

Electro-Magnetic Flowmeters MINI-MAG[®] T with Remote MagMaster MFE Converter 10D1475T

- Flowmeter System utilizing the MagMaster™ MFE remote converter.
- Standard system accuracy is $\pm 0.5\%$ of rate
- 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.
- Separate sealed, customer wiring compartment protects electronics from the environment.
- Available in sizes 1/10" to 4"



MINI-MAG[®] T
Magnetic Flowmeters

MINI-MAG® T MAGNETIC FLOWMETER

The ABB Mini-Mag® is the ideal flowmeter to measure liquids, pastes, or slurries with a specific minimum electrical conductivity. The flowmeter's high accuracy, lack of moving parts, minimal pressure loss and superb resistance to abrasion and chemical corrosion make it suitable for a variety of applications.

The Mini-Mag 10D1475T is a pulsed DC volumetric liquid flow rate detector. The coils of the primary are excited with pulsed DC current that is supplied by the MagMaster MFE Converter.

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: 250°F (121°C)
Ambient: Remote Configuration:
-40 to 149°F
(-40 to 65°C)

Storage: -40 to 160°F
(-40 to 70°C)

Converter/Primary Separation:
≤ 100m (328 ft.)

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

Power Requirements:
95 to 240 VAC, 47 to 440 Hz
11 to 40 VDC

Power Consumption: ≤ 20 VA

Empty Pipe Detector: Drives the outputs to a predetermined value when the electrodes become uncovered and the totalizer will stop incrementing.

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

Damping: 2-120 sec.

Pulse Output: Open collector pulse 0 - 800 Hz
≤ 250 mA

Current Output: Configurable 4-20 mA
or 0-20 mA dc into 0-800Ω load

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

HART® Protocol Communications: Refer to MagMaster MFE Converter specification.

System Accuracy:
Frequency Output:
0.5% of rate, .67 - 32.8 F.P.S.

Analog Output:
Same as frequency output but with an additional 0.01% 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		CONFIGURABLE FLOW 0 TO VALUE	
		MINIMUM	MAXIMUM
Inch	mm	gpm	gpm
1/10	3	0.021	1.06
5/32	4	0.042	2.12
1/4	6	0.11	5.28
3/8	10	0.24	11.9
1/2	15	0.53	26.4
1	25	1.06	52.8
1-1/2	40	3.17	158
2	50	5.28	264
3	80	15.85	792
4	100	21.14	1057

Table 1.

Approximate Shipping Weight (lbs)

Meter Size		Remote *Primary	Remote - proof Design
Inch	mm	lbs	lbs
1/10	3	4	5
5/32	4	4	5
1/4	6	4	5
3/8	10	4	5
1/2	15	4	5
1	25	4	5
1-1/2	40	5	6
2	50	7	8
3	80	10	11
4	100	16	17

* General Purpose or CL 1, Div 2

Safety Classification:

Standard: General Purpose (No Approvals)

Optional: 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.

Materials of Construction

Meter Housing:

All welded carbon steel construction with epoxy finish

Converter Housing:

Glass loaded polypropylene, polycarbonate window.

Electrical Connections:

1/2 inch NPT internally threaded conduit fitting.

Liner:

TEFZEL® (ETFE)

Electrodes:

Hastelloy-C, Platinum/10% Iridium, Tantalum

Cable:

Remote Signal Cable - STT3350, STT3500 (IP68)

1/2 Inch and smaller sizes are designed for use with 1/2 inch size flanges
For Options & Accessories & Grounding Rings see D-FMZ-10D9000

Standard Product= Code

Electromagnetic Flowmeter Mini-Mag 1/10 In. ... 4 in. 10D1475T

1 : Liner Material

Tefzel	N
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2 : Flowmeter Size - In. (mm)

2.5 mm (1/10 in.)	01
4 mm (5/32 in.)	02
6 mm (1/4 in.)	04
10 mm (3/8 in.)	06
15 mm (1/2 in.)	07
25 mm (1 in.)	09
40 mm (1-1/2 in.)	11
50 mm (2 in.)	12
80 mm (3 in.)	14
100 mm (4 in.)	15

3 : Mating Flanges

ANSI 150 lb.	P
ANSI 300 lb.	Q
Not Required (must select x in Character 25)	X

4 : Electrode Material

Hastelloy C	D
Tantalum	F
Platinum (1/10 in. ... 3/8 in.)	(Note: 1) M
Platinum (1/2 in. ... 4 in.)	(Note: 2) M

5 : Electrode Type

Flush	2
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6 : Flange Material

Wafer Design w/riveted SST tag	9
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7 : Safety Classification

