



DEGREE CONTROLS, INC.

Your Partner for Airflow Sensing & Controls

S100



Application

- Ducts and HVAC systems
- Air handlers
- Damper feedback
- Evacuation systems
- Control cabinets
- Enclosure venting
- Process controls
- Compressor fan monitoring
- Heat exchangers
- Datacenter cooling units

Overview

The S100 air velocity switch is designed to monitor airflow in ducts, air handling units, and hood and laboratory exhausts to warn of airflow degradation. It is also used in industrial processes and electronics systems and enclosures. The air velocity trip point is user adjustable, and a change or drop in flow is signaled by a relay output and on-board LED indicator.

With its robust, spray resistant design, and UV tolerant construction, the S100 airflow monitor handles a wide range of applications where AC or DC supply voltages are encountered, or extreme environments down to -15°C (5°F). The S100 switch is manufactured as non-directional and will sense flow from either direction. Additionally, it is configured to order with your choice of 5-12VDC or 24VAC/VDC supply input and Normally Closed (N.C.) or Normally Open (N.O.) relay output alarm.

Installation is fast and easy with included mounting bracket options, convenient push-wire connections, and user accessible trip point adjustment. Simply mount the S100, make electrical connections to the device, and then dial in the desired velocity trip point with the S100 installed in its application environment. The trip point is adjusted via a potentiometer, and positive stops at both ends of travel provide the user with a clear, well-defined range of adjustment. The high-performance S100 switch sets a new standard for ease of integration and in-the-field programmability.

Mechanical Features

- User accessible potentiometer sets the air velocity trip point.
- Red/green LED indication for power, alarm and damaged sensor conditions.
- Easy duct mounting, with two bracket options (parallel and perpendicular to sensor).
- Push-wire connections for fast, convenient installation.
- Optimized flow geometry with segregation of velocity and temperature elements for highest accuracy.
- Best in class acceptance angle performance.
- Robust, protected probe assembly uses corrosion and UV resistant materials.
- RoHS compliant

Electrical & Performance Features

- Trip point repeatability within $\pm 5\%$.
- Temperature compensated up to 60°C (140°F).
- Field adjustable air velocity trip point.
- 5-12VDC or universal 24VAC/VDC input.
- Isolated relay signal output.
- <15 second warm up time.

Degree Controls, Inc.

is an ISO-9001 certified, world-class designer and manufacturer of airflow sensing, monitoring, and control solutions. With over 25 years of proven experience, we pride ourselves on delivering solutions which provide the value, differentiation, and service required by our customers, to meet the rapidly changing competitive landscape that they face.

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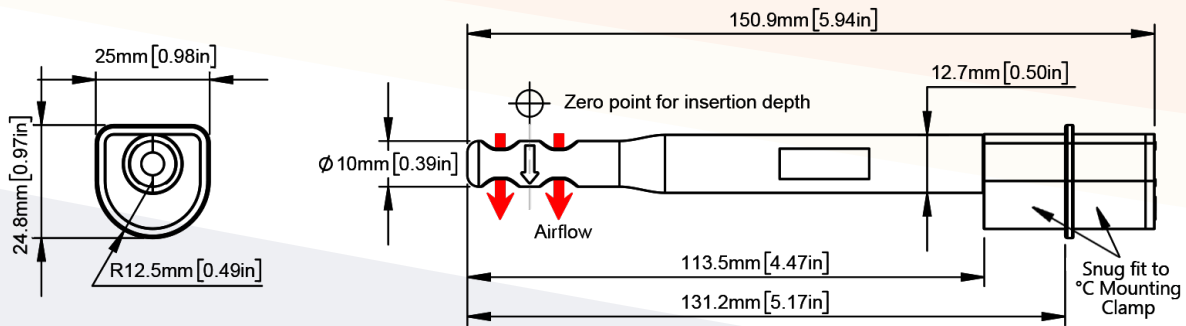
°C Clamp End Mount (left) or Side Mount (right)
- Perpendicular or parallel to sensor
- #10 screw fits thru holes

Specifications

Velocity Range	0.15m/s to 20m/s (30fpm to 4,000fpm)	
Operating Temperature	-15°C to 60°C (5°F to 140°F)	
Storage Temperature	-40°C to 105°C (-40°F to 220°F)	
Relative Humidity	5-95%	
Acceptance Angle	± 30°	
Input Voltage Current Consumption	5-12VDC Version	24VAC/VDC Version
	4.5 -13.5VDC <125mA at 12VDC	24VAC/VDC +/- 10% <42mA at 24VDC
Alarm Delay	10 sec	
Recovery Point	15% deviation from trip point	
Trip Point Adjustment	Single Turn Potentiometer CW High Flow CCW Low Flow	
Trip Point Range	0.5m/s to 20m/s (100fpm to 4000fpm)	
Trip Point Repeatability	± 5%	
Warm Up Time	< 15 sec < 15 sec (temperatures 0°C to 60°C (32°F to 140°F)) < 60 sec (temperatures <0°C (32°F))	
Response Time	10 sec	

Relay Output	Mechanical Relay - N.C. or N.O. N.C. (Standard Configuration) No Power – Contacts Open Flow Above Trip Point – Contacts Closed Flow Below Trip Point – Contacts Open N.O. No Power – Contacts Closed Flow Above Trip Point – Contacts Open Flow Below Trip Point – Contacts Closed 250VAC, 2A, 125VA Max or 220VDC, 2A, 60W Max Contact Impedance: 75mΩ max (initial) Insulation Resistance: 1000MΩ @ 500VDC Withstanding Voltage: 1500VAC for 1 minute (contact to coil)
	Green ON continuously when powered if there is no alarm condition Green ON - Flow Above Trip Point Green blinking ¹ – Trip Point Set Mode Active or Trip Point Set Red blinking - Flow Below Trip Point Red ON - Damaged sensor or heater error
Wire Gauge	20 - 26 AWG solid core wire
Housing Construction	Polycarbonate (PC), UL94-V0
Standard Dimensions	150.9mm x 25.0mm x 24.8mm (5.94" x 0.98" x 0.97")

¹When the potentiometer is first turned, it initiates a 10 second internal timer and the LED blinks green 3-4 times to indicate that trip point set mode is active. While in set point mode, the 10 second timer will restart whenever the potentiometer is turned. When the 10 second timer expires, the LED blinks green again to confirm that the trip point has been set.



Temperature Compensation

The S100 Switch is a thermal airflow switch; it is sensitive to changes in air density and measures velocity with reference to a set of standard conditions (21°C (70°F), 760mmHg (101.325kPa), and 0%RH). The S100 has been designed to automatically compensate for temperature effects up to 60°C (140°F).

Part Number Format

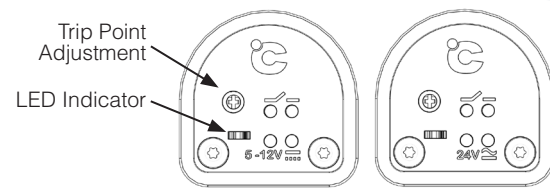
S100 - S - O

S = Supply Voltage

- 1 = 5-12VDC
- 2 = 24VAC/VDC

O = Output

- 1 = Normally Closed (N.C.)
- 2 = Normally Open (N.O.)



5-12VDC and 24VAC/DC Versions are Available



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