

# ROTAMETER WITH ALARM

## FLSW Series



Optional

- ✓ HIGH or LOW Alarms
- ✓ Compact Design
- ✓ Liquid or Gas Applications
- ✓ High or Low Flow Cutoff Applications
- ✓ Dip Switch Configurable Buzzer, Relay, and LED

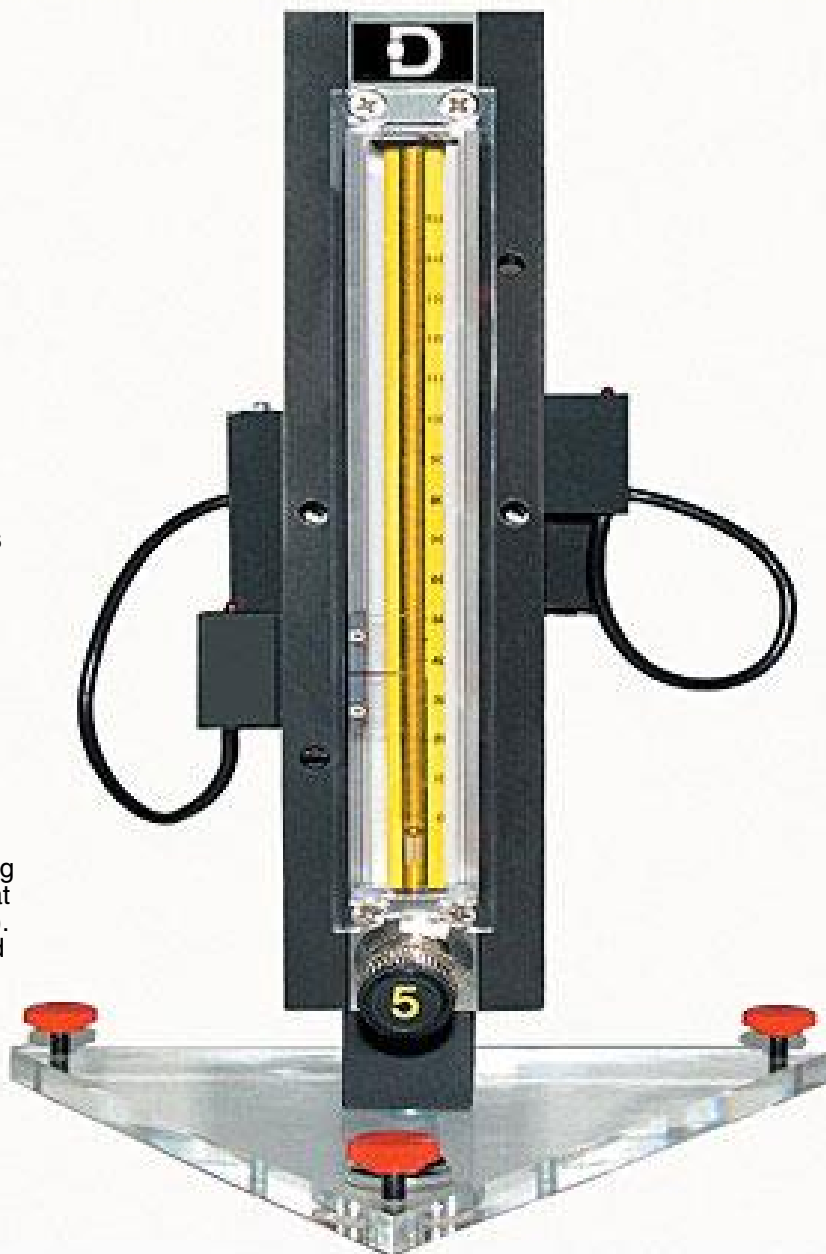
The 150 mm high/low alarm flowmeter with optical sensor switch is a noninvasive means for detection of a HI or LOW flow. This sensor is ideal for signaling an alarm, cutoff valve, or other device when the float passes the detector (alarm, valve, etc. not included). The FLSW Series helps protect your processes and equipment from damage caused by extreme flow rates. Its compact design and ease of operation make it a unobtrusive, simple-to-use addition to your flowmeter.

