

• F-3200 •
INLINE ELECTROMAGNETIC
FLOW METER



Faraday's Law states that a voltage will be induced in a conductor (the conductive fluid) when it passes through a magnetic field (generated by the meter), and that voltage will be directly proportional to the velocity of the conductor (the fluid). This voltage is measured by electrodes on opposite sides of the flow tube and used to calculate the flow velocity.

FEATURES

Exceptional Performance & Accuracy – F-3200 series inline meters deliver unmatched accuracy in installations with just three diameters of straight pipe upstream of the meter!

Easy to Install and Use - Every ONICON meter is individually wet calibrated and programmed for the application - saving start-up and commissioning time!

Excellent Long Term Reliability - ONICON electromagnetic flow meters have no moving parts and employ state-of-the-art electronics, ensuring years of accurate, trouble-free performance.

Redundant Outputs – The F-3200 series inline meters can be ordered with an additional, redundant analog output. This optional feature can provide a cost-effective alternative in Mission Critical applications which require redundant flow measurements.

DESCRIPTION

ONICON F-3200 inline electromagnetic flow meters are suitable for measuring electrically conductive liquids in a wide variety of applications. The F-3200 can be configured to provide analog outputs for flow rate, programmable pulse outputs for flow totalization and serial communications via an RS485 network.

APPLICATIONS

- Chilled water, hot water, condenser water and water/glycol/brine solutions used in HVAC
- Bi-directional flow for primary/secondary bypass
- Process flow with conductivity greater than 5 $\mu\text{S}/\text{cm}$
- Domestic/municipal water

CALIBRATION

Every ONICON F-3200 flow meter is wet calibrated in a flow laboratory against standards that are directly traceable to international standards. A certificate of calibration accompanies every meter.



For energy measurement applications, the F-3200 flow meter can be specified together with an ONICON BTU Meter, forming a complete energy measurement system.

GENERAL SPECIFICATIONS

ACCURACY

- ± 0.2% of reading from 1.6 to 33 ft/s
- ± 0.0033 ft/s at flow rates < 1.6 ft/s

SENSING METHOD

Electromagnetic sensing (no moving parts)

FLUID TEMPERATURE RANGE

Refer to Liner Selection Table below

OUTER BODY MATERIALS OPTIONS

Carbon Steel, painted
Stainless Steel

FLOW TUBE (Internal)

304 Stainless Steel

CONNECTION TYPES AVAILABLE

Wafer
ANSI Class 150 flange
ANSI Class 300 flange

ELECTRICAL CONNECTIONS

Removable terminal blocks, for use with 18-22 AWG shielded cable

FLUID CONDUCTIVITY

5 µS/cm minimum

POWER SUPPLY

Low Power, 24 VAC/DC, 12 VA typical
High Power, 120 - 240 VAC, 12 VA typical

DISPLAY

Backlit 16-character, 8-line graphic LCD displays: flow rate and velocity, flow direction and totals, short term data and error messages

OUTPUT SIGNALS

- Isolated 4-20 mA analog output for flow rate
- Two (2) isolated programmable digital/pulse outputs (configurable for flow frequency, pulse, alarm or flow direction)
- MODBUS® RTU (RS485)
- Redundant output with second isolated analog output for flow rate and two additional isolated programmable pulse outputs

ELECTRONICS ENCLOSURE

- Epoxy painted aluminum housing, NEMA 4 (IP67)
- Remote mount, maximum distance from the sensor - up to 325 ft at conductivities ≥ 200 µS/cm

