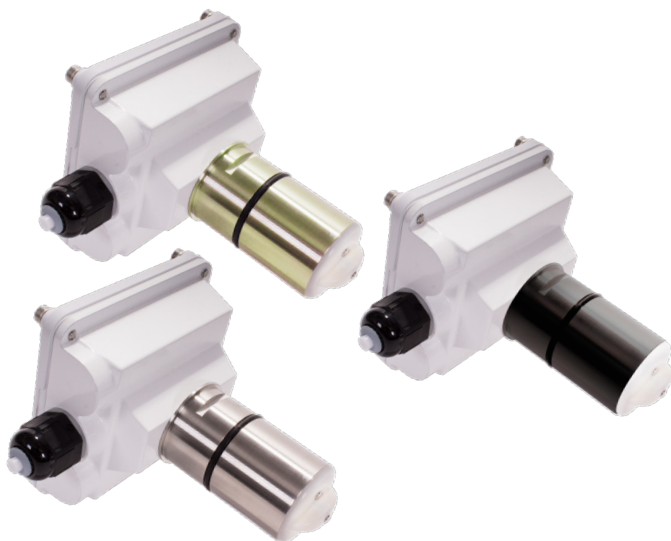


# EX800-SERIES

## INSERTION ELECTROMAGNETIC FLOW SENSOR



### APPLICATIONS

Conductive fluids

Small pipe applications  
(1"-12")

Industrial processes

Chemical metering pumps

Fertigation

### Features

- No moving parts
- Economical
- Durable
- Easy to install
- Easy to maintain

**EX800-Series** insertion electromagnetic flowmeters are designed for use with conductive liquids in 1 to 12" pipe. A choice of materials (stainless steel, brass, and PVC) allows the meter to adapt to a range of temperature, pressure, and corrosive environments.

The EX800 is highly suitable for difficult applications with changing viscosities and pulsating flows, such as air-driven diaphragm pumps. With no moving parts, these meters can be used in "dirty water" applications where debris would foul a mechanical meter. 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).

Designed for modularity and versatility, the EX800-Series has a current-sinking pulse output that can be combined with the appropriate transmitter or indicator for the application. For basic rate/total and pulse output, the FT430 is best. For analog output and display of rate and total, the FT440 can be used. Electronic modules can be wall- or meter-mounted. If the EX800 meter is used with a programmable controller, the output signal can be fed direct, with no other conditioning required. Built-in data logging is available as an option for secure flow logging.

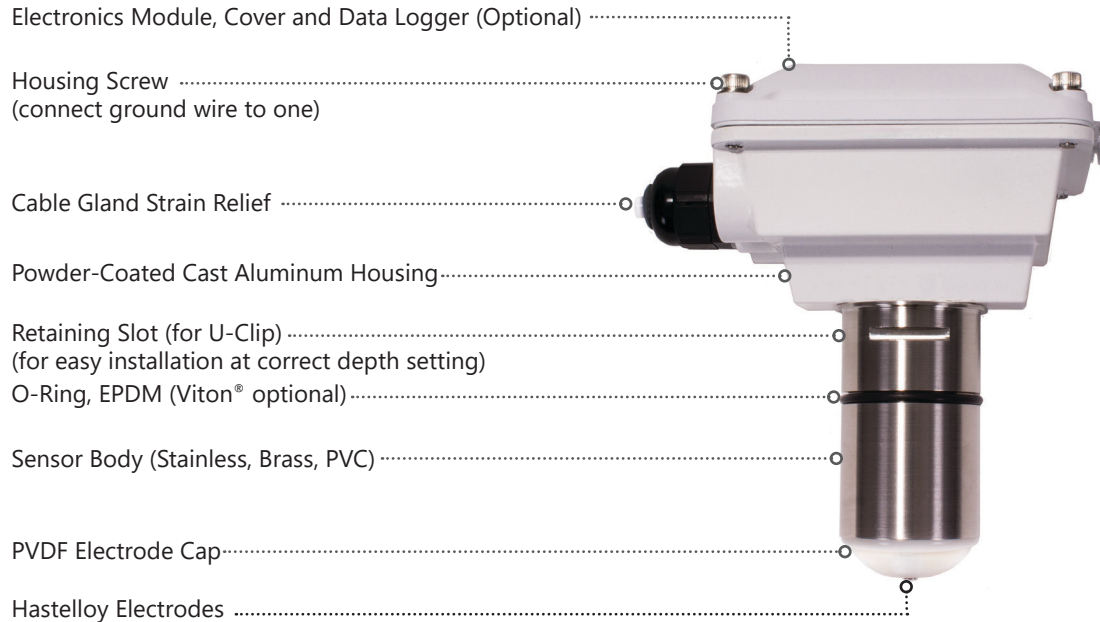
EX800-Series fixed depth insertion meters require special fittings. Factory installation in the fitting ensures correct depth placement in the pipe. The EX800-Series meter can be ordered in a full power model when a source of electricity is available, or in a low power model that can run on an external battery with solar panel.

