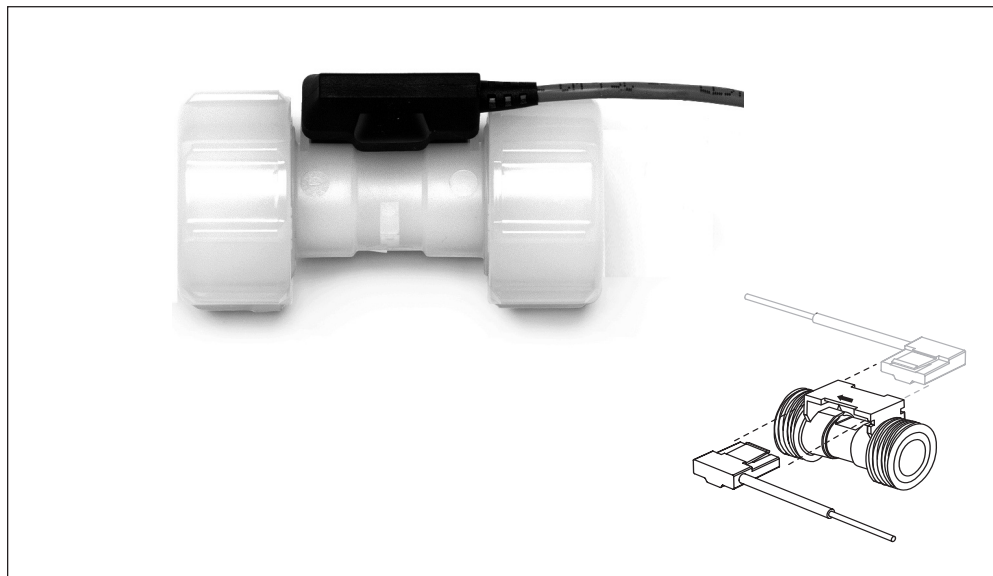


2100 Turbine Flow Sensor



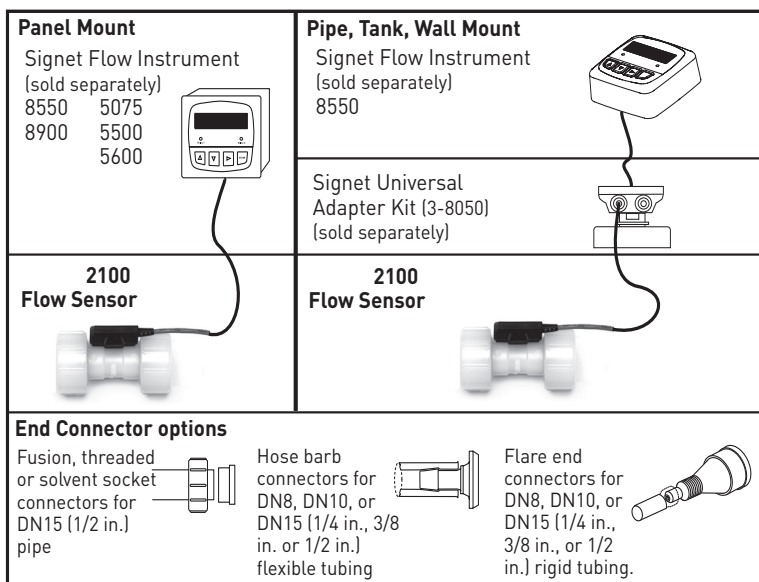
Description

Engineered specifically for small pipe diameter applications, the Signet 2100 Turbine Flow Sensor provides accurate readings in two flow ranges: 0.3 to 3.8 lpm and 3 to 38 lpm (0.1 to 1 gpm and 0.8 to 10 gpm).

The injection-molded PVDF body and ceramic bearings provide excellent chemical compatibility and long service in dosing and batching applications. Union piping and tubing

connections along with removable NEMA 4X electronics allow for easy assembly and field replacement. The 2100 can be used with DN8 (1/4 in.), DN10 (3/8 in.), DN15 (0.5 in.) tubing, or DN15 (0.5 in.) piping for simple installation. End connections are available in PVDF for hose barbs, flare ends, fusion socket or IR/butt fusion, and in PVC for socket or NPT thread.

