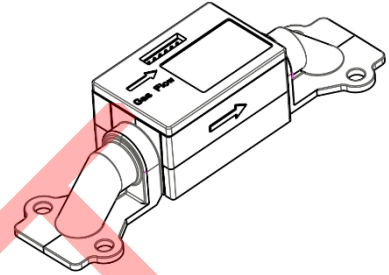


X111073-AF

Mass Flow Sensor

Key Features

- More compact size for better installation adaptability
- Fully flow calibrated and temperature compensated
- Both digital and analog output of flow
- Both digital and analog output of temperature as an optional
- High reliability and stability
- Local manufacturing and R&D team for safer supply chain and faster technical support



Product Description

The X111073-AF is designed based on the Honeywell new generation airflow sense die. The sensor provides both digital output and analog output for reading airflow over 0-30SLM. The sensor is designed to measure mass flow of air and other non-corrosive gases, such as Oxygen (O₂), Nitrous oxide (N₂O), etc.

The X111073-AF is fully calibrated, and temperature compensated over the specified flow range. The X111073-AF has a linearized flow output over the temperature range of 0°C to 60°C and operates across a temperature range of -20°C to 85°C. The sensor also has a linearized temperature output over the range of -20°C to 85°C(optional).

The sensor operates on the heat transfer principle to measure mass airflow. It provides the customer with enhanced reliability, high accuracy, repeatable measurements and the ability to customize sensor options to meet many specific application needs.

Specifications

Units

Mass Flow rate

SLM ¹

Operating Specifications

Parameter	Condition	Digital Output	Analog Output	Units
Supply voltage (V _{supply})		5 ± 5%		V
Calibrated flow range	Air/O ₂ / N ₂ O ⁵	0 ~ 30		SLM
Accuracy (flow) ^{2 4}	Offset	0.05	0.05	SLM
	Span (0~30SLM)	3	3	% m.v. ³
Accuracy Shift due to Temperature Variation	Offset	0.02	0.02	SLM
	Span	0.5	0.5	% m.v. /10°C
Offset stability	1000 hours	0.01		SLM
I2C rate		≤400		kHz
I2C address		0x48		
Analog output signal (flow)			0.3 ~ 2.7	V
Resolution (flow)		16bits ⁶	14bits	
Flow Output Update rate		1500	75	Hz
Warm-up time ⁷		50 ~ 500		ms
Response time ⁸		≤3		ms

Parameter (optional)	Condition	Digital Output	Analog Output	Units
Temperature measurement range		-20 ~ 85		°C
Accuracy (temperature)	0°C ~ 60°C	2	2	°C
	otherwise	3	3	°C
Analog output signal (temperature)			0.3 ~ 2.7	V
Resolution (temperature)		0.01	0.01	°C
Temperature Output Update rate		7.5	7.5	Hz

Environmental Specifications

Operating temperature range

-20°C to 85°C

Calibration temperature range ⁹

0°C to 60°C

Operating humidity range

0% to 95% RH, non-condensing

Storage temperature range

-40°C to 85°C

Materials

Wetted materials	glass reinforced (GR) thermoplastic polymer, gold, silicon, silicon nitride, epoxy, NBR
Compliant with	RoHS

Note 1 – Standard for mass flow rate units is SLM, which has reference conditions of 0 °C and 1 atm.

Note 2 – Accuracy is the maximum deviation in output from nominal over the entire calibrated flow range at 25 °C. Errors include Offset, Full Scale Span, Linearity, Flow Hysteresis, and Repeatability.

Note 3 – % m.v. = % measured value = % of reading.

Note 4 – Span or offset value, whichever is larger

Note 5 – Contact Honeywell for requirements with other custom gases for calibration.

Note 6 – Honeywell HAF2xxx Series use a very high performance MCU with 24bits ADC.

Note 7 – Warm-up time: time to the first valid flow measurement after power is applied.

Datasheet creation date

Sep 9, 2022 Rev 1.2

This is described an unreleased product.
All Specifications are subject to change
without notice

Note 8 – Response time: time to electrically respond to any mass flow change at the microbridge airflow transducer (response time of the transducer may be affected by the pneumatic interface).

Note 9 – Custom and extended calibrated temperature ranges are possible. Contact Honeywell for details.

DRAFT

Product Outline Dimensions and Connector Pin Definition

