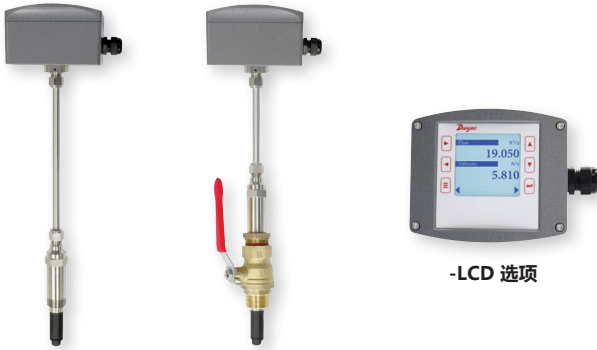


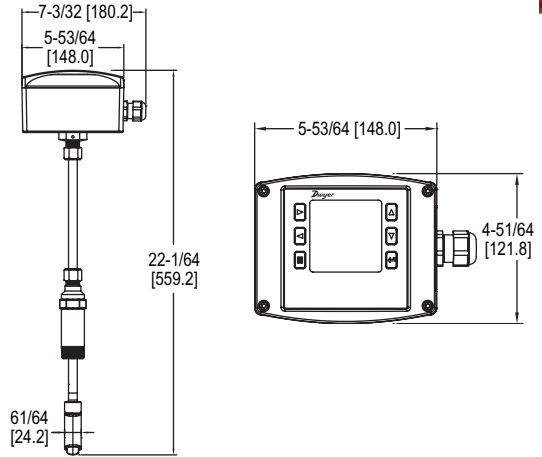
# 插入式电磁流量变送器

可现场配置,高精度,带BACnet 或 Modbus®协议



带 A-IEF-VLV-BR 备件备件的  
安装阀门

-LCD 选项



IEF系列插入式电磁流量计可调整插入深度保证更加精准和可靠的流速测量,并给出连续信号输出。独特的设计达到超凡的性能,并且安装简便。它能用于4 到 36英寸管径(102 mm到914 mm),各种输出选项包括BACnet MS/TP或者 Modbus® RTU通讯协议采用两线RS-485,还带标准模拟信号,脉冲信号,报警输出。

## 功能/特点

- \*现场配置显示器(-LCD一体式选项,或分体显示配件A-IEF-DSP)可针对不同的应用场合灵活配置,输入多种配置参数,例如管径,管道材质,液体种类,模拟输出,脉冲/频率输出,报警输出,通讯输出,阻尼参数,和校准系数。
- \*高精度不受温度变化,密度变化,粘度变化的影响。
- \*配置向导和安装工具简便易用,用于快速和精密的安装。
- \*IEF-KIT配置套件可保证精确的安装插入深度,包括厚度表和测量带。
- \*没有会磨损的部件,也没有可能被损坏的电极使得它使用寿命长,维护量小,可靠耐用。
- \*隔离阀配件可用于带压安装或拆卸,无需影响工业过程。
- \*高精度选项的NIST可溯源高精度校准证书包括标准碳钢管Schedule 40 管径 4" (102 mm), 6" (150 mm), 8" (200 mm), 和 10" (250 mm)

## 应用方案

- 锅炉供水
- 冷冻水
- 冷凝器冷凝水系统
- 灌溉系统
- 市政供水系统
- 工艺过程冷媒
- 地表水修复
- 化学过程
- 水泵保护
- 污水
- 采矿

型号表					
举例	IEF	-H	N	-CND	-LCD IEF-HN-CND-LCD
系列	IEF				插入式电磁流量变送器
精度		H S			高精度: 读数的1% 标准精度; 满刻度的1%
过程连接			N B		1" NPT 1" BSPT
电气连接				CND PG 10	1/2" NPT内螺纹 PG 16 密封压盖 PG 16 密封压盖, 带 (2) 10' (3 m) 阻燃电缆
选项				LCD COM	自带LCD BACnet 或 Modbus® 通讯协议(可选)
				NIST	NIST 可溯源多点校准证书
				FC	工厂校准证书 (单点读数的0.5%)
				CC	客户订制配置用于特定的安装场合

