High Airflow Sensors

Honeywell announced it has expanded its Zephyr™ airflow sensor HAF Series portfolio with new digital versions that provide airflow ranges of 0 to 20 SLPM (Standard Liters per Minute) and 0 to 200 SLPM. With this new product, Honeywell has leveraged its original Zephyr building block airflow sensor via a bypass to the main flow channel of the sensor, eliminating the need for a customer-designed bypass in equipment such as ventilators.

“With this new extension to the Zephyr HAF Series, our customers can now choose between creating a separate bypass or using one included in the sensor,” said Jacky Leff, senior product marketing manager for Honeywell Sensing and Control. “These sensors are configurable and customizable with multiple interface and package options, a variety of flow ranges, and custom calibration all which increase the customer’s options for integrating the sensor into the application.”

Honeywell’s new Zephyr™ airflow sensors with the built-in bypass offer customers three important benefits:

High performance that includes a narrow Total Error Band (the most comprehensive and meaningful measurement that provides the sensor’s true accuracy) of ±4% reading and a high accuracy of ±3.5% reading, allowing for very precise airflow measurement often ideal for demanding applications with high accuracy requirements.

Ease of integration provided by simple electrical interfaces (regulated, compensated, calibrated, linearized) and multiple mechanical configurations (manifold mount, male and female fittings).

Custom calibration, including forward flow direction and optimized custom calibration for many gases (dry air, helium, argon, nitrogen, nitrous oxide, carbon dioxide), which eliminates the need to implement gas correction factors.

These new airflow sensors are designed to function in a wide range of applications. Potential medical applications include anesthesia delivery machines, laparoscopy, patient monitoring systems, spirometers, ventilators and ventricular assist devices (heart pumps). Potential industrial applications include air-to-fuel ratio, analytical instrumentation, fuel cells, fume hoods, gas leak detection, and gas meters.

Honeywell first introduced the foundational building block of the Honeywell Zephyr™ HAF Series in March 2010 with a digital output version, ±200 SCCM airflow with two port styles (long port fastener mount and short port snap mount). Subsequent building block line extensions include an analog version, additional flow ranges (±50, ±100, ±400 or ±750 SCCM), and a short port fastener mount.

Honeywell's customers use this Zephyr building block with their own bypass solution. The bypass serves as a small parallel airflow pathway to the main airflow channel in the equipment, such as a ventilator. Honeywell's building block airflow sensor is attached to the bypass. When air passes through the bypass, by design only a small amount of air goes into the Zephyr building block. Due to its sensitivity, the sensor can provide a measurement that allows the customer to determine the airflow through the main flow channel.

When using the Zephyr building block, the customer needs to ensure that the air is laminarized when it enters the bypass, and does this through the use of the bypass shape, filters, screens, etc. With the new Honeywell Zephyr™ airflow sensor, the sensor is directly in the main flow channel and the bypass is optimized inside the sensor.

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