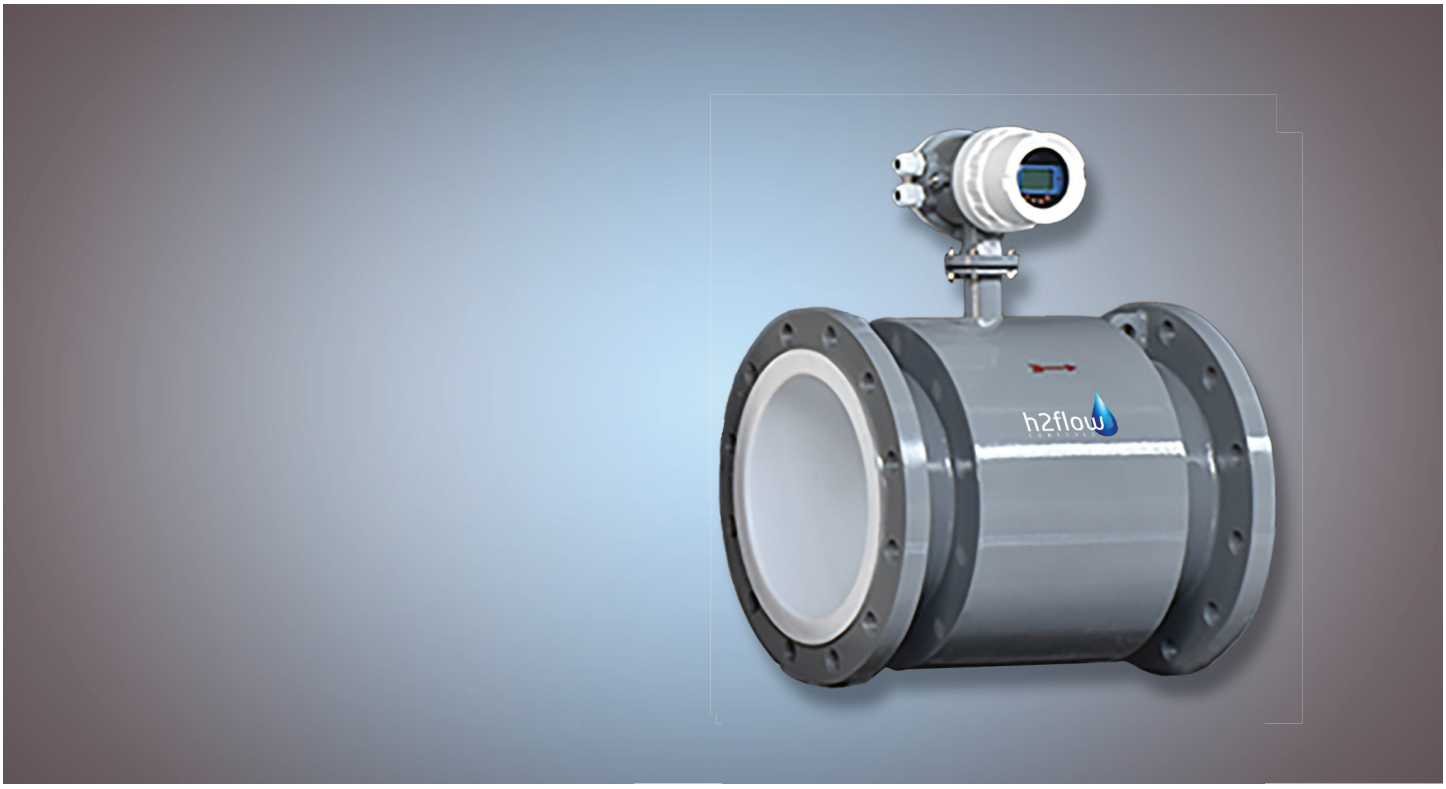


FaraMag™ FM750

Technical Specification

ELECTROMAGNETIC FLOW METER

- No moving parts to impede the flow
- Available for 0.5-inch to 120-inch (DN15 to DN3000) pipe diameters
- User-friendly installation and operation
- ±0.5% average accuracy

CE ISO 9001 Certified Ex JJG HART COMMUNICATION PROTOCOL

ASSEMBLED IN THE USA
USING GLOBALLY SOURCED COMPONENTS

h2flow CONTROLS

Table of Contents

1. Introduction to FaraMag FM750

FaraMag™ FM750 mag meters from H2flow Controls use Faraday's electromagnetic principle to measure the flow of conductive liquids and slurry in a closed pipe. This technology is widely used in power, oil and gas, chemical and petrochemical, metallurgy, mineral, paper, water, wastewater, food and beverage, pharmaceutical, oil and gas, and other industries. There are no moving parts in contact with the liquid, meaning the flow meter isn't affected by any solid particles that may pass through the pipe and there is no resulting pressure drop.

The FM750 is characterized by it's high degree of accuracy and reliability. Setting of flow meter parameters is performed using either the keypad and intuitive display menu, the external remote controller, or using service software via a communication port.

The FM750 is comprised of two basic components: 1) the Sensor, which includes the flow tube, isolating liner and measuring electrodes, and 2) the Converter, which is the electronic device responsible for signal processing, flow calculation, display and output signals.

The materials of construction of the wetted parts (liner and electrodes) should be appropriate for the specifications on the intended type of service. FM750 offers a wide array of options for each of these components. A thorough review of the compatibles consistent with the specifications is recommended.

All FaraMag™ FM750 electromagnetic flow meters are factory tested and calibrated. A calibration certificate is included in the shipment of each meter.

FaraMag™ FM750 mag meters are assembled in the USA using globally sourced components.

2. Key Features & Benefits

- No moving parts, meaning no restriction on flow
- Bi-directional flow measurement
- Compact and remote versions available
- Intuitive controls
- LCD backlit display
- Long operating life
- IP65, IP67 and IP68 protection classes available
- 8 programming languages options to choose from (English, French, Portuguese, Turkish, Russian, Korean, Simplified Chinese, Traditional Chinese)
- Self-diagnosis and auto detection feature
- Displays instantaneous flow, flow unit, or cumulative flow (flow totalizing)
- Ability to select preferred unit of measurement (L/s, L/m, L/h, m3/s, m3/m, m3/h, uk/s, uk/m, uk/h, us/s, us/m, us/h, kg/s, kg/m, kg/h, t/s, t/m, t/h)
- Available for 0.5-inch to 120-inch pipe diameters
- Nominal Pressure 87 - 580psi / 0.6 - 4.0MPa
- 120-230VAC, 24VDC, 3.6V power supply options
- Available with ANSI or DIN flanges
- Flow rage: 0.85 - 734,605 GPM
- Accuracy: ±0.5% of the value displayed

3. Technical Data

3.1 System of Measurement

Measuring Principle	Faraday's law of induction
Application Range	Electrically conductive fluids
Primary Measured Value	Flow velocity
Secondary Measured Value	Total flow volume

3.2 Design

Features	Handheld remote controller for simplified programming and operation
	No internal or moving parts
	Self-diagnosis and auto detection feature
	LCD backlit display with intuitive controls
Modular Construction	The measurement system consists of a flow sensor and a signal converter. It is available in both compact and remote configurations.
Compact Type	FARAMAG FM750 (EC)
Remote Type	FARAMAG FM750 (ER)
Nominal Diameter	0.5" - 120" (DN15 - DN3000)
Display and Pushbuttons	English and Chinese display can display the instantaneous flow, total flow and percentage of flow as well as alarm display, four soft-touch buttons, which are used for data set.
Structure Type	Integral Type, Remote Type, Submersible Type, ex-proof Type
Flange Type	ANSI, DIN, Tri-clamp (optional)
Connection Type	Flange Type (standard), Clamp Type (optional on certain models)
Cable Length (Remote Type)	32ft (10M); can be extended

