EX100/200-SERIES

INSERTION ELECTROMAGNETIC FLOW SENSOR

Seametrics

APPLICATIONS

3" - 48" pipe (up to 72" optional)

Clean or "dirty" liquids

Conductive liquids

Municipal

Industrial

Irrigation

EX11x/21x

EX15x/25x

Features

- No moving parts
- Durable
- Adjustable depth
- Hot-tap available
- Brass or stainless steel
- Immersibility available
- Reverse flow output available

Contact Your Supplier

The **EX100/200-Series** are adjustable depth insertion magmeters that fit 3" to 48" pipe (up to 72" optional). The complete lack of moving parts of the EX100/200-Series is the source of its reliability. Brass and stainless steel models withstand a variety of temperature, pressure, and chemical conditions. The EX-Series has no rotor to stop turning in dirty water and there are no bearings to wear out. Like all magmeters, when used in chemical injection applications, these meters should be installed upstream of the chemical line (or far enough downstream to allow complete mixing of fluids before the meter). Adapters mate with standard 1-1/2" (11x/21x) or 2" (15x/25x) FNPT threaded fittings such as saddles and weldolets which may be purchased either locally or from Seametrics.
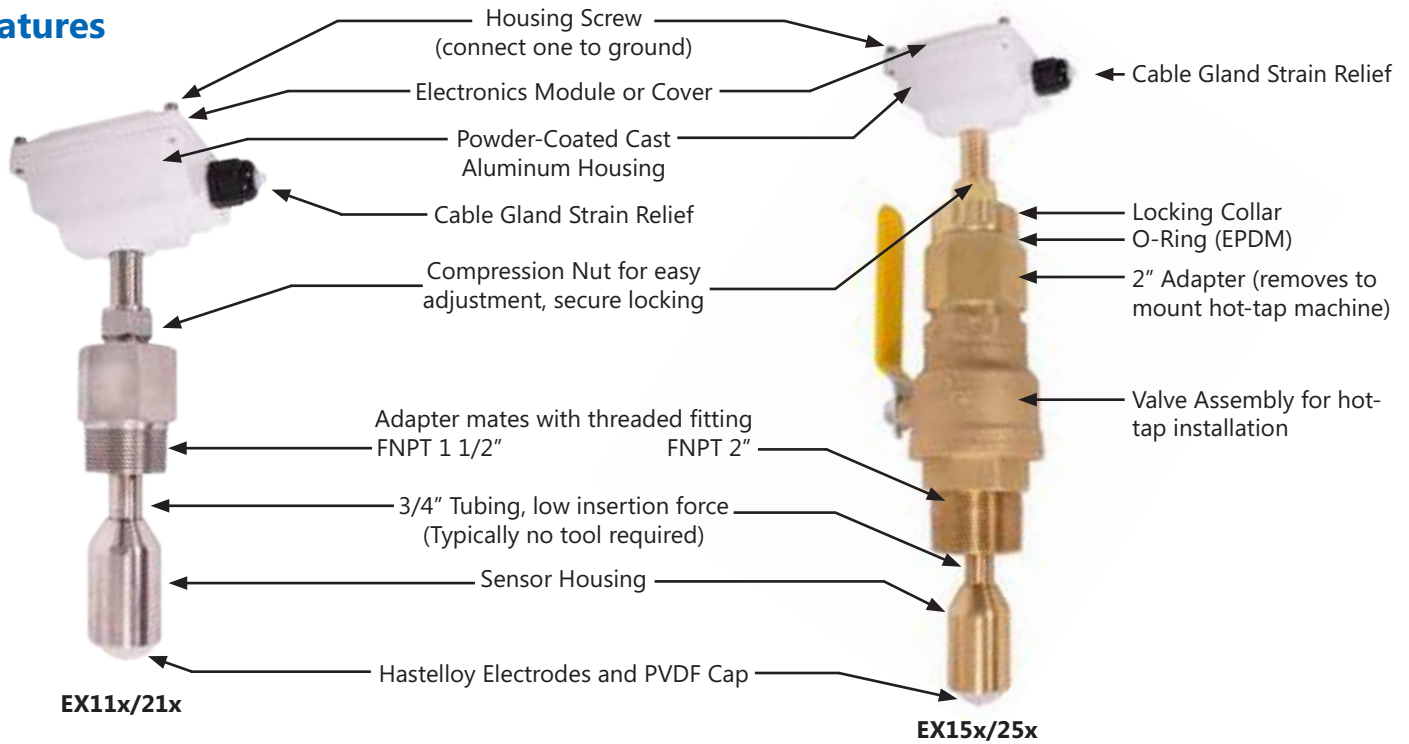
A rapidly reversing magnetic field is produced in the lower housing. As the fluid moves through this field, a voltage is generated that is measured and translated into a frequency signal proportional to flow rate. This square wave signal can be sent directly to a PLC or other control or can be converted using any of the Seametrics family of indicators and converters. A modular system of electronics can be installed directly on the flow sensor or mounted remotely. The FT430 (externally powered with pulse) and the FT440 (loop powered), both provide digital rate and total displays, as well as a programmable pulse; the FT440 also provides a 4-20 mA analog output. The AO55 is a blind analog (4-20 mA) transmitter. Programmable pulse for pump pacing is available with the PD10.

