

SERIES IEF | INSERTION ELECTROMAGNETIC FLOW TRANSMITTER



FEATURES/BENEFITS

- Field configurable, integral or remote displays allow for ultimate flexibility by accommodating a variety of applications through multiple display configurations
- High performance accuracy is maintained through changes in temperature, density, and 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



Shown with A-IEF-VLV-BR accessory valve

APPLICATIONS

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

DESCRIPTION

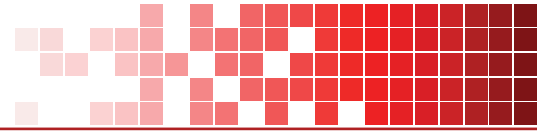
The **SERIES IEF** Insertion Electromagnetic Flow Transmitter is an adjustable insertion flowmeter featuring electromagnetic technology that accurately and reliably measures fluid velocity in addition to providing several continuous signal outputs. This series is specifically designed to offer superior performance paired with simple installation and use. One unit is adjustable to fit pipe sizes from 4 to 36" (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.



-LCD option shown

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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	IEF-HX-X: $\pm 0.5\%$ of reading at calibrated velocity; $\pm 1\%$ 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: $\pm 1\%$ 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, 0.25 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.

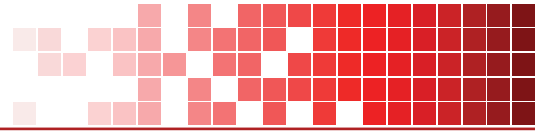
COMMUNICATIONS SPECIFICATIONS (-COM OPTION)

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.

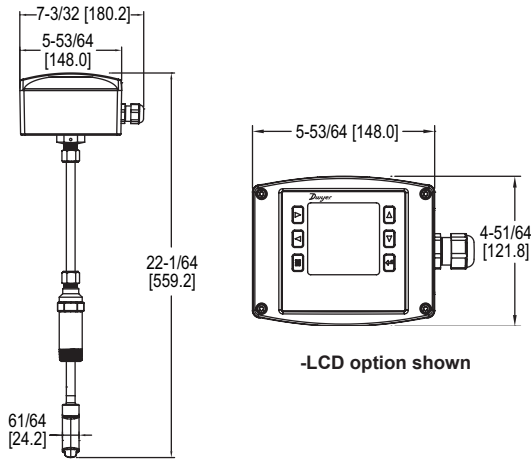
ADDITIONAL SPECIFICATIONS

Applicable Pipe Material	BACnet MS/TP or Modbus® RTU communication protocol (default disabled, display selectable).
Applicable Pipe Size	9600, 19200, 38400, 57600, 76800, or 115200 bps (display selectable).
Diameter Length Requirements	1/8 unit load.
*For max flowrates > 10 ft/s (3 m/s) order option -CC.	

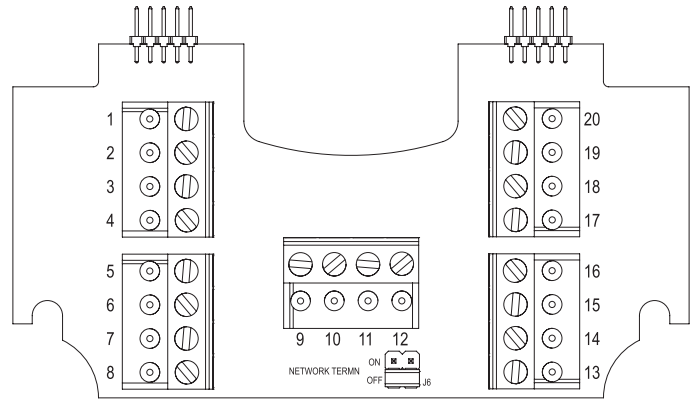




DIMENSIONS



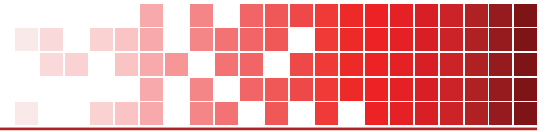
WIRING DIAGRAM



WIRING DIAGRAM				
Cable*	Terminal #	Wire Color	Description	Note
A	1	Red	Power Supply Positive	Connect to +24VDC or VAC transformer
A	2	Black	Power Supply Common	Connect to 24VDC/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 to 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 to 10 V, 0 to 5 V, 2 to 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	-

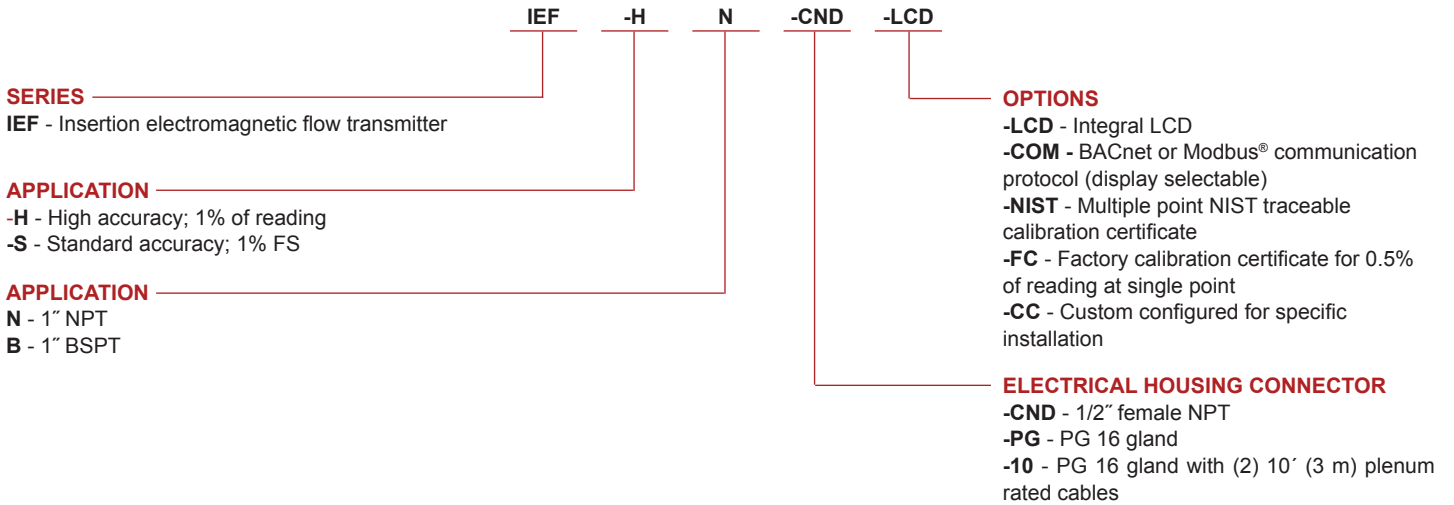
*Supplied cables - shown





HOW TO ORDER

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



ACCESSORIES

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

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