3.3 Materials

Body Material	Carbon Steel (standard), 304 Stainless Steel (optional), 316 Stainless Steel (optional)
Liner Material	Neoprene, Urethane Rubber, Polysilicone Rubber, PTFE, F46, PFA
Electrode Type	General Type, scraper type, replaceable type
Electrode Material	SUS316, Hastelloy B, Hastelloy C, Titanium, Tantalum, Platinum-iridium alloy, Stainless Steel covered with Tungsten Carbide
Protection Grade	NEMA 4 (IP65), NEMA 6 (IP67), NEMA 6P (IP68)

3.4 Communication Options

Communication	RS232 RS485 HART Profibus DP GPRS Wireless Communication

3.5 Operating Conditions

Medium Temperature	Integrated Type	-4°F - +158°F (-20°C - +70°C)	
	Remote Type	Neoprene & Polyurethane Liner	-4°F - +140°F (-20°C - +60°C)
		PTFE Liner / PFA Liner / F46 Liner	-40°F - +356°F (-40°C - +180°C)
Ambient Temperature	-13°F - +140°F (-25°C - +60°C)		
Ambient Humidity	5 - 100% RH (relative humidity)		
Medium Electrical Conductivity	≥5μs/cm		
Maximum Percentage Solids Content (by volume)	40%		
Measuring Range	1500:1, flow rate <15m/s		

3.6 Performance

Main Power	120-240VAC 50Hz - 60Hz / 24-36VDC / Lithium battery powered (optional)	
Power Consumption	<15W (and set with sensor supporting power consumption)	
Accumulator	Forward total quantity, reverse total quantity	
Output Signal	Analog output	Bi-directional, isolation 0-10mA / 4-20mA
	Frequency output	Forward and reverse flow output with frequency range set between 1 - 5000Hz. The external voltage must be lower than 35V and the max output current is 50mA when the transistor is turned on.
	Alarm output	Two outputs from the collectors of photoelectric isolate transistors are for alarm signals. The external voltage must be lower than 35V and the max output current is 250mA when the transistor is turned on. Alarm status: Activates when the measured pipes are empty, the excitation circuits are broken, or the volume of flow rate exceeds the value designed limits.
	Pulse output	For pulse output in forward and reverse flow measurement, upper frequency of pulse output can be up to 5000 CP/S relevant value of pulse is from 0.0001 to 1.0 M3/P. The width of pulse can be set to 20ms or squired wave form automatically. The collector of transistor with photoelectric is open circuited. The external voltage must be lower than 35V and maximum output current is 250mA when the transistor is turned on.
Performance	±0.5% of the value displayed	
Damping Time Constant	Continuous variable from 0-100 s (90%) can be selected by group	
Nominal Pressure	87 - 580psi / 0.6 - 4.0MPa	
Power Failure	An anti-failure clock is designed in the flow meter which can save the power failure records for 16 times (10 years)	

3.7 Standards

Product Standard	JB/T 9248-1999 Electromagnetic Flowmeter
Calibration Standard	JJG 1033-2007
Ex-proof Mark	Exd [ia]iaIICT5, Exmd IICT4

4. Available Diameters

FM750 electromagnetic flow meter converter matching sensor diameter range: 0.5” - 120” / DN15 - DN3000:

- 0.5”, 0.75”, 1”, 1.25”, 1.5”, 2”, 2.5”, 3”, 4”, 5”, 6”, 8”, 10”, 12”, 14”, 16”, 18”, 20”, 24”, 28”, 32”, 36”, 40”, 44”, 48”, 52”, 56”, 60”, 64”, 68”, 72”, 76”, 80”, 88”, 92”, 96”, 100”, 104”, 108”, 112”, 116”, 120”
- DN15, DN20, DN25, DN32, DN40, DN50, DN65, DN80, DN100, DN150, DN200, DN250, DN300, DN350, DN400, DN450, DN500, DN600, DN700. DN800, DN900, DN1000, DN1100, DN1200, DN1300, DN1400, DN1500, DN1600, DN1700, DN1800, DN1900, DN2000, DN2100, DN2200, DN2300, DN2400, DN2500, DN2600, DN2700, DN2800, DN2900, DN3000

5. Measuring Accuracy

Diameter Inches (DN)	Range GPM / m/s	Accuracy
0.5 - 0.75” (DN15 - DN20)	< 4,755 GPM; (< 0.3 m/s)	±0.25% FS
	4,755 - 15,850 GPM; (0.3 - 1 m/s)	±1.0% R
	15,850 - 237,754 GPM; (1 - 15 m/s)	±0.5% R
1” - 24” (DN25 - DN600)	< 4,755 GPM; (< 0.3 m/s)	±0.25% FS
	4,755 - 15,850 GPM; (0.3 - 1 m/s)	±0.5% R
	15,850 - 237,754 GPM; (1 - 15 m/s)	±0.3% R
28” - 120” (DN700 - DN3000)	< 4,755 GPM; (< 0.3 m/s)	±0.25% FS
	4,755 - 15,850 GPM; (0.3 - 1 m/s)	±1.0% R
	15,850 - 237,754 GPM; (1 - 15 m/s)	±0.5% R

% FS: Relative Range
% R: Relative Measurement

6. Flow Parameters

6.1 Flow Units

Unit of measurement options include:
L/s, L/m, L/h, m3/s, m3/m, m3/h, uk/s, uk/m, uk/h, us/s, us/m, us/h, kg/s, kg/m, kg/h, t/s, t/m, t/h. The user can select an appropriate flow display according to the process requirements or usage habits.

6.2 Flow Accumulation Unit

The converter display is a 9-digit counter, and the maximum allowable count value is 999999999. The total unit used is L, m3, ukg, usg, kg, t (liters, cubic meters, British gallons, US gallons, kilograms, tons). This unit is automatically set to be consistent with the flow unit. When the flow unit is L/h, L/m, L/s, the integration unit is L. When the flow unit is m^3/h, m^3/m, m^3/s, the integration unit is m^3. When the flow unit is uk/s, uk/m, uk/h, the integration unit is kg/s. When the flow unit is kg/s, kg/m, kg/h, the integration unit is kg. When the flow unit is t/s, t/m, t/h, the integration unit is t.

