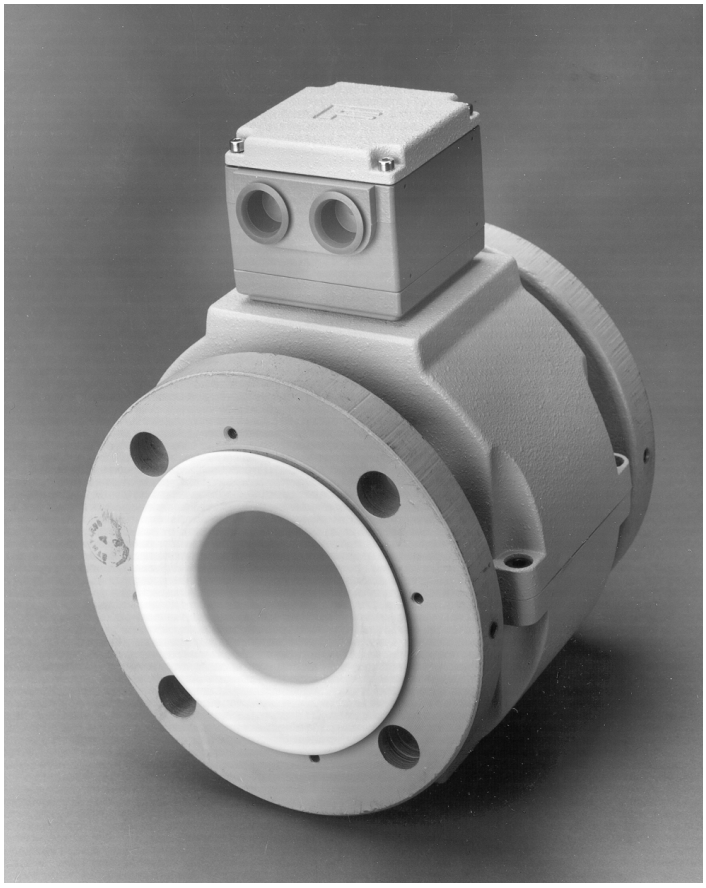
Specification

Flow Products
Magnetic Flowmeters
MAG-X®
Series 10DX3111E (1/2” - 12”)

- Flowmeter system with a remote analog or microprocessor signal converter.
- Available in sizes 1/2” to 12”
- Available with ANSI or DIN flanges
- Typical flowrate measurement is independent of viscosity, density, and temperature
- Standard NEMA 4X enclosure rating for use in corrosive environments
- Produced in an ISO 9001 certified facility.
- System accuracies of ±1/2%, or 1/4% of rate depending on the signal converter chosen.
- Optional remote communications via RS-232C, RS-485, ABB RSK or HART® Protocol.
- Only one conduit required between primary and secondary.



MAG-X®
Series 10DX3111E (1/2” - 12”)

SERIES 3000
MAGNETIC FLOWMETER
MAG-X®

The Series 10DX3111 Magnetic Flowmeter is a pulsed DC-type volumetric, liquid flow rate detector. The coils of the magnetic flowmeter are excited with pulsed DC current in order to establish the magnetic field. As a conductive liquid passes through this magnetic field, a voltage is induced in the liquid which is directly proportional to its velocity. This induced voltage is sensed by the electrodes and sent to the converter which digitally processes these signal and converts it into analog and digital output signals.

The flowmeter primary is available in a remote configuration with the 50XM1000N converter.

Engineering Specifications

Minimum Liquid Conductivity: 5µS/cm.

Vacuum Limits:

Full Vacuum:
For TEFLON® PTFE 1/2" to 4", TEFZEL®, Hard Rubber, Soft Rubber, Neoprene, and Polyurethane liners.
For TEFLON® PTFE 6" to 12"
3.9 psia (26.9 kPaa) @ 68ºF (20ºC)
6.7 psia (46.2 kPaa)@ 266ºF (130ºC)

Temperature Limits:

Process: -15ºF (-26ºC) to 356ºF (180ºC) for TEFLON® 1/2" to 12" Sizes.
266ºR (130ºC) for TEFZEL®
190ºF (88ºC) for Neoprene & Polyurethane
170ºF (77ºC) for Soft & Hard Rubber

Ambient:
-15ºF (-26ºC) to 140ºF (60ºC) for all liners

Enclosure Classification:

Standard: NEMA 4X (IP65)
Optional: Accidental submergence (IP67) in water up to 30 feet (9 meters) deep for up to 48 hours.
Optional: Continuous submerge (IP68)

Certifications:

