

Installation Instructions for the AWM 5000 Series Microbridge Mass Airflow Sensor

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GENERAL INFORMATION

The AWM5000 Series Microbridge Mass Airflow Sensors operate on the theory that airflow directed across the surface of a sensing element causes heat transfer. Output voltage varies in proportion to the mass of air or other gas flowing through a given sensor's inlet and outlet ports.

CURRENT SINK/SOURCE

Maximum current ratings are 10 mA sinking and 20 mA sourcing, governed by an LM224 operational amplifier in the final stage of the instrumentation amplifier.

MEDIA CONTAMINATION

Media flowing through the sensor should be free of condensing moisture and particulate contaminants. A 5 micron filter upstream of the sensing element reduces the risk of damage due to contaminants.

MOUNTING INSTRUCTIONS

Mount AWM5000 Series sensors with 6-32 screws. The use of washers below the screw head is recommended. Mounting torque is 1,1 N m (9.75 in lb) max. for steel screws, or 0,75 N m (6.75 in lb) max. for brass screws.

NOTICE

- When making flow connections to a mounted sensor, the AWM5000 **must** be supported at the flow adapter.
- If end adapters are twisted with respect to the flow tube during installation, the seal between O-ring and flow tube will be broken, causing a small temporary leak. The leak can be as high as 1 psi, or may remain within specification. It will self-heal as the O-ring conforms. About 85% of the leak will be gone within approximately 24 hours, with complete recovery within approximately 48 hours.
- Do not expose ports to forces greater than 1 kg [2 lb] in a direction perpendicular to the port centerline.
- Torque on ports should not exceed 4,52 N m [40 in lb].

ELECTRICAL CONNECTION

The AWM5000 Series accepts a latch detente connector, such as:

1. Amp part number 5-103956-3.
2. Sensing and Control part number SS-12143

Information and literature on the latch detente connector is available from Amp Product Information Center, 1-800-522-6752 or the Customer Hotline, 1-800-722-1111.

RECOMMENDED AMP LITERATURE

–	MTE Interconnection System (AMPMODU) Catalog
108-25034	Product Specification (technical performance information)
114-25026	Application Specification (describes product, proper assembly, full tooling information)
408-6790 408-9359	Instruction Sheet for assembly procedure

TO MAKE ELECTRICAL CONNECTIONS

1. Remove (unlatch) the connector from the AWM5000.
2. Hand-crimp the interface wire to the appropriate pin on connector. Suggested tool: AMP Hand-Crimp Tool, part number 58074-1 and terminating head 58336-1.
3. Insert the terminal contacts into the connector housing after the carrier strip (lead-frame) is removed.
4. Reconnect (latch) connector to the AWM5000 device.

CLEANING

CAUTION

PRODUCT DAMAGE

- Do not use ultrasonics.
- Do not use III Tri-chloroethane, methylene chloride, methyl pyrrolidone or any oxidizing type acid such as formic acid.
- Cover the ends of the tube during cleaning because certain solvents may attack the epoxy which seals the chip tube to the ceramic substrate.

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

Technical drawing of the MS28775-016 connector, showing front and side views with dimensions.

Front View Dimensions:

- Overall length: 50.8 (2.00)
- Pin spacing: 43.2 (1.70)
- Pin 1, Pin 2, Pin 4 labels
- Right side radius: R 1.9 (R .08)
- Right side radius: R 3.2 (R .12)
- Right side diameter: 32.3 (1.27)
- Left side diameter: 19.0 HEX .75
- Bottom left dimension: 20.3 (.80)

Side View Dimensions:

- Overall length: 110.5 (4.35) (PRODUCT LENGTH)
- Bottom left dimension: 162.8 (6.41)
- Top left dimension: 35.6 (1.40)
- Top left dimension: 22.9 (.90)
- Top left dimension: 16.5 (.65)
- Bottom left dimension: 1/4 NPT (SNAP ON FITTING)
- O-RING SEAL (MS28775-016) label
- Right side label: 20 SLM FLOW

Pin 1	+ Supply voltage
Pin 2	Ground
Pin 3	No connection
Pin 4	Output voltage

Technical drawing of a 4x4 connector. The drawing shows a side view of the connector with dimensions: 28,4 (total length), 1,12 (length of the main body), 10,2 (height), 40 (height of the main body), 15,2 (length of the internal structure), and 60 (total length including the internal structure).



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.

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