This meter is perfect for OEM® applications. Use whenever maximum or minimum flow levels need to be monitored automatically.

The FLSW Series 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. It can also be set to monitor float position at a specific level, signalling when float is outside of the range of the sensor light beam. DIP Switches are located next the the 9-pin D connector. In order to activate the alarm sensors the corresponding switch has to be in the "ON" position on the DIP switch. The relay output or the buzzer or the green LED can be separately set for momentary or latch operation. If for example DIP Switch SW1 is set to "ON", when the left sensor is active, the relay and the green LED will be energized in the latch mode. It will remain latched until the RESET button is pressed or external RESET TTL signal is applied.



FLSW3405ST rotameter and FLTR-1 tripod, shown smaller than actual size.

### Alarm DIP Switch Configuration

Left Alarm	Right Alarm	Action When Switch is "ON"
SW1	SW5	LED and Relay are ON (Latch)
SW2	SW6	Buzzer is ON (Latch)
SW3	SW7	LED and Relay are ON momentarily (Follow Sensor)
SW4	SW8	Buzzer is ON momentarily (Follow Sensor)

## SPECIFICATIONS

**Accuracy:**  $\pm 2\%$  of full scale

**Repeatability:** 0.5% of full scale

**Ambient Temperature:** 0 to 70°C  
(32 to 158°F)

**Maximum Pressure:** 200 psig

**Connections:** 1/8 FNPT

**End Blocks:** Aluminum or  
316 Stainless Steel

**Elastomers:** Buna and FKM  
(Aluminum), FKM (316SS)

**Tube:** Borosilicate

**Float Materials:** "G" for Glass or "ST"  
for 316 SS or "T" for Tantalum (noted in  
model number)

**Input Power:** 12 Vdc, 15 Vdc  
maximum, 250 mA regulated,  
peak to peak maximum 100 mV

**Power Consumption:**

Less than 200 mA

**Response Time:** 500 milliseconds

**Source of Light:** 65 mm, red LED

**Light Immunity:** Pulse modulated

**Dry Contact Closures:** 2 normally  
open, and normally closed relays 91A,  
30 Vdc maximum)

**Alarm Options:** High, Low or High/Low

**Buzzer:** User configurable, momentary  
or latch through DIP switch setting

**Reset:** Reset button or remote

through "D"

-connector, to

disable relay

or buzzer

**Interface:** 9-pin

"D"-connector

**Optional:** 12 Vdc

power supply,

tripod base

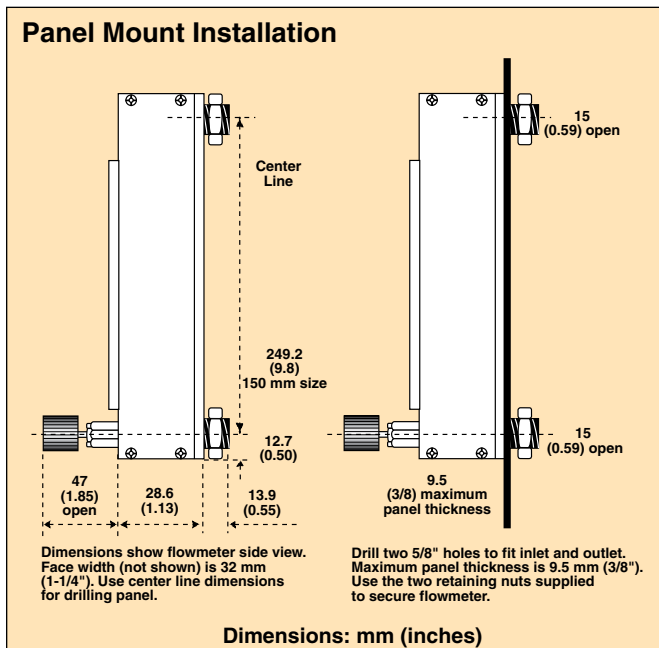
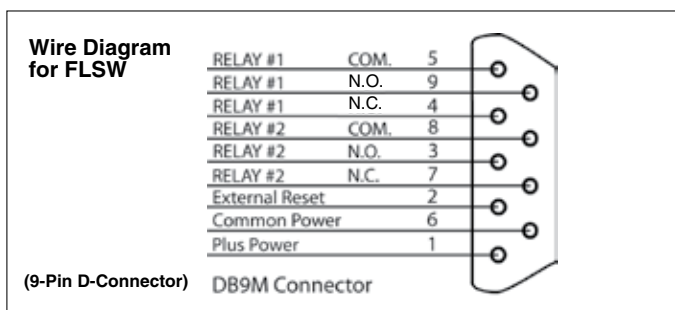
**Dimensions:**