FM Approved Non-Incendive for CI, I, Div, 2, Groups A, B, C & D, Outdoor Hazardous Locations, NEMA 4X, Dust-Ingitionproof CI, II, Div, 1, Groups E, F, & G. Suitable for CI, III, Div. 1. With intrinsically safe electrodes.
FM Approved Explosionproof Class I, Div. 1, Groups B, C & D

Certifications:

FM Approved Non-Incendive for CI, I, Div, 2, Groups A, B, C & D, Outdoor Hazardous Locations, NEMA 4X, Dust-Ingitionproof CI, II, Div, 1, Groups E, F, & G. Suitable for CI, III, Div. 1. With intrinsically safe electrodes.
FM Approved Explosionproof Class I, Div. 1, Groups B, C & D

Connections:

Process Flanges: ANSI Class 150 or 300, DIN PN 6, 10, 16, 25 and 40
Electrical Connection: 1/2" NPT or PG 13.5

Vibration Immunity: 1.5G for 10 - 150 Hz

CAPACITY TABLE

SIZE		METER* CAPACITY	MINIMUM RANGE		MAXIMUM RANGE	
in.	mm	gpm	gpm	L/min	gpm	L/min
1/2	15	26.4	0.53	2	26.4	100
1	25	52.8	1.06	4	52.8	200
1.5	40	158.5	3.17	12	158	600
			gpm	m^3/h	gpm	m^3/h
2	50	264.1	5.28	1.2	264	60
3	80	792.5	15.9	3.6	792	180
4	100	1,056	21.1	4.8	1056	240
6	150	2,641	52.8	12	2641	600
8	200	4,755	95.1	21.6	4755	1080
10	250	7,925	159	36	7925	1800
12	300	10,567	212	48	10567	2400

*Meter Capacity = Volumetric flowrate @ 32.81 ft/sec.

Note: Flow Velocity (ft/s) = Operating GPM x 32.81/meter capacity

Materials of Construction

Meter Spool: 304 Stainless Steel

Flanges: Carbon Steelor 304 Stainless Steel

Liners: TEFLON® PTFE and TEFZEL® ; Available in sizes 1/2" to 12"
Neoprene, Polyurethane, Soft & Hard Rubber; Available in sizes 2" to 12"

Electrode Material: 316 SST, Hastelloy® C, Titanium, Tantalum, Platinum/ Iridium, Zirconium.

Housing & Connection Box: Cast Aluminum

Liner Protectors & Grounding Rings: 316 Stainless Steel or Hastelloy®

Model Number Designation for the 10DX3111

Model Number 10DX3111 — E D A 07 C 1 A 2 B 1 1 1 A 1 2

Design Level
- 1/2" to 12" (w/ 50XM1000 converter) ..... E

Meter Lay Length
- Standard ..... D
- 10D1419 & 10D1465 ..... E
- Other ..... Z

Liner
- Hard Rubber ..... A
- ■ Soft Rubber ..... B
- Polyurethane ..... D
- TEFLON® PTFE ..... E
- Neoprene L
- TEFZEL® ETFE ..... N

Size
- 1/2" (15mm) Teflon/Tefzel only 07
- 1" (25mm) Teflon/Tefzel only 09
- 1.5" (40mm) Teflon/Tefzel only 11
- 2" (50mm) 12
- 3" (80mm) 14
- 4" (100mm) 15
- 6" (150mm) 17
- 8" (200mm) 18
- 10" (250mm) 19
- 12" (300mm) 20

Flange Connection
- DIN PN 10 C
- DIN PN 16 ..... D
- DIN PN 25 ..... E
- DIN PN 40 ..... F
- ANSI 150 ..... P
- ANSI 300 ..... Q

Flange Material
- Carbon Steel 1
- 304 Stainless Steel 2

Protector Plate (Teflon Liner Only)
- None Required ..... A
- 316 Stainless Steel ..... B
- Hastelloy® C ..... E

Electrode Design
- Flush 2
- Bullet Nose 3
- Slurry Service 7

Electrode Material
- 316 Stainless Steel ..... B
- Hastelloy® B C
- Hastelloy® C ..... D
- Titanium ..... E
- Tantalum (Teflon or Tefzel Liner Only ..... F
- Platinum/Iridium (Teflon or Tefzel Liner Only ..... H
- Zirconium L

Certification
- General Purpose ..... A
- FM Approved for Cl I, Div. 2, Group A, B, C, & D ..... K
- FM Approved for Cl I, Div. 1, Groups B, C, & D L

Enclosure Classification
- NEMA 4X, IP65, IEC 529 1
- Accidental Submergence, IP67, IEC 529 2
- Continuous Submergence, IP68 5

