,0, 1,2, 1,6, 2,0, 2,5, 3,0, 4,0, 5,0, 6,0, 8,0, 10,0, 12,0, 14,0, 16,0
32	1,6, 2,0, 2,5, 3,0, 4,0, 5,0, 6,0, 8,0, 10,0, 12, 16, 20, 25
40	2,5, 3,0, 4,0, 5,0, 6,0, 8,0, 10,0, 12, 16, 20, 25, 30, 40
50	4,0, 5,0, 6,0, 8,0, 10, 12, 16, 20, 25, 30, 40, 50, 60, 70
65	6,0, 8,0, 10, 12, 16, 20, 25, 30, 40, 50, 60, 80, 100, 120
80	10, 12, 16, 20, 25, 30, 40, 50, 60, 80, 100, 120, 160
100	16, 20, 25, 30, 40, 50, 60, 80, 100, 120, 160, 200, 250
125	25, 30, 40, 50, 60, 80, 100, 120, 160, 200, 250, 300, 400
150	40, 50, 60, 80, 100, 120, 160, 200, 250, 300, 400, 500, 600
200	60, 80, 100, 120, 160, 200, 250, 300, 400, 500, 600, 800, 1000
250	100, 120, 160, 200, 250, 300, 400, 500, 600, 800, 1000, 1200, 1600
300	160, 200, 250, 300, 400, 500, 600, 800, 1000, 1200, 1600, 2000, 2500
350	200, 250, 300, 400, 500, 600, 800, 1000, 1200, 1600, 2000, 2500, 3000
400	250, 300, 400, 500, 600, 800, 1000, 1200, 1600, 2000, 2500, 3000, 4000
450	300, 400, 500, 600, 800, 1000, 1200, 1600, 2000, 2500, 3000, 4000, 5000
500	400, 500, 600, 800, 1000, 1200, 1600, 2000, 2500, 3000, 4000, 5000, 6000
600	600, 800, 1000, 1200, 1600, 2000, 2500, 3000, 4000, 5000, 6000, 10000
700	800, 1000, 1200, 1600, 2000, 2500, 3000, 4000, 5000, 6000, 10000, 12000
800	1000, 1200, 1600, 2000, 2500, 3000, 4000, 5000, 6000, 10000, 12000, 16000
900	1200, 1600, 2000, 2500, 3000, 4000, 5000, 6000, 8000, 10000, 12000, 16000
1000	1600, 2000, 2500, 3000, 4000, 5000, 6000, 8000, 10000, 12000, 16000, 20000



EKFM-100

Graph Illustration Of Nominal Diameter, Flow Speed And Flow Volume Of Flowmeter.



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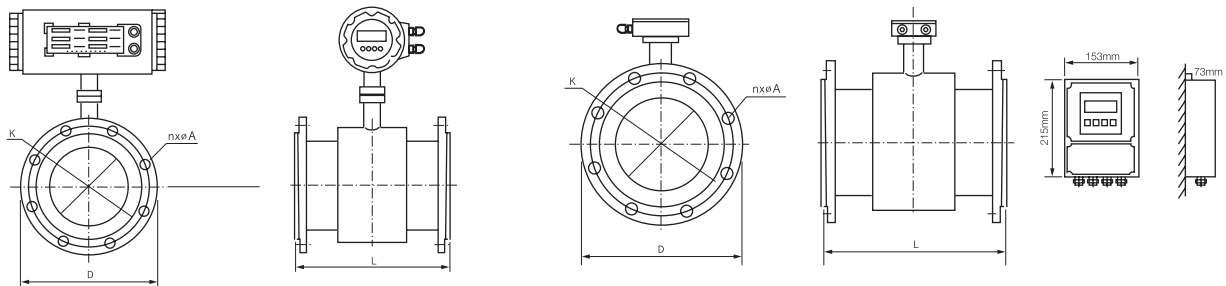
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● EKFM-100 External Dimension For Integration And Partial Installation

mm

JIS10K	Working pressure (Bar)	L	D	K	n-∅ A	Intergration Weight (kg)	Partial installation Weight (kg)
10	40	200	90	65	4-∅ 15	6	4
15		200	95	70	4-∅ 15	6	4
20		200	100	75	4-∅ 15	6	4
25		200	125	90	4-∅ 19	7	5
32		200	135	100	4-∅ 19	9	7
40		200	140	105	4-∅ 19	10	8
50		200	155	120	4-∅ 19	12	10
65		200	175	140	8-∅ 19	17	15
80		200	185	150	8-∅ 19	17	15
100	16	250	210	175	8-∅ 19	22	20
125		250	250	210	8-∅ 23	24	22
150		300	280	240	8-∅ 23	35	33
200	10	350	330	290	12-∅ 23	45	43
250		400	400	355	12-∅ 25	84	82
300		500	445	400	12-∅ 25	102	100
350		500	490	445	16-∅ 25	123	121
400		600	560	510	16-∅ 27	147	145
450		600	620	565	20-∅ 27	212	210
500		600	675	620	20-∅ 27	229	207
600		600	745	730	24-∅ 33	252	250
700		700	905	840	24-∅ 33	352	350
800		800	1020	950	24-∅ 33	462	460
900	900	720	1050	28-∅ 33		550	
1000	6	1000	1235	1160	20-∅ 39		680



