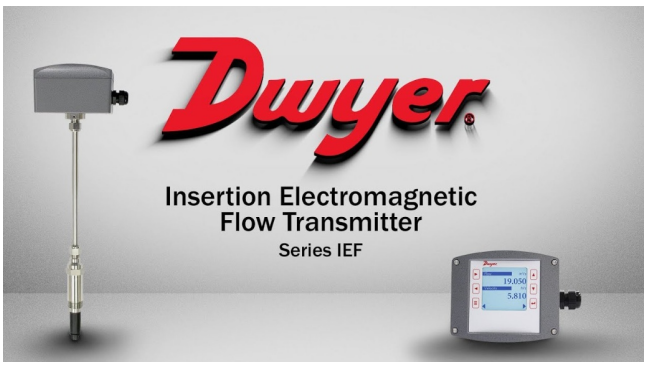

Dwyer Series IEF Insertion Electromagnetic Flow Transmitter Instruction Manual

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Dwyer Series IEF Insertion Electromagnetic Flow Transmitter

Product Information

The Flow Series IEF is an adjustable insertion electromagnetic flow transmitter used for measuring the flow rate of compatible clean or dirty non-conductive liquids. It comes equipped with a 2-inch graphic LCD with backlight and is available with an optional full port ball valve accessory kit. The transmitter has a range of 0 to 20 ft/s (0 to 6 m/s) and is compatible with most popular plastic and metal pipes. The wetted materials include 316 SS for the body shaft/fitting, electrodes, and electrode cap, polystyrene/polymer for the electrode cap and silicon for the O-ring. The transmitter has a pressure limit of 400 psi (27.6 bar) and is available in various models with different accuracy levels, process connections, and pipe sizes.

Product Usage

To use the Flow Series IEF transmitter, follow these steps:

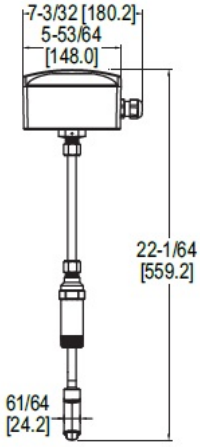
1. Ensure that the transmitter is compatible with the liquid being measured.
2. Select the appropriate model based on the accuracy level, process connection, and pipe size.
3. Install the transmitter by inserting it into the pipe at least 10 inches upstream and 5 inches downstream.
4. Connect the electrical wires to the removable terminal blocks or female NPT conduit connection.
5. If using the optional full port ball valve accessory kit, install it along with the transmitter.
6. Apply power to the transmitter by connecting it to a power source with a voltage between 12-42.4 VDC or 12-36 VAC.
7. Select the desired output signal (analog, pulse/frequency, or alarm) and configure it using the setup display or online video resources.
8. Calibrate the transmitter using the available calibration services or by following the instructions in the user manual.
9. Monitor the flow rate readings on the 2-inch graphic LCD with backlight or through the RTU communication protocol (if enabled).

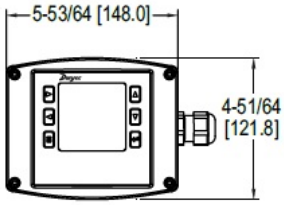
Instruction

Shown with
A-IEF-VLV-BR**
accessory valve kit

-LCD option shown

A-IEF-KIT





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.

BENEFITS/FEATURES

- Meet application requirements with field configurable setup displays (-LCD integral option or remote accessory A-IEF-DSP), which accommodate 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
- Maintain system efficiency with high performance accuracy that is maintained through changes in temperature, density or viscosity
- Quick and easy ordering and set up with Setup Wizard and installation tool that are simple to use and allow for precise installation
- Save time with accessory setup kit A-IEF-KIT that ensures exact installation application depth with included thickness gage and measuring tape
- Reduced costs, long product life, and minimal maintenance requirements with no moving parts to wear or break and electrodes that discourage fouling
- Minimize installation costs with isolation valve accessory options to allow for installation in operational systems via hot-tap kit or easy removal without system downtime
- Required documents included with NIST traceable pass/fail verification certificate included standard for Carbon Steel Schedule 40 pipes sized 4″ (102 mm), 6″ (150 mm), 8″ (200 mm)

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**
Series	IEF					Insertion electromagnetic flow transmitter
Accuracy		L G S F I E T H				Standard accuracy 4 to 10″ (100 to 250 mm) pipe; 1% FS Standard accuracy >10″ (250 mm) pipe; 1% FS Standard accuracy 4 to 36″ (100 to 900 mm) pipe; 1% FS High accuracy 4″ (100 mm) pipe; 1% of reading High accuracy 6″ (150 mm) pipe; 1% of reading High accuracy 8″ (200 mm) pipe; 1% of reading High accuracy 10″ (250 mm) pipe; 1% of reading High accuracy 4 to 10″ (100 to 250 mm) pipe; 1% of reading
Process Connection			N B			1″ male NPT 1″ male BSPT

Housing Electrical Connection				CND PG 10		1/2″ female NPT conduit connection without cable PG gland without cable PG gland with 10´ (3 m) cable
Options					CC COM FC LCD NIST NW	Custom configured for specific installation BACnet or Modbus® communication protocol (display selectable) Factory calibration certificate for 0.5% of reading at single point Integral LCD display Six point NIST traceable calibration certificate NSF certified
Note: For CC option, must provide completed configuration paperwork. **Note:** For maximum performance select -LCD option or setup display accessory.						

ACCESSORIES	
Model	**Description**
A-IEF-CBL-50 A-IEF-DSP	Plenum rated cable 50 ft (15.2 m) Setup display
A-IEF-KIT	Setup kit (includes setup display, thickness gage and measuring tape), and universal power adaptor
A-IEF-PA	AC wall adaptor
A-IEF-VLV-BR A-IEF-VLV-SS	1-1/4″ full port isolation valve brass kit** 1-1/4″ full port isolation valve 316 SS kit
**Brass fittings and pipe are not to be used with NSF Certified models. Brass valves are non-RoHS compliant.	

SPECIFICATIONS

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: 316 SS; Electrodes: 316 SS; Electrode cap: Polymer/Polystyrene; O-ring: Silicon.

Accuracy: High accuracy units: ±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); Standard accuracy units: ±1% FS. **Temperature Limits:** Ambient: -20 to 160°F (-29 to 71°C); Process: 15 to 250°F (-9 to 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) @ 100º F (37.8°C).

Pressure Drop: < 0.1 psi at 12 ft/s in 4″ (101.6 mm) and larger pipe.

Outputs:

(1) Analog: 4-20 mA, 0-5 V, 0-10 V or

2-10 V (display selectable);

(1) Pulse/Frequency: 0-15 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: 12-42.4 VDC, .25

A @ 24 VDC; 12-36 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).

Compliance: BTL, CE, NSF/ANSI 61 and 372.

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: 4-36″ (101 to 914 mm), model dependent. See model chart. **Diameter Length Requirements:** >10 upstream; >5 downstream.

Glycol: 0 to 100% display selectable.

*For max flowrates >10 ft/s (3 m/s) order option -CC.
†Brass fittings and pipe are not to be used with NSF Certified models.

Modbus® is a registered trademark of Schneider Automation, Inc.
A-IEF Remote Display now available:
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Documents / Resources

	Dwyer Series IEF Insertion Electromagnetic Flow Transmitter [pdf] Instruction Manual Series IEF Insertion Electromagnetic Flow Transmitter, Series IEF, Insertion Electromagnetic Flow Transmitter, Electromagnetic Flow Transmitter, Flow Transmitter, Transmitter

References

- Dwyer Home