The "hot-tap" models (EX15x/25x) can be installed or serviced without shutting down the line by means of a 2" full-port isolation valve that comes with a nipple for installation on the pipe fitting; a bronze ball valve is standard, with a 316 stainless steel valve option if needed. In most circumstances, no special tool is required.
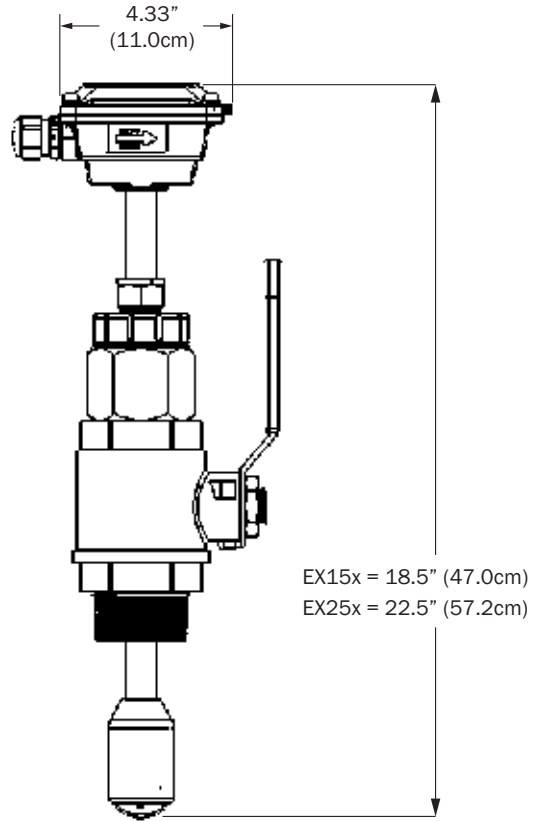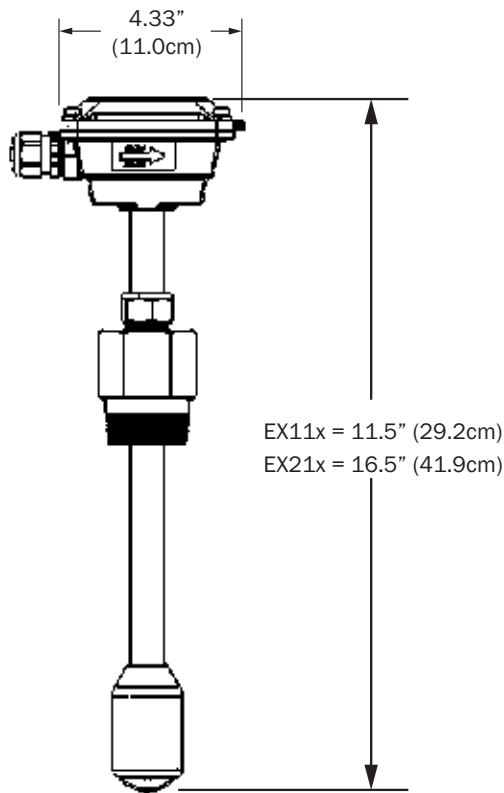
Reverse flow output and immersibility are optional.

ISO 9001:2008 Certified Company

PROUDLY MADE IN THE USA

Features

Housing Screw
(connect one to ground)

Electronics Module or Cover

Cable Gland Strain Relief

Powder-Coated Cast
Aluminum Housing

Cable Gland Strain Relief

Locking Collar
O-Ring (EPDM)

2" Adapter (removes to
mount hot-tap machine)

Compression Nut for easy
adjustment, secure locking

Adapter mates with threaded fitting
FNPT 1 1/2"   FNPT 2"

Valve Assembly for hot-
tap installation

3/4" Tubing, low insertion force
(Typically no tool required)

