

- Standard system accuracy is $\pm 0.5\%$ of rate from 2 to 100% of meter capacity. ($\pm 0.25\%$ is optional).
- Extremely low power consumption.
- TEFZEL® liner provides superior chemical and abrasion resistance.
- Long term accuracy, stability and absolute zero stability by digital signal processing with pulsed DC excitation.
- Wafer design body mounts between ANSI Class 150 or 300 flanges and global flange designs available.
- Available in sizes 1/10" to 4".



MINI-MAG® J/S
Magnetic Flowmeters

MINI-MAG® J/S MAGNETIC FLOWMETER

The Mini-Mag® is the ideal flowmeter to measure liquids, pastes, or slurries with a specific minimum electrical conductivity. The flowmeter's accuracy, lack of moving parts, minimal pressure loss and resistance to abrasion and chemical corrosion make it suitable for a variety of applications. For many years, ABB magmeters have been successfully installed in the chemical, pharmaceutical, food, municipal water and waste water industries.

The Series 10D1475J/S magmeter is a pulsed DC volumetric liquid flow rate detector. The coils of the meter primary are excited with pulsed DC current in order to establish a magnetic field. The standard converter is the microprocessor based converter. This is available integral - with the primary and converter as one unit, or remotely with the primary and converter as separate components.

Engineering Specifications

Minimum Liquid Conductivity: 5 μ S/cm

Pressure Limits: 740 psi (5.10 Mpa) @ 100°F (38°C) or mating pipe flange if lower.

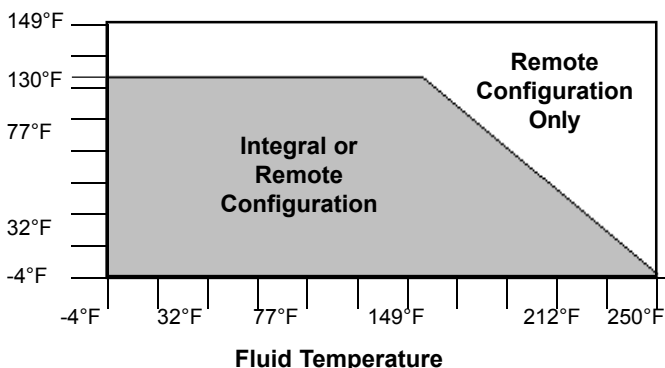
Vacuum Limits:

1/10" to 3" -- Full Vacuum to 212°F (100°C)
4" -- Full Vacuum to 176°F (80°C)

Temperature Limits:

Process: 266°F (130°C)
Ambient:
Remote Configuration: -40 to 149°F (-40 to 65°C)
Integral Configuration: -4 to 131°F (-20 to 55°C)
Storage: -40 to 160°F (-40 to 70°C)

Operating Conditions:



Vibration Limits: 5 to 14 Hz, 0.10 inch displacement, 14 to 2000 Hz, 1g.

Power Requirements:

115/230 VAC, +15/-10%, 50/60 Hz \pm 6%
24 VDC, -30/+30%, residual ripple -5%.

Power Consumption: 23VA (primary and converter)

Coil Excitation Frequency:

6-1/4, 12.5 Hz, or 25 Hz for 50 Hz power supply.
7-1/2, 15 Hz, or 30 Hz for 60 Hz power supply.

Empty Pipe Detector: Drives the outputs to a value when the electrodes become uncovered (0% or 130% of the limiting current value) and the totalizer will stop incrementing. Minimum fluid conductivity 50 μ S/cm.

Low Flow Cut-Off: 0 to 10%, software selectable.

Damping: 0.5 to 99.99 seconds, software selectable.

Current Output: Configurable 4-20 mA dc into 0-750 Ω load, including split range capabilities w/o HART.

Active Scaled Pulse Output (Optional): 24 VDC into >150W load. Maximum scaled pulse output frequency is 4 kHz. The pulse multiplication factor may be set between 0.001 and 1000. The pulse width is adjustable from 0.1 ms to 2000 ms.

Isolation: Current and pulse outputs are galvanically isolated from the input circuit and from one another.

HART® Protocol Communications: 1200 Baud using frequency shift keying. Maximum cable length: 5000 ft (1667m).

