

• F-4600 SERIES • INLINE FLOW METER



DESCRIPTION

ONICON F-4600 Inline Flow Meters accurately and reliably measure the flow of water and water glycol solutions. Meters are available for ½" - 2 ½" diameter pipe sizes. The F-4600 utilizes wetted direct beam path transit time ultrasonic technology to measure flow. It has no moving parts and operates over a wide flow range with excellent low-flow measurement capability. The cost effective design includes a 4-20 mA output for flow rate and a scaled pulse output for totalization.

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.

Easy to Install in Limited Straight Runs –

The ½" - 1" F-4600's feature a flow tube design that allows for limited straight pipe run in many meter installations.

Simple Installation and Commissioning –

Every ONICON F-4600 is individually configured and programmed using customer specific application data. Field programming is not required.

Industry Leading Two-year "No-fault" Warranty –

Start-up costs are reduced with extended coverage that includes 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

24V AC/DC ±10%, 50/60 Hz, 5 VA or 60 mA DC

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 (Nominal Size)	Typical Design Flow (gpm)	1% of Rate Range (gpm)	2% of Rate Range (gpm)	Min Flow (gpm)	C _v (gpm)	Length with Couplings or Flanges (in)
F-4600-050	Male NPT	½"	6.6	0.6 - 15	0.15 - 15	0.03	6.08	11.2
F-4600-075	Male NPT	¾"	6.6	0.6 - 15	0.15 - 15	0.03	6.08	11.7
F-4600-075H	Male NPT	¾" (high flow)	11	1 - 25	0.25 - 25	0.05	8.81	11.7
F-4600-100	Male NPT	1"	11	1 - 25	0.25 - 25	0.05	8.81	12.3
F-4600-100H	Male NPT	1" (high flow)	15.4	1.4 - 35	0.35 - 35	0.07	12.17	15
F-4600-125	Male NPT	1¼"	26.4	3 - 60	0.6 - 60	0.12	20.26	15.2
F-4600-150	Male NPT	1½"	44	5 - 100	1 - 100	0.2	33.85	17
F-4600-200	Male NPT	2"	66	8 - 150	1.5 - 150	0.3		
F-4600-250	Class 150 Flange	2½"	110	12 - 225	2.5 - 225	0.5		11.81

¹ National Institute of Standards and Technology

*Specifications subject to change without notice

GENERAL SPECIFICATIONS (cont.)

OUTPUT SIGNALS PROVIDED

- Analog output: 4-20 mA (non-isolated)
- Scalable pulse output:
 - Isolated solid state dry contact
 - Contact rating: 50 mA, 30 VDC
 - Contact duration: 1 second

MATERIALS

- Wetted components: Lead-free brass, PEEK
- Enclosure: Polycarbonate

ENVIRONMENTAL

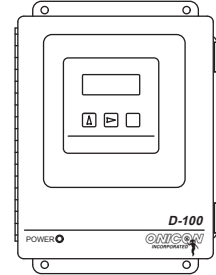
- NEMA 4
- Operating Temperature Range: -13° to 131°F
- Operating Humidity Range: 5 to 90% RH (Non-condensing environment)
- Storage Temperature Range: -14° F to 158° F

APPROVALS

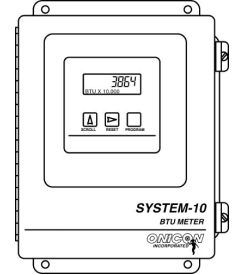
- AWWA: C750-10
- FCC: Part 15, Subpart B
- CE
- Conforms to ANSI/NSF61 & 372 (certification pending)



ALSO AVAILABLE



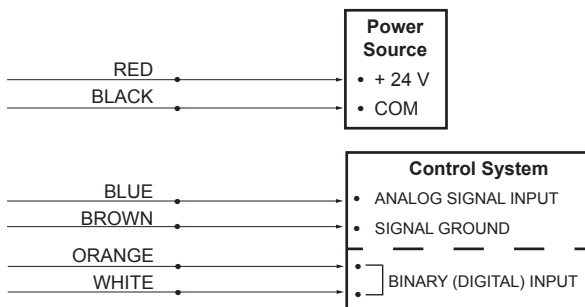
Display Modules



Btu Measurement Systems

F-4600 WIRING DIAGRAM

Flow meter into control system (no display or Btu meter)



F-4600 WIRING INFORMATION

WIRE COLOR	DESCRIPTION	NOTES
RED	(+) 24 V AC/DC supply voltage, 60 mA	Connect to power supply positive.
BLACK	(-) Common ground	Connect to power supply negative.
BLUE	(+) Analog signal	Active 4-20 mA (non-isolated)
BROWN	(-) Analog signal	
ORANGE	Dry contact switch output	Scaled to provide one pulse per desired unit volume.
WHITE		

Note: 4-20 mA signal is active. Do not connect external voltage to the blue & brown wires.

TYPICAL METER INSTALLATION

(New construction or scheduled shutdown)