Sensor Housing

Hastelloy Electrodes and PVDF Cap

EX11x/21x

EX15x/25x

Specifications*

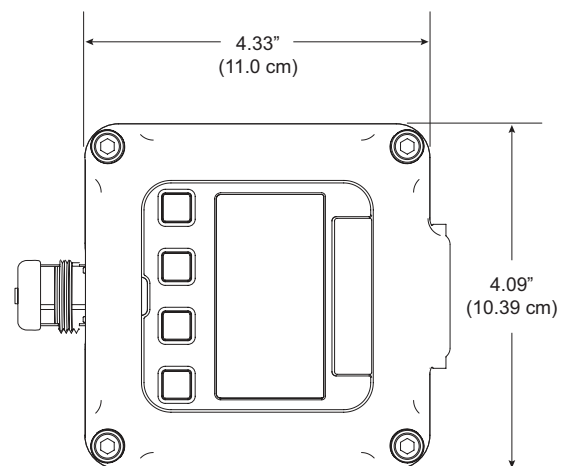| Pipe Size		3" to 48" (up to 72" optional)
Power		**Full Power:** 12 - 24 Vdc, 250mA **Low Power:** 12 - 24 Vdc, 40mA average with 250mA peaks
Materials	Housing	Powder-coated cast aluminum
	Tubing/Fitting/Sensor Housing	Brass or 316 Stainless Steel
	Electrodes	Hastelloy
	Electrode Cap	PVDF
	O-Ring (15x/25x only)	EPDM
	Valve Assembly (15x/25x only)	Bronze (stainless optional) with bronze ball valve
Fitting Size Required		**11x/21x:** 1.5" FNPT **15x/25x:** 2" FNPT
Maximum Pressure		200 psi (14 bar)
Temperature	Ambient	0˚ to 160˚ F (-17˚ to 72˚ C)
	Fluid	32˚ to 200˚ F (0˚ to 93˚ C)
Minimum Conductivity		20 microSiemens/cm
Flow Velocity		0.28 - 20 ft/sec (0.08 - 6.09 m/sec)
Accuracy		± 1% of full scale
Output		Square wave pulse, opto-isolated, 500 Hz @ 20 ft/sec 6 mA max, 30Vdc forward flow standard; reverse flow optional
Empty Pipe Detection		Software, defaults to zero flow
Cable		Standard 18' (6m), #22 shielded twisted pair, 4-conn. Max. cable run at 24 Vdc = 1000' (300m); at 12 Vdc = 500' (150m). For other circumstances, contact the factory.
Regulatory		C E Mark (full power only)

Specifications subject to change • Please consult our website for current data (www.seametrics.com).

Seametrics

Dimensions

4.33"
(11.0cm)

EX11x = 11.5" (29.2cm)
EX21x = 16.5" (41.9cm)

4.33"
(11.0cm)

EX15x = 18.5" (47.0cm)
EX25x = 22.5" (57.2cm)

Flow Range

Flow Range (GPM)		
Nominal Pipe Size	Minimum Flow	Maximum Flow
3	6	440
4	11	783
6	25	1,762
8	44	3,133
10	69	4,895
12	99	7,050
14	134	9,596
16	175	12,533
18	222	15,863
20	274	19,584
24	395	28,200
30	617	44,064
36	888	63,452
48	1,580	112,804

4.33"
(11.0 cm)

4.09"
(10.39 cm)

How to Order

	Description	Size	Sensor Material	Options (110/210)	Options (150/250)
Sensor Only	Sensor Only.	3" – 10" pipe = EX110 10" – 48" pipe = EX210 Hot Tap 3" – 10" pipe = EX150 10" – 48" pipe = EX250	Brass = B 316 Stainless = S	Brass Adapter Fitting 2" NPT = -02 SS Adapter Fitting 2" NPT = -02 Reverse Flow Output = -15 Brass Adapter 1 ½" BSP = -23 SS Adapter 1 ½" BSP = -24 Old Style Adapter 1 ½" NPT = -35 *Immersible = -40 Low Power = -50 12" Extension (200 Series Only) = -72	316 SS Valve Assembly = -08 No Valve Assembly = -09 316 SS Valve Assembly = -08 Reverse Flow Output = -15 *Immersible = -40 Low Power = -50 12" Extension (200 Series Only) = -72

	Description	Size	Sensor Material	Options (112/212)	Options (152/252)
AO55 Mounted on Sensor	Blind 4-20 mA analog transmitter (AO55) mounted on the sensor.	3" – 10" pipe = EX112 10" – 48" pipe = EX212 Hot Tap 3" – 10" pipe = EX152 10" – 48" pipe = EX252	Brass = B 316 Stainless = S	Brass Adapter Fitting 2" NPT = -02 SS Adapter Fitting 2" NPT = -02 Reverse Flow Output = -15 Brass Adapter 1 ½" BSP = -23 SS Adapter 1 ½" BSP = -24 Old Style Adapter 1 ½" NPT = -35 Low Power = -50 12" Extension (200 Series Only) = -72	316 SS Valve Assembly = -08 No Valve Assembly = -09 Reverse Flow Output = -15 Low Power = -50 12" Extension (200 Series Only) = -72

