

F200



Application

- Clean Tech & Laboratory
 - Down Flow and Exhaust Sensing
 - Biological Safety Cabinets
 - Chemical Fume Hoods
 - Laminar Flow Hoods
 - Clean Benches
 - HEPA & Filter Boxes
- HVAC
 - Heat Exchangers
 - Airflow Ventilation
 - Valve Control
 - Detecting Filter Clog Status
- Industrial
 - Inflow Measurement for Combustion
 - Airflow Monitoring
 - Evaporation & Curing Control
 - Telecom Shelters

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.

Degree Controls, Inc.
300 Innovative Way
Suite 222
Nashua, NH 03062-5746

603.672.8900 or 1.877.334.7332
sales@degreeC.com
www.degreeC.com

Overview

The F200 series is a versatile and rugged, high-performance air velocity and air temperature sensor with digital interface. Designed with conformal coated electronics and sealed enclosure, the F200 is suitable for demanding applications, including those in corrosive or alkaline environments. With its robust, splash proof design, and UV tolerant construction, the F200 transducer is designed to handle a wide range of product and process control air flow applications. The F200 is configured to order, with a variety of velocity ranges and either UART or I²C communication styles available. The F200 is intended for new product designs, where the designer can take advantage of the digital communication. (If analog output signals are required, please see the F300, F400, and F500 velocity sensors.)

Mechanical Features

- Easy duct mounting, with two bracket options (parallel and perpendicular to sensor).
- Push-wire connector for fastest connections. (Soldered leads available on request.)
- Optimized flow geometry with segregation of velocity and temperature elements for highest accuracy.
- Aerodynamic cross section to minimize flow disturbance.
- Robust, sealed probe assembly uses corrosion and UV resistant materials.
- Conformal coated sensing elements for environmental protection.
- RoHS compliant
- CE certified

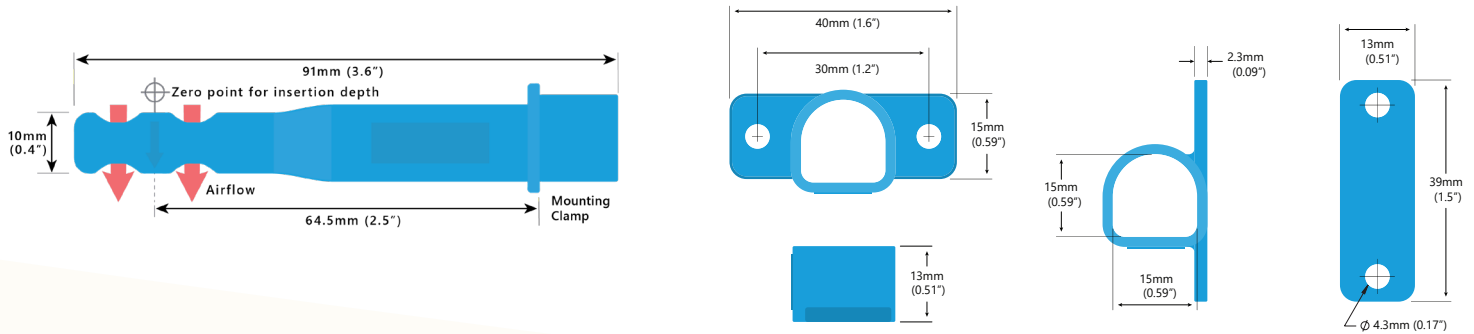
Electrical & Performance Features

- Industry-leading air velocity performance, with repeatability within 1%.
- 1°C air temperature accuracy.
- Best in class acceptance angle performance.
- 4.5 - 12 VDC voltage input.
- Factory configured UART or I²C
- More than 15 useful read addresses available.
- In-situ calibration available.
- I²C addressing capability for multiple sensors
- Ideal with Arduino, Raspberry Pi, and all major microcontrollers and development boards.
- Configurable velocity averaging for smoothing sensor response.
- <10 second start-up time and 400ms response time.
- May be configured as an airflow switch with open drain output.

Specifications

Velocity Range	0.15m/s to 20m/s (30 fpm to 4,000 fpm)
Operating Temperature	0°C to 60°C (32°F to 140°F)
Storage Temperature	-40°C to 105°C (-40°F to 221°F)
Response Time	400ms
Relative Humidity (non-condensing)	5-95%
Supply Power Requirements	4.5 - 12 VDC, 35mA nominal

Digital Output	UART or I ² C available for flow and temperature information
Housing Construction	UL94-V0
Wire Gauge	18 – 26 AWG Max conductor 1.05mm Max insulation 2.1mm
Environmental Protection	IP65 electronics, including conformal coated sensing element



Two bracket options are available

Air Velocity Performance

Repeatability ±1% of reading (under identical conditions)

Air Velocity Range

- 0.15 to 1.0 m/s (30 to 200 fpm)
- 0.5 to 10 m/s (100 to 2,000 fpm)
- 1.0 to 20 m/s (200 to 4,000 fpm)

*within compensation range

Air Velocity Accuracy*

- ± (1% of reading + 0.05 m/s [10 fpm])
- ± (4% of reading + 0.10 m/s [20 fpm])
- ± (5% of reading + 0.15 m/s [30 fpm])

Resolution: 0.1°C

Temperature Compensation Range

Temperature Compensation Range: The F200 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 F200 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.

Part Number Format

F200 - V - O

V = Velocity Profile

- A = 0.15 to 1.0 m/s [30 to 200 fpm]
- B = 0.5 to 10.0 m/s [100 to 2,000 fpm]
- C = 1.0 to 20.0 m/s [200 to 4,000 fpm]

O = Output Configuration

- 1 = UART communication output
- 2 = I²C communication output
 - For multi-sensor addressing, select I²C.



Covered under US patent 6,829,930

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