

Installation Instructions for the Honeywell Zephyr™ Analog Airflow Sensors 50045091

HAF Series—High Accuracy Issue D

±50 SCCM to ±750 SCCM

GENERAL INFORMATION

CAUTION

IMPROPER USE

Do not use to sense liquid flow.

Failure to comply with these instructions may result in product damage.

CAUTION

IMPROPER CLEANING

- Avoid cleaning the sensor; however, if it must be cleaned use isopropyl alcohol and dry the device thoroughly before use. Cap the ports or connect housing to the ports before cleaning the sensor with alcohol. Using alcohol may remove the text on the sensor label; however, the label ID is hard coded inside the sensor.
- Do not use III Tri-chloroethane, methylene chloride, methyl pyrrolidone, or any oxidizing type acid such as formic acid.
- Do not use ultrasonic cleaning.

Failure to comply with these instructions may result in product damage.

CAUTION

LARGE PARTICULATE DAMAGE

Use a 5-micron filter upstream of the sensor to keep media flow through the sensor free of condensing moisture and particulates. Large, high-velocity particles or conductive particles may damage the sensing element.

Failure to comply with these instructions may result in product damage.

Table 1. Absolute Maximum Ratings

Characteristic	Parameter
Supply voltage	-0.3 Vdc to 6.0 Vdc
Voltage on I/O output pin	-0.3 Vdc to Vsupply
Storage temperature range	-40 °C to 125 °C [-40 °F to 257 °F]
Maximum flow change	5.0 SLPM/s
Maximum common mode pressure	25 psi at 25 °C [77 °F]
Maximum flow	10 SLPM

NOTICE

Absolute maximum ratings are the extreme limits that the device will withstand without damage to the device. However, the electrical and mechanical characteristics are not guaranteed as the maximum limits (above recommended operating conditions) are approached, nor will the device necessary operate at absolute maximum ratings.

Table 2. Operating Specifications

Characteristic	Parameter	Notes	
Supply voltage:	3.3 Vdc 5.0 Vdc	3.3 Vdc ±10% 5.0 Vdc ±10%	—
Power:	3.3 Vdc 5.0 Vdc	40 mW max. 65 mW max.	1
Compensated temperature range	0 °C to 50 °C [32 °F to 122 °F]		2
Operating temperature range	-20 °C to 70 °C [-4 °F to 158 °F]		—
Warm-up time	30 ms		3
Calibration media	gaseous nitrogen		4
Reverse polarity protection	no		—

Notes:

1. Maximum power: Is measured under the conditions of the highest supply voltage, Vsupply + 10%, 70 °C, full scale flow and with the minimum load specified for that supply voltage.
2. Custom and extended compensated temperature ranges are possible. Contact Honeywell for details.
3. Warm-up time: The time to the first valid flow measurement after power is applied.
4. Default calibration media is dry nitrogen gas. Please contact Honeywell for other calibration options.

Table 3. Environmental Characteristics

Characteristic	Parameter
Humidity	0% to 95% RH, non-condensing
Shock	100 g, 11 ms
Vibration	15 g at 20 Hz to 2000 Hz
ESD	Class 3B per MIL-STD 883G

Table 4. Wetted Materials

Characteristic	Parameter
Covers	high temperature polymer
Substrate	PCB
Adhesives	epoxy
Electronic components	silicon, gold
Compliance	RoHS, WEEE

Table 5. Recommended Mounting and Implementation

Characteristic	Parameter
Mounting screw: size torque	5-40 0.68 N m [6 in lb]
Silicone tubing for long port style	70 durometer; 0.125 inch inside diameter, 0.250 inch outside diameter
O-ring: short port style long port style	AS568A, Size 7, Silicone, Shore A 70 AS568A, Size 10, Silicone, Shore A 70
Filter	5-micron filter upstream of sensor