System Overview



Features

- Flow rate range of 0.38 to 38 lpm (0.10 to 10 U.S. gpm)
- Unaffected by mounting angles
- Non-magnetic turbine
- Union ends for various connector types
- End connector kits for rigid or flexible tubing or DN15 (0.5 in.) pipe
- PVDF & ceramic wetted parts provide superior chemical compatibility
- For use with both clear and opaque fluids
- Small and compact design
- 4.6m (15 ft.) cable
- Features removable electronics that installs from either side of the sensor
- Sensor mounts at any angle

Application

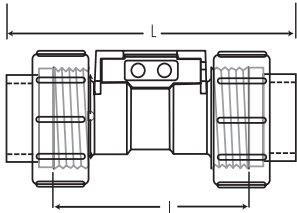
- Chemical Addition
- Textile dyeing
- High-purity Chemical Dispensing
- Water Addition
- Fertigation
- Dosing
- Pump Protection
- Not suitable for gases



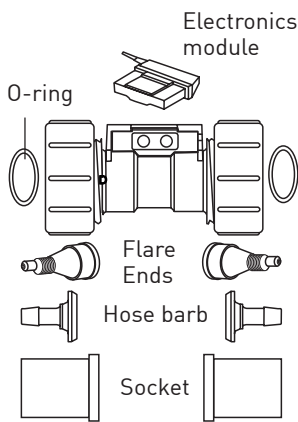
Dimensions

L = overall length

All sockets: 102 mm (4 in.)
 Butt fusion/IR: 170 mm (6.7 in.)
 All flare ends: 47 mm (1.85 in.)
 1/4 in. Barb: 124 mm (4.9 in.)
 3/8 in. Barb: 127 mm (5 in.)
 1/2 in. Barb: 132 mm (5.2 in.)



L = 64 mm (2.5 in.)



Application Tips:

- All socket and hose barb connector kits are sold individually. Two kits are required for each sensor.
- Flare end connector kits are sold in package of two.
- Mount at any angle.
- Terminal block recommended if standard cable is extended to maximum 300 m (1000 ft.)

Please refer to **Wiring, Installation, and Accessories** sections for more information.

Specifications

General

Flow range:

- -L = 0.38 to 3.8 lpm (0.10 to 1 U.S. gpm)
- -H = 3 to 38 lpm (0.8 to 10 U.S. gpm)
- -H (w/flare) = 3 to 27 lpm (0.8 to 7 U.S. gpm)

Linearity: ±3% of reading

Repeatability: ±0.5% of reading

Pipe size range: DN15 (1/2 in.)

Hose size: DN8 (1/4 in.), DN10 (3/8 in.), DN15 (1/2 in.)

Wetted Materials

Sensor body/rotor: PVDF

Shaft/bearings: Ceramic

O-rings: -1 = FPM, -2 = EPDM

Electronics:

PBT (polybutylene terephthalate)

EVA (ethylene vinyl acetate)

Electrical

Power:

5 to 24 VDC @ 1.5 mA max.

Reverse polarity protected

Electrical (continued)

Output:

Open collector, sinking, max 30 mA

Cable type:

PVC jacketed, 2 conductor twisted pair with shield (22 AWG)

Cable length: 4.6 m (15 ft.)

Max. Pressure/Temperature Rating

16 bar @ 20°C, 9.3 bar @ 70 °C
 (232 psi @ 68°F, 130 psi @ 158°F)

Operating temperature:

-20° to 70°C (-4° to 158°F)

Storage temperature:

-15° to 80°C (5° to 176°F)

Relative humidity:

0 to 95%, non-condensing

See Temperature and Pressure graphs

Shipping Weight: 0.15 kg (0.33 lbs)

Standards and Approvals

- CE
- Manufactured under ISO 9001:2000 for Quality and ISO 14001:2004 for Environmental Management

FLOW

Ordering Information

Sensor Part Number	
3-2100	Turbine flow sensor, PVDF body and rotor, for use with various end-connectors
	O-ring material - Choose one
-1	FPM
-2	EPDM
	Flow range
L	low, 0.38 to 3.8 lpm (0.10 to 1 gpm)
H	high, 3 to 38 lpm (0.8 to 10 gpm) except if used with flare fitting
H	high, 3 to 27 lpm (0.8 to 7 gpm) when used with flare fitting
3-2100	-1 L Example Part Number
*Note: To install this flow sensor, end fittings must be installed on both ends of the sensor. See selection below	
Fitting Part Number	
3-2100	End fitting for Model 2100 sensor
	Type of end fitting
-31	Hose barb connector kit, PVDF, 1/2 inch (1-hose barb and 1-ring nut)
-32	Hose barb connector kit, PVDF, 3/8 inch (1-hose barb and 1-ring nut)
-33	Hose barb connector kit, PVDF, 1/4 inch (1-hose barb and 1-ring nut)
-34	Fusion socket connector, PVDF, DN 15 1/2 inch (1-fusion socket and 1 ring nut)
-35	Butt Fusion/IR connector kit, PVDF, DN 15 1/2inch (1-IR socket and 1 ring nut)
-36	Metric socket connector kit, PVC, 1/2 inch (1-solvent socket and 1 ring nut)
-37	SCH 80 socket connector kit, PVC, 1/2 inch (1-solvent socket and 1 ring nut)
-38	NPT thread socket connector kit, PVC, 1/2 inch (1-threaded socket and 1 ring nut)
-40	Flare end, 1/2 inch (2 flare ends, 2 flare nuts, and 2 ring nuts)
-41	Flare end, 3/8 inch (2 flare ends, 2 flare nuts, and 2 ring nuts)
-42	Flare end, 1/4 inch (2 flare ends, 2 flare nuts, and 2 ring nuts)
3-2100	-33 Example Part Number

