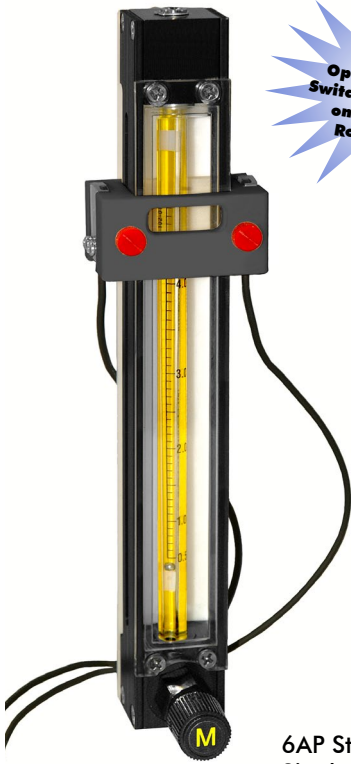


OPTICAL SENSOR SWITCH



Picture Showing Optical Sensor Switches Installed on a Typical Rotameter

GENERAL DESCRIPTION

The **Optical Sensor Switch** is a non-invasive means for detection of either HI or LOW flow. This sensor is ideal for signaling an alarm, cutoff valve or other device when the float passes the detector. **Note:** Alarm, valve, power supply etc. are not included. The Optical Sensor Switch helps protect processes and equipment from damage caused by extreme flow rates. Used in conjunction with 6AP and 6AT Flow Meters.

PRINCIPLE OF OPERATION

A self-contained miniature photoelectric sensor (Thrubeam type) consisting of a transmitter and receiver are mounted at opposite sides of the flow tube on a solid carrier. The float inside the flow tube is detected as it passes across the beam of light. The sensor can be used to detect the float passage beyond the set-point of the sensor and can also be set to monitor the float position at a specific level, signaling when the float is outside of the range of the sensor light beam.

The sensor consists of two parts: transmitter and receiver. When power is properly connected the power supply indicator (green LED) on the transmitter is constantly on.

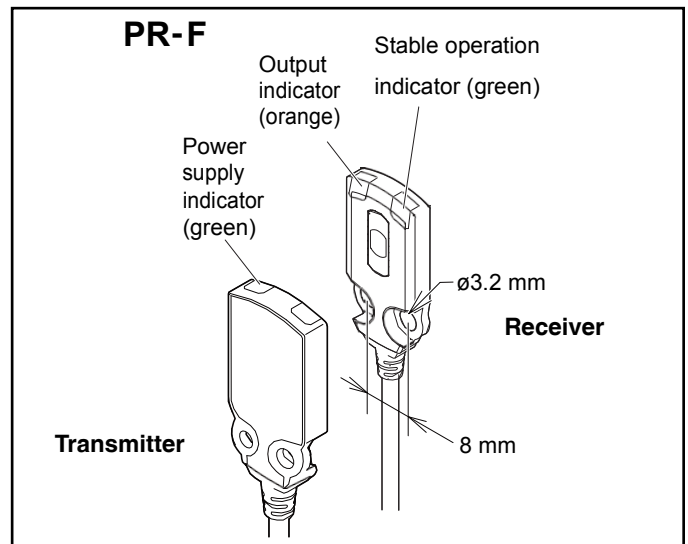
The receiver has two indicators:

Stable operation indicator (green LED) turns on with a stable incoming beam and with a stable blocked light. Output indicator (orange LED) turns on when the beam from emitter is blocked by the float.

6AP Style Meter with Single Optical Sensor Switch

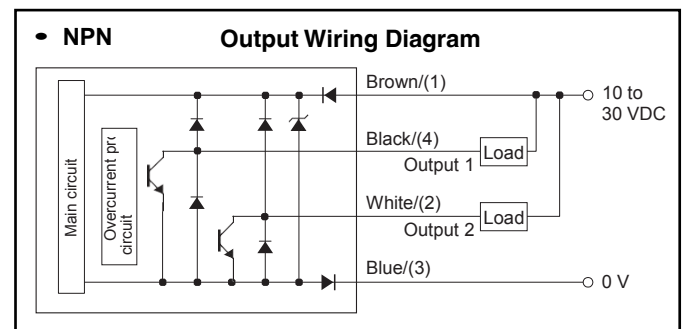
TROUBLESHOOTING FOR SINGLE AND DOUBLE OPTICAL SENSOR SWITCH		
PROBLEM	CAUSE	CHECK & ACTION
All indicators are off.	The power supply is not connected.	Connect the power supply.
The output indicators turn on and off but output does not turn on or off.	Incorrect wiring.	Check the wiring for the output wires.
	Sensor output has failed or an output wire is broken	Try connecting the sensor output to a separate input Sensor output has failed or an output wire is broken device.
The output indicator is flashing.	Over-current has passed through an output.	Check that the rated current for the input device has not exceeded 50 mA. Check that the output wires are not shorted by any other wires.
	The sensor is affected by ambient light.	When there are light sources nearby (sensors, lighting), adjust the sensor installation.

