

# SensorLinx™

## Energy Metering Technical Data Sheet



The SensorLinx™ Sensor System is designed to measure the thermal energy used in a residential or commercial liquid heating or cooling system including HVAC, Solar thermal heating and Geothermal. The sensors can be used individually to track many system parameter configurations to record daily, monthly, and yearly totalized usage in real time using the HBX Sensorlinx™ App. When the Sensorlinx™ sensors are used in conjunction within your liquid system, the system allows for accurate BTU measurement.



### Features and Benefits:

- *Remote monitoring and configuration via the Sensorlinx App*
- *Supply and return do not have to be within 2 meters like conventional BTU meters*
- *Graphs calculated BTU's based on hour, day, week, and month via*
- *Accurate calculations in glycol, methanol, and water at any concentration*
- *Suitable for a wide range of applications*
- *Measure System pressure, flow, and temperature for easy and cost-efficient installation*
- *BTU and DWH Metering*
- *Triac output for relay operation*
- *External strap on thermistor for simple BTU calculations.*
- *Hydronic system balancing*

SensorLinx™ is a customizable sensor solution incorporating the **WFS Sensor** (Wi-Fi Flow & Temperature Sensor) and **WPS Sensor** (Wi-Fi Pressure & Temperature Sensor). The system includes 2 pre-paired sensors that feature a wireless communication protocol between them that eliminate. The sensors incorporate a built-in electronic calculator and datalogger via the ThermoLinx mobile app.



**SensorLinx™ Energy metering sensors includes the following:**

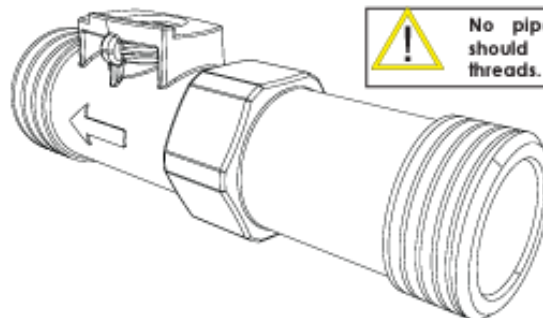
- One (1) WFS Sensor (Wi-Fi Flow and Temperature Sensor)
- One (1) WPS Sensor (Wi-Fi Pressure and Temperature Sensor)
- Two (2) EPDM O-Rings
- Dual unions, tailpieces - NPT, sweat, press
- Composite Flow pipe and tube with connection fittings

**Flow Rates**

Flow(l/Min)	Union Pipe Configuration	HBX Part #
1-14 (0.3-3.69 GPM)	3/4"	ENG-0100-14
3-30 (0.70-7.92 GPM)	3/4"	ENG-0100-30
7-70 (1.84-18.49 GPM)	1"	ENG-0100-70
13-130 (3.43-34.34 GPM)	1 1/4"	ENG-0100-130

**Dimensions**

**TECHNICAL DATA AND DIMENSIONS**



	ENG-010-14	ENG-010-30	ENG-0100-70	ENG-010-130
mm	82	88	129	137.5
in	3.23	3.46	5.08	5.41

Flow Pipe (Housing)	Union Pipe Config.	Torque	Flow Pipe Size	HBX Part #
Composite	3/4"	5 ft-lb / 6.78 N m	1/2"	ENG-0100-14
Composite	3/4"	5 ft-lb / 6.78 N m	1/2"	ENG-0100-30
Composite, Stainless Steel	1"		3/4"	ENG-0100-70
Composite, Stainless Steel	1 1/4"		1"	ENG-0100-130



## 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.

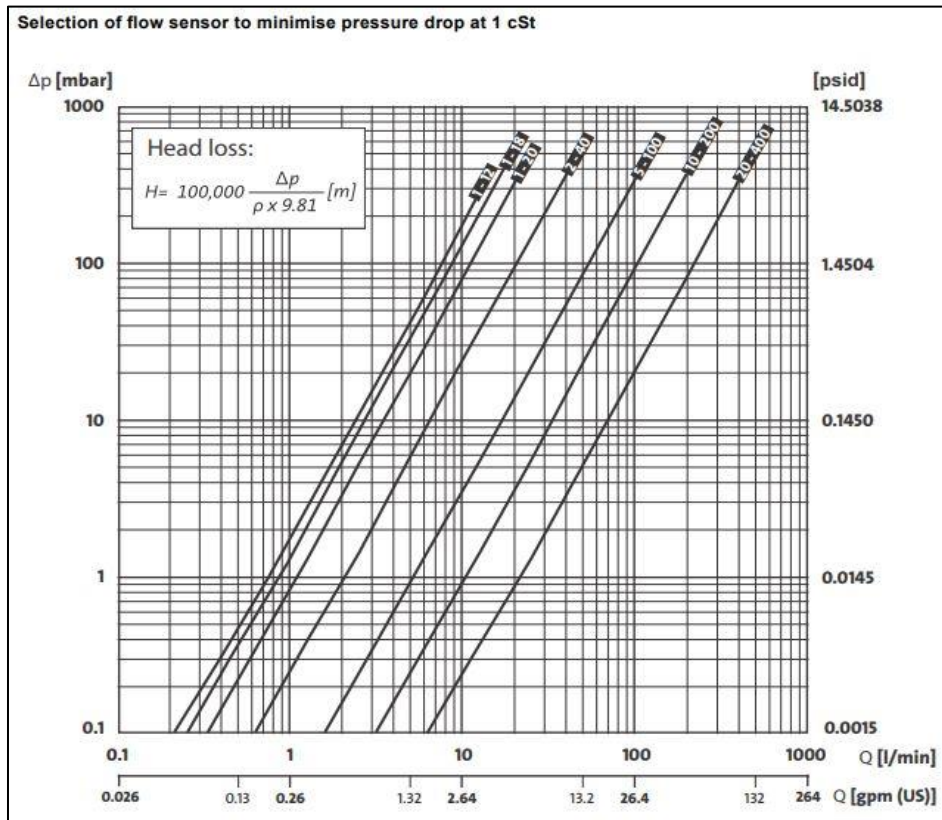
The WFS sensors measure temperature from 0-100 degrees Celsius (32 to 212 degrees Fahrenheit).