Flow Accumulation Equivalent: 0.001 L, 0.010 L, 0.100 L, 1.000 L
0.001m, 0.010 m, 0.100 m, 1.000 m^3
0.001 ukg, 0.010 ukg, 0.100 ukg, 1.000 ukg
0.001 usg, 0.010 usg, 0.100 usg, 1.000 usg
0.001kg, 0.010 kg, 0.100kg, 1.000kg
0.001t, 0.010t, 0.100t, 1.000t

7. Measurable Flow Rate Ranges

Flow rate Unit: Gal/m (U.S.)	
Min.	Max.
0.0281	42.0147
0.0497	74.6928
0.0779	116.7076
1.9900	298.7714
0.3112	466.8306
0.5261	788.9435
0.7969	1195.0859
1.2446	1867.3217
2.8011	4201.4742
4.9796	7469.2871
7.7803	11670.7614
11.2039	16805.8966
15.2497	22874.6926
19.9181	29877.1491
25.2090	37813.2670
31.1221	46683.0457
44.8158	67223.5859
60.9990	91498.7697
79.6725	119508.5972
100.8353	151253.0686
124.4879	186732.1832
179.2627	268894.3440
243.9967	365995.0791
318.6896	478034.3891
403.3413	605012.2739
497.9523	746928.7331
602.5226	903546.0122
717.0517	1075577.3760
841.5388	1262308.0460
AVAILABLE UPON REQUEST	

Inch	DN mm
0.5	15
0.75	20
1	25
1.5	40
2	50
2.5	65
3	80
4	100
6	150
8	200
10	250
12	300
14	350
16	400
18	450
20	500
24	600
28	700
32	800
36	900
40	1000
48	1200
56	1400
64	1600
72	1800
80	2000
88	2200
96	2400
104	2600
112	2800
120	3000

Flow rate Unit: m3/h	
Min.	Max.
0.0064	9.5426
0.0113	16.9646
0.0177	26.5072
0.4520	67.8584
0.0707	106.0288
0.1195	179.1886
0.1810	271.4336
0.2827	424.1150
0.6362	954.2588
1.1310	1696.4600
1.7671	2650.7188
2.5447	3817.0351
3.4636	5195.4089
4.5239	6785.8401
5.7256	8588.3289
7.0686	10602.8752
10.1788	15268.1403
13.8544	20781.6354
18.0956	27143.3605
22.9022	34353.3157
28.2743	42411.5008
40.7150	61072.5612
55.4177	83126.5416
72.3823	108573.4421
91.6088	137413.2627
113.0973	169646.0033
136.8478	205217.6640
162.8602	244290.2448
191.1343	286701.4020
AVAILABLE UPON REQUEST	

8. Model Ordering Code

Model	Ordering Code								Description
FM750	A	B	C	D	E	F	G	H	***Sensor Material***
	CS								Carbon Steel
	SS								316 Stainless Steel
	IN								Insertion Type
									Diameter:
		A0005							Minimum ANSI diameter (0.5")...
		A1200							Maximum ANSI diameter (120")
		D0015							Minimum DN diameter (DN15)...
		D3000							Maximum DN diameter (DN3000)
		TA005							Minimum Tri-clamp diameter (0.5")...
		TA080							Maximum Tri-clamp diameter (8")
		TD015							Minimum Tri-clamp diameter (DN15)...
		TD200							Maximum Tri-clamp diameter (DN200)
									Liner Material: *see section 11.1 of Technical Spec for guidance*
			1						Neoprene / Hard Rubber; 2" - 120"
			2						PTFE; 0.5" - 40"
			3						Polyurethane; 0.5" - 24"
			4						F46; 0.5" - 12"
			5						PFA; 0.5" - 10"
									Electrode Material: *see section 11.2 of Technical Spec for guidance*
				SS					Stainless Steel (316L)
				HB					HB (Hastelloy B)
				HC					HC Hastelloy C)
				TI					Ti (Titanium)
				PI					Platinum iridium
				TA					Ta
				TC					Stainless Steel Tungsten Carbide
									Housing Protection:
					1				NEMA 4 / IP65
					2				NEMA 6P / IP68 sensor + NEMA 4 / IP65 converter
					3				NEMA 6P / IP68 sensor + converter (battery powered)
									Structure:
						ER			Remote Type (standard cable length 32ft / 10m)
						EC			Compact Type
									Power Supply:
							1		120VAC-230VAC
							2		11-40VDC
							3		3.6V Lithium Battery
									Communication:
								MA	Pulse+4-20mA, RS485
								MB	Pulse+4-20mA, HART
								MC	Pulse+4-20mA, Profibus DP
								MD	Pulse+4-20mA, RS232
								ME	GPRS Wireless Communication

	Optional Accessories:
GR	Grounding Rings (2 pcs)
SE	Scraper Electrode (3" / DN80 and larger only)
HF	High Frequency Converter with strengthened magnetic coils
RC	Remote Controller
FR	Remote Controller with Flow Totalizer Reset
CA	Extended cable length (please specify number of feet/meters required)
EP	Intrinsically safe Explosion-proof converter (compact-type only)
FP	Flame-proof converter (compact-type only)
TS	Temperature sensor
PS	Pressure sensor
SC	316 Stainless Steel converter

Example:

An example for ordering a FaraMag™ FM750, with carbon steel body, 12-inch diameter with ANSI flange, PTFE lining, Hastelloy B electrodes, NEMA4 / IP65 housing, compact structure, 120VAC-230VAC power supply, and a converter that is equipped with HART communication, would be:

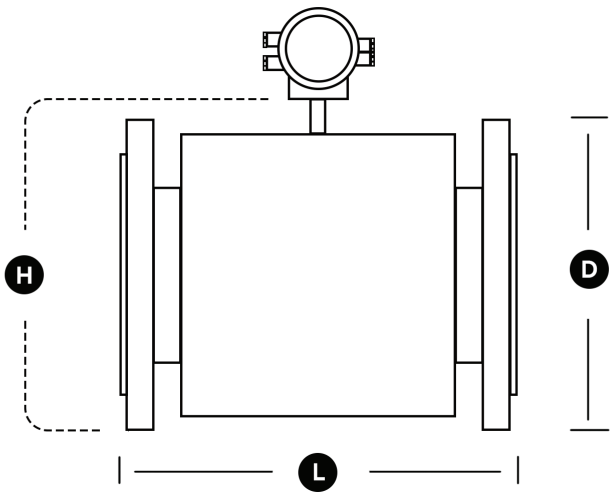
FM750	-	CS	-	A0120	-	2	-	HB	-	1	-	EC	-	1	-	MB
FaraMag model FM750		Sensor Material		Diameter		Lining Material		Electrode Material		Housing		Mounting Access.		Structure		Power Supply		Converter Model