**Alarm Electronics Enclosure:**

51.1 x 76.2 mm (2.01 x 3.00")

**Enclosure #2 with Phone Plug:**

30.5 x 14.2 mm (1.2 x 0.6")



## To Order

Model No. Aluminum	Model No. Stainless Steel	Model No. High Res Valve Aluminum	Model No. High Res Valve Stainless Steel	Max Flow Air ml/min	Max Flow Water ml/min
FLSW3401G	FLSW3501G	FLSW3401G-HRV	FLSW3501G-HRV	49	0.49
FLSW3402G	FLSW3502G	FLSW3402G-HRV	FLSW3502G-HRV	92	0.9
FLSW3403ST	FLSW3503ST	FLSW3403ST-HRV	FLSW3503ST-HRV	264	4.7
FLSW3404G	FLSW3504G	FLSW3404G-HRV	FLSW3504G-HRV	374	5.5
FLSW3405ST	FLSW3505ST	FLSW3405ST-HRV	FLSW3505ST-HRV	814	20.4
FLSW3406ST	FLSW3506ST	FLSW3406ST-HRV	FLSW3506ST-HRV	1682	44.6
FLSW3407G	FLSW3507G	FLSW3407G-HRV	FLSW3507G-HRV	2313	54
FLSW3408G	FLSW3508G	FLSW3408G-HRV	FLSW3508G-HRV	4562	133
FLSW3409ST	FLSW3509ST	FLSW3409ST-HRV	FLSW3509ST-HRV	7825	217
FLSW3410ST	FLSW3510ST	FLSW3410ST-HRV	FLSW3510ST-HRV	16737	506
FLSW3411G	FLSW3511G	FLSW3411G-HRV	FLSW3511G-HRV	23742	541
FLSW3412ST	FLSW3512ST	FLSW3412ST-HRV	FLSW3512ST-HRV	45227	1288
FLSW3413T	FLSW3513T	FLSW3413T-HRV	FLSW3513T-HRV	69940	2000

## Accessories

Model No.	Description
FMA178PW	Socket plug-in power supply for 115 Vac
FMA178PW-220VAC	Socket plug-in power supply for 220 Vac, VDE plug type
FLTR-1	Tripod for one rotameter, 177.8 mm (7") L and 9.53 mm (0.375") thick
70A-1	Audible alarm

Comes complete with operator's manual.

For NIST calibration, add suffix "-NIST AIR" to model number or suffix "-NIST WATER" to model number for additional cost.

For oxygen cleaning add suffix "-O2CLEAN" to model number for additional cost.

**Ordering Examples:** FLSW3405ST, aluminum rotameter, maximum air flow 814 ml/min and maximum water 20.4 ml/min.

FLSW3413T, aluminum rotameter, maximum air flow 69940ml/min and maximum water 2000 ml/min.