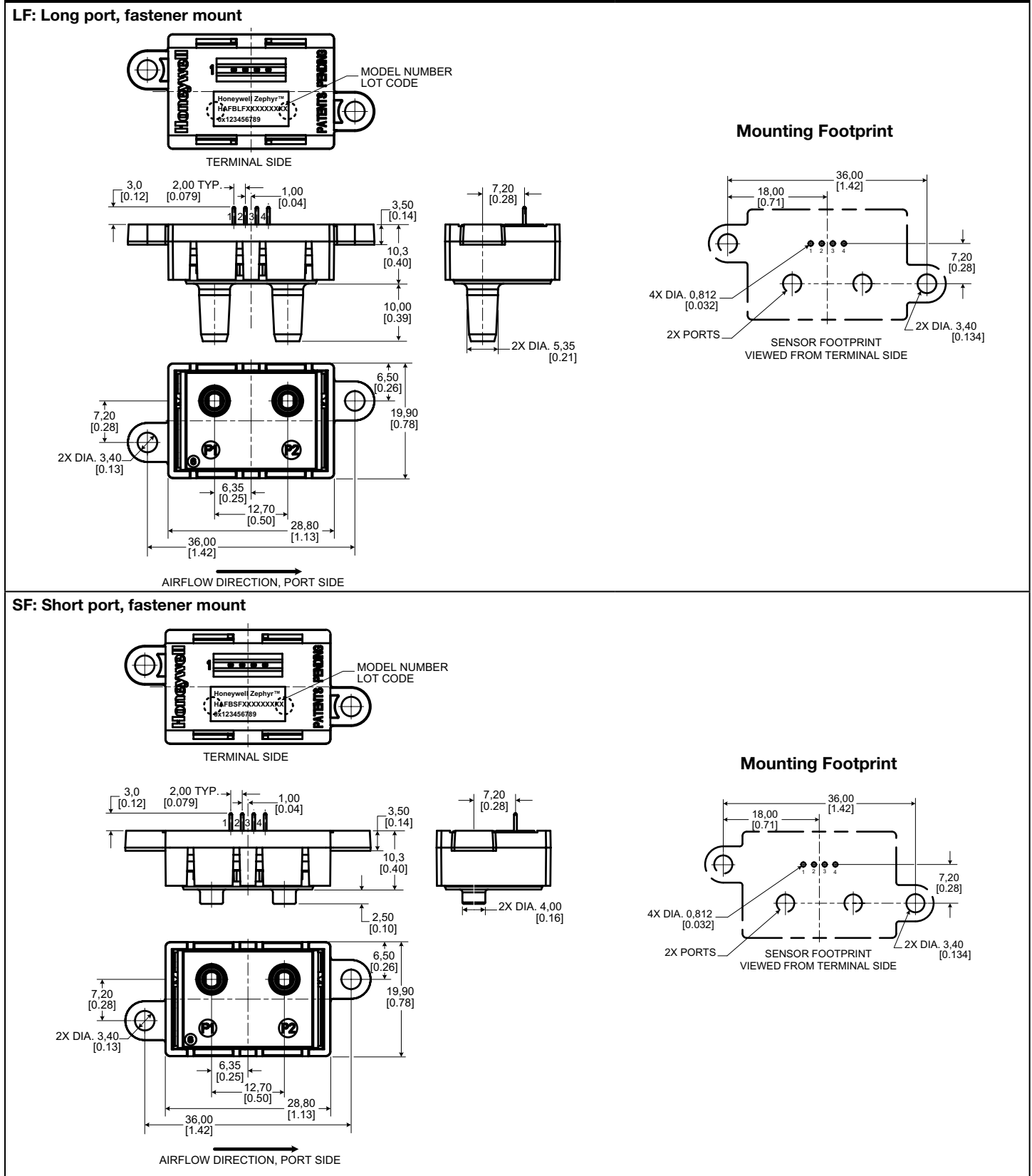
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Figure 1. Mounting Dimensions (For reference only: mm [in.])



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Figure 1. Mounting Dimensions (continued)