Process Temperature Range
- TEFLON® PTFE or TEFZEL® <266°F (130°C) 1
- TEFLON® PTFE <356°F (180°C) 2
- Soft Rubber or Hard Rubber <170°F (77°C) 3
- Neoprene or Polyurethane <190°F (88°C) 4

Line/Excitation Frequency
- 50 Hz / 6-1/4 Hz 1
- 50 Hz / 12-1/2 Hz 2
- 60 Hz / 7-1/2 Hz 3
- 60 Hz / 15 Hz 4

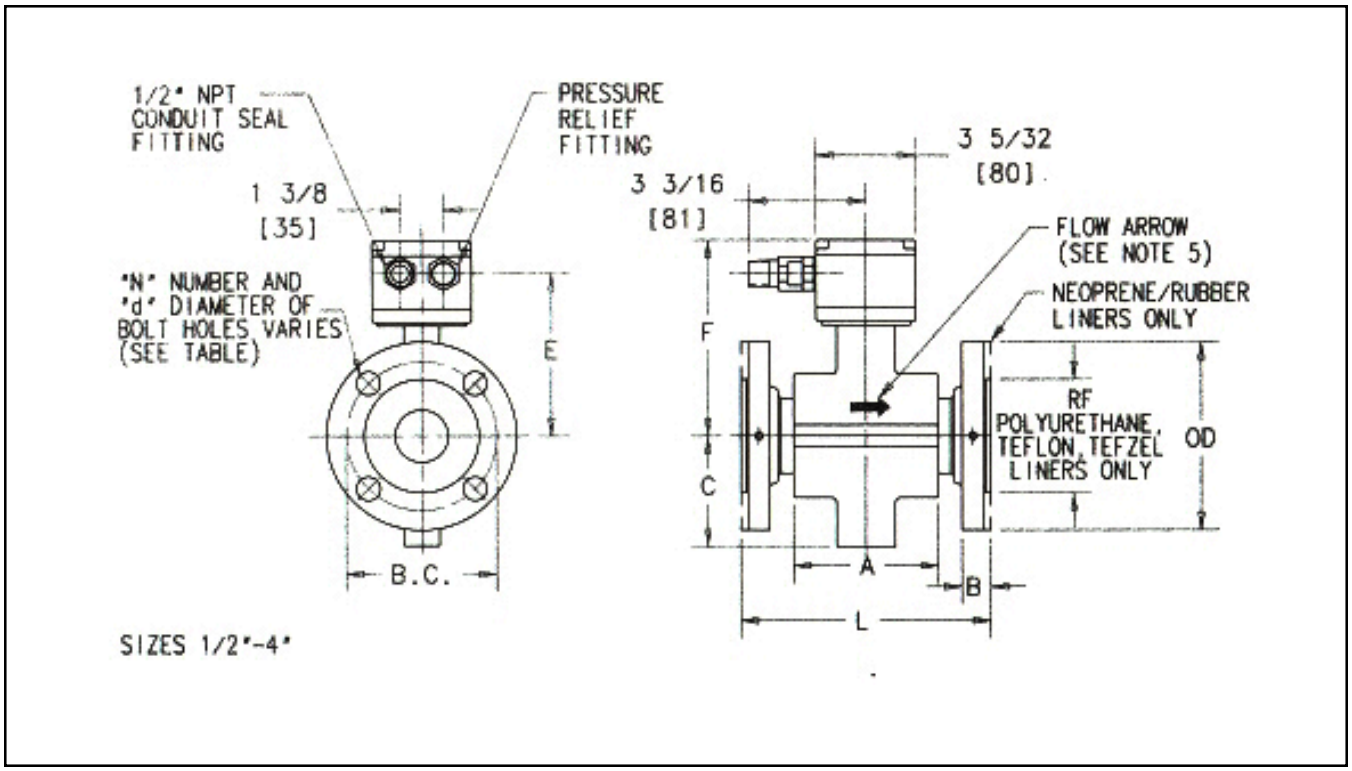
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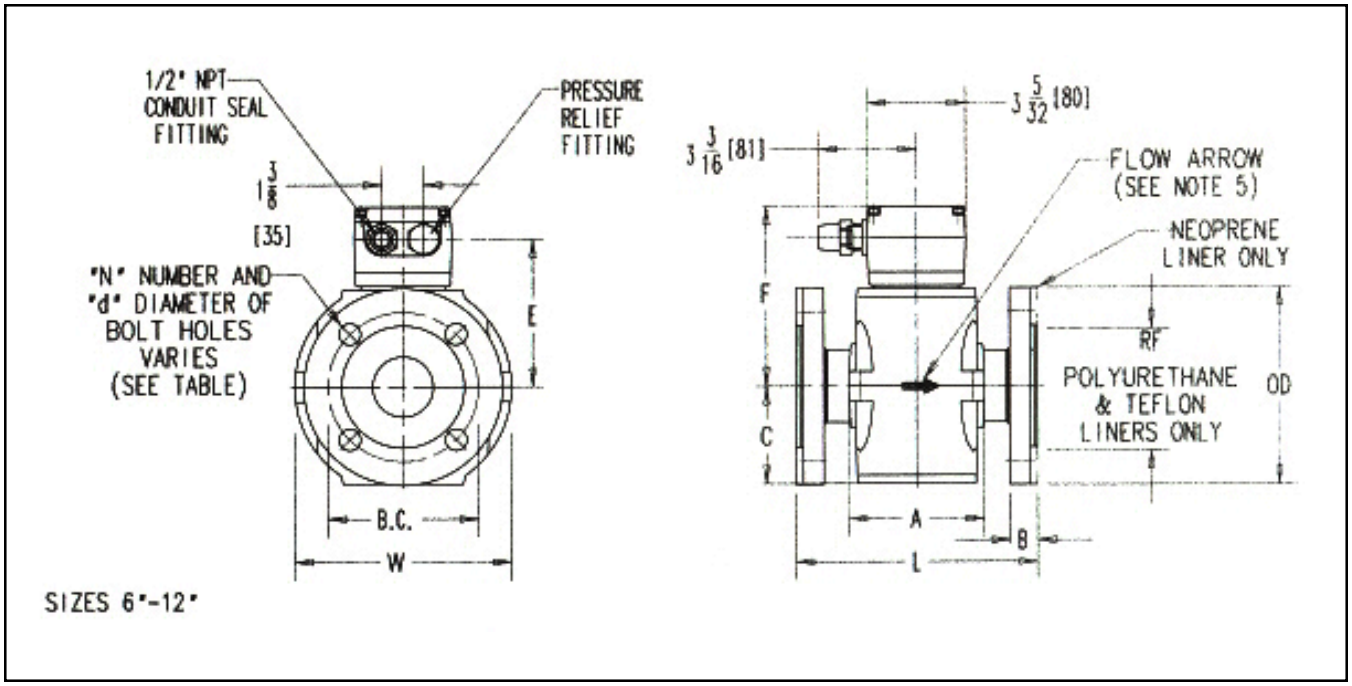
Remote Signal Converter 1