General Purpose (w/o FM Approval)	A
FM Approved CI 1, Div 2, Group A, B, C & D Standard	K
FM Approved, CI 1, Div. 1, Group B, C & D Explosion Proof (1/2 in. ... 4 In. Only)	(Note: 2) L

8 : Power Requirement Remote Converter

Separate Model Number (Converter Priced Separately - Please refer to MFE4)	(Note: 4) Y
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9 : Enclosure Classification

IEC 529 IP 67, Accidental Submergence in Water to 10 m (33 ft.) for 48 hrs	5
IEC 529 IP 68, Continuous Submergence in Water to 10 m (33 ft.) (with Remote only), (Cable STT-3500 to be priced separately)	4

10D1475T

Code

10 : Process Temperature Range

To 250 °C (1219 °F), Remote Converter	2
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11 : Output Current

No Output Signal, (See Remote Converter)	A
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12 : Output Options

No Output Signal, (See Remote Converter)	1
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13 : Communication Mode

Not Applicable (See Remote Converter)	1
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14 : Coil Drive Frequency

Standard	A
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15 : Additional Options

See Remote Converters	2
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16 : Mounting Hardware Kit

Standard Kit: Steel Bolts & Nuts, Centering Device, Klinger SIL C-4401 Gaskets	C
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Optional Kit: Steel Bolts & Nuts, Centering Device, Teflon Gaskets	E
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Standard Kit: Not Required	X
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(Note: 3)

17 : Converter

Required	1
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Not Required (Primary only)	2
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ACCESSORIES:

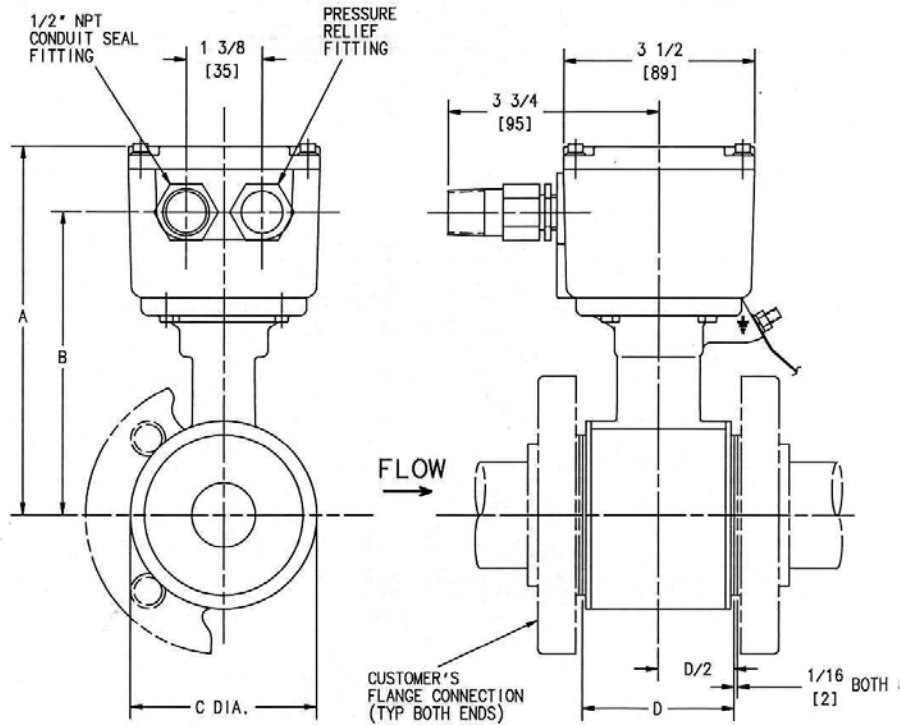
Instruction Manual: (One copy supplied with order at no charge) PN 24940
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Note 1: Not available with Flowmeter Size - In. (mm) code 07, 09, 11, 12, 14, 15

Note 2: Not available with Flowmeter Size - In. (mm) code 01, 02, 04, 06

Note 3: Not available with Mating Flanges code P, Q

Note 4: Converter Priced Separately



NOTES:

1. Dimensions are in inches. Dimensions in brackets [] are in millimeters.
2. Dimensions guaranteed only if this print is certified
3. All dimensions subject to Manufacturing tolerance of ±1/8 inch (3mm)
4. Meter must be completely filled with liquid to insure accuracy
5. Flow must be in same direction as flow arrow. 1/2 NPT conduit connections in housing indicate "upstream" end of meter.
6. Meter mounts between customer's pipeline flanges. Types and ratings listed in table of dimensions.
7. 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	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)

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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.

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