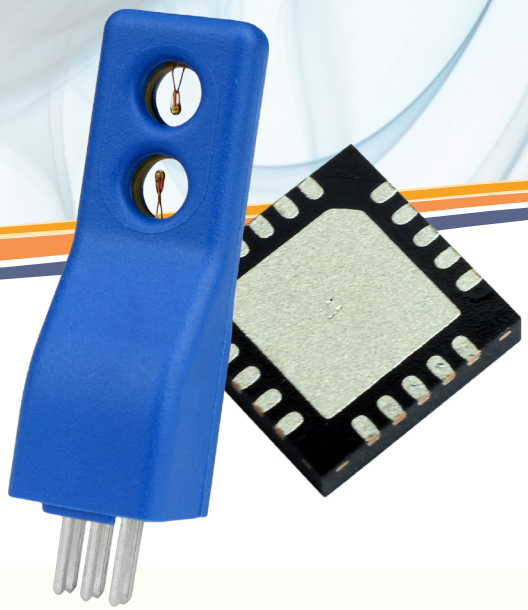
degreeC™

DEGREE CONTROLS, INC.

Your Partner for Airflow Sensing & Controls

RFS300



Applications

- Detecting filter clog status
- Air starvation watchdog
- Heatsink cooling
- DC-DC converter cooling
- Environmental sweeps of board/ blades
- Intake air temperature watchdog
- Temperature rise information
- Multiple sensors on an I²C bus
- High performance server boards
- High performance embedded computing
- Telecom systems
- High performance audio amplifiers
- Biological and incubation products
- High performance digital projectors and displays
- Heat recovery ventilators and exhaust fans
- Thermal Load Cards

Overview

The RFS300 board-mounted, digital air velocity and temperature sensor is the smallest form factor airflow sensor available on the market today. Designed to be soldered directly to a printed circuit board, or mounted to a surface-mount socket for easy removal or maintenance, the RFS300 uses dual element sensing technology from Degree Controls which yields excellent accuracy in a very small package. The sensor can be calibrated for flow velocities of 0.15 - 20 m/s (30-4000 fpm), with accuracy up to 5% of reading. The board-mount sensor uses a reference design circuit that the client integrates onto their board, which creates the smallest possible sensor footprint, (6mm x 6mm), thereby providing to maximum positioning flexibility for the client.

The sensor is powered by 3.3 - 12 VDC and communicates across the existing I²C or UART bus. The sensor includes a pre-programmed processor, and all guidelines for schematic integration and part placement. The surface area required for the sensor drive circuitry is 0.4 in^2 (3.2 cm^2).

Features

- Sensor element with programmed IC
- Drive circuit schematic and placement files supplied by Degree Controls
- Smallest footprint air velocity sensor available
- Dual sensing element with protective shroud
- Provides fully linearized air velocity and air temperature with wide operating range
- Excellent accuracy and repeatability
- Low sub-20mA power consumption (at higher voltages)
- Dedicated, configurable alarm for air velocity or temperature for switch style operation
- Addressable for multiple sensors on I²C bus
- On-command flow learning command for calibration optimization, post-install
- RoHS compliant

Degree Controls, Inc.

is an ISO-9001 certified, world-class designer and manufacturer of airflow sensing, monitoring, and control solutions. With over 20 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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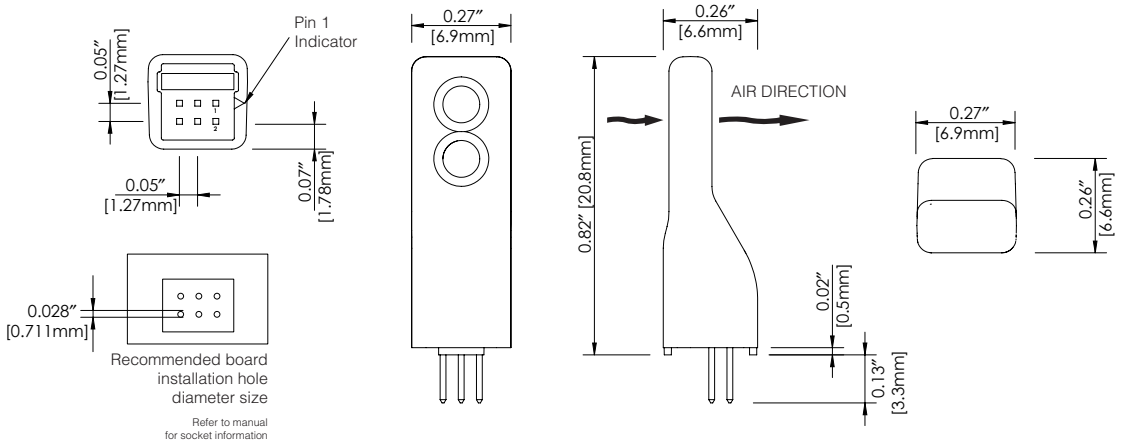
NOVA INSTRUMENTS



Specifications

Operating Temperature	-5°C to 60°C (23°F to 140°F)
Storage Temperature	-40°C to 105°C (-40°F - 221°F)
Velocity Range	0.15m/s – 20.0m/s (30fpm – 4000fpm)
Response Time	400 ms
Relative Humidity (non-condensing)	5-95%
Operating Voltage	3.3 – 12 VDC
Digital Output	3.3 VDC UART or I²C
Optional Alarm Output	Configurable trip point
Housing Material	UL94-V0
Sensor Weight	About 1.5g (.05oz)

Air Velocity & Temperature Accuracy

Repeatability ±2% of reading (under identical conditions)

Air Velocity Range

0.15 to 20 m/s (30 to 4,000 fpm)
*within compensation range

Air Velocity Accuracy*

± (5% of reading + 0.10 m/s [20 fpm])

Resolution: 0.1°C

Temperature Compensation Range

Temperature Compensation Range: The RFS300 is a thermal airflow sensor; it is sensitive to changes in air density and indicates velocity with reference to a set of standard conditions (21°C (70°F), 760mmHg (101.325kPa), and 0%RH). The RFS300 has been designed so that when used over the stated temperature compensation range, the sensor indicates very close to actual air velocity and minimal compensation is only required to account for changes in barometric pressure or altitude.

RoHS