



# PM

## Particulate Matter



Room



Duct

"Particulate matter" (PM) is the general term used to describe solid particles and liquid droplets found in the air. The PM series of transmitters are designed to measure Particulates that include smoke, smog, bacteria, fine dust, liquid droplets, and report the total particle concentration of the monitored environment. ACI's PM series transmitters utilize a laser particulate matter sensor, that is offered in two different measuring ranges. The PM series transmitters operate on a laser scattering principle, utilizing a fan sampling method.

The PM2.5 is designed to detect Particles less than 2.5  $\mu\text{m}$  in diameter. The PM10 is designed to detect Particles less than 10  $\mu\text{m}$  in diameter.

The sensor has good long-term stability with an accuracy 10% reading or 10  $\mu\text{g}/\text{m}^3$ . The room unit features field selectable outputs, 4-20 mA, 0-10 VDC, and Modbus RTU (RS485), relay, and display.

The sensor has two jumper selectable working modes for monitoring PM. The Normal Mode monitors the environment continuously and Auto Mode reduces the measuring time to extend service life. The sensor is sent default in Auto Mode.

**Applications:** Monitoring air quality, Air purifiers, WELL Building Standard

**The PM Series is covered by ACI's Two (2) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's web site, [workaci.com](http://workaci.com).**

## PRODUCT SPECIFICATIONS

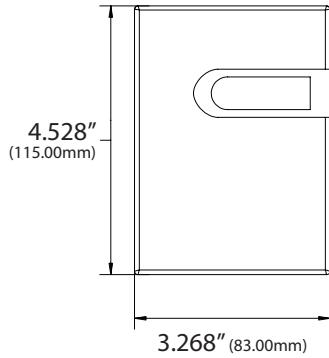
<b>Supply Voltage:</b>	16-28VAC/16-35VDC (Reverse Polarity Protection)
<b>Supply Current:</b>	<b>LCD:</b> 50mA   <b>Non-LCD:</b> 33mA
<b>Sensor Type:</b>	Laser particulate matter sensor
<b>Detected Particle Size:</b>	PM2.5: 0.3 ~ 2.5 $\mu\text{m}$   PM10: 0.3 ~ 10 $\mu\text{m}$
<b>Sensing Range:</b>	PM2.5: 0 ~ 500 $\mu\text{g}/\text{m}^3$   PM10: 0 ~ 600 $\mu\text{g}/\text{m}^3$
<b>Accuracy:</b>	+/- 10 $\mu\text{g}/\text{m}^3$ @ 0 ~ 100 $\mu\text{g}/\text{m}^3$ , +/- 10% reading @ 100 ~ 500/600 $\mu\text{g}/\text{m}^3$ @ 25°C/50%RH
<b>Resolution:</b>	1 $\mu\text{g}/\text{m}^3$
<b>Output/Load Resistance:</b>	4-20 mA: 500 Ohms maximum (Default)   0-10 VDC: 2K Ohms minimum
<b>Communication Protocol:</b>	Modbus RTY; EIA RS-485
<b>Relay (Room with LCD Only):</b>	1 SPDT, N.O. rated 3A @ 30VDC, 3A @ 250VAC
<b>Relay Trip Point:</b>	100 (Factory set), user adjustable
<b>Sampling Method:</b>	Fan
<b>Response Time:</b>	In continuous service mode, sample time <1s, response time <10s
<b>Warm Up Time:</b>	15 minutes
<b>Service Life:</b>	MTBF more than 3 years in continuous service mode, service life up to 8-10 years in auto (intermittent) service mode
<b>Connection/Wire Size:</b>	Screw Terminal Blocks/16 AWG (1.31 mm <sup>2</sup> ) to 22 AWG (0.33 mm <sup>2</sup> )
<b>Terminal Block Torque Rating:</b>	0.45 lb-in (0.5 Nm) nominal
<b>Operating Temperature Range:</b>	32 to 122°F (0 to 50°C)
<b>Storage Temperature Range:</b>	-30 to 70°F (-34 to 21°C)
<b>Operating Humidity Range:</b>	0 to 95% RH, non-condensing
<b>Enclosure Protection:</b>	IP30 (Room)   IP65 (Duct)   IP30 (Probe)
<b>Enclosure Material/UL Flammability:</b>	ABS Plastic/UL94V-0
<b>Weight:</b>	Room: ~200g   Duct: ~270g
<b>Approval:</b>	CE



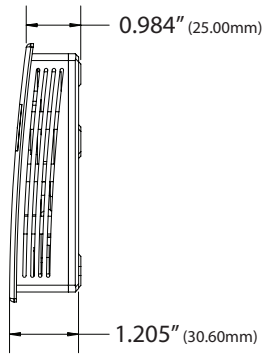


**DIMENSIONAL DRAWING**

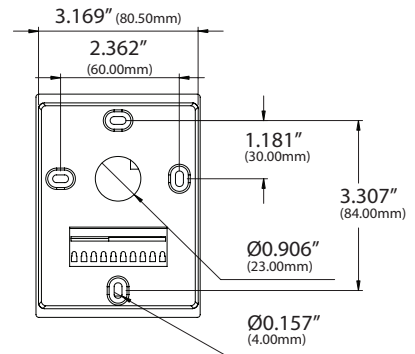
**Room**



Front View

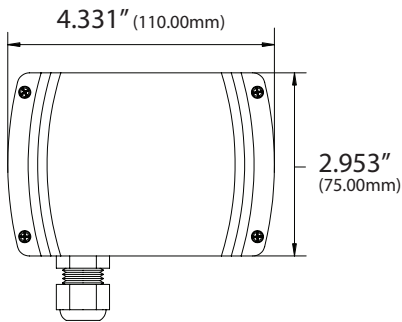


Side View

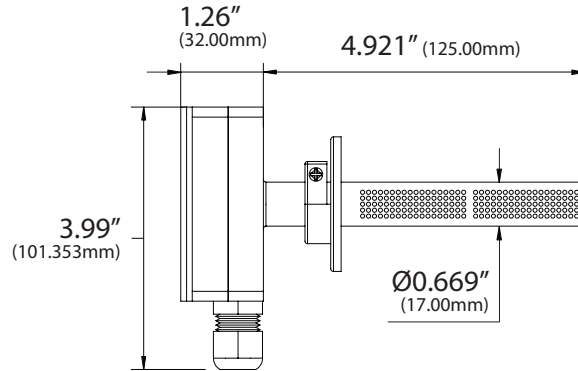


Back View

**Duct**



Front View



Side View

**STANDARD ORDERING**

Configuration	Item #	Detected Partical Size	Description
PM-R	147638	0.3 ~ 2.5 µm	Room mount, PM2.5, 4-20mA, 0-10V, Modbus RS-485
PM-R-LCD	147639	0.3 ~ 2.5 µm	Room mount, PM2.5, Relay, LCD, Keypad, 4-20mA, 0-10V, Modbus RS-485
PM-D	147640	0.3 ~ 2.5 µm	Duct mount, PM2.5, 4-20mA, 0-10V, Modbus RS-485
PM10-D	148522	0.3 ~ 10 µm	Duct mount, PM10, 4-20mA, 0-10V, Modbus RS-485