OPTICAL SENSOR SWITCH CONNECTION	
WIRE LEAD COLOR	CONNECTION
BLACK	Positive Power Lead (+10 to 30 VDC)
YELLOW	Negative Power Lead
GREEN	NPN output #1
RED	NPN output #2 (Complementary to Output #1)



ORDERING INFORMATION FOR SINGLE AND DOUBLE OPTICAL SENSOR SWITCH	
PART NUMBER	DESCRIPTION
6APOSV1-6P	Optical Sensor Switch for 65mm 6AP Style Meter
6APOSV1-1P	Optical Sensor Switch for 150mm 6AP Style Meter
6APOSV1-6T	Optical Sensor Switch for 65mm 6AT Meter
6APOSV1-1T	Optical Sensor Switch for 150mm 6AT Meter

ORDERING INFORMATION FOR SINGLE AND DOUBLE OPTICAL SENSOR SWITCH ACCESSORIES	
PART NUMBER	DESCRIPTION
6APOSSM	Optical Sensor Switch Module
6APSGMNA-12	Power Supply 110Vac /12 Vdc (North America)
6APSGMEU-12	Power Supply 230 Vac /12Vdc (Europe)
6APSGMAU-12	Power Supply 240 Vac /12Vdc (Australia)
6APSGMUK-12	Power Supply 240 Vac /12Vdc (United Kingdom)



Hi-Lo Optical Sensor Switch

GENERAL DESCRIPTION

The Hi-Lo Optical Sensor Switch is a non-invasive means for detection of Hi **and** LOW flow. This set of sensors is ideal for signaling an alarm, cutoff valve or other device when the float passes the detector. **Note:** Alarm, valve, power supply etc. are not included. The Optical Sensor Switch helps protect processes and equipment from damage caused by extreme flow rates. Its compact design and ease of operation make it a non-obtrusive, simple to use addition to your flow meter. Perfect for OEM applications, use whenever maximum or minimum flow levels need to be monitored automatically. It also can be used in conjunction with a control relay to power alternate equipment or monitoring devices. Used in conjunction with 6AP and 6AT Flow Meters.

PRINCIPLE OF OPERATION

The Hi-Lo Optical Sensor Switch consists of two self-contained mini-slim photoelectric sensors (Thrubeam type). Every sensor has a transmitter and receiver. Two sets of sensors are mounted on two solid carriers on opposite sides of the flow tube. The float inside the flow tube is detected as it passes across the beam of light.

The sensors can be used to detect the float passage beyond the set-point of the sensor and can also be set to monitor the float position at a specific level, signaling when the float is outside of the range of the sensor light beam.

Each sensor consists of two parts: transmitter and receiver. When power is properly connected the power supply indicator (green LED) on the transmitter is constantly on.

The receiver has two indicators:


Stable operation indicator (green LED) turns on with a stable incoming beam and with a stable blocked light. Output indicator (orange LED) turns on when the beam from emitter is blocked by the float.

ORDERING INFORMATION FOR OPTICAL SENSOR SWITCH	
PART NUMBER	DESCRIPTION
6APOSV2-6P	Hi-Lo Optical Sensor Switch for 65mm 6AP Style Meter
6APOSV2-1P	Hi-Lo Optical Sensor Switch for 150mm 6AP Style Meter
6APOSV2-6T	Hi-Lo Optical Sensor Switch for 65mm 6AT Style Meter
6APOSV2-1T	Hi-Lo Optical Sensor Switch for 150mm 6AT Style Meter

ORDERING INFORMATION FOR SINGLE AND DOUBLE OPTICAL SENSOR SWITCH ACCESSORIES	
PART NUMBER	DESCRIPTION
6APOSSM	Optical Sensor Switch Module
6APSGMNA-12	Power Supply 110Vac /12 Vdc (North America)
6APSGMEV-12	Power Supply 230 Vac /12Vdc (Europe)
6APSGMAU-12	Power Supply 240 Vac /12Vdc (Australia)
6APSGMUK-12	Power Supply 240 Vac /12Vdc (United Kingdom)