	Description	Size	Sensor Material	Options (113/213)	Options (153/253)
FT430 Mounted on Sensor	Rate & total indicator with pulse, externally powered (FT430) mounted on the sensor.	3" – 10" pipe = EX113 10" – 48" pipe = EX213 Hot Tap 3" – 10" pipe = EX153 10" – 48" pipe = EX253	Brass = B 316 Stainless = S	Brass Adapter Fitting 2" NPT = -02 SS Adapter Fitting 2" NPT = -02 Reverse Flow Output = -15 Brass Adapter 1 ½" BSP = -23 SS Adapter 1 ½" BSP = -24 Tamper Evident Kit = -32 Old Style Adapter 1 ½" NPT = -35 Low Power = -50 Non-resettable Total = -64 12" Extension (200 Series Only) = -72 Hinged Display Cover = -126	316 SS Valve Assembly = -08 No Valve Assembly = -09 Reverse Flow Output = -15 Tamper Evident Kit = -32 Non-resettable Total = -64 12" Extension (200 Series Only) = -72 Hinged Display Cover = -126

	Description	Size	Sensor Material	Options (116/216)	Options (156/256)
DL76 Mounted on Sensor	Data logger (DL76) mounted on the sensor.	3" – 10" pipe = EX116 10" – 48" pipe = EX216 Hot Tap 3" – 10" pipe = EX156 10" – 48" pipe = EX256	Brass = B 316 Stainless = S	Brass Adapter Fitting 2" NPT = -02 SS Adapter Fitting 2" NPT = -02 Reverse Flow Output = -15 Brass Adapter 1 ½" BSP = -23 SS Adapter 1 ½" BSP = -24 Tamper Evident Kit = -32 Old Style Adapter 1 ½" NPT = -35 Low Power = -50 12" Extension (200 Series Only) = -72	316 SS Valve Assembly = -08 No Valve Assembly = -09 Reverse Flow Output = -15 Tamper Evident Kit = -32 Low Power = -50 12" Extension (200 Series Only) = -72

	Description	Size	Sensor Material	Options (118/218)	Options (158/258)
PD10 Mounted on Sensor	Pulse Divider (PD10) mounted on the sensor.	3" – 10" pipe = EX118 10" – 48" pipe = EX218 Hot Tap 3" – 10" pipe = EX158 10" – 48" pipe = EX258	Brass = B 316 Stainless = S	Brass Adapter Fitting 2" NPT = -02 SS Adapter Fitting 2" NPT = -02 LMI Pump 4-pin Connector = -06 Reverse Flow Output = -15 Brass Adapter 1 ½" BSP = -23 SS Adapter 1 ½" BSP = -24 Old Style Adapter 1 ½" NPT = -35 10 Ft. Cable for LMI Connector = -37 Low Power = -50 12" Extension (200 Series Only) = -72 Roytronic® Series-A 5-Pin Connector = -106	LMI Pump 4-pin Connector = -06 316 SS Valve Assembly = -08 No Valve Assembly = -09 Reverse Flow Output = -15 10 Ft. Cable for LMI Connector = -37 Low Power = -50 12" Extension (200 Series Only) = -72 Roytronic® Series-A 5-Pin Connector = -106

	Description	Size	Sensor Material	Options (119/219)	Options (159/259)
FT440 Mounted on Sensor	Rate & total indicator with pulse & 4-20 mA output, loop powered (FT440) mounted on the sensor.	3" – 10" pipe = EX119 10" – 48" pipe = EX219 Hot Tap 3" – 10" pipe = EX159 10" – 48" pipe = EX259	Brass = B 316 Stainless = S	Brass Adapter Fitting 2" NPT = -02 SS Adapter Fitting 2" NPT = -02 Reverse Flow Output = -15 Brass Adapter 1 ½" BSP = -23 SS Adapter 1 ½" BSP = -24 Tamper Evident Kit = -32 Old Style Adapter 1 ½" NPT = -35 Low Power = -50 Non-resettable Total = -64 12" Extension (200 Series Only) = -72 Hinged Display Cover = -126	316 SS Valve Assembly = -08 No Valve Assembly = -09 Reverse Flow Output = -15 Tamper Evident Kit = -32 Non-resettable Total = -64 12" Extension (200 Series Only) = -72 Hinged Display Cover = -126

* Immersible to maximum of 3 ft (1m), up to 2 weeks • Roytronic is a registered trademark of Milton Roy Company.