

Technical Data Sheet No. TD-OSS-052018
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OPERATING MANUAL

Optical Sensor Switch

PICTURE SHOWING
OPTICAL SENSOR SWITCHES
INSTALLED ON A
TYPICAL ROTAMETER



AALBORG®

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⚠ CAUTION:

This product is not intended to be used in life support applications!

NOTE: Aalborg® reserves the right to change designs and dimensions at its sole Discretion at any time without notice. For certified dimensions please contact Aalborg®.

GENERAL DESCRIPTION

The Optical Sensor Switch is a non-invasive 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. are not included). The Optical Sensor Switch helps protect processes and equipment from damage caused by extreme flow rates.



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

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.

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 setpoint 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.

TO ORDER A FLOW METER WITH OPTICAL SENSOR SWITCHES



NOTE: To order a flow meter with a single Optical Sensor Switch add "O1-" to P, S, or T Model Numbers. Example: O1-P11A4-BA0-032-41-ST-VN.

ORDERING INFORMATION FOR OPTICAL SENSOR SWITCH ACCESSORY	
PART NUMBER	DESCRIPTION
OSV1-6-P	Optical Sensor Switch for 65mm P Style Meters
OSV1-1-P	Optical Sensor Switch for 150mm P Style Meters
OSV1-6-S	Optical Sensor Switch for 65mm S Style Meters
OSV1-1-S	Optical Sensor Switch for 150mm S Style Meters
OSV1-6-T	Optical Sensor Switch for 65mm T Style Meter
OSV1-1-T	Optical Sensor Switch for 150mm T Style Meter

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)

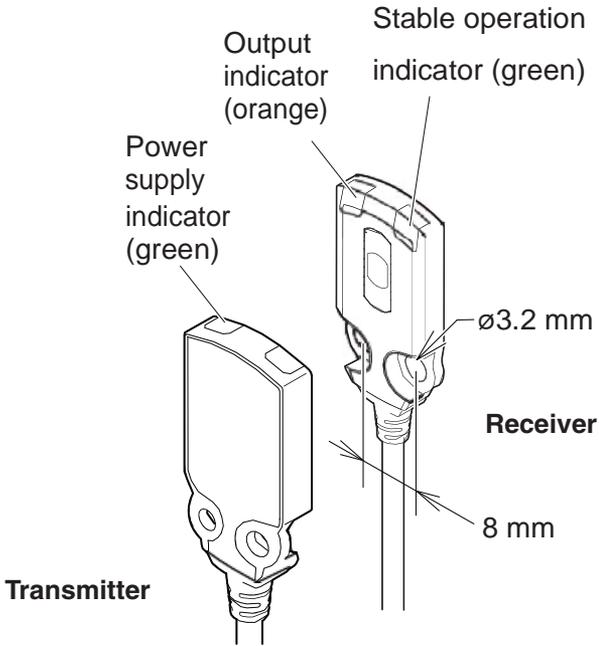
The sensor consists of two parts: transmitter and receiver. When power is properly connected the power supply indicator (green LED) on the transmitter is constantly on.

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.

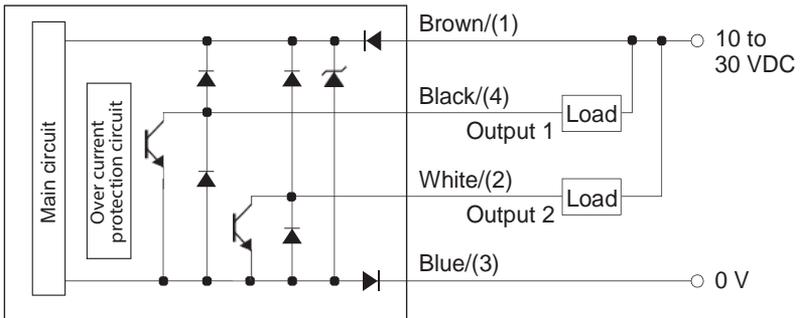
TROUBLESHOOTING		
PROBLEM	CAUSE	CHECK & ACTION
All indicators are off.	The power supply is not connected.	Connect the power supply.
The output indicators turn on and off but output does not turn on or off.	Incorrect wiring.	Check the wiring for the output wires.
	The input device has failed.	Try connecting the sensor output to a separate input device.
	Sensor output has failed or an output wire is broken.	
The output indicator is flashing.	Overcurrent 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.

