



Filtration Air Restriction Sensor FMA Series



For improved air filtration system performance, Amphenol's new FMA series of Filtration Air Restriction (FAR) Sensors accurately measure pressure loss across a variety of air filtration devices utilizing Amphenol's high accuracy NPA piezoresistive technology in a low-profile form factor that is easy to install and maintenance-free.

With configurable thresholds, the FMA Series can be easily installed for use in a variety of applications, including commercial and automotive HVAC and industrial air filters, engine air filtration systems and rooftop units exposed to pressure or vacuum environments. With hydrophobic reference port and sealed connection system, it can also be used in a variety of harsh environmental conditions.

The FMA Series of Filter Air Restriction Sensors are available in multiple positive or vacuum pressure ranges, mating with an integrated AMPSEAL 16 (3-way) electrical connector (Drawing No. C-776402-1-GEN) and a 1/8-27 NPT female pressure connection port.

Applications

- Engine Air Filter Restriction
- Cabin Pressure
- HVAC Pressure
- Exhaust Pressure
- Industrial Filters

Features

- Supply Voltage: 5VDC
- Linear Output: 0.5V to 4.5V (Ratiometric)
- Diagnostic Features (Bridge Connection Checks, Bridge Short Detection, Power Loss Detection)
- Temperature-compensated
- Sealed AMP Electrical Connector
- Multiple Pressure Ranges Available (Vacuum and Pressure)
- Fast Response Time
- REACH & RoHS Compliant

Amphenol
Advanced Sensors

Technical Specifications

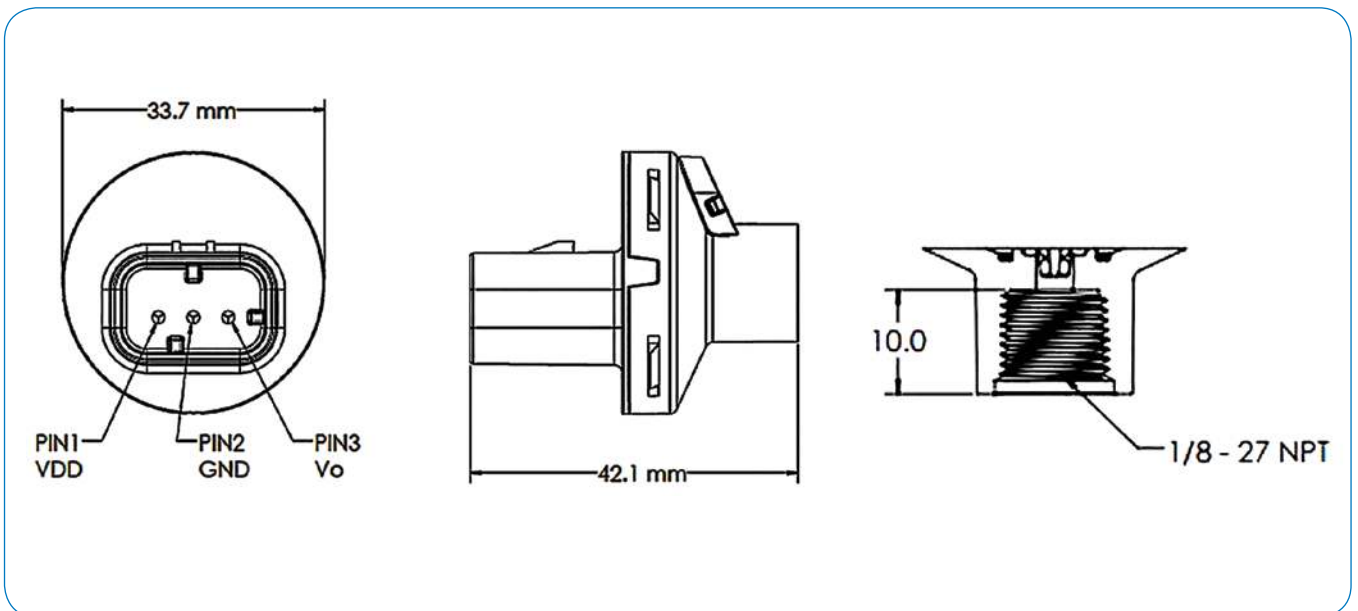
| Electrical | |
|--|---|
| Supply Voltage (VDD) ⁽¹⁾ | 5 VDC +/-5% |
| Supply Current | 5 mA Max |
| Output Voltage (V _o) (Ratiometric) | 0.5 to 4.5 V (10% to 90% VDD) |
| Output Impedance | 2.5 kohm Max |
| Over Voltage | 28 V Momentary Contact |
| Reverse Voltage | 28 V Momentary Contact |
| ESD Rating | Contact: 8 kV; Air: 15 kV |
| EMC Compliance | RE (150 kHz - 3.2 GHz) CI (30 Hz - 50 kHz) BCI (10 kHz - 400 MHz) RI (100 kHz - 3.2 GHz) |

| Performance | |
|-------------------------------|---|
| Accuracy | +/- 2.5% FSO |
| Resolution | 0.12% FSO |
| Compensated Temp Range | 0°C to 80°C 0°C to 60°C for 5" H ₂ O |
| Proof Pressure | 2X Full Pressure |
| Burst Pressure | 3X Full Pressure |
| Vibration | 20-2000Hz AT 11.5 Grms |
| Ingress Protection | IP66 |
| Operating Temp Range | -40°C to 125°C |
| Storage Temp Range | -55°C to 150°C |
| Start-Up Time | 10 ms |
| Response Time | < 2 ms |
| Intended Media | Clean Dry Air |
| Clamp Limits Upper/Lower | 92.5% to 7.5% VDD |
| Diagnostic Limits Upper/Lower | 97.5% to 2.5% VDD |
| Pressure Ranges Available | 5" H ₂ O 10" H ₂ O ⁽²⁾ 40" H ₂ O 1 PSI ⁽²⁾ 5 PSI |

