

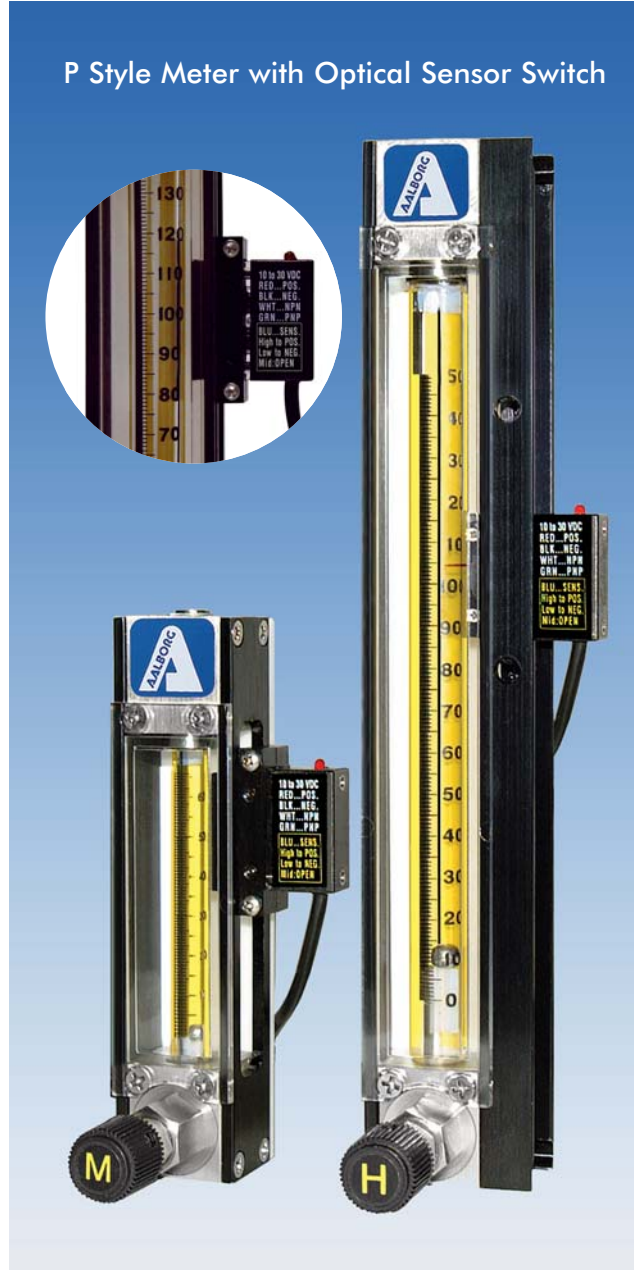
## GENERAL DESCRIPTION

The **Optical Sensor Switch** is a noninvasive means for detection of a HI or LOW flow. This sensor is ideal for signaling an alarm, cutoff valve, or other device when the float passes the detector (alarm, valve etc. not included). Helps protect your processes and equipment from damage caused by extreme flow rates.

It's compact design and ease of operation make it a nonobtrusive simple to use addition to your flow meter. Perfect for OEM applications. Use whenever maximum or minimum flow levels need to be monitored automatically. Also can be used in conjunction with a control relay to power alternate equipment or monitoring devices.

## PRINCIPLE OF OPERATION

A small LED sensor and receiver are mounted on one side of the flow meter. The float inside the flow tube is detected as it passes across the beam of light. Sensor can be used to detect float passage beyond the setpoint of the sensor, or also can be set to monitor float position at specific level, signalling when float is outside of the range of the sensor light beam.



