

• F-4600-BAC SERIES • INLINE FLOW METER



DESCRIPTION

F-4600-BAC series inline flow meters accurately measure flow in a wide variety of applications. The meters are provided with backlit displays and native BACnet MS/TP communications. The compact design is available for use in ½” through 2½” piping systems with flow rates ranging from 0.03 to 225 GPM.

Each meter is also provided with three auxiliary pulse inputs for totalizing pulses from external devices. Totals are accumulated in the meter. They can be viewed on the display and over the network.

CALIBRATION

Each F-4600 is wet-calibrated using N.I.S.T.¹ traceable standards. A certificate of calibration is provided with each meter.

FEATURES

Reliable No-Moving-Parts Design –

The F-4600 uses direct beam path wetted ultrasonic transducers for maximum signal strength and long-term reliability.

Highly Accurate Over a Wide Flow Range –

The direct beam path design is optimized for water and water/glycol solutions. This allows for improved accuracy at low flows.

Simple Installation and Commissioning –

Every ONICON F-4600 is individually configured and programmed using customer specific application data.

Native BACnet® MS/TP Communications -

The F-4600 communicates flow, volume, temperature, interval data and meter status to the network.

Detachable Display -

The F-4600-BAC enclosure is easily detached from the sensor to allow for remote installation using the 5 ft cable provided.

Industry Leading Two-year “No-fault” Warranty –

Start-up costs are reduced with extended coverage for accidental damage during installation. Certain exclusions apply. See our warranty statement for details.

APPLICATIONS

- Domestic/municipal water
- Chilled water, hot water, condenser water & water/glycol solutions for HVAC
- Steam condensate
- Process application water flow

GENERAL SPECIFICATIONS*

ACCURACY

FLOW

- ± 1% of reading over 25:1 turndown
- ± 2% of reading over 100:1 turndown
- Repeatability: ≤ ± 0.2%

OVERALL FLOW RANGE

500:1 turndown

SENSING METHOD

Direct beam path wetted ultrasonic sensors utilizing differential transit time velocity measurement

METER SIZES (Nominal diameter in inches)

½, ¾, 1, 1¼, 1½, 2 and 2½

PIPING SYSTEM CONNECTIONS

Male NPT threads or optional BSPT threads

2½” meter provided with ANSI Class 150 raise face flanges

POWER SUPPLY

20-26.5 VAC, 50/60 Hz, 15 W maximum

FLUID TEMPERATURE RANGE

32° F to 250° F

MAXIMUM OPERATING PRESSURE

400 PSI

PRESSURE DROP

Less than 1.5 PSI at design flow

Meter Models with Flow Ranges in GPM							
Model Number	Process Connection Type	Meter Size	Typical Design Flow	1% of Rate Range	2% of Rate Range	Min Flow	C _v
		(Nominal Size)	(gpm)	(gpm)	(gpm)	(gpm)	(gpm)
F-4600-BAC-050	Male NPT	½"	6.6	0.6 - 15	0.15 - 15	0.03	6.08
SF-4600-BAC-075	Male NPT	¾"	6.6	0.6 - 15	0.15 - 15	0.03	6.08
SF-4600-BAC-075H	Male NPT	¾" (high flow)	11	1 - 25	0.25 - 25	0.05	8.81
F-4600-BAC-100	Male NPT	1"	11	1 - 25	0.25 - 25	0.05	8.81
F-4600-BAC-100H	Male NPT	1" (high flow)	15.4	1.4 - 35	0.35 - 35	0.07	12.17
F-4600-BAC-125	Male NPT	1¼"	26.4	3 - 60	0.6 - 60	0.12	20.26
F-4600-BAC-150	Male NPT	1½"	44	5 - 100	1 - 100	0.2	33.85
F-4600-BAC-200	Male NPT	2"	66	8 - 150	1.5 - 150	0.3	
F-4600-BAC-250	Class 150 Flange	2½"	110	12 - 225	2.5 - 225	0.5	

¹ National Institute of Standards and Technology

*Specifications subject to change without notice

GENERAL SPECIFICATIONS (cont.)



