

## Electro-Magnetic Flowmeters Electrodeless - Primary

Series 10DX3121



- **Minimum Liquid Conductivity 0.05  $\mu$ S/cm.**  
Allows many new harsh process liquids to be measured with a magnetic flowmeter.
- **No Wetted Electrodes.** Eliminates the possibility of electrode leaks or process / electrode incompatibility.
- **Immune to Slurry Noise.** No wetted electrodes means electrodes cannot be impinged upon by process solids, this provides a stable output signal for control or indication.
- **Immune to Most Coating Buildup.**  
The 10DX3121 is ideal for heavy coating processes such as latex, clays and sludge.
- **Corrosion and abrasion resistant.**  
With TEFZEL<sup>®</sup> ETFE liner
- **Separate customer connection box.**  
Isolates electronics compartment and protects electronics from the environment.



Series 10DX3121 Primary  
Electrodeless Magnetic Flowmeter

## ELECTRODELESS MAGNETIC FLOWMETER (MICROPROCESSOR BASED)

The Series 10DX3121 Magnetic Flowmeter is a smart pulsed DC type volumetric, liquid flow rate detector. It utilizes the properties of a conductive fluid to generate an induced voltage when flowing through a magnetic field. The amplitude of the voltage, thus produced, is directly proportional to the flow rate of the metered liquid. A characterized non-uniform magnetic field design significantly reduces sensitivity to flow profile effects.

The meter's magnet coils are powered by a magnet driver unit. This unique method of magnet coil drive provides total zero point stability. The flow signal developed by this magnetic flowmeter is processed by Signal Converter Model 50CM2000 which can be mounted remotely on a wall or 2-inch pipe.

This flowmeter is similar to the Series 10DX3000 Magnetic Flowmeter with the exception that the 10DX3121 flowmeter does not have electrodes wetted by the process. The flowmeter is available in sizes 1" to 12".

### Engineering Specifications

**Minimum Liquid Conductivity:** 0.05  $\mu$ S/cm. For conductivity below 0.1 $\mu$ S/cm and viscosities below 100 centistokes consult factory.

**Electrical Power Requirements:**

115 Vac,  $\pm$ 10%, 50/60 Hz,  $\pm$ 5%.

230 VAC,  $\pm$ 10%, 50/60 Hz,  $\pm$ 5%

24 VDC, -25%, + 30%, Ripple  $\leq$  1.5 vp

**Power Consumption:**

< 23 VA for AC Power; 10W for DC Power

**Pressure Limits:** At 38°C (100°F)

Sizes	Pressure	ANSI Rating
1" thru 3"	5.10 MPa (740 PSI)	Class 300
4" thru 12"	2.00 MPa (285 PSI)	Class 150

**Temperature Limits:**

Process Liquid: To 100°C (212°F)

Ambient: -40°C to +65°C (-40° to 150°F)

**System Accuracy:** Range can be set between 5% and 100% of meter capacity shown in Table 1.

**Range:** Factory set full scale output signal can be set to any value between minimum and maximum value shown in Table 1.

Size		Minimum Range Setting		Maximum Range Setting	
Inch	mm	GPM	L/M	GPM	L/M
1	25	2.68	10	53.7	200
1.5	40	7.9	30	158	600
2	50	13.2	216	264	1,000
3	80	39.6	148	792	3,000
4	100	52.8	200	1,056	4,000
6	150	132	500	2,642	10,000
8	200	238	900	4,755	18,000
10	250	396	1500	7,925	30,000
12	300	528	2000	10,567	40,378

TABLE 1

**Isolation:** Input and output signals are fully isolated.

**Enclosure Classification:** NEMA 4X (IP65) suitable for indoor or outdoor installation. Optional NEMA 4X and accidental submergence 30 ft (10 M)/48 hours (IP67), continuous submergence (IP68).

**Safety Classification:** General Purpose

**Vacuum Limit:** 0 psia @  $\leq$  212°F (100°C)

### Materials of Construction

**Meter Tube:** 304 Stainless Steel

**Housing:**

Electronics: Die Cast Aluminum, Epoxy Coated

Flowmeter: Welded Cast Steel, Epoxy Coated

### Outline & Mounting Dimensions

See Figures 1 & 2.

**Electrical Connections:** 1/2 inch NPT

### Metering Weight

150# Flange Process Connections

Meter Size		Meter Weight	
inch	mm	lbs	kg
1	25	14.3	6.5
1.5	40	18.7	8.5
2	50	22	10
3	80	42	19
4	100	48.5	22
6	150	86	39
8	200	148	67
10	250	218	99
12	300	273	124

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### Model Number Designation for the 10DX3121

Model Number 10DX3121

**Design Level**

Remote Primary  
 use with 50CM2000 remote converter ..... \*

**Installation Length**

For ANSI Flanges (Standard) .....

**Liner Material**

TEFZEL® ETFE .....