## 技术指标

介质: 不粘附的导电液体。  
 量程: 0 - 20 ft/s (0 - 6 m/s)\*  
 材质: 主体轴/接头: 316不锈钢; 电极: 316不锈钢; 电极盖: 聚苯乙烯; O型环: 硅胶。  
 精度: IEF-HX-X: 在流速校准时读数的±0.5%; 在2 - 20 ft/s (0.6 - 6 m/s)范围内读数的±1%; 当 < 2 ft/s (0.6 m/s)时: ±0.02 ft/s (±0.006 m/s)。IEF-SX-X: 满刻度的±1%。  
 温度范围: 环境温度: -20 - 160°F (-29 - 71°C); 过程温度: 15 - 250°F (121°C); 储存: -40 - 185°F (-40 - 85°C)。  
 过程连接: 1" NPT 或 BSPT 带全球阀附件选项。  
 耐压: 400 psi (27.6 bar) @ 100°F (37.8°C)。  
 压力降: < 0.1 psi 在流速12 ft/s, 当大于等于4" (101.6 mm) 管径时。  
 输出:  
 (1) 模拟: 4 - 20 mA, 0 - 5 V, 0 - 10 V 或 2 - 10 V (可选);  
 (1) 脉冲/频率: 0 - 15 V 脉冲峰值, 0 - 500 Hz 或调整脉冲输出 (可选);  
 (2) 报警: (1) 空管监测或最小最大流速监测, (可选); (1) 反向输出指示。  
 电源: 12 - 42.4 VDC, 25 A @ 24 VDC; 12 - 36 VAC。  
 电气连接: 可移除接线排, 可选 1/2" NPT 导管, PG 16密封压盖或PG 16 密封压盖带 (2) 10 ft (3 m) 9芯22 AWG阻燃电缆, 可选择配件电缆长度到200 ft (61m)。  
 显示 (-LCD 选项): 2" (5.08 cm) x 2" (5.08 cm) 带背景光的LCD。  
 电导率: >20 microsiemens。  
 外壳材料: 粉末涂层铸铝。  
 外壳防护等级: NEMA 6P (IP68) (无显示型); NEMA 4X (IP66) (带-LCD显示型)。机构认证: BTL, CE, NSF/ANSI 61 和 372 待定。

## 通讯 (-COM 选项)

种类: BACnet MS/TP 或 Modbus® RTU 通讯协议(默认禁用协议, 可选)。  
 波特率: 9600, 19200, 38400, 57600, 76800, 或 115200 bps (可选)。  
 装置负载: 1/8 unit load。

## 额外说明:

适用管材: 主要塑料和金属管; 例如碳钢、不锈钢、铜、硬聚氯乙烯/聚偏氟乙烯, 镀锌钢, 低碳钢和青铜。  
 适用管径: IEF-HX-X: 4-10" (101-254 mm); IEF-SX-X: 4-36" (101-914 mm)。  
 前后直管段: 上游>10倍管径, 下游>5倍管径。

\*当最大流速度小于10 ft/s (3 m/s) 时, 订购-CC选项。

## 配件

型号	描述
A-IEF-KIT	配置套件 (包括配置显示器, 厚度表和测量尺)
A-IEF-DSP	配置显示器
A-IEF-CBL-50	阻燃电缆 50 ft (15.2 m)
A-IEF-VLV-BR	黄铜 1-1/4" 全通隔离球阀
A-IEF-VLV-SS	316不锈钢 1-1/4" 全通隔离球阀
A-IEF-INGD	安装对齐工具
A-IEF-PA	交流电源转换器

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如英文版与中文版有任何歧异, 概以英文版为准。  
 In case of any inconsistency between English and Chinese version, the English version shall prevail.

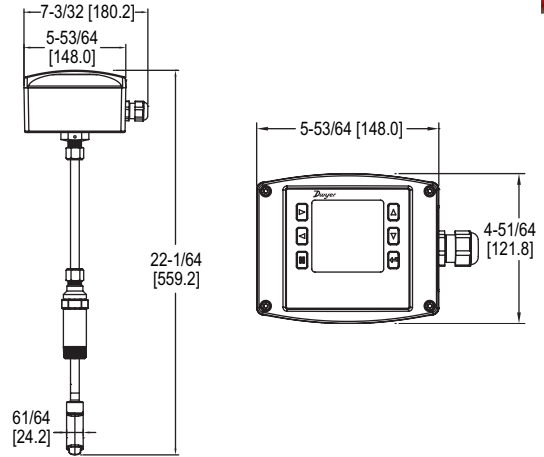
# INSERTION ELECTROMAGNETIC FLOW TRANSMITTER

Field Configurable, High Accuracy, BACnet or Modbus® Protocol



Shown with A-IEF-VLV-BR accessory valve

-LCD option shown



The **SERIES IEF** Insertion Electromagnetic Flow Transmitter is an adjustable insertion flowmeter featuring electromagnetic technology that accurately and reliably measures fluid velocity in addition to providing several continuous signal outputs. This series is specifically designed to offer superior performance paired with simple installation and use. One unit is adjustable to fit pipe sizes from 4 to 36" (102 to 914 mm), and offers several output options including selectable BACnet MS/TP or Modbus® RTU communications protocol over 2-wire RS-485 in addition to the standard analog, frequency and alarm outputs.

**FEATURES/BENEFITS**

- Field configurable setup displays (-LCD integral option or remote accessory A-IEF-DSP) allow for ultimate flexibility by accommodating a variety of application configurations with one model through multiple display configurations i.e. pipe size, pipe material, liquid type, analog output, pulse/frequency output, alarm outputs, communication outputs, damping, and calibration factor.
- High performance accuracy is maintained through changes in temperature, density or viscosity.
- Setup Wizard and installation tool are simple to use allowing for quick and precise installation.
- Accessory setup kit A-IEF-KIT ensures exact installation application depth with included thickness gage and measuring tape.
- Long Life Cycle and minimal maintenance requirements with no moving parts to wear or break and electrodes that discourage fouling.
- Isolation valve accessory options allow for installation in operational systems via hot-tap kit or easy removal without system downtime.
- NIST calibration certificate included standard for Carbon Steel Schedule 40 pipes sized 4" (102 mm), 6" (150 mm), 8" (200 mm), and 10" (250 mm) with high accuracy option.