NETWORK CONNECTION

Isolated RS485 serial interface

COMMUNICATION PROTOCOLS

BACnet® MS/TP per ASHRAE Standard 135.1: 2009

NETWORK CONFIGURATION & ADDRESSING

Baud Rates: 9600, 19200, 38400 & 76800

Device Address Range: 1 – 255

Device Instance Range: 1 – 4,194,303

AUXILIARY PULSE INPUTS

Three isolated totalizing pulse inputs for use with sinking open collector or dry contact outputs

Pulse duration: 50 msec minimum

MATERIALS

Wetted components: Lead-free brass, PEEK

Enclosure: Polycarbonate

ENVIRONMENTAL

IP65 (Indoor Use)

Operating Temperature Range: -13° to 131°F

Operating Humidity Range: 5 to 91%RH

(Non-Condensing Environment)

Storage Temperature Range: -14° F to 158° F

APPROVALS

FCC: Part 15, Subpart B

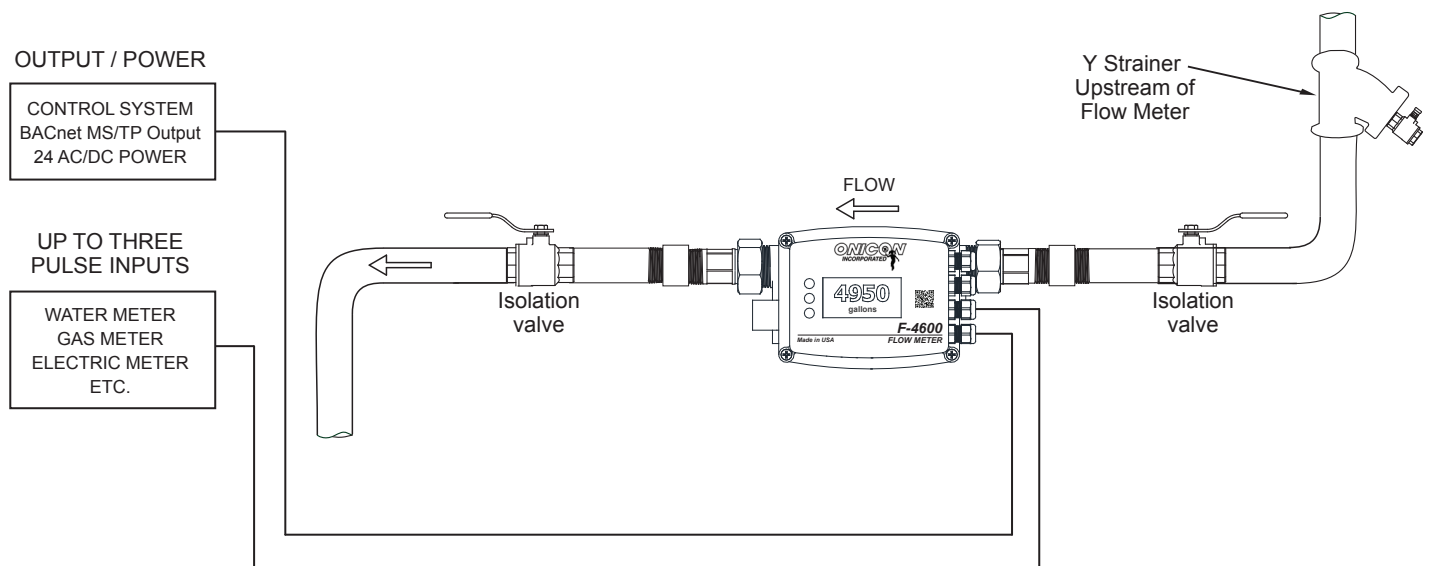
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Conforms to ANSI/NSF 61 & 372 (certification pending)

BTL Certified to ASHRAE 135:2009 (certification pending)

TYPICAL METER INSTALLATION

(New construction or scheduled shutdown)



Model	Process Connection Type	Length with couplings (in)	Length Flange to Flange (in)
F-4600-050	Male NPT	11.2	
F-4600-075	Male NPT	11.7	
F-4600-075H	Male NPT	11.7	
F-4600-100	Male NPT	12.3	
F-4600-100H	Male NPT	15	
F-4600-125	Male NPT	15.2	
F-4500-150	Male NPT	17	
F-4600-200	Male NPT	TBD	
F-4600-250	Class 150 Flange	N/A	11.81