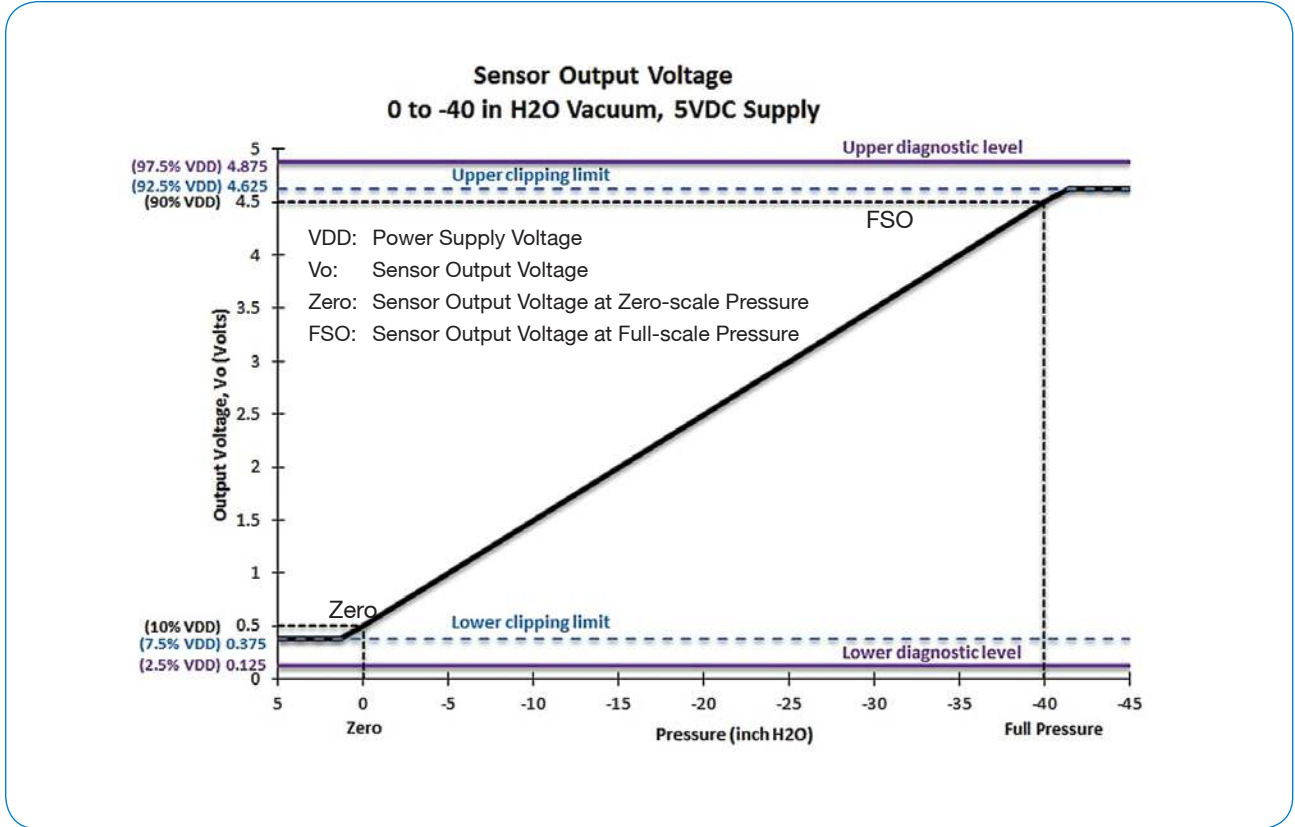
[1] Use 5 VDC +/- 2.5% for 5" H₂O

[2] Contact factory for additional custom pressure ranges.

Connector Pin Out and Port Thread



Transfer Function



Transfer Function Parameters

| Parameter | Unit | Typical | Output |
|------------------------|------|---------|---------|
| Upper Clipping Limit | VDD | 92.5% | 4.625 V |
| Lower Clipping Limit | VDD | 7.5% | 0.375 V |
| Upper Diagnostic Level | VDD | 97.5% | 4.875 V |
| Lower Diagnostic Level | VDD | 2.5% | 0.125 V |

Ordering Information

| FMA | Code | Description | | | |
|------------|-------------|---|-------------|----------------------------------|--------------------------------|
| | 500 | Analog Amplified Output, 5.0 VDC Excitation, Calibrated | | | |
| | | | Code | Description | |
| | | | T1 | Pressure Port, 1/8-27 NPT Female | |
| | | | | | Code Description |
| | | | 05W | 5 in H2O (1.25 kPa) | |
| | | | 10W | 10 in H2O (2.5 kPa)* | |
| | | | 40W | 40 in H2O (10 kPa) | |
| | | | 001 | 1 PSI (7 kPa)* | |
| | | | 005 | 5 PSI (35 kPa) | |
| | | | | | Code Description |
| | | | GV | Vacuum Gage | |
| | | | GP | Positive Gage | |
| | | | | | ↓ |
| FMA | _____ | _____ | _____ | _____ | - Typical Order Number |

*Contact factory for additional custom pressure ranges.