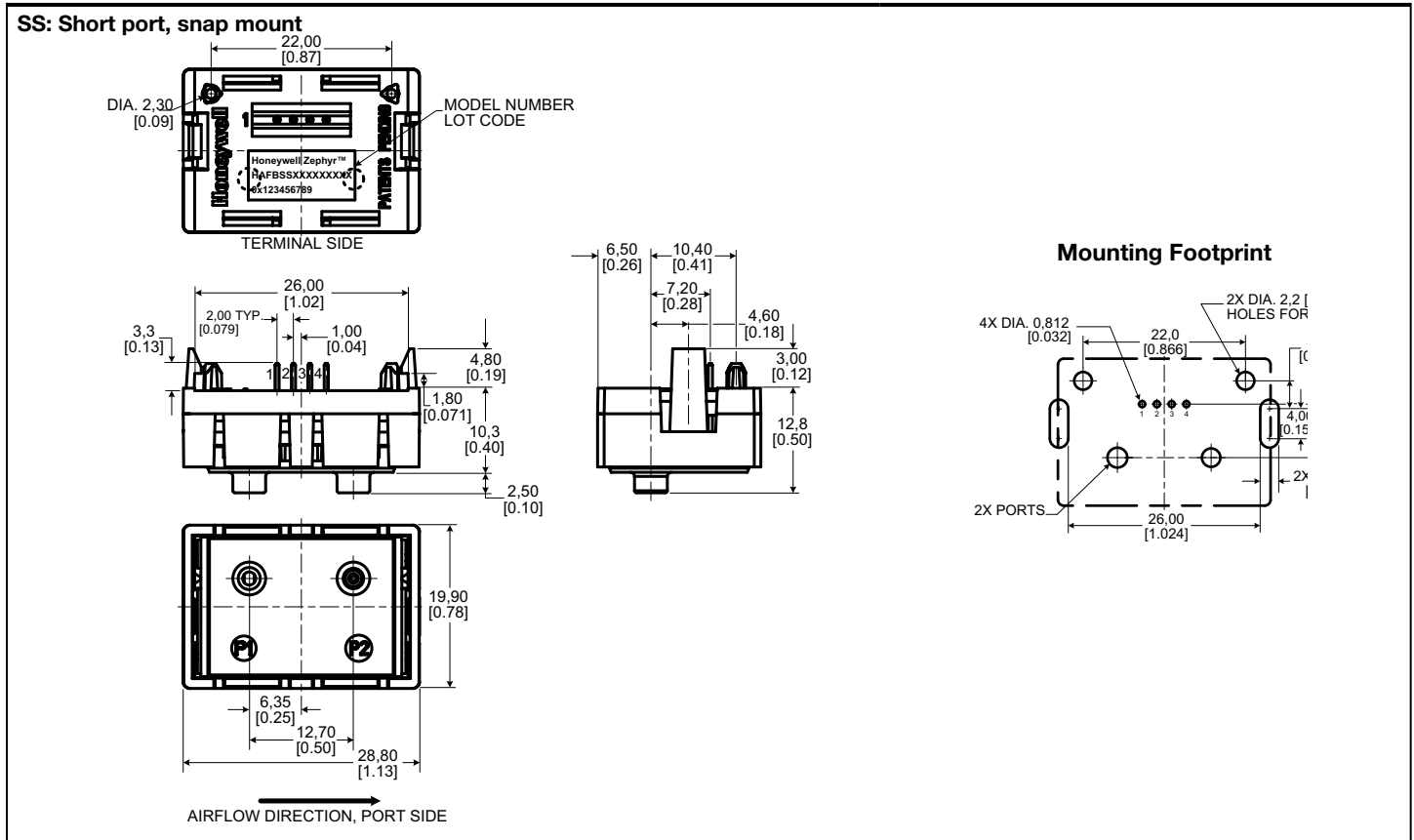


Table 6. Pinout

Pin 1	Pin 2	Pin 3	Pin 4
Vout	Vsupply	ground	NC

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Figure 2. Nomenclature and Order Guide

For example, a **HAFBLF0200CAAX5** part number defines a Honeywell Zephyr™ Analog Airflow Sensor, bidirectional forward flow optimized, long port, fastener mount, 200 SCCM, analog output, 10% to 90% transfer function, 5.0 Vdc supply voltage.

HAF	B	L	F	0200	C	A	A	X	5
Product Series	Flow Direction	Port Style	Housing Style	Flow Range ²	Unit	Output Format	Transfer Function	Reserved for Future Use	Supply Voltage
HAF Series High Accuracy Airflow Sensor	B Bidirectional forward flow optimized	L Long port ¹	F Fastener mount	0050 50 long port style only	C SCCM	A Analog	A 10% to 90% of Full Scale Output (FSO)	X XXXXX	3 3.3 Vdc
	S Bidirectional symmetric	S Short port	S Snap mount ¹	0100 100 long port style only					5 5.0 Vdc
				0200 200 long or short port					
				0400 400 long port style only					
				0750 750 long port style only					

¹The Long Port Port Style with the Snap Mount Housing Style is not a valid configuration.

²The 200 SCCM Flow Range is available in the Long and Short Port Styles.

Apart from the general configuration required, other customer-specific requirements are also possible. Please contact Honeywell.

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▲ WARNING **PERSONAL INJURY**

DO NOT USE these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury.

Failure to comply with these instructions could result in death or serious injury.

WARRANTY/REMEDY

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgement or consult your local sales office for specific warranty details. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, without charge those items it finds defective. **The foregoing is buyer's sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall Honeywell be liable for consequential, special, or indirect damages.**

While we provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

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