

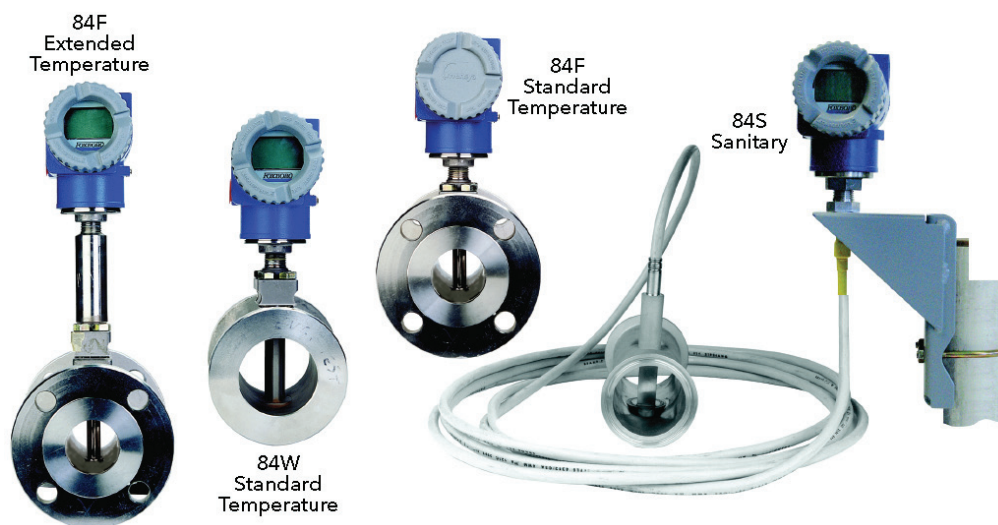
Summary

The Foxboro brand I/A Series Low Power Models 84F, 84W, and 84S are part of a family of intelligent, high performance, flanged, wafer body, and sanitary vortex flowmeters and are intended for use with battery power sources such as solar, wind or other alternative power technologies.

Business Value

The low power vortex flowmeters have no moving parts and are extremely durable and reliable. This simple design ensures low initial operating and maintenance costs, and therefore an overall lower cost of ownership.

Low Power Vortex Flowmeters



FEATURES / BENEFITS

- High Accuracy Flowmeters for measurement of liquid, gas and steam flows
- Low power consumption allows use with battery or solar powered installations
- Superior stability over turbine and PD meters
- No moving parts or bearings to wear reduces maintenance and downtime
- Pulse out put and digital HART make retrofit easy
- Active TuningTM:
 - Real-time Reynolds number (RD) low flow correction down to RD of 5000
 - Compensation for piping effects
 - Adaptive filtering and signal conditioning
 - Tunable for specific operating conditions

DESCRIPTION

The Foxboro® I/A Series® Low Power Models 84F, 84W, and 84S are part of a family of intelligent, high performance, flanged, wafer body, and sanitary vortex flowmeters. They transmit a digital and pulse output signal, as applicable, using HART communication protocol for remote configuration, calibration, and monitoring. An On-board LCD Indicator/Configurator is offered for local configuration.

These Low Power Vortex Flowmeters differ from other 84 Series Vortex flowmeters in that the supply current is fixed at a constant 10 mA, and remain in operation down to a minimum voltage of 10 V dc. They are intended for use with battery power with any form of recharging technology such as solar arrays or alternators.

The Models 84F and 84W set the example for industry standards whether the application requires accuracy for totalizing and batching; utility metering of fluids in the process industries; fuel, air, steam, or gas metering for the measurement of energy in any high use application; or stability and repeatability for process control. The model 84S available with 3A certification is ideally suited for the pharmaceutical, food and dairy industries and is available with a large selection of common sanitary end connections.

