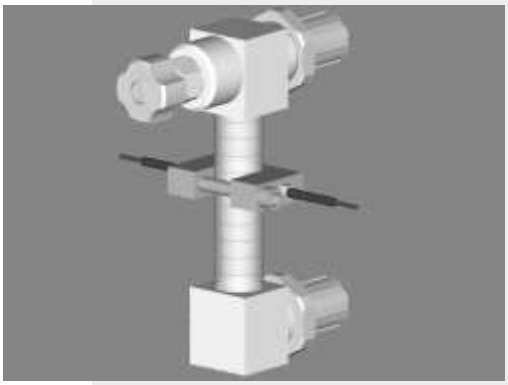
Sentinel Series Sensors provide non-contact monitoring of float position on Pathfinder® and Odyssey® Series flowmeters, providing a signal to system controls for alarm and flow switch functions.



Sentinel depicted on Pathfinder tube.

Fiber Optic (F/O)Sentinel®

Accurate, Reliable and Repeatable Performance

- Non-intrusive installation requires minimal process flow interruption
- Non-contact, non-intrusive operation does not disrupt the process flow during use
- Easily moveable along the site tube to accommodate changing process settings
- Single or multiple sensors may be used to provide high and low flow sensing or alarm functions
- Serialization provided for quality control tracking and custom configurations
- Small footprint allows close proximity mounting of flowmeters

Sensor Models and Applications

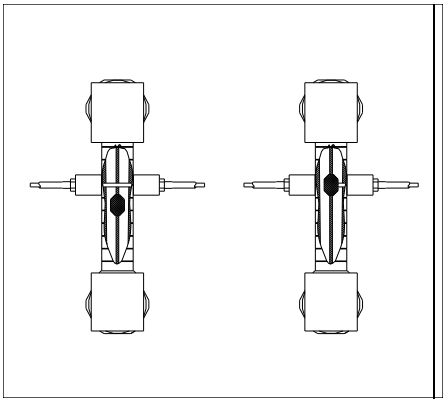
Sensor Model	Description	Application
STANDARD	Standard size fiber optic sensor that provides a discreet on/off signal	For standard applications with all Futurestar variable area flow flowmeters
LOW PROFILE	Reduced size fiber optic sensor that provides a discrete on/off signal	For space limited applications including those requiring multiple sensors in close proximity to each other
THREE-POSITION	Standard size fiber optic sensor that provides indication of low, ideal and high levels	For low flow and ultra low flow applications requiring high precision tracking of flow changes from a desired setting

s e n s o r s

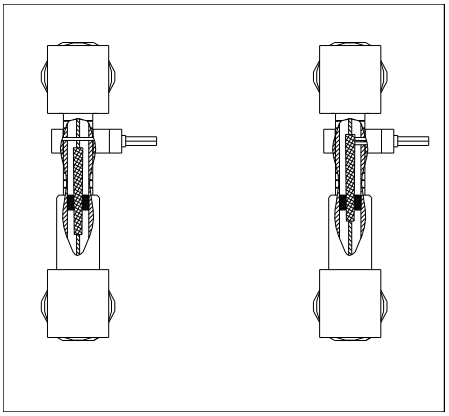
Operation

STANDARD AND LOW PROFILE SENSORS

Standard and low profile sensors use fiber optics to sense the presence or absence of a float. Standard sensors operate in the opposed mode. Light passes from the "emitter" cable through the flowmeter sight tube to the "receiver" cable. Depending on the flowmeter set up, the standard sensor can provide an alarm when the float is present or absent. Low profile sensors, operating in the reflective mode, are designed for space limited applications as both cables are routed on the same side of the flowmeter. The light is reflected off the float to provide an alarm function. Both standard and low profile sensors are powered with 10 to 30 VDC and provide the same for an output signal for alarm functions.



Standard

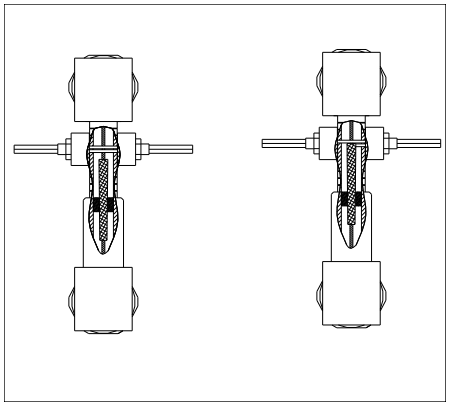


Low Profile

Specifications

THREE-POSITION SENSOR

The three-position sensor uses fiber optics operating in the opposed mode similar to the standard sensor. Low, desired and high flow conditions can be monitored. Two parallel beams of light pass through the site tube. With the float not interrupting either beam there is low or no flow. As the flow increases and the float rises, the bottom beam is interrupted and the float is in the desired position. If the flow continues to rise, both the bottom and top beams are interrupted, indicating a high flow condition. For use with Futurestar's low and medium flow tapered float flowmeters.