Mfr. Part No.	Code	Mfr. Part No.	Code
3-2100-1L	159 000 001	3-2100-35	159 000 009
3-2100-2L	159 000 003	3-2100-36	159 000 010
3-2100-1H	159 000 002	3-2100-37	159 000 011
3-2100-2H	159 000 004	3-2100-38	159 000 012
3-2100-31	159 000 005	3-2100-40	159 000 633
3-2100-32	159 000 006	3-2100-41	159 000 634
3-2100-33	159 000 007	3-2100-42	159 000 635
3-2100-34	159 000 008		

Accessories and Replacement Parts

Mfr. Part No.	Code	Description
1220-0018	159 000 019	O-rings FPM (2 required per sensor)
1224-0018	159 000 020	O-rings EPDM (2 required per sensor)
3-2100.390-1L	159 000 015	Turbine Lo Flow with FPM O-rings (replacement body)
3-2100.390-1H	159 000 016	Turbine Hi Flow with FPM O-rings (replacement body)
3-2100.390-2L	159 000 017	Turbine Lo Flow with EPDM O-rings (replacement body)
3-2100.390-2H	159 000 018	Turbine Hi Flow with EPDM O-rings (replacement body)
3-2100.390	159 000 014	Electronics Module with 15 ft. (4.6 m) cable

FC-110 Series

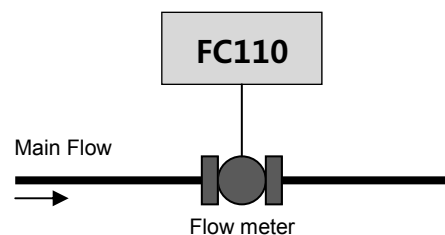
Flow Controller

FC110 ▶▶▶



Feature

- Total / accumulated total / flow rate
- Accepts 4-20mA and frequency flow inputs
- Scaled pulse output
- Alarm setter
- 4-20mA outputs



Over View

The FC110 series flow controllers are designed to measure general liquid and are provide highly reliable results for the variety of industrial requirement. This series have microprocessor inside, which makes it dependable and also have pulse input such as sine wave, open collector, reed switch and even analog input. The FC110 series have 4-20mA outputs, alarm and remote input as an option.

Flow Controller

FC110 ▶▶▶

General

Display

2-Line *16-character LCD display
with LED back Light

Display Update Rate 0.25-second

Decimal Points

Fully programmable for Rate and Total

Time Base

The Rate can be displayed in unit per second, per minute or per hour.

Data Retention

Set up parameters and totals stored in non-volatile memory with 10 years retention

Operation Temperature

0 to 55 °C

Power AC 110 or 220V / DC 24V

Power Consumption 6VA

Transducer Supply

DC12V , 50mA max

Flow Inputs

Frequency(Pulse) Input

Frequency Range 0 to 5kHz

Signal Type

Sine wave, open collector, reed switch, proximity switch, voltage and current pulse

K-factor Range

0.0001–9000000.0000(the pulse per units)

Analog Input

Inputs 4-20mA or 1-5V option

Input Impedance

Current 250 ohms

Voltage 10K ohms

Accuracy 0.05%

Zero 0.0000 to 50000.0000

Span 0.0001 to 50000.0000

Cut-off Point

A low flow rate cut-off can be programmed below which flow is not registered. The cut-off is programmed as a percentage of span Relationship Linear or square root

Pulse Output

Function

Open collector output with a pulse produced on each increment of the accumulated total.

Pulse Width 10 or 100 ms (negative going pulse)

Duty Cycle 49/4.9 pulses/sec. Max.

Output

Current sinking output transistor 50mA, 30Vdc max. (Pulse output is suitable for driving remote counter or PLC's)

Relay Output

Function

High and low or high-high, high, low and Low-low flow rate alarms based on the flow rate in volume.

Max. Switching Power 1250VA, 150W

Max. Switching Voltage AC250V, DC30V

Max. Switching Current $\cos\phi = 1$, 5 Amps

4-20mA Output

Function

The flow rate is output.

Resolution 12-bit.

