SERIES IEF | INSERTION ELECTROMAGNETIC FLOW TRANSMITTER

2 YEAR LIMITED WARRANTY

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

-LCD option shown

FEATURES/BENEFITS

- **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

DESCRIPTION

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″ (100 to 900 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.

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: Silicone.
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 (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″ (100 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, 0.25 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 pending.
*For max flowrates >10 ft/s (3 m/s) order option -CC.	

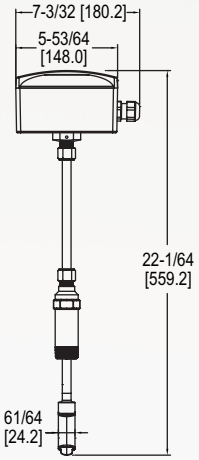
COMMUNICATIONS SPECIFICATIONS (-COM OPTION)

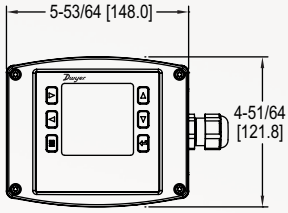
Type	BACnet MS/TP or Modbus® RTU communication protocol (default disabled, display selectable).
Supported Baud Rates	9600, 19200, 38400, 57600, 76800, or 115200 bps (display selectable).
Device Load	1/8 unit load.

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″ (100 to 900 mm), model dependent. See model chart.
Diameter Length Requirements	>10 upstream, >5 downstream.
Glycol	0 to 100% display selectable.
**Brass fittings and pipe are not to be used with NSF certified models.	

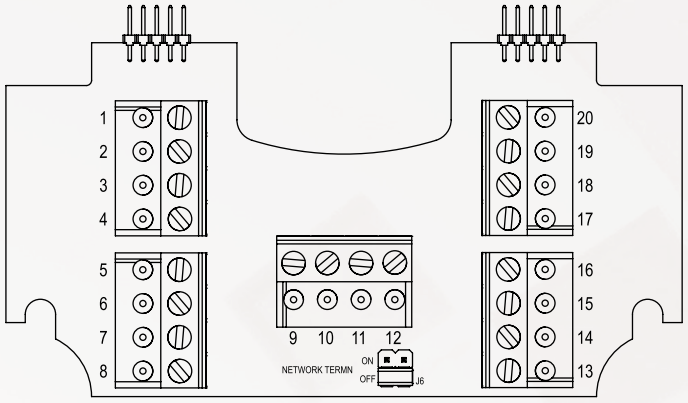
DIMENSIONS





-LCD option shown

WIRING DIAGRAM



WIRING DIAGRAM				
Cable*	**Terminal #**	**Wire Color**	**Description**	**Note**
A	1	Red	Power Supply Positive	Connect to +24 VDC or VAC transformer
A	2	Black	Power Supply Common	Connect to 24 VDC/VAC common
A	13	Shield	-	If used - Application Dependant
B	14	Shield	-	If used - Application Dependant
External		-	Earth/Chassis Ground	-
Analog Current Output				
B	3	Brown	(+) Analog current output	4-20 mA process output
B	4	Blue	(-) Analog output common	Current output common
Analog Voltage Output				
B	5	Green	(+) Analog voltage output	May be configured; 0-10 V, 0-5 V, 2-10 V, etc.
B	6	White	(-) Analog output common	Voltage output common
Frequency Output				
B	8	Violet	(+) Frequency output	0 to 500 Hz output (@ 0/15 VDC output level)
B	7	Grey	(-) Analog output common	Frequency output common
RS-485 Communication (optional)				
B	11,12	Orange	RS-485 (+)	On board short for daisy chain connection
B	9,10	Yellow	RS-485 (-)	On board short for daisy chain connection
Reverse Flow				
A	15	Brown	Isolated solid state output N.O.	50 V AC/VDC @ 100 mA maximum
A	16	Blue	Isolated solid state output N.O.	50 V AC/VDC @ 100 mA maximum
Alarm				
A	17	Green	Isolated solid state output N.O.	50 V AC/VDC @ 100 mA maximum
A	18	White	Isolated solid state output N.O.	50 V AC/VDC @ 100 mA maximum
Pulse				
A	19	Orange	Isolated solid state output N.O.	50 V AC/VDC @ 100 mA maximum
A	20	Yellow	Isolated solid state output N.O.	50 V AC/VDC @ 100 mA maximum
No Connection				
B	-	Red	Do not connect	-
B	-	Black	Do not connect	-
A	-	Violet	Do not connect	-
A	-	Grey	Do not connect	-
*Supplied cables - shown				

HOW TO ORDER

Use the **bold** characters from the chart below to construct a product code.

IEF **-H** **N** **-CND** **-LCD**

SERIES
IEF: Insertion electromagnetic flow transmitter

ACCURACY
-L: Standard accuracy 4 to 10″ (200 to 250 mm) pipe; 1% FS
-G: Standard accuracy > 10 to 36″ (250 to 900 mm) pipe; 1% FS
-S: Standard accuracy 4 to 36″ (100 to 900 mm) pipe; 1% FS
-F: High accuracy 4″ (100 mm) pipe; 1% of reading
-I: High accuracy 6″ (150 mm) pipe; 1% of reading
-E: High accuracy 8″ (200 mm) pipe; 1% of reading
-T: High accuracy 10″ (250 mm) pipe; 1% of reading
-H: High accuracy 4 to 10″ (100 to 250 mm) pipe; 1% of reading

PROCESS CONNECTION
N: 1″ NPT
B: 1″ BSPT

OPTIONS
-CC: Custom configured for specific installation
-COM: BACnet or Modbus® communication protocol (display selectable)
-FC: Factory calibration certificate for 0.5% of reading at single point
-LCD: Integral LCD
-NIST: Multiple point NIST traceable calibration certificate
-NW: NSF certified

ELECTRICAL HOUSING CONNECTOR
-CND: 1/2″ female NPT without cable
-PG: PG 16 gland without cable
-10: PG 16 gland with (2) 10´ (3 m) plenum rated cables

Note: For maximum performance select -LCD option or setup display accessory.

ACCESSORIES

Model	Description
A-IEF-CBL-50	Plenum rated cable 50 ft (15.2 m)
A-IEF-KIT	Setup kit (includes setup display, thickness gage and measuring tape) and universal power adapter
A-IEF-DSP	Setup display
A-IEF-PA	AC wall adapter
A-IEF-VLV-BR	1-1/4″ full port isolation valve brass kit**
A-IEF-VLV-SS	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.	