Reverse flow output and immersibility are optional.

### Contact Your Supplier



## Features



## Specifications\*

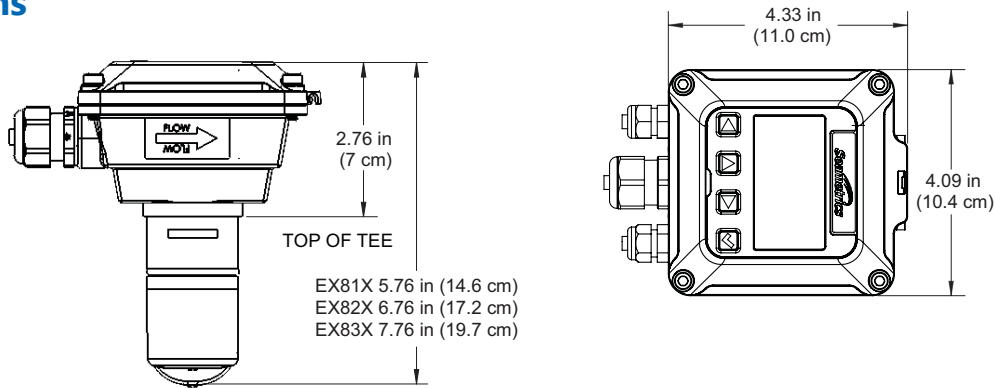
|                             |                      |                                                                                                                                                                                                            |                                                              |
|-----------------------------|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|
| <b>Pipe Size</b>            |                      | 1" to 12"                                                                                                                                                                                                  |                                                              |
| <b>Power</b>                |                      | <b>Full Power:</b> 12 - 24 Vdc, 250mA                                                                                                                                                                      | <b>Low Power:</b> 12 - 24 Vdc, 40mA average with 250mA peaks |
| <b>Materials</b>            | <b>Housing</b>       | Powder-coated cast aluminum                                                                                                                                                                                |                                                              |
|                             | <b>Sensor Body</b>   | 316 Stainless Steel, Brass, or PVC                                                                                                                                                                         |                                                              |
|                             | <b>O-ring</b>        | EPDM (Viton® optional)                                                                                                                                                                                     |                                                              |
|                             | <b>Electrodes</b>    | Hastelloy                                                                                                                                                                                                  |                                                              |
|                             | <b>Electrode Cap</b> | PVDF (Kynar®)                                                                                                                                                                                              |                                                              |
| <b>Maximum Pressure</b>     |                      | <b>Brass/Stainless Steel</b>                                                                                                                                                                               | <b>PVC</b> (See Pressure vs. Temp. Chart)                    |
|                             |                      | 200 psi (14 bar)                                                                                                                                                                                           | 150 psi (10 bar) @ 75° F (24° C)                             |
| <b>Temperature</b>          | <b>Ambient</b>       | 0° to 160° F (-17° to 72° C)                                                                                                                                                                               |                                                              |
|                             | <b>Fluid</b>         | 32° to 200° F (0° to 93° C)                                                                                                                                                                                | 32° to 130° F (0° to 55° C) @ 0 psi                          |
| <b>Minimum Conductivity</b> |                      | 20 microSiemens/cm                                                                                                                                                                                         |                                                              |
| <b>Flow Velocity</b>        |                      | 0.28 to 20 ft/sec (0.08 - 6.09 m/sec)                                                                                                                                                                      |                                                              |
| <b>Accuracy</b>             |                      | ± 1% of full scale                                                                                                                                                                                         |                                                              |
| <b>Output</b>               |                      | Square wave pulse, opto-isolated, 500 Hz @ 20 ft/sec                                                                                                                                                       |                                                              |
| <b>Empty Pipe Detection</b> |                      | Software, defaults to zero flow                                                                                                                                                                            |                                                              |
| <b>Cable</b>                |                      | 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.                                      |                                                              |
| <b>Environmental</b>        |                      | See meter mounted electronic specification for rating.                                                                                                                                                     |                                                              |
| <b>Regulatory</b>           |                      | CE Mark (applies to full power sensor only configuration and full power FT 430/440 mounted configurations). Certified to NSF/ANSI standard 61 and NSF 372 (Stainless only with EPDM O-ring. Viton pending) |                                                              |