PR-F



Output Wiring Diagram

• NPN



WARRANTY

Aalborg® Optical Sensor Switch is warranted against parts and workmanship for a period of one year from the date of purchase. Calibrations are warranted for up to six months after date of purchase, provided calibration seals have not been tampered with. It is assumed that equipment selected by the customer is constructed of materials compatible with gases used. Proper selection is the responsibility of the customer. It is understood that gases under pressure present inherent hazards to the user and to equipment, and it is deemed the responsibility of the customer that only operators with basic knowledge of the equipment and its limitations are permitted to control and operate the equipment covered by this warranty. Anything to the contrary will automatically void the liability of Aalborg® and the provisions of this warranty. Defective products will be repaired or replaced solely at the discretion of Aalborg® at no charge. Shipping charges are borne by the customer. This warranty is void if the equipment is damaged by accident or misuse, or has been repaired or modified by anyone other than Aalborg® or factory authorized service facility. This warranty defines the obligation of Aalborg® and no other warranties expressed or implied are recognized.

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Kalrez® is a registered trademark of DuPont Dow Elastomers.

VCR® is a registered trademark of Swagelok Marketing Co.

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Products Manufactured By Aalborg

ROTAMETERS

Single Tube

Aluminum / Brass / Stainless • Interchangeable Glass Flow Tubes • Optional Valves

Multiple Tube

Two to Six Channels • Aluminum or Stainless

PTFE Single and Multiple Tube

Chemically Inert • 1 to 4 Channels • Interchangeable Glass Flow tubes

PTFE - PFA

Chemically Inert • Low to Medium Flow of Corrosive Liquids with PFA Flow Tube

Kits

Aluminum / Stainless / PTFE • Including Five Glass Flow Tubes and a Set of Floats

Gas Proportioners

Aluminum / Stainless • Used for Blending Two or Three Gases

Medium Range Glass Safety Shield • Dual Air and Water Scale

Optical Sensor Switch

Non-Invasive Means for Detection of a High or Low Flow

High Flow Industrial Stainless Steel Flow Meters

Heavy Duty Stainless Steel • Direct Reading Air and Water Scales

VALVES

Barstock

Brass or Stainless • Standard or High Precision

PTFE

Chemically Inert • Needle or Metering

Proportionating Solenoid

Stainless • For Controlling Gas or Liquid Flow

• Pulse width Modulated

SMV • Stepping Motor Valve

PERISTALTIC PUMPS

Fixed RPM Pumps

Pump Heads

Tubing Pumps

Variable Speeds

Dispensing Pumps

Flexible Tubings

ELECTRONIC METERS & CONTROLLERS

Low Cost Mass Flow Meters

Aluminum or Stainless • With or Without LCD Readout

Low Cost Mass Flow Controllers

Aluminum or Stainless • With or Without LCD Readout

Mass Flow Controllers

Stainless • One to Four Channel Systems

Digital Mass Flow Controllers

Auto Zero • Totalizer • Alarms • Built in RS485

Multi Parameter Digital Mass Flow Meters

Displays Flow Pressure and Temperature

Paddle Wheel Meters

For Liquids • Optional Temperature Measurements

Vortex In-Line and Insertion Flow Meters

Steam / Liquid and Gas Service

Smart Rate / Totalizer / Signal Conditioner

LCD Keypad • RS232 / 485 • Pulse Output = Alarms