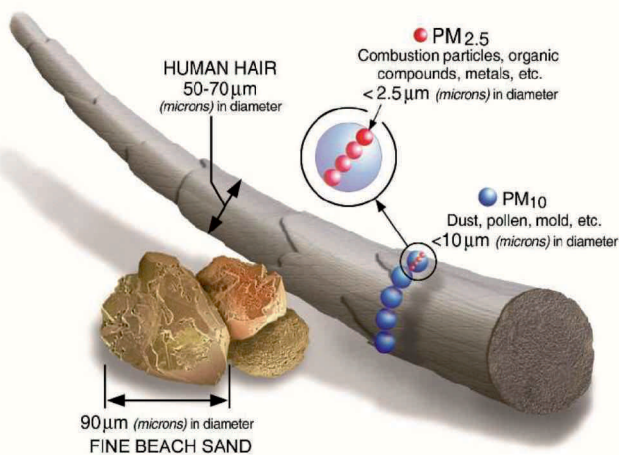


IMPACT SERIES - HONEYWELL PM 2.5 SENSOR



DID YOU KNOW that the size of particles is directly linked to their potential for causing health problems. Small particles less than 10 micrometers in diameter pose the greatest problems, because they can get deep into your lungs, and some may even get into your bloodstream. Particles less than 2.5 μm in diameter include smoke, smog, bacteria, fine dust and liquid droplets. The average human hair is about 70 micrometers in diameter, making it 30 times larger than the largest fine particle. These particles can get lodged deeper into the lungs, causing longer term illness.



source : <https://www.epa.gov/pm-pollution/particulate-matter-pm-basics>

Honeywell has therefore introduced IMPACT series of Particulate matter sensors, which detects and counts particles using a laser scattering principle. The detection concentration range is 0 $\mu\text{g}/\text{m}^3$ to 1,000 $\mu\text{g}/\text{m}^3$. A laser light source illuminates a particle as it is pulled through the detection chamber. As particles pass through the laser beam, the light reflects off the particles and is recorded on the photo or light detector. The light is then analyzed and converted to an electrical signal to calculate particle concentration.

FEATURES

- Laser-based light scattering particle sensing
- Concentration range: 0 $\mu\text{g}/\text{m}^3$ to 1,000 $\mu\text{g}/\text{m}^3$
- Air inlet & outlet on same side
- Fully calibrated
- Metal casting
- 4 channel direct output to measure PM 1.0, PM 2.5, PM 4.0 & PM 10
- Multiple digital outputs through UART, I2C, & PWM

DIFFERENTIATORS / VALUE TO CUSTOMERS

- Proven EMC performance, and superior accuracy of $\pm 15\%$ - 20% for all PM values
- Lowest current consumption of 50 mA
- Self calibration technology to overcome sensor drift incase of dust accumulation
- Ultra sleek design with dimensions of 49 x 31.5 x 10.8 mm

POTENTIAL APPLICATIONS

- HVAC (Commercial & Residential)
- Indoor air quality monitors
- Handheld air quality monitors
- Air purifiers (Commercial & Residential)
- Automotive cabin air purifiers

IMPACT SERIES HONEYWELL PM 2.5 SENSOR

Made In India



IMPACT
by Honeywell

Specification

Working Principle	Laser Scattering
Concentration Range (Max)	0 ~ 1000µg/m ³
Particle Size	0.3 ~ 10µm
Accuracy ¹	>100 µg/m ³ , ±15% <100 µg/m ³ , ±15µg/m ³ at Ambient Room Conditions
Data update frequency	1s
Calibration Feature	Power on Self Calibration
Supply Voltage	5V±0.25V
Standby Current	<10mA, at Ambient Room Conditions
Supply Current	~50mA, (Typical) at Ambient Room Conditions
Operating Temperature	-20 ~ 60°C
Operating Humidity	0 ~ 95%RH
Storage Temperature	-30 ~ 70°C
Storage Humidity	0 ~ 95%RH
Output Type	I2C or UART (User configurable) PWM(For PM2.5 only)
Output Data	4 Channels PM2.5, PM10 ,PM1, PM4,
Concentration	unit µg/m ³
Output Protocol I2C Default address:	0x08
Lifetime ²	6 Years
Casing	Metal
Dimension	49 X 31.5 X 10.8 mm

¹ Test condition: Temperature of 25±2☐; humidity of 50±10%RH; reference instrument is TSI8530; source of particle matter is from cigarette

² Depending on the operating environment

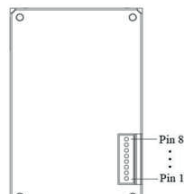
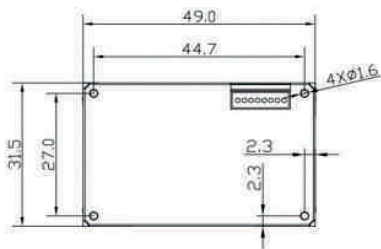


Figure 2. Pinout

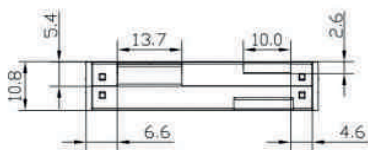


Figure 1. Dimension (Unit : mm, Tolerances : ISO2768-mK)

Table 2. Pin Function

Pin	Name	Function
Pin1	VCC	Power
Pin2	GND	Ground
Pin3	SET	0:1°C; on float I ² C UART
Pin4	RX/SDA	UART RX/I ² C SDA
Pin5	TX/SCL	UART TX/I ² C SCL
Pin6	NC	-
Pin7	NC	-
Pin8	PWM	PWM output

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or write to
impact.sps@honeywell.com

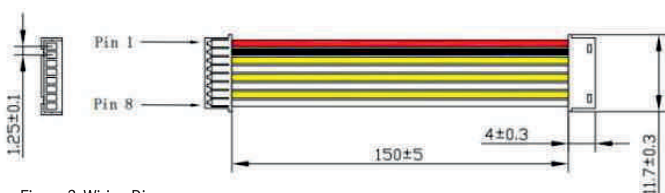


Figure 3. Wiring Diagram