**Meter Size**

- 1" (25mm) ..... 09
- 1.5" (40mm) ..... 11
- 2" (50mm) ..... 12
- 3" (80mm) ..... 14
- 4" (100mm) ..... 15
- 6" (150mm) ..... 17
- 8" (200mm) ..... 18
- 10" (250mm) ..... 19
- 12" (300mm) ..... 20

**Flange Connection**

- ANSI Class 150 ..... P
- ANSI Class 300 ..... Q

**Flange Material**

316 Stainless Steel (1.4571) .....

**Electrode Design**

Capacitive .....

**Approvals**

None .....

**Protection Class**

- IP 67 (Temporary submergence 33ft., 48 hrs.) ..... 2
- IP 68 (Continuous submergence, 33 ft.) ..... 3

**Temperature Range** - Standard, see Specification Sheet .....

**Line Frequency / Excitation Frequency**

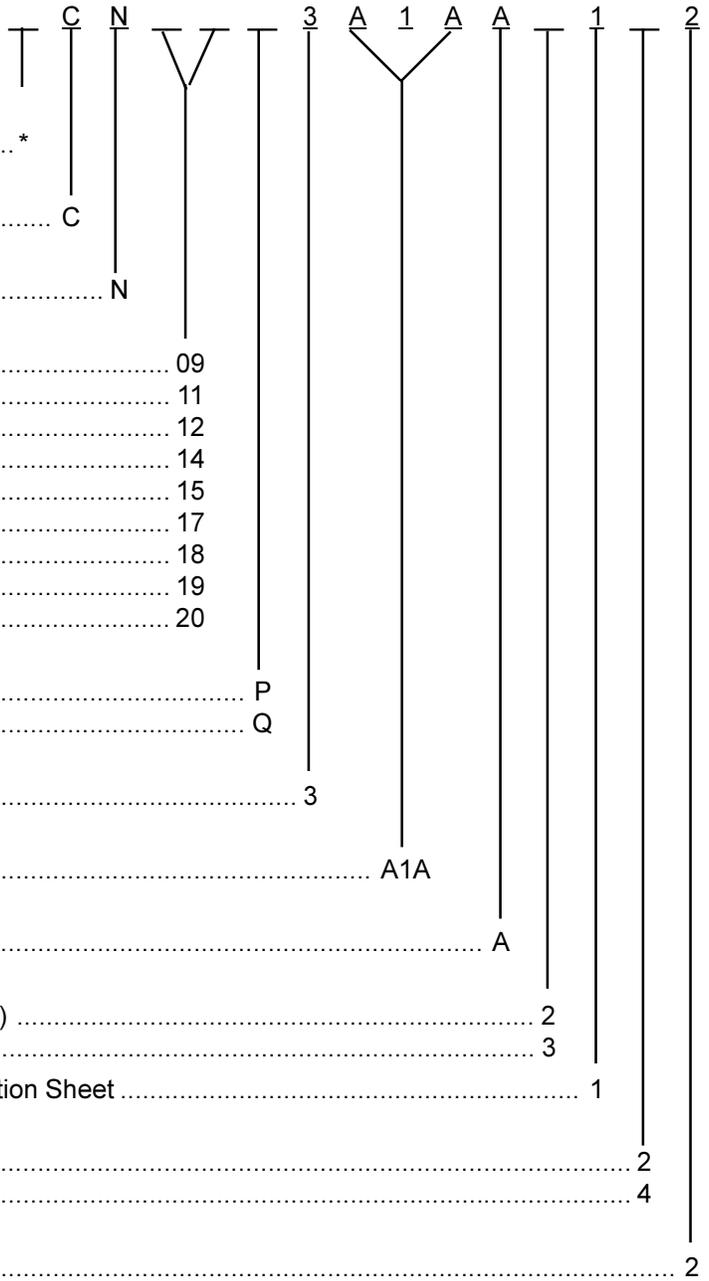
- 50 Hz, 12-1/2 Hz ..... 2
- 60 Hz, 15 Hz ..... 4

**Instrument Tag**

English .....

