

SensorLinx™

WFS Sensor Technical Data Sheet



The SensorLinx™ Sensor System is designed to measure and record the thermal energy used in a residential or commercial heating or cooling system including HVAC, Solar thermal heating and Geothermal. The sensors can be used individually to track many system parameter configurations in real time using the HBX Thermolinx™ App.



Features and Benefits:

- Remote monitoring and configuration via the Thermolinx App
- DHW Residential and commercial tenant billing
- Vortex in-flow sensor
- Calculated flow graphing based on hour, day, week and monthly
- Accurate calculations in glycol, methanol, and water at any concentration
- Measure System flow, and temperature for easy and cost-efficient installation
- Triac output for relay operation
- Hydronic system balancing



WFS SENSORS

(Wi-Fi Flow and Temperature Sensor)

The WFS Sensor is a combined flow and temperature sensor (two-in-one). The sensor is fully compatible with wet, aggressive liquids. The sensor is based on the principle of vortex shedding behind a bluff body. The sensor is based on MEMS sensing technology in combination with the corrosion-resistant Silicoat® coating technology on the sensor chip.

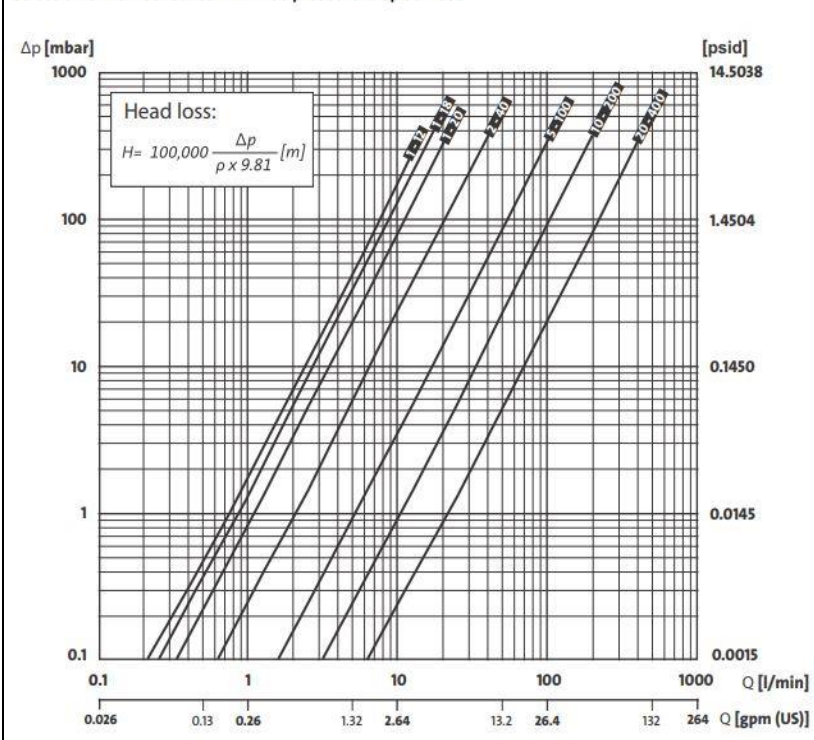
The WFS sensors measure temperature from 0°C -100°C (32°F – 212°F).

The sensor consists of a composite flow pipe and a sensor fitted with cable.

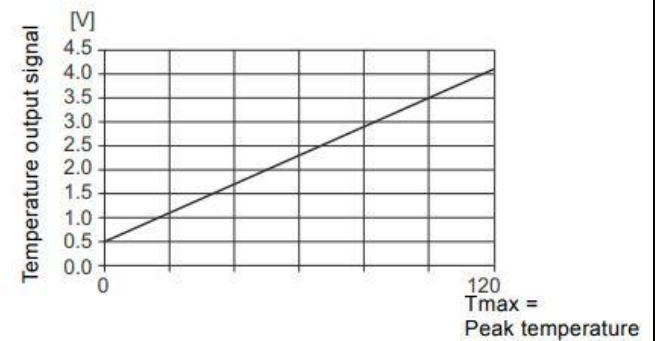
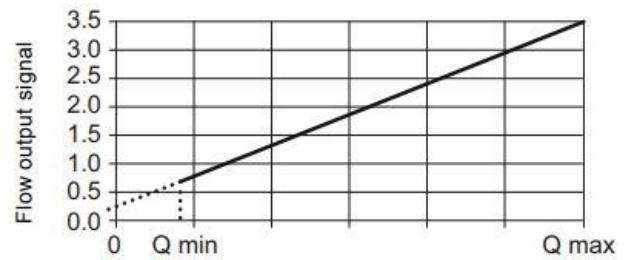
*Stainless steel options available.



Selection of flow sensor to minimise pressure drop at 1 cSt



Sensor output signals



WFS sensors include the following:

- One (1) WFS Sensor (Wi-Fi Flow and Temperature Sensor)
 - Two (2) EPDM O-rings
 - Dual unions, tailpieces - NPT, sweat, press
 - Composite Flow pipe and tube with connection fittings
- *Stainless steel option available in all sizes except for the WFS-0400*

Triac Output

The control module incorporates a triac output for relay operation that will allow for equipment to turn on/off manually or based off a flow, temperature, and pressure trigger limit for system safety purposes. The triac output also allows for a modulating output signal to external devices.