Communications: 9600 Baud using frequency shift keying.

System Accuracy:

Frequency Output:
Flow > 2% of Cal. Factor = \pm 0.5% of rate
Flow < 2% of Cal. Factor = \pm 0.01% of Meter Capacity

Analog Output:
Same as frequency output but with an additional \pm 0.1% of span

Enclosure Classification:

Standard: Accidental Submergence (IEC 529, IP67) in water up to a depth of 33 feet (10m) for up to 48 hours.

Optional: Continuous Submergence (IEC 529, IP68) in water up to a depth of 33 feet (10m).

Capacity Table

SIZE		METER CAPACITY	CONFIGURABLE FLOW RANGE: 0 TO VALUE			
			MINIMUM		MAXIMUM*	
Inch	mm	gpm	gpm	l/min	gpm	l/min
1/10	3	1.06	0.021	0.08	1.06	4.0
5/32	4	2.12	0.042	0.16	2.12	8.0
1/4	6	5.28	0.11	0.40	5.28	20.0
3/8	10	11.9	0.24	0.90	11.9	45.0
1/2	15	26.4	0.53	2.00	26.4	100.0
1	25	52.8	1.06	4.00	52.8	200.0
1-1/2	40	158.5	3.17	12.0	158	600.0
				m ³ /hr		m ³ /hr
2	50	264.2	5.28	1.2	264	60.0
3	80	792.5	15.85	3.6	792	180.0
4	100	1057	21.14	4.8	1057	240.0

Flow Velocity (ft/s) = Operating GPM x 32.81 / Meter Capacity

*Maximum values listed are at 10 m/s velocity. Meter can be overranged to 1.5 x meter capacity with standard software.

TABLE 1.

Safety Classification:

Standard: FM Approved - Nonincendive for Class I, Division 2, Groups A, B, C & D:
Electrodes are intrinsically safe for Class I, Division 1, Groups A, B, C, & D: Dust-Ignition proof for Class II, Division 1, Groups E, F & G: Suitable for Class III, Division 1.

Optional: FM Approved - Explosion proof for Class I, Division 1, Groups B, C & D:
Electrodes are intrinsically safe for Class I, Division 1, Groups A, B, C & D: Dust-Ignition proof for Class II, Division 1, Groups E, F & G: Suitable for Class II, Division 1.

Display: LCD dot matrix display, 2 lines x 16 digits. The internal flow totalizer integrates in both forward and reverse flow directions.

Data Security: All data is stored in a NV-RAM for a period of more than 10 years without requiring external power.

Materials of Construction

Meter Housing: All welded carbon steel construction with epoxy finish

Electronics Housing: Epoxy painted cast aluminum

Electrical Connections: Cage-clamp terminals for wiring and 1/2 inch NPT internally threaded conduit fittings.

Liner: TEFZEL®

Electrodes: Hastelloy-C, Tantalum, Platinum.

Approximate Shipping Weights

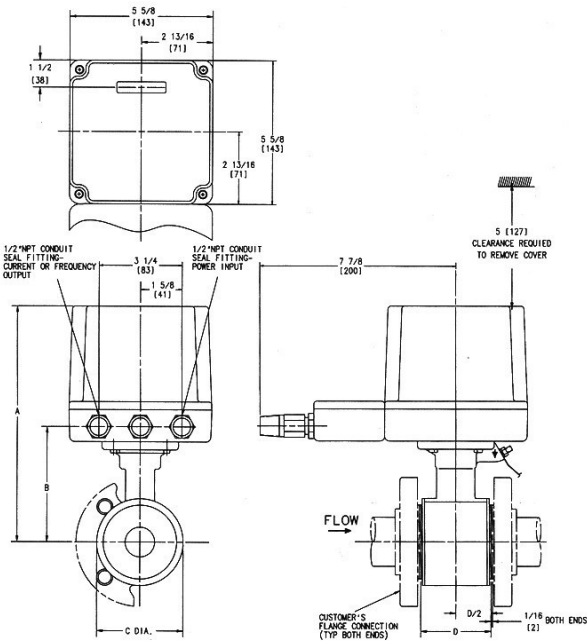
Meter Size		Remote *Primary	Integral (Primary & Converter)	Remote - Explosion proof Design
in.	mm	lbs	lbs	lbs
1/10	3	4	9	5
5/32	4	4	9	5
1/4	6	4	9	5
3/8	10	4	9	5
1/2	15	4	9	5
1	25	4	10	5
1-1/2	40	5	11	6
2	50	7	12	8
3	80	10	16	11
4	100	16	22	17