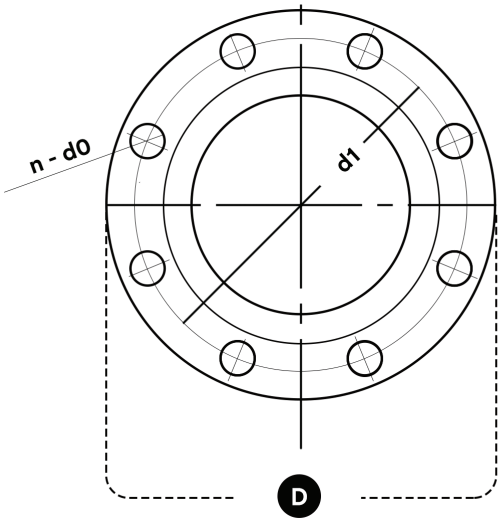
9. Weights & Dimensions

9.1 Installation Weights & Dimensions

Diameter Inches (DN)	Nominal Pressure PSI (MPa)	Outer Diameter450			Weight lbs. (kg)
		Length (including lining) Inches (mm)	D	H	
0.5 (15)	580 (4.0)	7.87 (200)	3.74 (95)	8.66 (220)	17.64 (8)
0.75 (20)		7.87 (200)	4.13 (105)	8.66 (220)	22.05 (10)
1 (25)		7.87 (200)	4.63 (115)	8.78 (223)	26.46 (12)
1.25 (32)		7.87 (200)	5.51 (140)	9.45 (240)	28.66 (13)
1.5 (40)		7.87 (200)	5.90 (150)	9.84 (250)	30.86 (14)
2 (50)		7.87 (200)	6.50 (165)	10.35 (263)	33.07 (15)
2.5 (65)	232 (1.6)	9.84 (250)	7.28 (185)	11.14 (283)	39.68 (18)
3 (80)		9.84 (250)	7.87 (200)	11.42 (290)	44.09 (20)
4 (100)		9.84 (250)	9.25 (235)	12.52 (318)	55.12 (25)
5 (125)		9.84 (250)	10.62 (270)	13.77 (350)	61.73 (28)
6 (150)		11.81 (300)	11.81 (300)	14.96 (380)	66.14 (30)
8 (200)		13.78 (350)	13.38 (340)	16.93 (430)	110.23 (50)
10 (250)		17.71 (450)	15.95 (405)	19.49 (495)	154.32 (70)
12 (300)	145 (1.0)	19.68 (500)	18.11 (460)	21.54 (547)	209.44 (95)
14 (350)		21.65 (550)	20.47 (520)	23.70 (602)	264.56 (120)
16 (400)		23.62 (600)	22.83 (580)	26.18 (665)	308.65 (140)
18 (450)		23.62 (600)	25.20 (640)	28.35 (720)	352.74 (160)
20 (500)		23.62 (600)	28.15 (715)	30.83 (783)	440.93 (200)
24 (600)		23.62 (600)	33.07 (840)	35.32 (897)	617.30 (280)
DIMENSIONS FOR LARGER UNITS AVAILABLE UPON REQUEST					

9.2 Sensor Weights & Dimensions





0.5” - 6” (DN15 - DN150), 232 & 580psi (1.6 & 4.0 MPa) Sensor and integrated / compact type

Product Weights and Dimensions

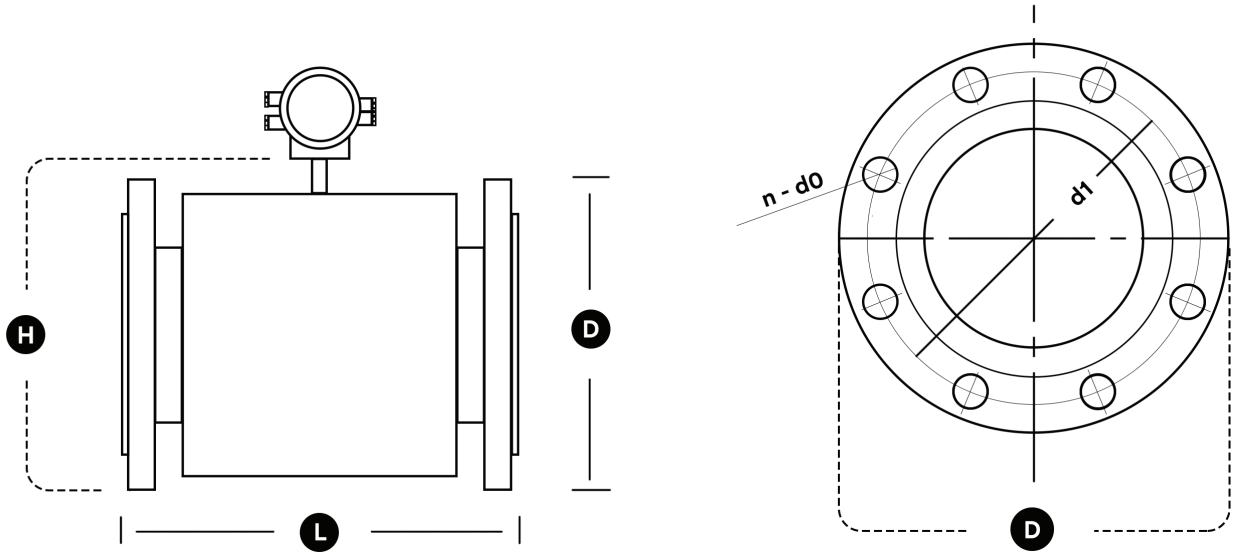
Inches	L	W	H	Reference Weight (lbs)	
				Compact Type	Sensor
0.5	7.87	5.51	5.79	22	15.5
0.75	7.87	5.51	6.06	26.5	20
1	7.87	5.51	6.14	31	24
1.25	7.87	6.61	6.54	33	26.5
1.5	7.87	6.93	6.77	35	28.5
2	7.87	6.93	7.52	37.5	31
2.5	9.84	8.43	7.87	55	48.5
3	9.84	8.43	8.58	64	57.5
4	9.84	9.06	9.53	68.5	62
5	9.84	11.06	10.91	79.5	73
6	11.81	11.06	11.89	90.5	84

DN	L	W	H	Reference Weight (kg)	
				Compact Type	Sensor
15	200	140	147	10	7
20	200	140	154	12	9
25	200	140	156	14	11
32	200	168	166	15	12
40	200	176	172	16	13
50	200	176	191	17	14
65	250	214	200	25	22
80	250	214	218	29	26
100	250	230	242	31	28
125	250	281	277	36	33
150	300	281	302	41	38

Flange Sizes

In.	Pressure 232 psi					Pressure 580 psi				
	D	d_1	d_0	n	b	D	d_1	d_0	n	b
0.5	3.74	2.56	0.55	0.15	0.63	3.74	2.56	2.56	0.15	0.63
0.75	4.13	2.95	0.55	0.15	0.71	4.13	2.95	2.95	0.15	0.71
1	4.53	3.35	0.55	0.15	0.71	4.53	3.35	3.35	0.15	0.71
1.25	5.51	3.94	0.71	0.15	0.71	5.51	3.94	3.94	0.15	0.71
1.5	5.91	4.33	0.71	0.15	0.79	5.91	4.33	4.33	0.15	0.79
2	6.50	4.92	0.71	0.15	0.79	6.50	4.92	4.92	0.15	0.79
2.5	7.28	5.71	0.71	0.15	0.79	7.28	5.71	5.71	0.15	0.87
3	7.87	6.30	0.71	0.86	0.87	7.87	6.30	6.30	0.31	0.87
4	8.66	7.09	0.71	0.86	0.87	9.25	7.48	7.48	0.31	1.02
5	9.84	8.27	0.71	0.86	0.87	10.6	8.66	8.66	0.31	1.02
6	11.22	9.45	0.86	0.94	0.94	11.8	9.84	9.84	0.31	1.10

DN	Pressure 1.6 MPa					Pressure 4.0 MPa				
	D	d_1	d_0	n	b	D	d_1	d_0	n	b
15	95	65	14	4	16	95	65	65	4	16
20	105	75	14	4	18	105	75	75	4	18
25	115	85	14	4	18	115	85	85	4	18
32	140	100	18	4	18	140	100	100	4	18
40	150	110	18	4	20	150	110	110	4	20
50	165	125	18	4	20	165	125	125	4	20
65	185	145	18	4	20	185	145	145	4	22
80	200	160	18	22	22	200	160	160	8	22
100	220	180	18	22	22	235	190	190	8	26
125	250	210	18	22	22	270	220	220	8	26
150	285	240	22	24	24	300	250	250	8	28



8” - 24” (DN200 - DN600), 232 - 580psi (1.0 & 1.6 MPa) Sensor and integrated / compact type