APPROVALS

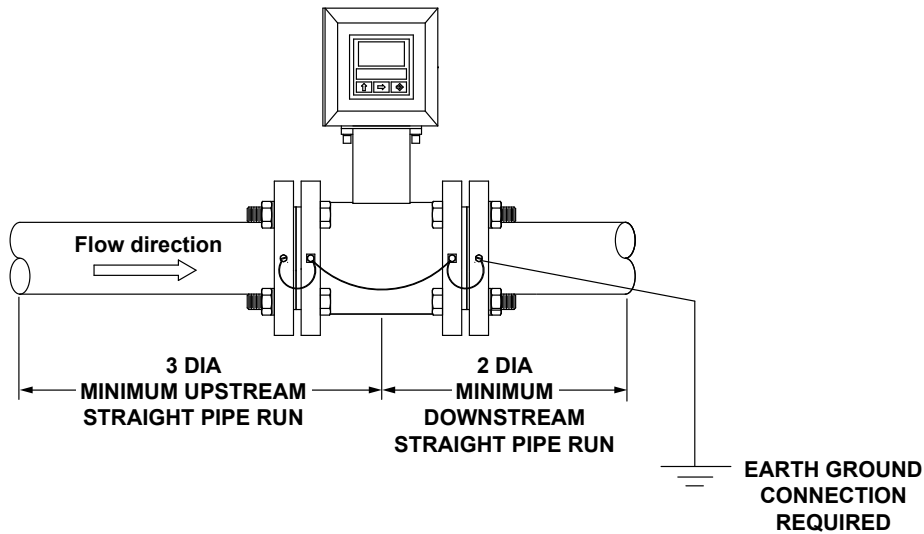
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NOTE: Specifications are subject to change without notice.

LINER SELECTION

LINER SELECTION TABLE						
Material	Line Size Flanged and Wafer	Grade	Color	Temperature Range	Pressure Range Based on Liner	Abrasion Resistance (Carbon Steel = 100)
Ebonite	8 - 48"	Food	Amber	32°F - 175°F	580 psi (1)	90 - 118
Polypropylene	1 - 6"	Food	Gray	32°F - 140°F	232 psi	122
PTFE	1 - 48"	Food	White	0°F - 266°F (3)	580 psi (1,2)	78
Notes	Description					
1	Flanged meter pressure rating is the lesser of 580 psi or the flange rating.					
2	Wafer style meters above 6" are limited to 232 psi.					
3	Remote mount electronics option required for application temperature above 212°F.					

TYPICAL METER INSTALLATION



OPERATING RANGE	
Pipe Size (Inches)	Flow Rate (GPM) (0.1 ft/sec - 33 ft/sec)
1	0.2 - 79
1½	0.6 - 203
2	0.9 - 317
2½	1.6 - 536
3	2.4 - 812
4	3.8 - 1,268
5	5.9 - 1,981
6	8.5 - 2,853
8	15 - 5,072
10	24 - 7,925
12	34 - 11,412
14	47 - 15,533
16	61 - 20,288
18	77 - 25,678
20	95 - 31,701
24	137 - 45,649
30	214 - 71,326
36	308 - 102,710
40	380 - 126,803
42	417 - 139,800
48	547 - 182,596

METER ORDERING INFORMATION

Meter Model Number Coding = F-32BB-CDEF(-SPC)

F-32XX = Inline Electromagnetic Flow Meter

BB = Meter Size

01 = 1"	04 = 4"
15 = 1.5"	05 = 5"
02 = 2"	06 = 6"
25 = 2.5"	08 = 8"
03 = 3"	10 = 10"
nn meter size, 12" - 48"	

C = Body Material, Liner and Electrode Configuration

- 1 = Carbon Steel, PTFE Liner and 3 SS Electrodes
- 2 = Carbon Steel, Polypropylene Liner, 3 SS Electrodes and Viton O-rings
- 3 = Carbon Steel, Ebonite Liner and 3 SS Electrodes

D = Process Connection

- 0 = Wafer Connection
- 1 = ANSI 150 Flanges
- 3 = ANSI 300 Flanges

E = Input Power

- 1 = Low Power, 24 VAC/DC
- 2 = High Power, 120 - 240 VAC

F = Electronics Enclosure Mounting Configuration

- 4 = Integral NEMA 4 (IP67) enclosure
- 5 = Remote NEMA 6 (IP68) enclosure

SPC = Special Configuration

- 101 = Aux outputs, redundant analog and pulse signals
- 102 = MODBUS RTU (RS485) serial communication