* Cl 1, Div 2

Electro-Magnetic Flowmeters

Mini-Mag® J & S Magnetic Flowmeters - 10D1475J/S

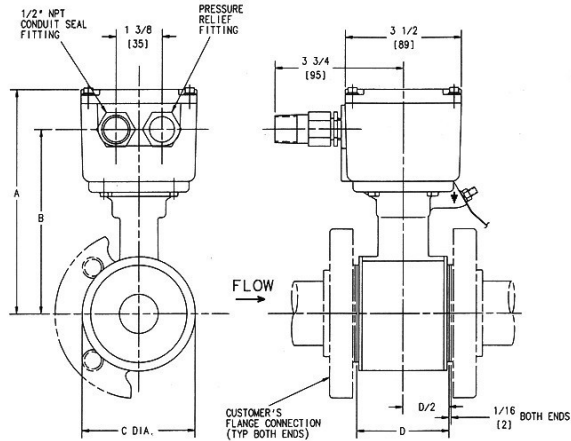
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METER AND FLANGE SIZES	CUSTOMER FLANGE TYPE AND RATING	A	B	C DIA	D
1/10 (3) - 1/2 (15)	ANSI CLASS 150 ANSI CLASS 300 BS 10 TBL D.E.F. DIN PN 10, 16, 25 & 40	7-11/16 (95)	3-3/4 (95)	1-7/8 (48)	2-5/32 (55)
1 (25)		8-1/16 (205)	4-1/8 (105)	2-5/8 (87)	2-5/32 (55)
1-1/2 (40)		8-7/16 (214)	4-1/2 (114)	3-3/8 (86)	2-3/4 (70)
2 (50)		8-3/4 (222)	4-13/16 (122)	4 (102)	3-11/32 (85)
3 (80)		9-3/8 (238)	5-7/16 (138)	5-1/4 (133)	4-23/32 (120)
4 (100)		10 (254)	6-1/16 (154)	6-1/2 (165)	5-29/32 (150)

NOTES:

- Dimensions are in inches. Dimensions in brackets [] are in millimeters.
- Dimensions guaranteed only if this print is certified
- All dimensions subject to Manufacturing tolerance of ±1/8 inch (3mm)
- Meter must be completely filled with liquid to insure accuracy
- Flow must be in same direction as flow arrow. 1/2 NPT conduit connections in housing indicate "upstream" end of meter.
- Meter mounts between customer's pipeline flanges. Types and ratings listed in table of dimensions.
- This drawing is third angle projection as shown



METER AND FLANGE SIZES	CUSTOMER FLANGE TYPE AND RATING	A	B	C DIA	D
1/10 (3) - 1/2 (15)	ANSI CLASS 150 ANSI CLASS 300 BS 10 TBL D.E.F. DIN PN 10, 16, 25 & 40	5-23/32 (145)	4-21/32 (118)	1-7/8 (48)	2-5/32 (55)
1 (25)		63/32 (155)	5-1/32 (128)	2-5/8 (67)	2-5/32 (55)
1-1/2 (40)		6-15/32 (164)	5-13/32 (137)	3-3/8 (86)	2-3/4 (70)
2 (50)		6-25/32 (172)	5-23/32 (145)	4 (102)	3-11/32 (85)
3 (80)		7-13/32 (188)	6-11/32 (161)	5-1/4 (133)	4-23/32 (120)
4 (100)		8-1/16 (205)	8-1/16 (205)	6-1/2 (165)	5-29/32 (150)

ABB has Sales & Customer Support expertise in over 100 countries worldwide

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The Company's policy is one of continuous product improvement and the right is reserved to modify the information contained herein without notice.

Printed in USA (3.9.08)

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D-FMP-10D1475J/S_4 (US)