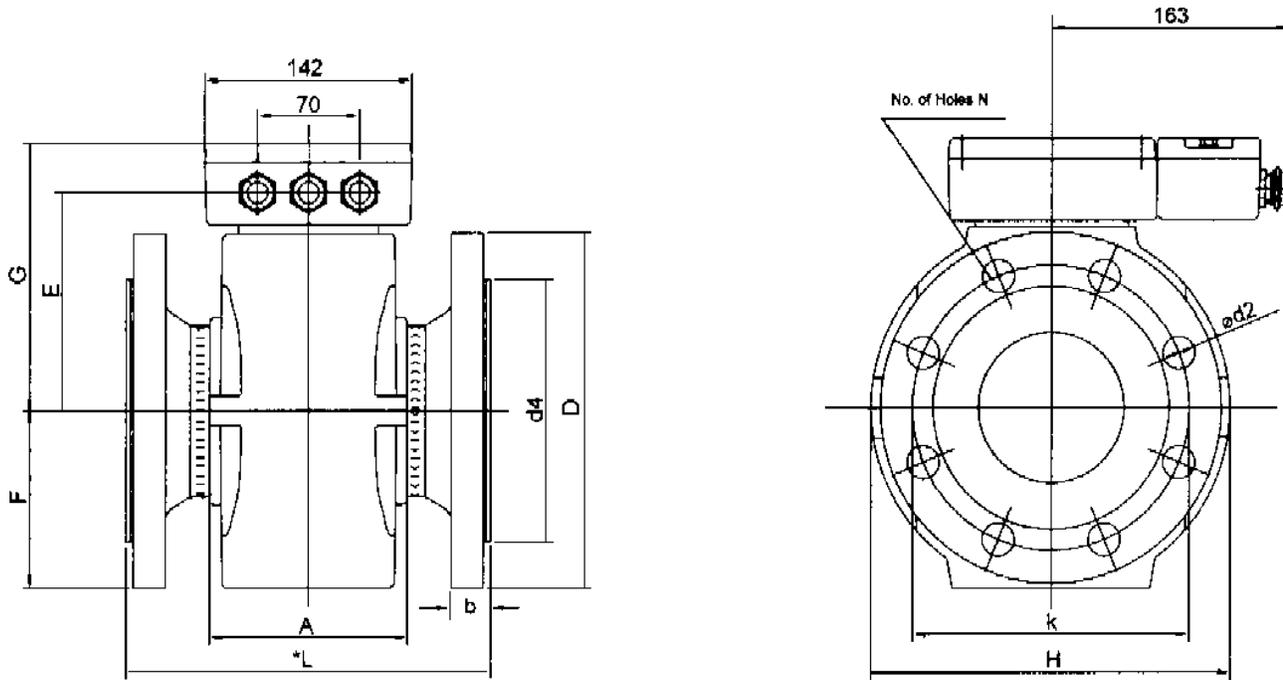
**Instruction Manual** (One copy supplied with order at no charge)

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**FIGURE 1 Outline Dimensions 10DX3121 Primary**



Meter Size (Inch)	Fig Rtg	*L	k	d4	D	N	A	E	F	G	H
1"	150	10-5/8 (270)	3-1/8 (79.4)	2 (50.8)	4-1/4 (107.9)	4	4-13/16 (122)	3-55/64 (98)	2-7/8 (73)	5-15/64 (133)	6-11/16 (170)
1 1/2"	150	11-1/32 (280)	3-7/8 (98.4)	2.5 (73)	5 (127)	4	4-13/16 (122)	3-55/64 (98)	2-7/8 (73)	5-15/64 (133)	6-11/15 (170)
2"	150	11-1/32 (280)	4-3/4 (120.6)	3-5/8 (92.1)	6 (152.4)	4	4-13/32 (112)	4-7/32 (107)	3-7/32 (82)	5-33/64 (140)	7-3/32 (180)
3"	150	13-3/8 (340)	6 (152.4)	5 (127)	7-1/2 (190.5)	8	4-13/32 (112)	4-27/32 (123)	3-7/8 (98)	6-9/64 (156)	7-7/8 (200)
4"	150	15-3/4 (400)	7-1/2 (900)	6-3/16 (157)	9 (229)	8	5-1/8 (130)	5-5/8 (143)	4-5/8 (118)	6-59/64 (176)	9 (229)
6"	150	17-23/32 (450)	9-1/2 (241)	8-1/2 (215)	11 (279)	8	6-11/16 (170)	6-13/16 (173)	5-13/16 (148)	8-7/64 (206)	11 (279)
8"	150	19-11/16 (500)	11-3/4 (298)	10-5/8 (270)	13-1/2 (343)	8	7-43/64 (195)	8-1/16 (205)	7-1/32 (179)	9-3/8 (238)	13-1/2 (343)
10"	150	21-21/32 (550)	14-1/4 (362)	12-3/4 (324)	16 (406)	12	9-27/32 (250)	9-11/64 (233)	8-5/32 (207)	10-15/32 (266)	16 (406)
12"	150	21-21/32 (550)	17 (431.8)	15 (381)	19 (482.6)	12	9-27/32 (250)	11-1/32 (280)	9-27/32 (250)	12-9/32 (250)	19 (482.6)

**Note**

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Notes

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Printed in USA (05.09.03)

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**ABB Inc.**  
125 East County Line Road  
Warminster  
PA 18974  
USA  
Tel: +1 215 674 6000  
Fax: +1 215 674 7183

**ABB Ltd**  
Howard Road, St. Neots  
Cambridgeshire  
PE19 8EU  
UK  
Tel: +44 (0)1480 475321  
Fax: +44 (0)1480 217948

**ABB Automation Products  
GmbH**  
Dransfelder Str. 2.  
37079 Goettingen  
Germany  
Tel: +49 551 905-0  
Fax: +49 551 905-777