Product Weights and Dimensions

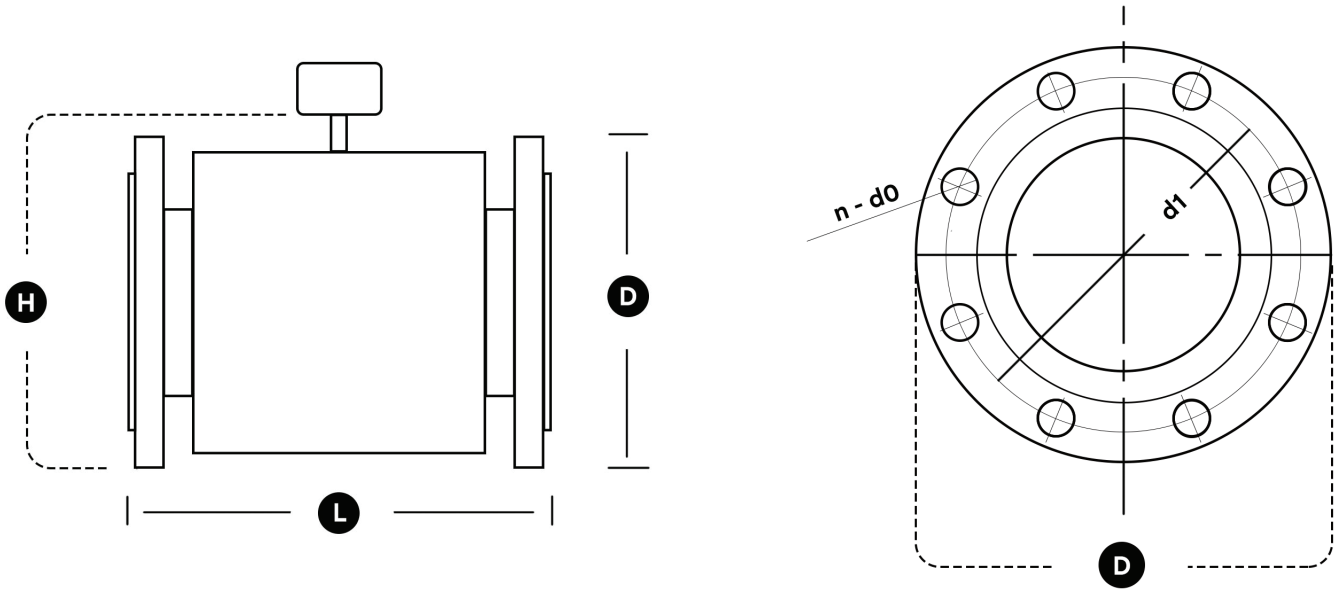
Inches	L	H ϕ	Weight (lbs)
8	13.78	14.25	99
10	17.72	16.22	110
12	19.69	18.58	132
14	19.69	21.73	319
16	19.69	22.52	180
18	21.65	24.65	397
20	21.65	26.61	540
24	23.62	30.55	739

DN	L	H ϕ	Weight (kg)
200	350	362	45
250	450	412	50
300	500	472	60
350	500	552	145
400	500	572	180
450	550	626	215
500	550	676	245
600	600	776	335

Flange Sizes

In.	Pressure 232 psi					Pressure 580 psi				
	D	d_1	d_0	n	b	D	d_1	d_0	n	b
8	13.4	11.6	0.87	0.47	1.02	13.4	11.6	0.87	0.31	0.94
10	17.7	14.0	1.02	0.47	1.10	15.6	13.8	0.87	0.47	1.02
12	18.1	16.1	1.02	0.47	1.26	17.5	15.7	0.87	0.47	1.10
14	20.5	18.5	1.02	0.63	1.38	19.9	18.1	0.87	0.63	1.18
16	22.8	20.7	1.18	0.63	1.50	22.2	20.3	1.02	0.63	1.26
18	25.2	23.0	1.18	0.79	1.65	24.2	22.2	1.02	0.79	1.38
20	28.1	25.6	1.30	0.79	1.81	26.4	24.4	1.02	0.79	1.50
24	33.1	30.3	1.42	0.79	2.05	30.7	28.5	1.18	0.79	1.65

DN	Pressure 1.6 MPa					Pressure 4.0 MPa				
	D	d_1	d_0	n	b	D	d_1	d_0	n	b
200	340	295	22	12	26	340	295	22	8	24
250	450	355	26	12	28	395	350	22	12	26
300	460	410	26	12	32	445	400	22	12	28
350	520	470	26	16	35	505	460	22	16	30
400	580	525	30	16	38	565	515	26	16	32
450	640	585	30	20	42	615	565	26	20	35
500	715	650	33	20	46	670	620	26	20	38
600	840	770	36	20	52	780	725	30	20	42



28” - 120” (DN700 - DN3000), 87 & 232psi (0.6 & 1.0 MPa) Sensor for Remote type

NOTE:

1. 28” - 120” (DN700 - DN3000) without integrated/compact type.
2. 28” - 64” (DN700 - DN1600) separated explosion-proof sensor has the same appearance as the conventional instrument.

Product Weights and Dimensions

Inches	L	H ϕ	Weight (lbs)
28	27.56	34.09	959
32	31.50	38.03	1201
36	35.43	42.36	1444
40	39.37	47.24	1786
48	47.24	55.35	1929
56	55.12	64.25	2723
64	62.99	72.13	3428
72	70.87	80.16	4597
80	78.74	88.03	5754
88	86.61	95.91	7077
96	94.49	103.8	8620
104	102.36	111.7	9436
112	110.2	119.5	11023
120	118.1	127.4	12346

Flange Sizes

Inches	Pressure (psi)	D	d_1	d_0	n	b
28	232	35.2	33.1	1.30	0.94	1.18
32		40.0	37.4	1.30	0.94	1.26
36		43.9	41.3	1..30	1.10	1.34
40		48.4	45.7	1.42	1.10	1.34
28	87	33.9	31.9	1.02	0.94	1.02
32		38.4	36.2	1.18	0.94	1.02
36		42.3	40.2	1.18	0.94	1.02
40		46.3	44.1	1.18	1.10	1.02
48		55.3	52.8	1.30	1.26	1.10
56		64.2	61.4	1.42	1.42	1.26
64		72.0	69.3	1.42	1.57	1.34
72		80.5	77.6	1.54	1.73	1.42
80		89.2	85.9	1.65	1.89	1.50
88		97.4	94.1	1.65	2.05	1.65
96		105.7	102.4	1.65	2.20	1.73
104		114.4	110.6	1.89	2.36	1.81
112		122.6	118.9	1.89	2.52	1.89
120		130.5	126.8	1.89	2.68	1.97