\*Specifications subject to change • Please consult our website for current data ([www.seametrics.com](http://www.seametrics.com)).  
Kynar is a registered trademark of Arkema, Inc., Viton is a registered trademark of DuPont Corporation.

## Flow Range

| Nominal Pipe Size | 1"  | 1½" | 2"   | 3"   | 4"   | 6"   | 8"    | 10"   | 12"   |
|-------------------|-----|-----|------|------|------|------|-------|-------|-------|
| <b>Min GPM</b>    | .69 | 1.5 | 2.7  | 6.2  | 11   | 25   | 43    | 68    | 99    |
| <b>Min LPM</b>    | 2.6 | 5.6 | 10.2 | 23.4 | 41   | 94   | 162   | 257   | 374   |
| <b>Max GPM</b>    | 49  | 110 | 196  | 440  | 783  | 1760 | 3130  | 4900  | 7050  |
| <b>Max LPM</b>    | 185 | 416 | 741  | 1665 | 2963 | 6662 | 11848 | 18548 | 26687 |

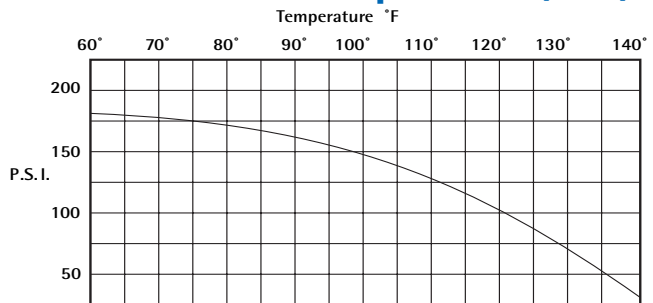
## Dimensions



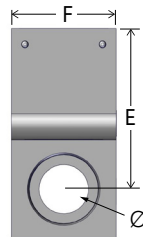
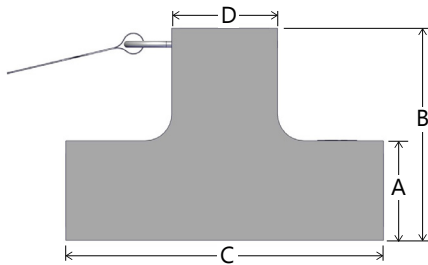
## EX800-Compatible Fittings

|                        | Tee     | Saddle   | Weld/Braze | Sweat Tee |
|------------------------|---------|----------|------------|-----------|
| <b>Bronze</b>          | 1" - 4" | 3" - 4"  | 3" - 12"   | 1" - 4"   |
| <b>PVC</b>             | 1" - 2" | 3" - 8"  | x          | x         |
| <b>Stainless Steel</b> | 1" - 2" | x        | 3" - 12"   | x         |
| <b>Carbon Steel</b>    | 1" - 2" | x        | 3" - 12"   | x         |
| <b>Ductile Iron</b>    | x       | 3" - 12" | x          | x         |

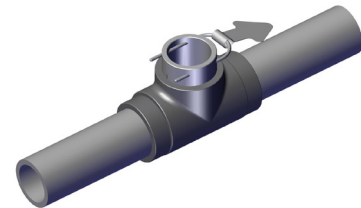
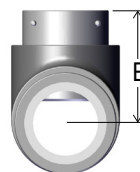
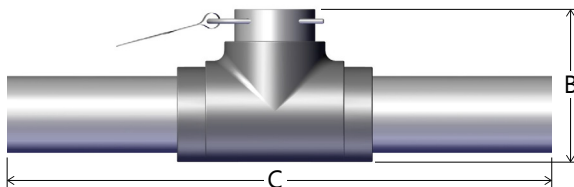
## Pressure vs. Temperature (PVC)