SPECIFICATIONS	
<b>MODE OF DETECTION</b>	Red LED beam break.
<b>POWER REQUIREMENTS</b>	10 to 30 Vdc @50 mA max.
<b>OUTPUT TRANSISTORS</b>	NPN (1) and PNP (1) output transistors provided.
<b>NPN</b>	Sink up to 100 mA.
<b>PNP</b>	Source up to 100 mA.
<b>RESPONSE TIME</b>	500 msec.
<b>LIGHT IMMUNITY</b>	Pulse modulated to provide extremely high immunity to ambient light.
<b>AMBIENT TEMPERATURE</b>	-30 + 70 degree C operating range.
<b>SENSOR CONSTRUCTION</b>	High impact polycarbonate housing. Epoxy encapsulated for mechanical strength.
<b>LIGHT SOURCE</b>	LED
<b>WAVELENGTH</b>	High intensity red = 650 nm connections.

Used in conjunction with P, S and T Style Flow Meters

To order a flow meter with a single Optical Sensor Switch add "E1-" to P, S, to T Model Numbers. Example: E1-P11A4-BA0A-032-41-ST-VN

OPTICAL SENSOR SWITCH CONNECTION	
WIRE LEAD COLOR	CONNECTION
BLACK	Positive Power Lead (+10 to 30 VDC)
WHITE	Negative Power Lead
GREEN*	PNP (Current Source) - to Positive of Load
WHITE*	NPN (Current Sink) - to Positive of Load
BLUE	Connect to Red Lead + Power

ORDERING INFORMATION FOR OPTICAL SENSOR SWITCH ACCESSORY	
PART NUMBER	DESCRIPTION
OSS-6-P	Optical Sensor Switch for 65mm P Style Meter
OSS-1-P	Optical Sensor Switch for 150mm P Style Meter
OSS-6-S	Optical Sensor Switch for 65mm S Style Meter
OSS-1-S	Optical Sensor Switch for 150mm S Style Meter
OSS-6-T	Optical Sensor Switch for 65mm T Style Meter
OSS-1-T	Optical Sensor Switch for 150mm T Style Meter

## GENERAL DESCRIPTION

The 150mm High /Low Alarm Flow Meter with the **Optical Sensor Switch** is a non-invasive means for detecting flows. This switch is ideal for signaling an alarm, as the float interrupts the sensor light beams (alarm, valve etc. not included).

**Helps protect your 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. Also can be used in conjunction with a control relay to power alternate equipment or monitoring devices.

**Use whenever maximum or minimum flow levels need to be monitored automatically.**

### \*\*MATERIALS OF CONSTRUCTION

**END BLOCKS:** Aluminum or 316 Stainless Steel.

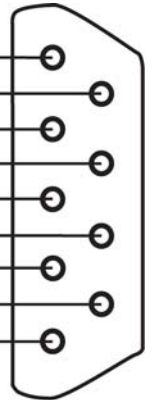
**ELASTOMERS:** Buna® & Viton® (Aluminum), Viton® (316 SS).

**TUBE:** Borosilicate.

### INTERFACE CONNECTION

RELAY #1	COM.	5
RELAY #1	N.O.	9
RELAY #1	N.C.	4
RELAY #2	COM.	8
RELAY #2	N.O.	3
RELAY #2	N.C.	7
External Reset		2
Common Power		6
Plus Power		1

