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HAFBSF0200C2AX5
(Home: Products : Sensors » Airflow Sensors » HAF)



Actual product appearance may vary.

Honeywell Zephyr™ Digital Airflow Sensors: HAF Series -High Accuracy, bidirectional flow, short port, fastener mount, 200 SCCM flow range, digital I²C address: 0x29, 5.0 Vdc supply voltage

Sales & Service

Distributor Inventory

- Overview
- Specs
- Documentation
- Application Notes

Description

Honeywell Zephyr™ Digital Airflow Sensors: HAF Series -High Accuracy, provide a digital interface for reading airflow over the specified full scale flow span and temperature range. Their thermally isolated heater and temperature sensing elements help these sensors provide a fast response to air or gas flow.

Zephyr™ sensors are designed to measure mass flow of air and other non -corrosive gases. They are available in standard flow ranges and are fully calibrated and temperature compensated with an on-board Application Specific Integrated Circuit (ASIC).

The HAF Series is compensated over the temperature range of 0 °C to 50 °C [32 °F to 122 °F] and operates across a temperature range of -20 °C to 70 °C [-4 °F to 158 °F]. The stateof-the-art ASIC-based compensation provides digital (fC) outputs with a response time of 1 ms.

These sensors operate on the heat transfer principle to measure mass airflow. They consist of a microbridge Microelectronic and Microelectromechanical System (MEMS) with temperatureensitive resistors deposited with thin films of platinum and silicon nitride. The MEMS sensing die is located in a precise and calculated airflow channel to provide repeatable flow response.

Zephyr™ sensors provide customers with enhanced reliability, digital accuracy, repeatable measurements and the ability to customize sensor options to meet many specific application needs. The combination of rugged housings with a stable substrate makes these products extremely robust. They are designed and manufactured according to ISO 9001 standards.

Features

Features and Benefits

- ?

High ±2.5% accuracy allows for very precise airflow measurement, often ideal for demanding applications with high accuracy requirements
- ?

Full calibration and temperature compensation typically allow customer to remove additional components associated with signal conditioning from the PCB, reducing PCB size as well as costs often associated with those components (e.g., acquisition, inventory, assembly)
- ?

Customizable for specific end-user needs
- ?

High sensitivity at very low flows allows a customer 's application to detect presence or absence of airflow
- ?

High stability reduces errors due to thermal effects and null shift to provide accurate readings over time, often eliminating need for system calibration after PCB mount and periodically over time
- ?

Low pressure drop typically improves patient comfort in medical applications,and reduces noise and system wear on other components such as motors and pumps
- ?

Linear output provides more intuitive sensor signal than the raw output of basic airflow sensors, which can help reduce production costs, design, and implementation time
- ?

Fast response time allows a customer's application to respond quickly to airflow change, important in critical medical (i.e., anesthesia) and industrial (i.e., fume hood) applications
- ?

High 12-bit resolution increases ability to sense small airflow changes, allowing customers to more precisely control their application
- ?

Low 3.3 Vdc operating voltage option and low power consumption allow for use in battery-driven and other portable applications
- ?

ASIC-based fC digital output compatibility eases integration to microprocessors or microcontrollers, reducing PCB complexity and component count
- ?

Bidirectional flow sensing capability eliminates the need for two airflow sensors, helping to reduce production costs and implementation time
- ?

Insensitivity to mounting orientation allows customer to position sensor in most optimal point in the system, eliminating concern for positional effects
- ?

Insensitivity to altitude eliminates customer implemented altitude adjustments in the system, easing integration and reducing production costs by not having to purchase additional sensors for altitude adjustments
- ?

Small size occupies less space on PCB, allowing easier fit and potentially reducing production costs; PCB size may also be reduced for easier fit into space-constrained applications
- ?

RoHScompliant materials meet Directive 2002/95/EC

Potential Applications

Potential Applications

- Medical
- ?

Anesthesia delivery machines
- ?

Ventricular assist devices (heart pumps)
- ?

Hospital diagnostics (spectrometry, gas chromatography)
- ?

Nebulizers
- ?

Oxygen concentrators
- ?

Patient monitoring systems (respiratory monitoring)
- ?

Sleep apnea machines
- ?

Spirometers
- ?

Ventilators
- Industrial
- ?

Air-to-fuel ratio
- ?

Analytical instrumentation (spectrometry, chromatography)
- ?

Fuel cells
- ?

Gas leak detection
- ?

Gas meters
- ?

HVAC filters
- ?

VAV system on HVAC systems
- ?

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