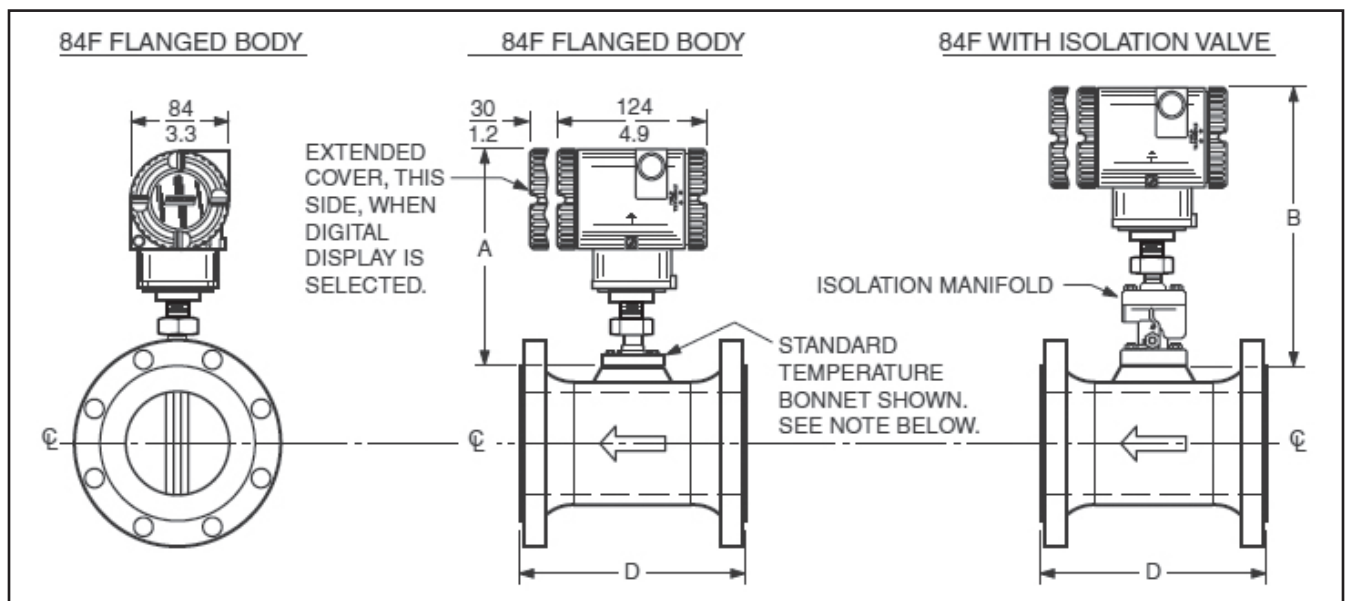
This patented family of vortex flowmeters has the high accuracy and rangeability of positive displacement and turbine flowmeters without the mechanical complexity and high cost. They provide flow rate accuracy of $\pm 0.5\%$ in liquids and $\pm 1.0\%$ in gas and steam. It utilizes patented DirectSense technology to eliminate routine problems encountered with other vortex meters. DirectSense technology measures pressure pulses from vortex shedding directly, without losses due to mechanical linkages. DirectSense technology benefits include:

- Provides best performance in class
- Increased measurement sensitivity for wider rangeability
- Greater immunity to pipe vibration
- High reliability backed by lifetime sensor warranty
- Replaceable sensor without recalibrating (Models 84F and 84W only)

The flowmeter is easily installed and configured. Simply wire it to a proper power source, an I/O module, or controller, and it is ready to measure flow. Foxboro will preconfigure the flowmeter using data supplied by the customer. Preconfigured flowmeters can be used as shipped, but for more precise application, they should be configured to specific process usage. The configurator allows selection of fluid type, and provides general default configurations when process conditions are not available.

The low power vortex flowmeters have no moving parts and are extremely durable and reliable. This simple design ensures low initial operating and maintenance costs, and therefore an overall lower cost of ownership. The flowmeters meet FM and CSA requirements for hazardous area locations and are available for explosion-proof and zone requirements.

84F Flanged Body Flowmeters; Integral Mount and Single Measurement



SPECIFICATIONS

The manufacturer shall provide low power, field-mounted vortex flowmeters featuring digital signal processing techniques capable of accurately measuring liquid, gas, or steam flows. The specifications for these meters are as follows:

Communication Protocol: HART

Outputs: HART digital with or without pulse output.

Configuration: Local configuration with the LCD Indicator; Remote configuration with the HART Communicator, or PC-based Configurator.

Accuracy: 0.5% of reading in liquids, 1.0% of reading in gas and steam.

Internal Flow Totalizer: Standard.

Sensor: Replaceable without meter recalibration required - 84F and 84W only.

EMC Compatibility: Complies with EMC Directives 2004/108/EC by conforming to the following EN and IEC standards; EN 61326-1 and IEC 61000-4-2 through 61000-4-6; also to NAMUR NE 21 Interference Immunity Requirement.

Power Supply: 10 to 42 V dc.

Supply Current: 10 mA dc nominal.

Electronics Housing: Aluminum housing with epoxy finish.
84F/W; Remote or integrally mounted to flowtube (with remote mount interconnecting cable up to 50 ft (15 m) required.)
84S; Remote mounted only. A 15 ft (4.5 m) cable integral to flowtube is provided.

Electronics: Enclosed in a NEMA 4X (IEC IP66) housing sealed with O-rings for protection against moisture or other contaminants optional integral LCD indicator with onboard configuration pushbuttons.

Body and
Shedder Bar Materials: 84F: 316 ss up to 4 in (DN 100) sizes; and 304 ss greater than 4 in (DN 100) sizes.
84W: 316 ss for all sizes, or Hastelloy C for 3/4 to 4 in (DN 15 to DN 100) sizes
84S: 316 ss tube and 316L ss shedder bar.

Flowmeter Sizing: Foxboro Sizing Program FlowExpertPro.com with free web site access.

Electrical Classification: FM and CSA intrinsically safe; Class I, II, and III, Division 1.
FM and CSA explosionproof; Class I, and II, Division 1.
FM and CSA nonincendive and suitable for use in Class I and II, Division 2 locations.
CSA zone certified Ex d [ia] IIC.
Also available with no Electrical Certifications.

Model Code: Foxboro Model 84F: Flanged Body, Low Power Vortex Flowmeter, or equivalent.
Foxboro Model 84W: Wafer Body, Low Power Vortex Flowmeter, or equivalent.
Foxboro Model 84S: Sanitary, Low Power Vortex Flowmeter, or equivalent.

For more information, please visit the IOM Support Services web page at iom.invensys.com/EN/Pages/Support.aspx or contact the IOM Global Client Support Center at 866-746-6477 (US and Canada)), 508-549-2424 (International), or email iom.support@invensys.com.



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