Three Position

Configuration Options

MATERIALS

- Housing: natural polyethylene
- Fiber optic cable: monofilament acrylic core with polyethylene cover and FEP jacket

OPERATING

- Mode of operation (fiber optic): red visible light, other light sources available
- Temperature limit: 66ºC *(150°F)*

ELECTRICAL

Fiber Optic

- Input: user supplied 10-30 VDC at less than 25 mA (exclusive of load), 10% maximum ripple
- Output: 150 mA maximum output at 25° C derated to 100 mA at 70° C
- Configuration: 1 current sourcing (PNP) and 1 current sinking (NPN output)
- Electrical cable: 4 conductor PVC jacket, 72" long
- Protection: protected against false pulse on power up, inductive load transients, power supply polarity reversal
- Output protection: protected against continuous or short-circuit of output
- Switches used are CE Compliant

Ordering Information

To order, select the appropriate part number from the table below.

FLOWMETER	*FLOW RANGE PART NUMBERS**	*STANDARD*	*LOW PROFILE*	*THREE-POSITION***
Odyssey®	All	**400-001**		
Pathfinder®	-00010 through -02000 **AND** -004 through -008	**400-002**	**400-012**	**400-102**
	-010 through -015	**400-003**	**400-013**	
	-018 through -060	**400-004**	**400-014**	

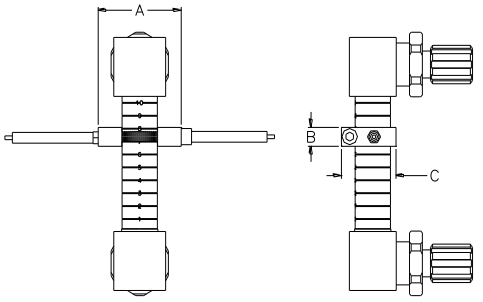
*Flow range part numbers correspond to the flow range of the flowmeter, identified in the flowmeter part number or on the back of the sight tube. Consult factory for additional information.

**For Pathfinder® series low and medium flow tapered float designs only.

Installation Drawings

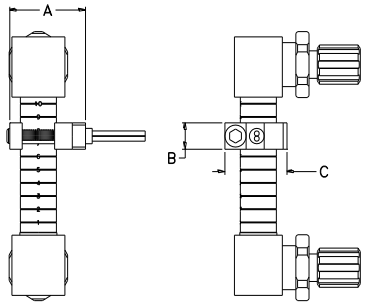
STANDARD

		inches	mm
A	400-001	2.45	62.2
	400-002	2.00	50.8
	400-003	2.00	50.8
	400-004	2.00	50.8
B	400-002	0.48	12.2
	400-003	0.48	12.2
	400-004	0.48	12.2
C	400-001	1.98	50.3
	400-002	1.19	30.3
	400-003	1.27	32.2
	400-004	1.32	33.4



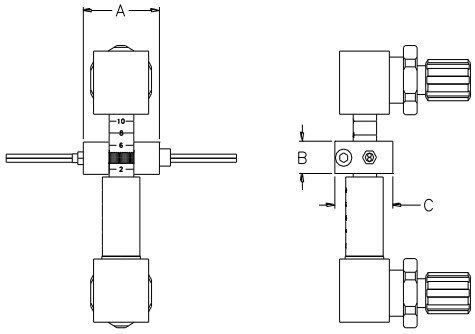
LOW PROFILE

		inches	mm
A	All	1.43	36.3
B	All	0.48	12.2
C	400-012	1.19	30.3
	400-013	1.27	32.2
	400-014	1.32	33.4



THREE-POSITION

		inches	mm
A	All	1.40	35.6
B	All	0.70	17.8
C	All	1.19	30.3



Futurestar Corporation ● 1470 Lake Drive West ● Chanhassen MN 55317 ● 952 942 8388 ● 952 942 8661 fax ● futurestarcorp.com