Integration installation type

Partial installation type

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ORDERING CODE

MODEL	SPECIFICATION	DESCRIPTION
EKFM-100 EKFM-200		COMBINED TYPE SEPARATE TYPE
METER SIZE		
1		10A (3/8")
2		15A (1/2")
3		20A (3/4")
4		25A (1")
5		32A (1-1/4")
6		40A (1-1/2")
7		50A (2")
8		65A (2-1/2")
9		80A (3")
10		100A (4")
11		125A (5")
12		150A (6")
13		200A (8")
14		250A (10")
15		300A (12")
16		350A (14")
17		400A (16")
18		450A (18")
19		500A (20")
20		600A (24")
CONNECTION FLANGE STANDARD		
A		JIS 10K
B		JIS 16K
C		JIS 20K
D		ANSI 150#
E		ANSI 300#
F		DIN PN16
G		Other
ELECTROD MATERIAL		
A		316LSS
B		Ti (titanium)
C		Pt-Ir (platinum iridium)
D		Ta (tantalum)
E		Hastelloy C
F		Other
GROUNDING RING MATERIAL		
A		316SS
B		316LSS
C		Ti (titanium)
D		Ta (tantalum)
E		Pt-Ir (platinum iridium)
F		Hastelloy C
LINING MATERIAL		
A		PTFE
B		HARD RUBBER
EXCITATION AND SIGNAL CABLE		
A		Not provided
B		30m Cable provided
C		Other
FLOW AND CALIBRATION VELOCITY RANGE		
A		0.3 to 10m/sec (Standard range calibration)

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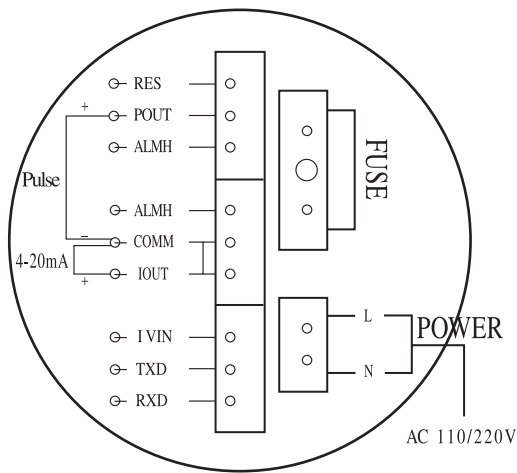
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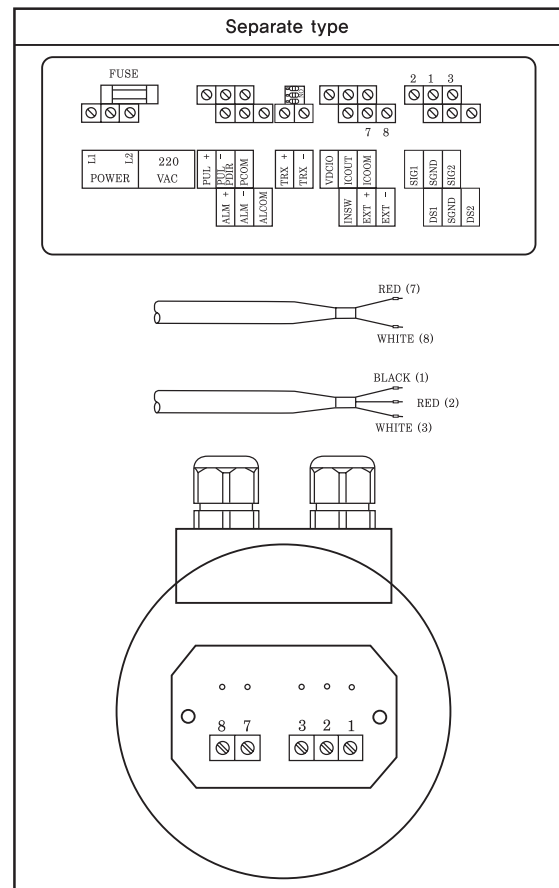
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ELECTRICAL CONNECTION

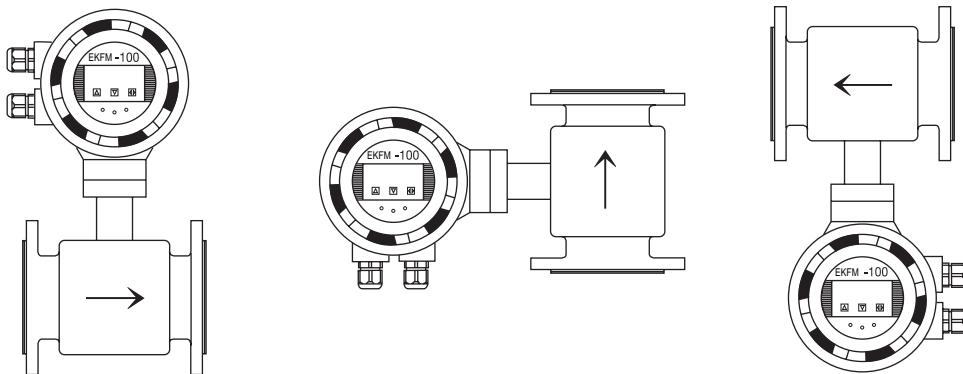
COMBINED TYPE



SEPARATE TYPE



MOUNTING POSITION OF LCD DISPLAY



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○ DRAWING OF INSTALLATION

