

## Technical Note

# Flow Sensor Particle Contamination and Filter Manufacturers

### CAUTION

#### PRODUCT DAMAGE

Do not use Honeywell microbridge mass airflow sensors to sense liquid flow.

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

### NOTICE

Dust particle contamination may be present in some applications. Ensure appropriate measures are taken to minimize the effect of particulate contamination.

The sense element is in parallel to the airstream and tends to direct the dust particles in the airflow stream past the sense element away from the sense bridge.

The sense element is a microstructure-based device and the bridge portion of the sense element structure is made up of two platinum sense elements and a heater. The heater tends to repel dust particles via a thermophoretic effect past the heater and tends to keep most dust off the bridge structure. The heat affect, along with a simple filter, can help to keep the dust from causing output shifts in the output of the device.

Although the sensor naturally repels dust, some dust and contamination can still collect on the microstructure. Dust adherence to chip edges and channel surfaces can be prevented by using a simple filter. A disposable five micron filter used in series on the upstream side of the airflow divide will provide adequate filtering in most applications. See Table 1 for recommended filter suppliers.

**Table 1. Recommended Filter Suppliers**

<b>Pall Corporation</b> <a href="http://www.pall.com">www.pall.com</a>	
Acro 50	<ul style="list-style-type: none"> <li>The filter may be used at a common mode pressure of 0.17 MPa (24.6 psi) at a temperature of 80 °C [176 °F]</li> <li>May be used with swag lock compression fittings</li> <li>Approximate pressure drop is 5 kPA at 1 SLPM of flow</li> </ul>
Acro cap	<ul style="list-style-type: none"> <li>May be used at an operating temperature of 55 °C [131 °F] and common mode pressure of 30 psi</li> <li>Sensors connections are 1/4 barb fittings</li> </ul>
General Gas filter	<ul style="list-style-type: none"> <li>Pressure drop is 1 psi with a flow of 15 SLPM</li> <li>Fittings are 1/8 barbed tubing</li> </ul>
<b>Parker Balston</b> <a href="http://www.balstonfilters.com">www.balstonfilters.com</a>	
Model 9933-05	<ul style="list-style-type: none"> <li>US and EMEA only sales offices</li> <li>May be used at common mode pressures up to 125 psi and operating temperature to 135 °C [275] °F</li> <li>Sensor connections are 1/4 tube</li> </ul>

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## WARNING

### PERSONAL INJURY

DO NOT USE these products as safety or emergency stop products 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.

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use.

## WARNING

### MISUSE OF DOCUMENTATION

- The information presented in this technical note is for reference only. DO NOT USE this document as a product installation guide.
- Complete installation, operation, and maintenance information is provided in the instructions supplied with each product.

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

### SALES AND SERVICE

Honeywell serves its customers through a worldwide network of sales offices, representatives and distributors. For application assistance, current specifications, pricing or name of the nearest Authorized Distributor, contact your local sales office or:

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