DB9M Connector



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



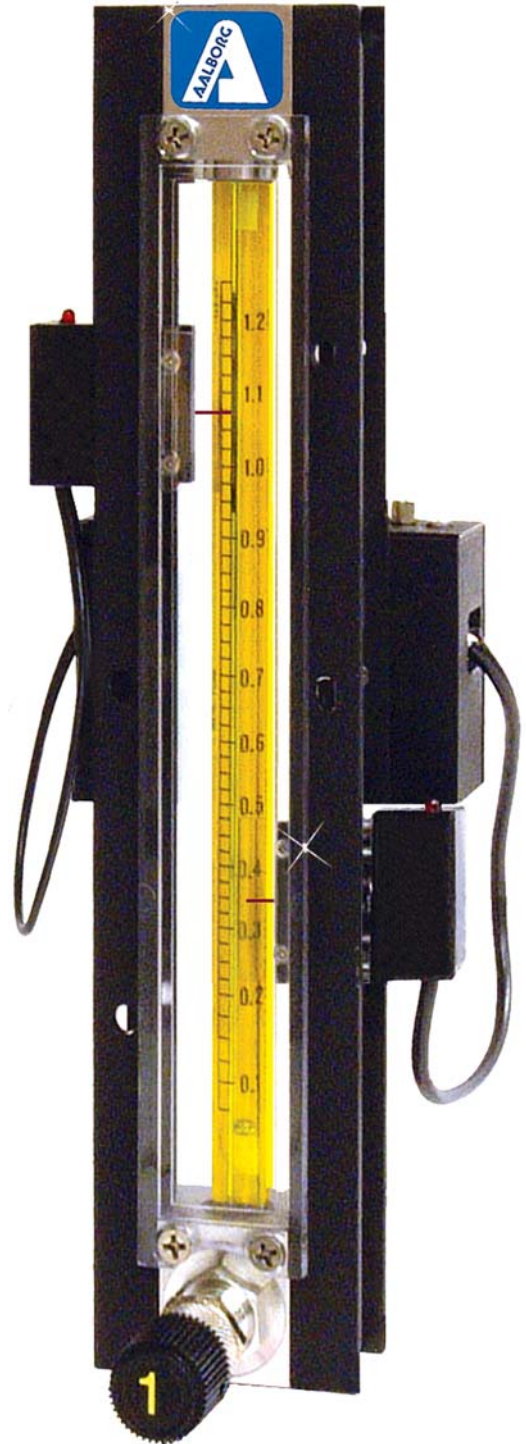
### SPECIFICATIONS

<b>REPEATABILITY:</b>	0.5% of full scale.
<b>AMBIENT TEMPERATURE:</b>	0-70 deg. C
<b>MAXIMUM PRESSURE:</b>	200 PSIG
<b>CONNECTIONS:</b>	1/8" FNPT
<b>INPUT POWER:</b>	12 VDC, 15 VDC maximum, 250mA regulated, peak to peak maximum 100mA.
<b>POWER CONSUMPTION:</b>	Less than 100mA.
<b>RESPONSE TIME:</b>	500 milliseconds.
<b>SOURCE OF LIGHT:</b>	65 nm, red LED.
<b>LIGHT IMMUNITY:</b>	Pulse modulated.
<b>DRY CONTACT CLOSURES:</b>	2 normally open, and normally closed relay's.
<b>ALARM:</b>	70 dB audible buzzer and /or visual LED.
<b>ALARM OPTIONS:</b>	High, Low or High/Low.
<b>BUZZER:</b>	User configurable, momentary or latch.
<b>RESET:</b>	Reset button or remote through "D"-connector, to disable relay or buzzer.
<b>INTERFACE:</b>	9-pin "D"-connector.
<b>OPTIONAL:</b>	12VDC Power Supply, Tripod Base.



## PRINCIPLE OF OPERATION

LED Receiver / Sensors are mounted at each side of the flow meter. The position of the float inside the flow tube is detected as it passes across the sensor light beam. The sensor can alternately be used to detect float passage beyond a set point, or it can be set to monitor the float position at a specific level, signalling when the float is outside of the range of the sensor light beams.