■*Not available at this time*

Figure 1. Outline Dimensions of Remote Mounted Signal Converter

OUTLINE DIMENSIONS inches (mm)																							
DIM	Size	1/2 (15)		1 (25)		1-1/2 (40)		2 (50)		3 (80)		4 (100)		6 (150)		8 (200)		10 (250)		12 (300)	
	FLANGE CLASS	150	300	150	300	150	300	150	300	150	300	150	300	150	300	150	300	150	300	150	300
	MODEL NO.																						
L	10DSX3111ED	7-7/8 (200)	9 (229)	7-7/8 (200)	9 (229)	7-7/8 (200)	9 (229)	7-7/8 (200)	9 (229)	7-7/8 (200)	9 (229)	9-7/8 (250)	11 (280)	11-13/16 (300)		13-25/32 (350)		17-23/32 (450)		19-11/16 (500)	
L	10DSX3111EE	14 (356)		14 (356)		16 (406)		16 (406)		12 (305)		12 (305)		17-23/32 (450)		19-11/16 (500)		21-21/32 (550)		24-13/32 (620)	
	LINER																						
RF		1-3/8 (35)		2 (51)		2-7/8 (73)		3-5/8 (92)		5 (127)		6-3/16 (157)		8-1/2 (216)		10-5/8 (270)		12-3/4 (324)		15 (381)	
B	POLY/NEO/ RUBBER LINER	N/A		N/A		N/A		15/16 (24)	1-1/16 (27)	1-1/8 (29)	1-5/16 (33)	1-1/8 (29)	1-7/16 (36)	1-3/16 (30)	1-5/8 (41)	1-5/16 (33)	1-13/16 (46)	1-3/8 (35)	2-1/16 (52)	1-1/2 (38)	2-1/4 (57)
	TEFLON LINER	1/2 (13)	5/8 (16)	11/16 (17)	13/16 (21)	27/32 (21)	31/32 (25)	29/32 (23)	1-1/32 (26)	1-3/32 (27)	1-9/32 (32)	1-3/32 (27)	1-13/32 (35)	1-1/8 (29)	1-9/16 (40)	1-9/32 (33)	1-25/32 (45)	1-3/8 (35)	2-1/16 (52)	1-1/2 (38)	2-1/4 (57)
	TEFZEL LINER			5/8 (16)	3/4 (19)	3/4 (19)	7/8 (22)	27/32 (21)	31/32 (25)	3/4 (19)	1-1/4 (32)	1-3/32 (27)	1-3/8 (35)	1-1/8 (29)	1-9/16 (40)	1-1/4 (32)	1-3/4 (44)	1-5/16 (33)	2 (51)	1-25/64 (35)	2-9/64 (54)
d		5/8 (16)		5/8 (16)	3/4 (19)	5/8 (16)	7/8 (22)	3/4 (19)	3/4 (19)	3/4 (19)	7/8 (22)	3/4 (19)	7/8 (22)	7/8 (22)	7/8 (22)	7/8 (22)	1 (25)	1 (25)	1-1/8 (29)	1 (25)	1-1/8 (29)
N		4	4	4	4	4	4	4	8	4	8	8	8	8	12	8	12	12	16	12	16
BC		2-3/8 (60)	2-5/8 (67)	3-1/8 (79)	3-1/2 (89)	3-7/8 (98)	4-1/2 (114)	4-3/4 (121)	5 (127)	6 (152)	6-5/8 (168)	7-1/2 (191)	7-7/8 (200)	9-1/2 (241)	10-5/8 (270)	11-3/4 (298)	13 (330)	14-1/4 (362)	15-1/4 (387)	17 (432)	17-3/4 (451)
OD		3-1/2 (89)	3-3/4 (95)	4-1/4 (108)	4-7/8 (124)	5 (127)	6-1/8 (156)	6 (152)	6-1/2 (165)	7-1/2 (190)	8-1/4 (210)	9 (229)	10 (254)	11 (279)	12-1/2 (318)	13-1/2 (343)	15 (381)	16 (406)	17-1/2 (445)	19 (483)	20-1/2 (521)
A		2-15/16 (75)		3-7/16 (87)		3-15/16 (100)		4-9/16 (116)		3-15/16 (100)		5-1/8 (130)		6-11/16 (170)		7-11/16 (195)		9-27/32 (250)		9-27/32 (250)	
C		2-7/16 (62)		2-7/8 (73)		3-7/32 (82)		3-17/32 (90)		4-11/32 (110)		5-1/8 (130)		5-25/32 (147)		7-1/16 (179)		8-5/32 (207)		9-27/32 (250)	
E	STANDARD TEMPERATURE	4-1/4 (108)		4-11/16 (119)		5-1/32 (128)		5-11/32 (136)		6-5/32 (156)		6-15/16 (176)		7-5/8 (194)		8-7/8 (225)		9-31/32 (253)		12-9/16 (319)	
F		5-5/16 (135)		5-3/4 (146)		6-3/32 (155)		6-13/32 (163)		7-7/32 (183)		8 (203)		8-5/8 (216)		9-7/8 (251)		11 (279)		13-23/32 (348)	
E	HIGH TEMPERATURE	4-5/8 (117)		5-1/16 (128)		5-13/32 (137)		5-23/32 (145)		6-17/32 (166)		7-5/16 (186)		12-3/8 (314)		13-5/8 (346)		14-23/32 (375)		16-13/32 (417)	
F		5-11/16 (144)		6-1/8 (156)		6-15/32 (164)		6-25/32 (172)		7-19/32 (193)		8-3/8 (213)		13-7/16 (341)		14-11/16 (373)		15-25/32 (401)		17-15/32 (444)	
W		N/R		N/R		N/R		N/R		N/R		N/R		12-3/16 (310)		14-3/8 (365)		16-25/32 (426)		20-5/64 (510)	





NOTES:

1) *All dimensions are in inches. Dimensions in brackets [ ] are in millimeters [mm].*
2) *Dimensions are guaranteed only if this print is certified.*
3) *This drawing is thrid angle projection as shown.*
4) *Flange bolts straddle centerlines.*
5) *Flow must be in same direction as flow arrow.*
6) *Meter must be completely filled with liquid to insure accruacy.*
7) *All dimensions subject to manufacturing tolerances of ±1/8 [3].*

WEIGHT TABLE

METER SIZE		ANSI CLASS 150		ANSI CLASS 300	
in.	**mm**	**lbs**	**kg**	**lbs**	**kg**
1/2	15	4.5	2	5.5	2.5
1	25	9	4	10	4.5
1.5	40	12	5.5	13	6
2	50	18	8	22	10
3	80	26	12	35	16
4	100	40	18	48	22
6	150	105	47	140	64
8	200	155	70	210	95
10	250	220	100	295	134
12	300	275	125	365	166

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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