**APPLICATIONS**

- Boiler feed water
- Chilled water
- Open and closed loop condenser water
- Irrigation system
- Municipal water distribution
- Process and coolant flow
- Ground water remediation
- Chemical processing
- Pump protection
- Wastewater
- Mining

**MODEL CHART**

Example	IEF	-H	N	-CND	-LCD	IEF-HN-CND-LCD
<b>Series</b>	IEF					Insertion electromagnetic flow transmitter
<b>Accuracy</b>		H S				High accuracy; 1% of reading Standard accuracy; 1% FS
<b>Process Connection</b>			N B			1" NPT 1" BSPT
<b>Electrical Housing Connector</b>				CND PG 10		1/2" female NPT PG 16 gland PG 16 gland with (2) 10' (3 m) plenum rated cables
<b>Options</b>					LCD COM NIST FC CC	Integral LCD BACnet or Modbus® communication protocol (display selectable) Multiple point NIST traceable calibration certificate Factory calibration certificate for 0.5% of reading at single point Custom configured for specific installation

**SPECIFICATIONS**

**Service:** Compatible clean or dirty non coating, conductive liquids.  
**Range:** 0 to 20 ft/s (0 to 6 m/s).\*  
**Wetted Materials:** Body shaft/fitting: 316SS; Electrodes: 316SS; Electrode cap: Polymer/Polystyrene; O-ring: Silicon.  
**Accuracy:** IEF-HX-X: ±0.5% of reading at calibrated velocity; ±1% of reading from 2 to 20 ft/s (0.6 to 6 m/s); ±0.02 ft/s (±0.006 m/s) at < 2 ft/s (0.6 m/s). IEF-SX-X: ±1% FS.  
**Temperature Limits:** Ambient: -20 to 160°F (-29 to 71°C); Process: 15 to 250°F (121°C); Storage: -40 to 185°F (-40 to 85°C).  
**Process Connection:** 1" NPT or BSPT with accessory full port ball valve options.  
**Pressure Limits:** 400 psi (27.6 bar) @ 100° F (37.8°C).  
**Pressure Drop:** < 0.1 psi at 12 ft/s in 4" (101.6 mm) and larger pipe.  
**Outputs:**  
 (1) Analog: 4 to 20 mA, 0 to 5 V, 0 to 10 V or 2 to 10 V (display selectable);  
 (1) Pulse/Frequency: 0 to 15 V peak pulse, 0 to 500 Hz or scalable pulse output (display selectable);  
 (2) Alarm: (1) Empty pipe detection or minimum/maximum velocity, (display selectable); (1) Reverse flow output indication.  
**Power Requirements:** 12 to 42.4 VDC, .25 A @ 24 VDC; 12 to 36 VAC.  
**Electrical Connection:** Removable terminal blocks, model selectable 1/2" female NPT conduit connection, PG 16 gland or PG 16 gland with (2) 10 ft (3 m) 9 conductor 22 AWG plenum rated cables, accessory cable lengths up to 200 ft (61 m) optional.  
**Display (-LCD option):** 2" ( 5.08 cm) x 2" (5.08 cm) graphic LCD with backlight.  
**Conductivity:** >20 microsiemens.  
**Enclosure Material:** Powder coated die cast aluminum.  
**Enclosure Ratings:** NEMA 6P (IP68) (Non display models); NEMA 4X (IP66) (-LCD option).  
**Agency Approvals:** BTL, CE, NSF/ANSI 61 and 372 pending.

**COMMUNICATIONS (-COM OPTION)**

**Type:** BACnet MS/TP or Modbus® RTU communication protocol (default disabled, display selectable).  
**Supported Baud Rates:** 9600, 19200, 38400, 57600, 76800, or 115200 bps (display selectable).  
**Device Load:** 1/8 unit load.

**ADDITIONAL SPECIFICATIONS**

**Applicable Pipe Material:** Most popular plastic and metal pipes; i.e. Carbon steel, SS, copper, UPVC/PVDF, galvanized steel, mild steel, and brass.  
**Applicable Pipe Size:** IEF-HX-X: 4 to 10" (101 to 254 mm); IEF-SX-X: 4 to 36" (101 to 914 mm).  
**Diameter Length Requirements:** >10' upstream, >5' downstream.  
 \*For max flowrates >10 ft/s (3 m/s) order option -CC.

**ACCESSORIES**

Model	Description
<b>A-IEF-KIT</b>	Setup kit (includes setup display, thickness gage and measuring tape)
<b>A-IEF-DSP</b>	Setup display
<b>A-IEF-CBL-50</b>	Plenum rated cable 50 ft (15.2 m)
<b>A-IEF-VLV-BR</b>	1-1/4" full port isolation valve brass
<b>A-IEF-VLV-SS</b>	1-1/4" full port isolation valve 316SS
<b>A-IEF-INGD</b>	Installation alignment kit
<b>A-IEF-PA</b>	AC wall adapter