Stainless Steel  
Meter with  
High Precision Valve

ORDERING INFORMATION OPTICAL SENSOR SWITCH 150MM HIGH / LOW ALARM FLOW METERS					
MODEL NUMBER		MAX FLOW		FLOAT	
ALUMINUM	STAINLESS STEEL	[mL/min] Air	[mL/min] H <sub>2</sub> O		
<b>STANDARD VALVE</b>					
E2-P11A4-BA0A-032-41-GL-VN	E2-P11S4-VA0A-032-41-GL-VN	49	0.49	GL	
E2-P11A4-BA0A-062-01-GL-VN	E2-P11S4-VA0A-062-01-GL-VN	92	0.9	GL	
E2-P11A4-BA0A-062-01-ST-VN	E2-P11S4-VA0A-062-01-ST-VN	264	4.7	ST	
E2-P11A4-BA0A-112-02-GL-VN	E2-P11S4-VA0A-112-02-GL-VN	374	5.5	GL	
E2-P11A4-BA0A-112-02-ST-VN	E2-P11S4-VA0A-112-02-ST-VN	814	20.4	ST	
E2-P11A4-BA0A-082-03-ST-VN	E2-P11S4-VA0A-082-03-ST-VN	1682	44.6	ST	
E2-P11A4-BA0A-092-04-GL-VN	E2-P11S4-VA0A-092-04-GL-VN	2313	54	GL	
E2-P11A4-BA0A-092-04-ST-VN	E2-P11S4-VA0A-092-04-ST-VN	4662	133	ST	
E2-P11A4-BA0A-102-05-ST-VN	E2-P11S4-VA0A-102-05-ST-VN	7825	217	ST	
E2-P11A4-BA0A-034-39-ST-VN	E2-P11S4-VA0A-034-39-ST-VN	16,737	506	ST	
E2-P11A4-BA0A-044-40-GL-VN	E2-P11S4-VA0A-044-40-GL-VN	23,742	541	GL	
E2-P11A4-BA0A-044-40-ST-VN	E2-P11S4-VA0A-044-40-ST-VN	45,227	1288	ST	
E2-P11A4-BA0A-044-40-TA-VN	E2-P11S4-VA0A-044-40-TA-VN	69,940	2000	TANT	
<b>HIGH PRECISION VALVE</b>					
E2-P11A1-BA0A-032-41-GL-VN	E2-P11S1-VA0A-032-41-GL-VN	49	0.49	GL	
E2-P11A1-BA0A-062-01-GL-VN	E2-P11S1-VA0A-062-01-GL-VN	92	0.9	GL	
E2-P11A1-BA0A-062-01-ST-VN	E2-P11S1-VA0A-062-01-ST-VN	264	4.7	ST	
E2-P11A1-BA0A-112-02-GL-VN	E2-P11S1-VA0A-112-02-GL-VN	374	5.5	GL	
E2-P11A1-BA0A-112-02-ST-VN	E2-P11S1-VA0A-112-02-ST-VN	814	20.4	ST	
E2-P11A1-BA0A-082-03-ST-VN	E2-P11S1-VA0A-082-02-ST-VN	1682	44.6	ST	
E2-P11A1-BA0A-092-04-GL-VN	E2-P11S1-VA0A-092-04-GL-VN	2313	54	GL	
E2-P11A1-BA0A-092-04-ST-VN	E2-P11S1-VA0A-092-04-ST-VN	4662	133	ST	
E2-P11A1-BA0A-102-05-ST-VN	E2-P11S1-VA0A-102-05-ST-VN	7825	217	ST	
E2-P11A1-BA0A-034-39-ST-VN	E2-P11S1-VA0A-034-39-ST-VN	16,737	506	ST	
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E2-P11A1-BA0A-044-40-ST-VN	E2-P11S1-VA0A-044-40-ST-VN	45,227	1288	ST	
E2-P11A1-BA0A-044-40-TA-VN	E2-P11S1-VA0A-044-40-TA-VN	69,940	2000	TANT	

OPTIONAL ACCESSORIES OPTICAL SENSOR SWITCH	
MODEL NUMBER	DESCRIPTION
PS-GFM-110NA-2	Power Supply 110vac/12Vdc (North America)
PS-GFM-230EU-2	Power Supply 230vac/12Vdc (Europe)
PS-GFM-240AU-2	Power Supply 240vac/12Vdc (Australia)
PS-GFM-240UK-2	Power Supply 240vac/12Vdc (United Kingdom)
TPI	Tripod for Single Tube Meter