**\*With water additives in potable water, the flow sensor can read as low -25°C (-13°F). When used in an application for billing purposes the meter is certified to go as low to 5°C (41°F).**

Burst pressure >16 bar (232 psi).

\*The sensor consists of a composite flow pipe and a sensor fitted with cable. \*Stainless steel options available.



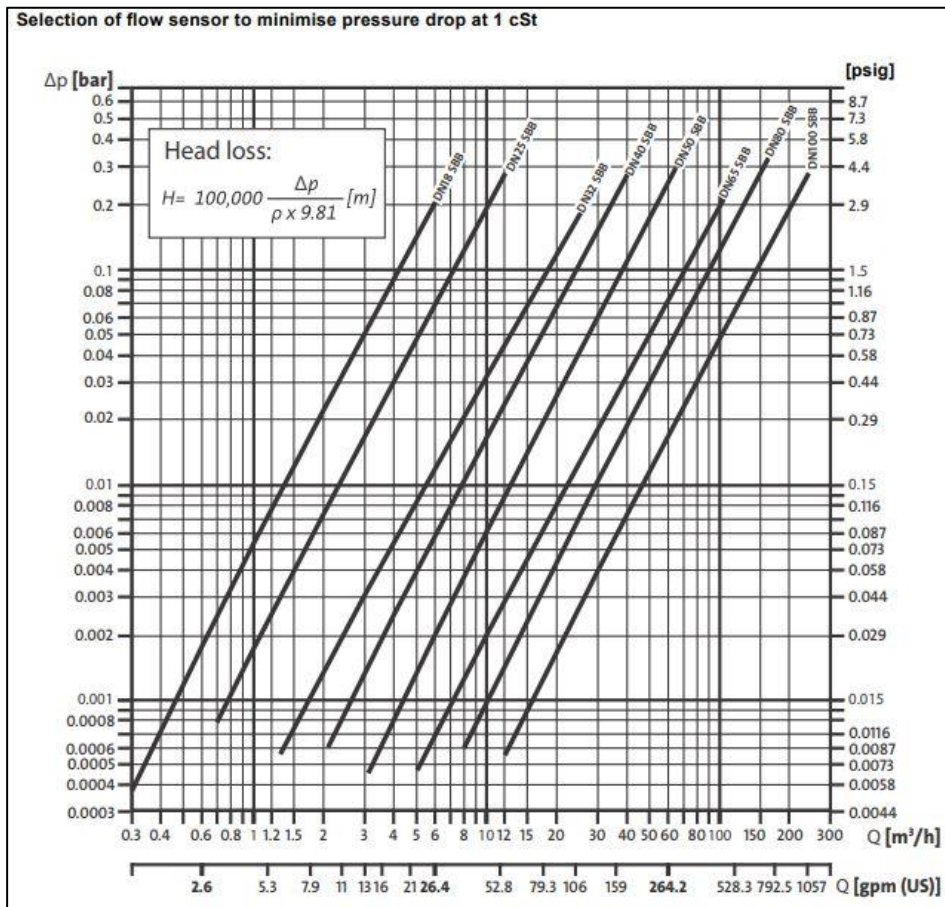
## WPS Sensors

### Wi-Fi Pressure and Temperature Sensor

The WPS-0100 sensor is a combined pressure 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 sensor is suitable for a wide range of applications with a measuring range >16 BAR (232 PSI).



\*The sensor consists of a composite flow pipe and a sensor fitted with cable. \*Stainless steel options available.



## Specifications

<b>Flow</b>	
Measuring Range	1-14L (0.3-3.69 GPM), 3-30L (0.70-7.92 GPM), 7-70L (1.84-18.49 GPM), 13-130L (3.43-34.34 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
<b>Pressure</b>	
Measuring Range	0-10 bar (0-145 psig); 0-16 bar (0-232 psig)
Accuracy ( $\pm 1 \sigma$ ), 15-90°C (59-194°F)	$\pm 1.5$ % FS
Accuracy ( $\pm 1 \sigma$ ), 0-120 °C (32-248 °F)	$\pm 2$ % FS
Response time	Less than 1 s
Resolution	0.6 mbar (0.009 psig)
<b>Temperature</b>	
Measuring Range	0-120 °C (32-248 °F) With water additives -25°C -120°C (-13°F - 248°F)
Accuracy ( $\pm 1 \sigma$ ), 15-90 °C (59-194 °F)	$\pm 0.5$ K
Accuracy ( $\pm 1 \sigma$ ), 0-120 °C (32-248 °F)	$\pm 1$ K
Response time (63.2 % at 50 % FS flow)	250 ms
Resolution	0.006 K
<b>System Conditions and Environment</b>	
Liquid Types	Aqueous media compatible with wetted materials. Kinematic viscosity less than or equal to 2 mm <sup>2</sup> /s (cSt)
Liquid temperature, operation	Water: 0-100 °C (32-212 °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
<b>Materials</b>	
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
<b>Electrical</b>	
Power Supply	24 VAC
Triac Output	24 VAC
<b>Certification</b>	
Certification	EN1434, ASTM E3137