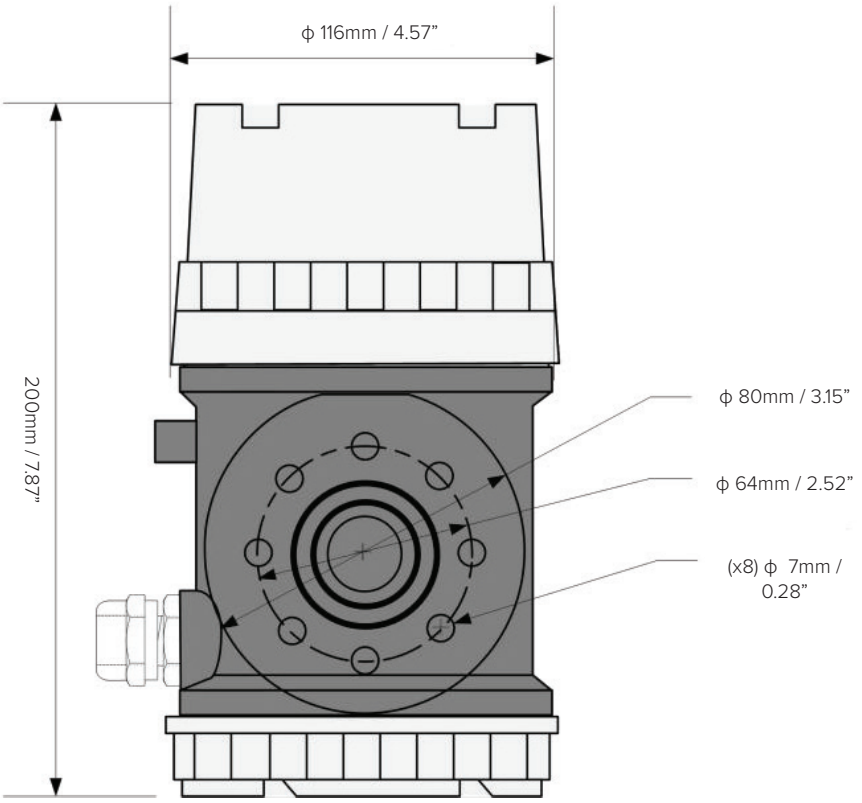
Product Weights and Dimensions

DN	L	H ϕ	Weight (kg)
700	700	866	435
800	800	966	545
900	900	1076	655
1000	1000	1200	810
1200	1200	1406	875
1400	1400	1632	1235
1600	1600	1832	1555
1800	1800	2036	2085
2000	2000	2236	2610
2200	2200	2436	3210
2400	2400	2636	3910
2600	2600	2836	4280
2800	2800	3036	5000
3000	3000	3236	5600

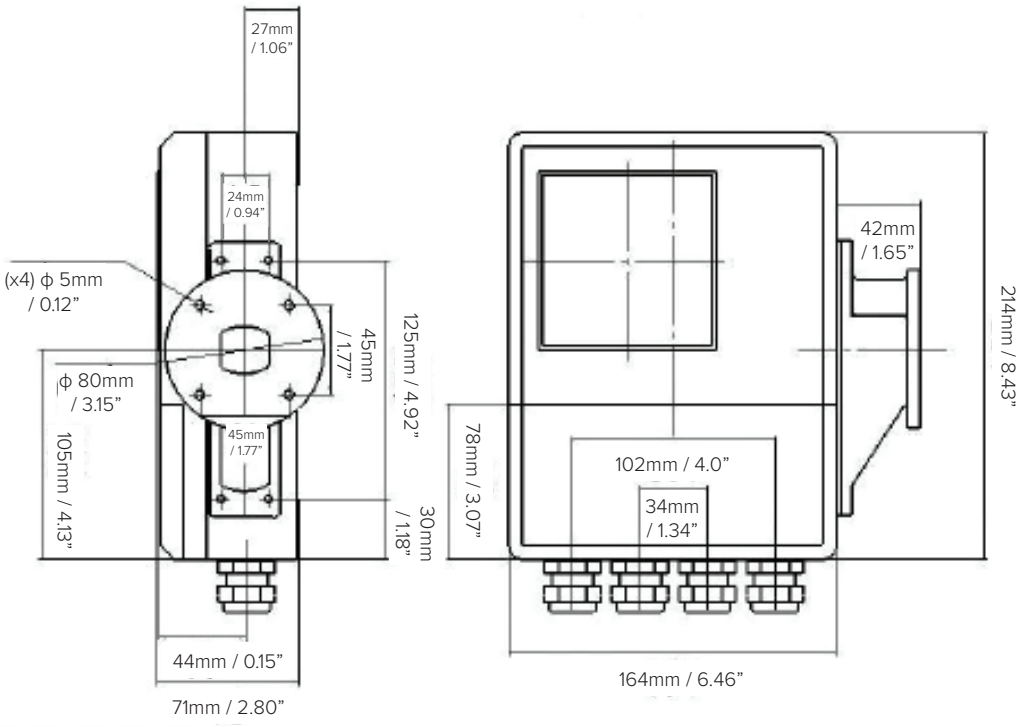
Flange Sizes

DN	Pressure (MPa)	D	d_1	d_0	n	b
700	1.0	895	840	33	24	30
800		1015	950	33	24	32
900		1115	1050	33	28	34
1000		1230	1160	36	28	34
700	0.6	860	810	26	24	26
800		975	920	30	24	26
900		1075	1020	30	24	26
1000		1175	1120	30	28	26
1200		1405	1340	33	32	28
1400		1630	1560	36	36	32
1600		1830	1760	36	40	34
1800		2045	1970	39	44	36
2000		2265	2180	42	48	38
2200		2475	2390	42	52	42
2400		2685	2600	42	56	44
2600		2905	2810	48	60	46
2800		3115	3020	48	64	48
3000		3315	3220	48	68	50

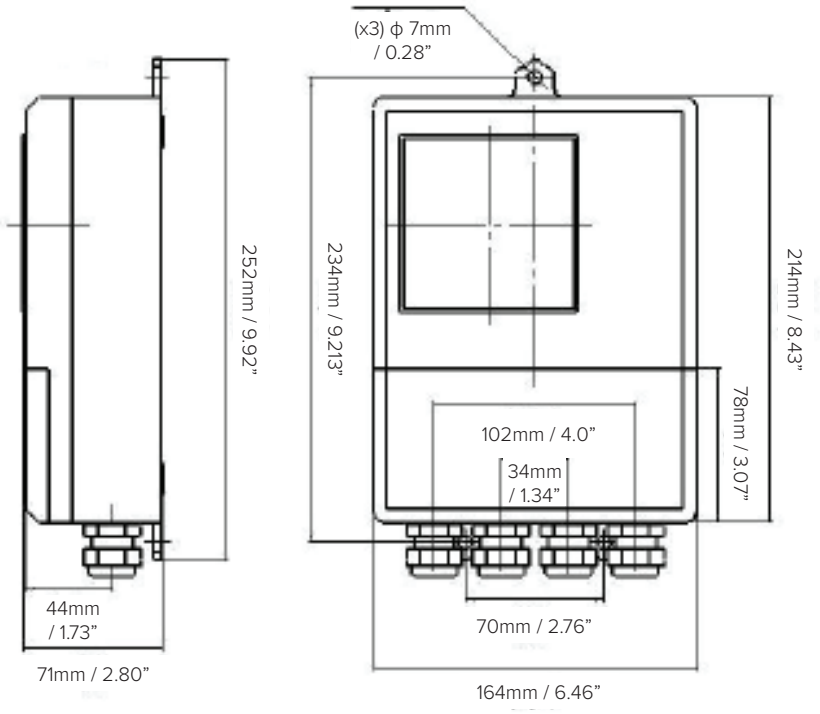
9.3 Converter Dimensions



FM750 Compact Type Shell Dimensions



FM750 Square Integrated Shell Dimensions

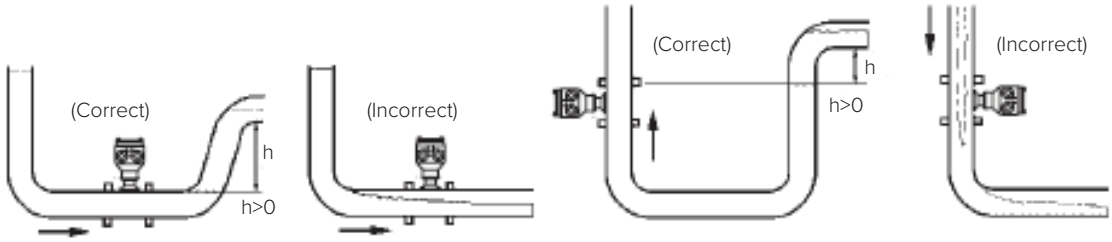


FM750 Square Split Type Shell Dimensions

10. Installation Considerations

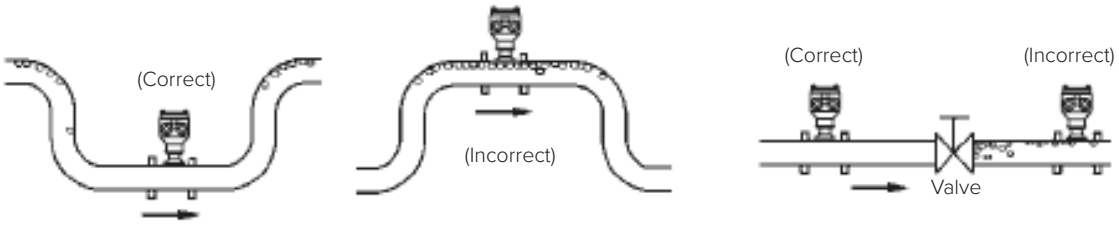
10.1 Mounting Positions

- Pipes must be fully filled with liquid. It is essential that pipes remain fully filled at all times, otherwise flow rate indications may be affected and measurement errors may occur.