SPECIFICATIONS

MODE OF DETECTION: Red LED Thrubeam type.
POWER REQUIREMENTS: 10 to 30 Vdc @50 mA max.
OUTPUT TRANSISTORS: NPN source up to 50 mA.
RESPONSE TIME: 0.5 MS.
LIGHT IMMUNITY: 4 Element, point light source, red LED 650 nm.
AMBIENT TEMPERATURE: 25 degree C to +55 degree C.
SENSOR CONSTRUCTION: Heavy duty metal housing, IP-6[®] protection.
SENSOR CERTIFICATION
UL: File #: E301717; Category: NRKH2/NRKH8; Enclosure type: 1 (UL50)
CE:EMC DIRECTIVE: Applicable Standard: EMI: EN60947-5-2, (2004/108/EC); Class A/EMS:EN60947-5-2

 The selection of materials of construction, is the responsibility of the customer. The company accepts no liability.

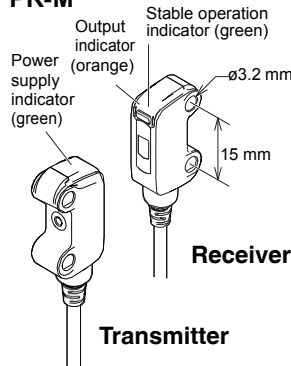


MOMENTARY OR LATCH OPERATION

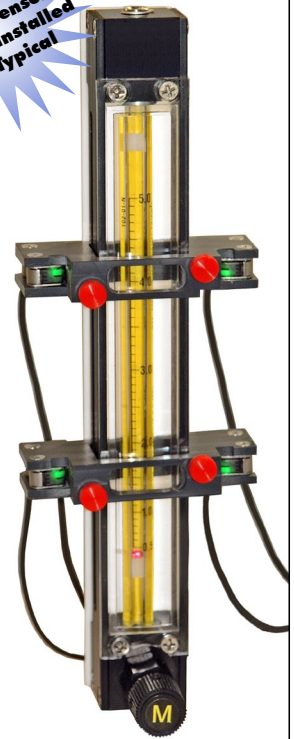
Optionally the, Hi-Lo Optical Sensor Switch could be supplied with OSSM Module, allowing each sensor to be separately set for momentary or latch operation of buzzer, LED and relay.

The OSSM module is equipped with the 8 position DIP switch and requires a +12 VDC power-supply with a minimum current rating of 250 mA.

PR-M

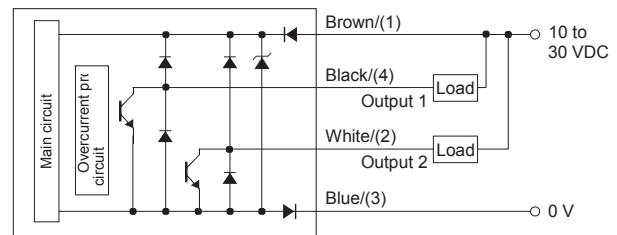


Picture Showing Optical Sensor Switches Installed on a Typical



6AP Style Meter with Double Optical Sensor Switch

Output Wiring Diagram



OPTICAL SENSOR SWITCH CONNECTION

WIRE LEAD COLOR	CONNECTION
BLACK	Positive Power Lead (+10 to 30 VDC)
YELLOW	Negative Power Lead
GREEN	NPN output #1
RED	NPN output #2 (Complementary to Output #1)

TROUBLESHOOTING FOR SINGLE AND DOUBLE OPTICAL SENSOR SWITCH

PROBLEM	CAUSE	CHECK & ACTION
All indicators are off.	The power supply is not connected.	Connect the power supply.
The output indicators turn on and off but output does not turn on or off.	Incorrect wiring.	Check the wiring for the output wires.
	The input device has failed. Sensor output has failed or an output wire is broken.	Try connecting the sensor output to a separate input device.
The output indicator is flashing.	Over-current has passed through an output.	Check that the rated current for the input device has not exceeded 50 mA. Check that the output wires are not shorted by any other wires.
	The sensor is affected by ambient light.	When there are light sources nearby (sensors, lighting), adjust the sensor installation.