Accuracy Better than 0.05%

Maximum Load

500 ohms internally powered. 950 ohms from external 24V dc.

Isolation

Isolated.

Enclosure

Dimension 48mm(H) x 96mm(W) x 125mm(D)

Material Polycarbonate and Aluminum

Cutting Size 45mm x 92mm(±0.2mm)

Standards and Approvals

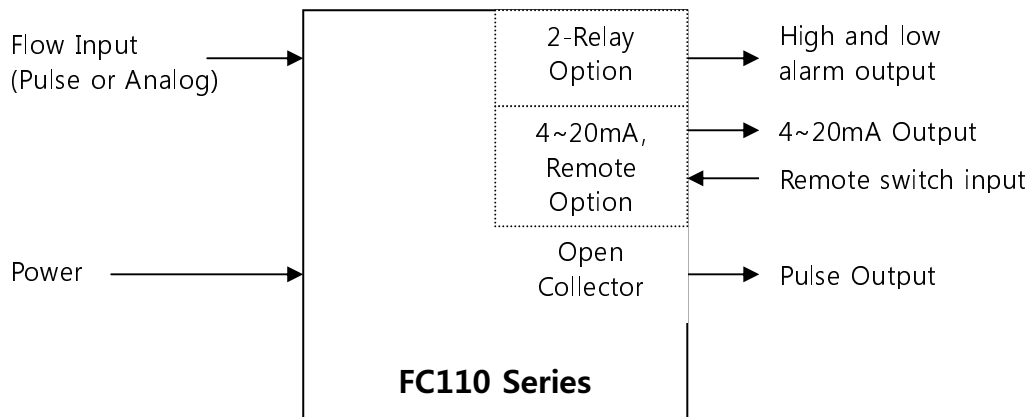
CE

Manufactured under **ISO 9001**

Flow Controller

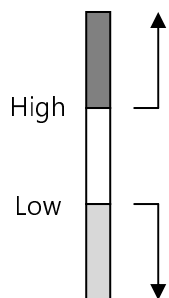
FC110 ▶▶▶

Block Diagram



Alarm Setter(2-Relay)

2-Alarm Setter



Flow Transmitter (4-20mA)



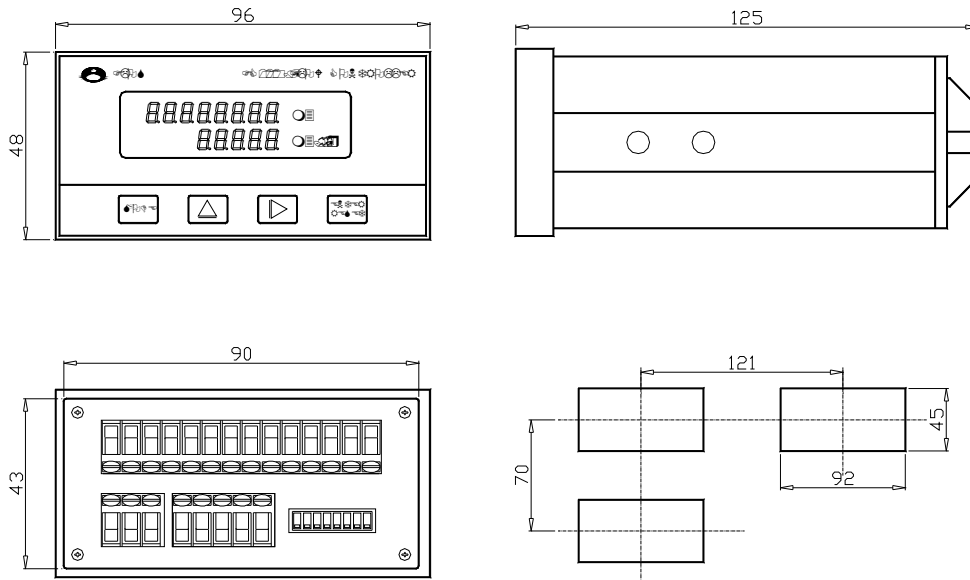
Scaled Pulse Output



Flow Controller

FC110 ▶▶▶

Dimension



Ordering Information

MODEL	Order Code				Description
FC110 –					Basic Model Name
Sensor	P				Frequency Type Flow Meter Input
	A				4-20mA Analog Type Flow Meter Input
In/Output		0			Basic Model (No Option)
		1			4-20mA Analog Output
		2			2-Relay Output
		3			4-20mA and 2-Relay Output
		4			Remote reset input
Communication			0		None Communication
			1		RS-232 Communication
			2		RS-422/RS-485 Communication
Power				A	AC 100 – 120V
				E	AC 220 – 240V
				D	DC 24V