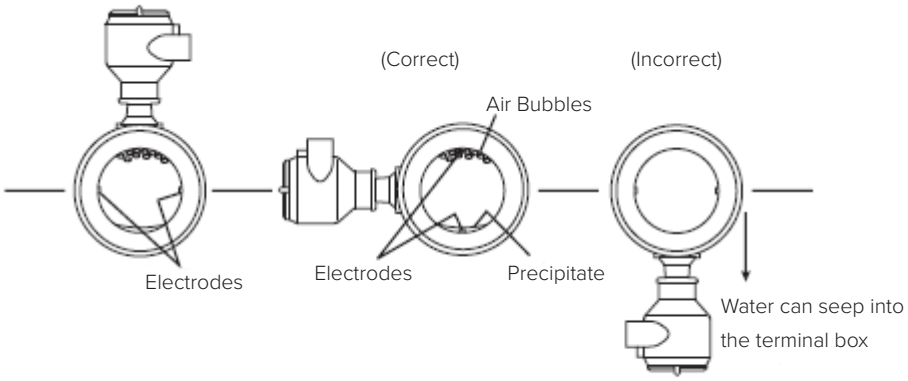
Mounting Positions

- Avoid air bubbles. If air bubbles enter a measurement pipe, flow rate indications may be affected and measurement errors may be caused.



Avoiding Air Bubbles

- If the electrodes are vertical to the ground, air bubbles near the top or precipitates at the bottom may cause measurement error. Ensure that the terminal box is mounted above the piping to prevent water from entering them.



Mounting Orientation

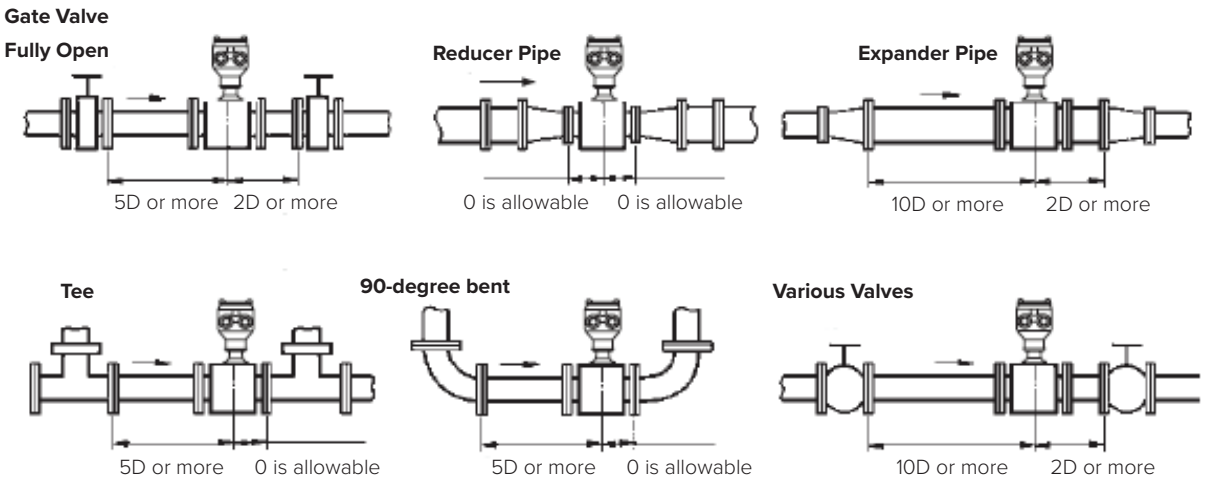
- Avoid all pipe locations where the flow is pulsating, such as in the outlet side of piston or diaphragm pumps.
- Avoid locations near equipment producing electrical interference , such as electric motors, transformers, variable frequency drives, etc.

- Install the meter with enough room for future access for maintenance purposes.
- The magnetic meter isolating liner, whether it is PTFE or Rubber, is not intended to be used as gasket material. Standard gaskets (not provided) should be installed to ensure a proper hydraulic seal. When installing the gaskets, make sure they are properly centered to avoid flow restriction or turbulence. Do not use graphite or any electrically conductive sealing compound to hold the gaskets in place during installation, as this could affect the reading accuracy of the measuring signal.

⚠ WARNING **Precaution for direct sunlight and rain when the meter is installed outside:**

10.2 Required Lengths of Straight Runs

For optimum accuracy and performance, it is required that sufficient inlet and outlet straight pipe runs are provided. An equivalent to 3 diameters of straight pipe is required on the inlet side, and 2 diameters on the outlet side. There are no special requirements for standard concentric pipe reducers. See Fig.5.4 for required straight runs when there is an altering device.



D = Flowtube Size

Required Straight Runs

11. Material Selection Guide

11.1 Liner Materials

Liner Material	Main Features	Scope of Application
PTFE	1. One of the most stable chemical properties in plastics. PTFE is resistant to boiling hydrochloric acid, sulfuric acid and aqua regia, but also resistant to concentrated acids and various organic solvents. 2. Poor abrasion resistance.	Applicable in mediums of strong corrosion, such as concentrated acid, alkali, etc. Temperature range: -40°F - 338°F (-40°C - 170°C).
F46	1. Corrosion resistance is the same as PTFE. 2. Low abrasion resistance. 3. Strong anti-negative pressure ability.	As with PTFE, possesses strong corrosive resistance and can be used to measure mediums with low abrasion. Temperature range: -40°F - 320°F (-40°C - 160°C).
Polyurethane	1. Excellent abrasion resistance (10x equivalent of natural rubber). 2. Poor acid resistance and alkali resistance. 3. Cannot be used with water mixed with organic solvents.	Ideal for neutral mediums with strong abrasion, such as slurry, coal slurry, mud, etc. Temperature range: -4°F - 140°F (-20°C - 60°C).
Polysilicone Rubber	1. Excellent elasticity, high tearing force, high pressure resistance. 2. Not resistant to the corrosion caused by acids, alkali, salt.	Water temperature range: 68°F - 356°F (20°C - 180°C).
PFA	The corrosion resistance of PFA is the same as PTFE, with strong anti-negative pressure ability.	Can be used in a negative pressure state. Temperature range: -40°F - 320°F (-40°C - 160°C).
Neoprene	1. Excellent elasticity, high tearing force, good abrasion resistance. 2. Resistant to general low concentrated acids, alkali, salt medium corrosion. Not resistant to the corrosion of oxidizing media.	Water, sewage, mildly abrasive mud, pulp. Temperature range: -4°F - 140°F (-20°C - 60°C).