## PVC Block Tee Fitting (Figure 1)



## PVC Tee Fittings (Figure 2)



| Figure | Pipe Size | A               | B                | C                             | D               | E               | F               | Ø                |
|--------|-----------|-----------------|------------------|-------------------------------|-----------------|-----------------|-----------------|------------------|
| 1      | 1"        | 1.88" (4.77 cm) | 4.00" (10.16 cm) | 6.00" (15.24 cm)              | 2.00" (5.08 cm) | 3.06" (7.77 cm) | 2.00" (5.08 cm) | 1.325" (3.36 cm) |
| 2      | 1 1/2"    | —               | 4.50" (11.43 cm) | 19.4" (49.28 cm)<br>(nominal) | —               | 3.35" (8.51 cm) | —               | —                |
| 2      | 2"        | —               | 4.90" (12.45 cm) | 19.9" (50.55 cm)<br>(nominal) | —               | 3.45" (8.76 cm) | —               | —                |

## How to Order

| Sensor Only | Description                                  | Size                                               | Sensor Material                                 | Options                                                                                          |
|-------------|----------------------------------------------|----------------------------------------------------|-------------------------------------------------|--------------------------------------------------------------------------------------------------|
|             | Externally powered (12 - 24Vdc) sensor only. | 1" - 3" = EX810<br>4" - 10" = EX820<br>12" = EX830 | Brass = B<br>316 Stainless Steel = S<br>PVC = P | Reverse Flow Output = -15<br>*Immersible = -40<br>Low Power Option = -50<br>Viton® O-Ring = -125 |

| FT430 Mounted on Sensor | Description                                                                                                            | Size                                               | Sensor Material                                 | Options                                                                                                                                                                                                                        |
|-------------------------|------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|-------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                         | Externally powered sensor (12 - 24Vdc) with FT430 rate and total indicator (with pulse outputs) mounted on the sensor. | 1" - 3" = EX813<br>4" - 10" = EX823<br>12" = EX833 | Brass = B<br>316 Stainless Steel = S<br>PVC = P | Reverse Flow Output = -15<br>Tamper Evident Kit = -32<br>Low Power Option = -50<br>Non-resettable Total = -64<br>Dual Relay Output = -98<br>Viton® O-Ring = -125<br>Hinged Display Cover = -126<br>Internal Data Logger = -127 |

| DL76 Mounted on Sensor <sup>2</sup> | Description                                                                                      | Size                                               | Sensor Material                                 | Options                                                                                                 |
|-------------------------------------|--------------------------------------------------------------------------------------------------|----------------------------------------------------|-------------------------------------------------|---------------------------------------------------------------------------------------------------------|
|                                     | Externally powered sensor (12 - 24Vdc) with self powered DL76 data logger mounted on the sensor. | 1" - 3" = EX816<br>4" - 10" = EX826<br>12" = EX836 | Brass = B<br>316 Stainless Steel = S<br>PVC = P | Reverse Flow Output = -15<br>Tamper Evident Kit = -32<br>Low Power Option = -50<br>Viton® O-Ring = -125 |

| FT440 Mounted on Sensor <sup>1</sup> | Description                                                                                                                       | Size                                               | Sensor Material                                 | Options                                                                                                                                                                                                                        |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|-------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                      | Externally powered sensor (12 - 24Vdc) with FT440 rate and total indicator (with pulse and 4-20mA outputs) mounted on the sensor. | 1" - 3" = EX819<br>4" - 10" = EX829<br>12" = EX839 | Brass = B<br>316 Stainless Steel = S<br>PVC = P | Reverse Flow Output = -15<br>Tamper Evident Kit = -32<br>Low Power Option = -50<br>Non-resettable Total = -64<br>Dual Relay Output = -98<br>Viton® O-Ring = -125<br>Hinged Display Cover = -126<br>Internal Data Logger = -127 |

\* Immersible to maximum of 3 ft (1m), up to 2 weeks

<sup>1</sup> When ordering an EX with an FT440 mounted, the EX sensor cannot be loop powered.

<sup>2</sup> **DL76 configured units will be retired 12/31/2020**

**User is responsible for reviewing end use application with their supplier for product suitability.**