- Pump or valve control
- Modulating Output (0.5-3.5 VDC)
- Equipment safety operation (ex.leaks)
- External thermistor input for BTU measurement

Flow Rates

Flow (l/Min) (GPM)		Flow Pipe (Housing)	Union Pipe Configuration	HBX Part #
1– 20	0.26 – 5.28	Composite	1/2"	WFS-0020
2 - 40	0.52 - 10.60	Composite	1/2"	WFS-0040
5 - 100	1.32 – 26.40	Composite, Stainless Steel	3/4"	WFS-0100
10 - 200	2.64 – 52.80	Composite, Stainless Steel	1"	WFS-0200
20 - 400	5.28 – 106.0	Composite	1 1/2"	WFS-0400



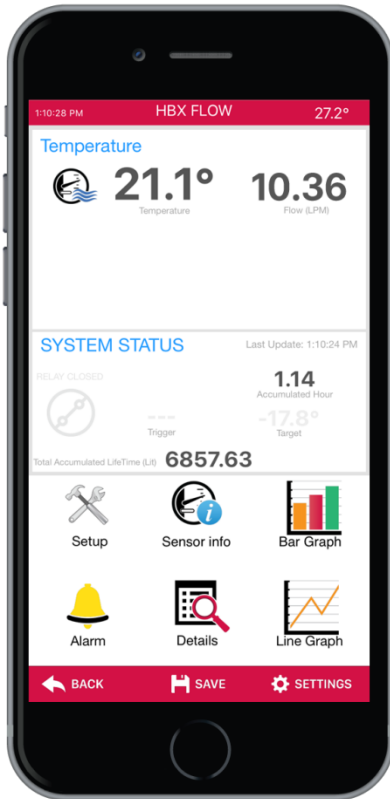
WI-FI NETWORK PROTOCOL

The SensorLinX™ incorporates a Wi-Fi communication protocol that allows for an easy setup to connect any system to any surrounding Wi-Fi network available. For systems that do not have a Wi-Fi connection, the user can connect the system using an internal local Wi-Fi connection to view current and historical BTU consumption.

Data logging capabilities will also be available for Bacnet or Modbus interfaces through the SensorLinX™ API communication protocol.

Features:

- *Connect each sensor directly to a Wi-Fi network*
- *Unlimited amount of sensors per location*
- *Real time flow calculations*
- *1 year of data storage*
- *Local on-site network connection available*
- *Bacnet or Modbus capabilities*



The free ThermoLinX app allows for remote monitoring and system configuration for each individual sensor for your entire system. The app is capable of datalogging flow, temperature, and pressure daily, monthly, and yearly totalized usage in real time that can be utilized for billing purposes for residential or commercial tenants.

Features:

- *Available for Apple® and Android Devices®*
- *Remote monitoring and system configuration*
- *Calculated flow graphing and raw data*
- *System Alarm notification*
- *Data logging for tenant billing*



SPECIFICATIONS

Flow	
Measuring Range	1-20L (0.34-5.28 GPM), 2-40L (0.53-10.57 GPM), 5-100L (1.32-26.42 GPM), 10-200L (2.64-52.83 GPM), 20-400L (5.28-105.67) *Composite only
Accuracy ($\pm 1 \sigma$) in water, 0-100 °C (32-212 °F)	$\pm 1 \%$ FS
Response time (63.2 %)	Less than 1 s
Maximum range	105 GPM
Temperature	
Measuring Range	0-120 °C (32-248 °F)
Accuracy ($\pm 1 \sigma$), 15-90 °C (59-194 °F)	± 0.5 K
Accuracy ($\pm 1 \sigma$), 0-120 °C (32-248 °F)	± 1 K
Response time (63.2 % at 50 % FS flow)	250 ms
Resolution	0.006 K
System Conditions and Environment	
Liquid Types	Aqueous media compatible with wetted materials. Kinematic viscosity less than or equal to 2 mm ² /s (cSt)
Liquid temperature, operation	Water: 0-100 °C (32-212 °F)
Liquid temperature, peak	-25 to +120 °C (-13 to +248 °F), non-freezing
Ambient temperature	operation -25 to +60 °C (-13 to +140 °F)
Ambient temperature, peak	-55 to +90 °C (-67 to +194 °F)
Maximum System Pressure	24 bar (348 psig) Composite, 30 bar (435 psig) Stainless
Burst Pressure	30 bar (435 psig) Composite, 40 bar (580 psig) Stainless
Materials	
Sensing element	Silicon-based MEMS
Sealing	EPDM O-rings, FKM O-rings or EPDM sealing cap with FKM O-rings
Housing	Composite (PPS, PA66),
Flow pipe	Stainless steel AISI 316 EN 1.4408, PPA 40-GF
Piping connection	Dual unions, tailpieces - NPT, sweat, press
Wetted materials	Corrosion-resistant coating, EPDM or FKM, PPS, PPA 40-GF
Electrical	
Power Supply	24 VAC, 1A
Triac Output	24 VAC, 1A
Analog Output	0.5 - 3.5 VDC