11.2 Electrode Materials

Electrode Materials	Corrosion Resistance
SUS316	For industrial water, domestic water, sewage, corrosive media, widely used in petroleum, chemical, steel, etc., industrial sectors and municipal, environmental protection fields.
Hastelloy B (HB)	Good corrosive resistance for Hydrochloric acids of all concentrations below the boiling point. Also resistive to the corrosion of sulfuric acid, phosphoric acid, hydrofluoric acid, organic acids and other non-oxidizing acids, alkali, non-oxidizing salt solutions.
Hastelloy C (HC)	Resistive to the corrosion of oxidative acids, such as nitric acid, mixed acid, or chromic acid and sulfuric acid mixed medium. Also resistant to oxidizing salts such as Fe +++, Cu ++ or other oxidants such as hypochlorite solution above sea level, sea water corrosion.
Titanium (Ti)	Resistive to the corrosion of seawater, various chlorides and hypochlorites, oxidative acids (including fuming sulfuric acid), organic acids, alkalis, etc. Not resistive to the corrosion of pure reducing acids (such as sulfuric acid and hydrochloric acid). However, if the acid contains oxidants (such as nitric acid, Fe +++, Cu ++), the corrosion is greatly reduced.
Tantalum (Ta)	Has excellent corrosion resistance (similar to glass). In addition to hydrofluoric acid, fuming nitric acid, alkali, Tantalum is resistive to the corrosion of almost all chemical media (including hydrochloric acid, nitric acid and sulfuric acid under 302°F (150°C) and aqua regia).
Platinum-iridium	Resistive to almost all chemical corrosion, except aqua regia and ammonium salts.
Stainless Steel covered with Tungsten Carbide	Applicable for mediums with no corrosive media or high abrasion.

12. Menu Structure

No	Parameters	Settings	Content	Password Level
I	**Flow Setup**	**Select**		
1	Flow Unit	Select	L/h, L/m, L/s, m3/h, m3/m, m3/s, UK/h, UK/m, UK/s, US/h, US/m, US/s, kg/h, kg/m, kg/s, t/h, t/m, t/s	2
2	Flow Total Unit	Select	0.001 m^3 - 1m^3, 0.001 L - 1 L, 0.001 UKG - 1 UKG, 0.001USG - 1 USG, 0.001 kg - 1 kg, 0.001t - 1 t	2
3	Reverse Flow En.	Select	Enable, Disable, Enable & Output	2
4	Flow Range	Set Count	0 - 99999	2
5	Flow Filter Time	Selected	1 - 60 S	2
6	Analog Damp Time	Selected	0 - 150 S	2
7	Peak Limit Ena.	Select	Enable, Disable	2
8	Peak Limit Valu.	Set Count	0% - 30%	3
9	Peak Limit Time	Set Count	0s - 20s	3
10	Flow Direction	Select	Forward, Reverse	2
11	Cutoff Alarm En.	Set Count	Enable, Disable	2
12	Low Flow Cutoff	Set Count	According to Flow	2
13	Fluid Density	Set Count	0 - 1.999	2
14	Zero Correction	Set Count	0 - ±9999	2
15	Meter Factor	Set Count	0.0000 - 5.9999	5
16	Clear Total Key	User Set	0 - 99999	2
II	**Alarm Setup**	**Select**		
1	High Alarm Enab.	Select	Enable, Disable, Enable & Output	2
2	High Alarm Value	Set Count	According to Flow	2
3	Low Alarm Enable	Select	Enable, Disable, Enable & Output	2
4	Low Alarm Value	Set Count	According to Flow	2
5	System Alarm Ena.	Select	Enable, Disable, Enable & Output	2
6	Sensor Measure Ena.	Select	Enable, Disable, Enable & Output	2
7	Sensor MT Alarm	Set Count	0 - 59999	2
8	Sensor MT Zero	Set Count	0 - 59999	5
9	Sensor MT Range	Set Count	0 - 5.9999	5
10	MT Filter Time	Selected	2 - 60 SEC	2
III	**Output Setup**			
1	Digital Output	Select	PO: Freq. output / PO Pulse output / DO: Pulse output	2
2	Pulse Unit	Select	m3, Ltr, UKG, USG, kg, t	2
3	Pulse Factor	Set Count	00.001 - 59.999	2
4	Pulse Width	Select	1 - 9999ms	2
5	Frequency Lower		0 - 5000 Hz	2
6	Frequency Range	Set Count	1 - 5000 Hz	2
7	Analog Output	Select	4-20mA / 4mA	2
8	Analog Zero CRC	Set Count	0.0000 - 1.9999	5
9	Analog Range CRC	Set Count	0.0000 - 3.9999	5
10	Analog Out. Test	Set Count	00.00 - 99.99	2

No	Parameters	Settings	Content	Password Level
IV	**Sensor Setup**			
1	Sensor Size	Select	3 - 3000	2
2	Excit. Frequency	Select	For 50Hz: 6.25Hz, 5.55Hz, 5.00Hz, 4.54Hz For 60Hz: 6.25Hz, 5.55Hz, 5.00Hz, 4.54Hz	4
3	Sensor Factor	Set Count	0.0000 - 5.9999	4
4	Lineary Correct	Select	Enable, Disable	2
5	Velocity Point 1	User Set	According to Flow	4
6	Velocity Value 1	User Set	According to Flow	4
7	Velocity Point 2	User Set	According to Flow	4
8	Velocity Value 2	User Set	According to Flow	4
9	Velocity Point 3	User Set	According to Flow	4
10	Velocity Value 3	User Set	According to Flow	4
11	Velocity Point 4	User Set	According to Flow	4
12	Velcoity Value 4	User Set	According to Flow	4
13	Velocity Point 5	User Set	According to Flow	4
14	Sensor Code 1	User Set	Year, Month (0 - 99999)	4
15	Sensor Code 2	User Setting	Product No. (0 - 99999)	4
V	**Communication**			
1	Communication Mode	Select	MODBUS, HART, PROFIBUS	2
2	Communication Address	Set Count	0 - 250	2
3	Baud Rate	Select	300 - 38400	2
4	Check Mode	Select	No Parity, 1 Stop, Odd Parity, 1 St, Even Parity, 1 S, No Parity, 2 Stop, Odd Parity, 2 St, Even Parity, 1 S.	2
VI	**Meter Parameters**			
1	Password 1	User Set	0 - 59999	5
2	Password 2	User Set	0 - 59999	5
3	Password 3	User Set	0 - 59999	5
4	Password 4	User Set	0 - 59999	5
5	Meter Code 1	Factory Set	Year, Month (0 - 99999)	5
6	Meter Code 2	Factory Set	Year, Month (0 - 99999)	5
7	Fwd. Total Low	User Set	0 - 99999	5
8	Fwd. Total High	User Set	0 - 99999	5
9	Rev. Total Low	User Set	0 - 99999	5
10	Rev. Total High	User Set	0 - 99999	5

13. Customer Notes

Progress through Innovation™

Our innovative solutions are developed with a focus on controlling, protecting and monitoring machines and processes that are driven by electric motors.

Contact your authorized H2flow Controls solutions provider to find out how our products can reduce your operating costs and increase your productivity.

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H2flow reserves the right to make changes to specifications and product features without notice. Please contact H2flow or visit www.h2flow.net for the most up-to-date versions of our product literature.

FaraMag FM750 mag meters are assembled in the USA using globally sourced components.