



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 series of air velocity switches are designed to monitor airflow in ducts, air handling units, and hood and laboratory exhausts, as well as in industrial processes and electronic systems and enclosures to warn of airflow degradation. The air velocity trip point is user adjustable, and a change or drop in flow is signaled by the relay output and on-board LED indicator.

With its robust, spray resistant design, and UV tolerant construction, the S100 airflow monitor is designed to handle 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 Normally Closed (N.C.) or Normally Open (N.O.) relay output to alarm on low or no flow.

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. Trip point adjustment is done via 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, single-turn 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

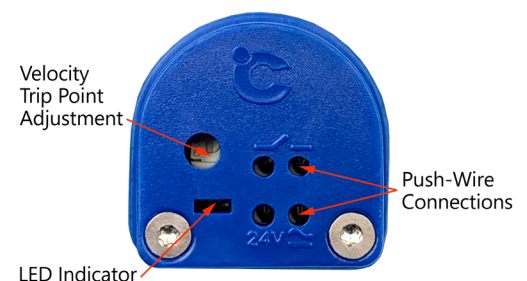
- Trip point repeatability within $\pm 5\%$.
- Temperature compensated up to 60°C (140°F).
- Field adjustable air velocity trip point.
- Universal 24 VAC/DC +/- 10% voltage input.
- Isolated relay signal output.
- <15 sec second warm up time.

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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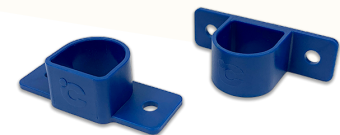
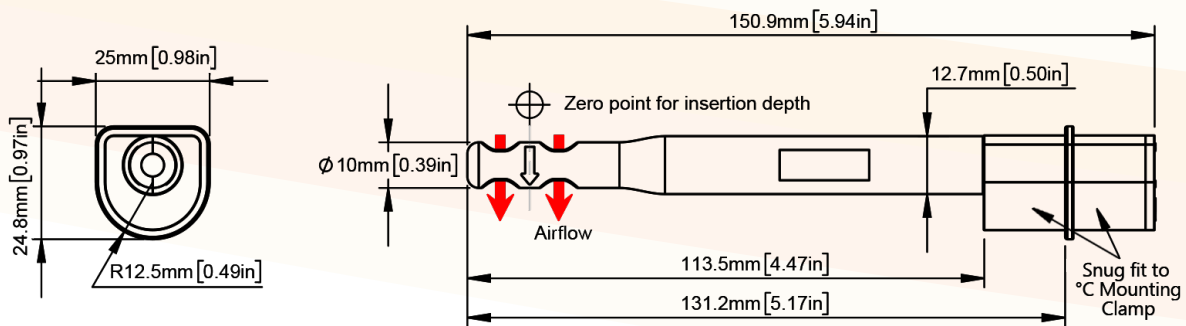
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Specifications

Velocity Range	0.15m/s to 20m/s (30 fpm to 4,000 fpm)
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	24 VAC/DC +/- 10%
Current Consumption	< 42mA nominal at 24VDC
Alarm Delay	5s
Recovery Point	15% deviation from trip point
Trip Point Adjustment	Single Turn Potentiometer CW High Flow CCW Low Flow
Trip Point Range	0.5 - 20 m/s (100 - 4000 fpm)
Trip Point Repeatability	± 5%
Warm Up Time	< 10 sec < 10 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) <i>No Power – Contacts Open</i> <i>Flow Above Trip Point – Contacts Closed</i> <i>Flow Below Trip Point – Contacts Open</i> N.O. <i>No Power – Contacts Closed</i> <i>Flow Above Trip Point – Contacts Open</i> <i>Flow Below Trip Point – Contacts Closed</i> 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)
Power/Alarm LED Indicator	Power: Green ON continuously when powered Alarm: Green ON - Flow Above Trip Point 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")



°C Clamp End Mount (left) or °C Clamp Side Mount (right)
#10 screw fits thru holes in °C Clamps

Pin Assignment

Input Voltage		Relay Output	
Pin	Description	Pin	Description
1	24VAC/DC	1	Relay 1
2	24V Return	2	Relay 2

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 - O

O = Output

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

Note: For a switch configured as N.C., the relay contact is closed during good flow, and will open upon crossing the trip point.



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