



A real-time warning system to prevent engine “dusting”

Undetected air-induction leaks can lead to rapid engine failure, machine down-time and loss of production of your engine. Enter DustDetect, a revolutionary air filtration monitoring, offering a groundbreaking solution to safeguard engines against harmful particulate intrusion.

Why is DustDetect needed?

Dust (Silica) ingress into combustion chambers causes catastrophic damage.

“1g of dust ingested per engine horsepower is enough to destroy an engine”
- Cummins Filtration Inc.

DustDetect instills users with unmatched confidence in safeguarding their engine by proactively spotting potential filter issues before they become more serious. Utilizing certified optical laser sensing technology and sophisticated algorithms to accurately monitor particulate matter ranging from PM0.5 to PM2.5.

Reduce accidents and improve productivity

Featuring 4 distinct air-sample inlets and an additional 4 pressure inputs, DustDetect offers real-time analysis of particles in filtered air, guaranteeing peak engine protection, performance, and longevity.



Cloud-based data & remote alerts

DustDetect includes access to a cloud-based dashboard where air sample data can be tracked and monitored in both real-time as well as on a historical basis. The DustDetect System can be configured to send alerts to designated maintenance and engineering personnel in the event that a monitored parameter exceeds specified limits.

Communications flexibility

The DustDetect System supports LTE cellular and GPS protocols, with the option of having Can j1939, modbus TCP and Wifi enabled. In addition, DustDetect has been designed to work with industry-standard maintenance management platforms so that data and alerts can be communicated directly to existing monitoring systems.

DustDetect not only sends remote alerts but also offers the option to notify the driver through a light tower and horn in case of detecting dust intrusion, ensuring immediate awareness and prompt action.

Controller Specifications

DustDetect Housing

- 300 x 300 x 120mm enclosure size
- Sheet steel housing, powdered coated with IP 66 rating
- 320 x 260 mm mounting points ((to be mounted on shock mounts)
- Weight: 11kg
- 4 JIC 7/16" air inputs, 1 JIC 7/16" air exhaust
- Easy to install binder-connectors for providing power and other (optional) IO
- 1 ethernet port for Modbus TCP or local network connection
- 4 SMA (F) connection for cellular, GPS and satellite communication

Electronic Control Unit (ECU)

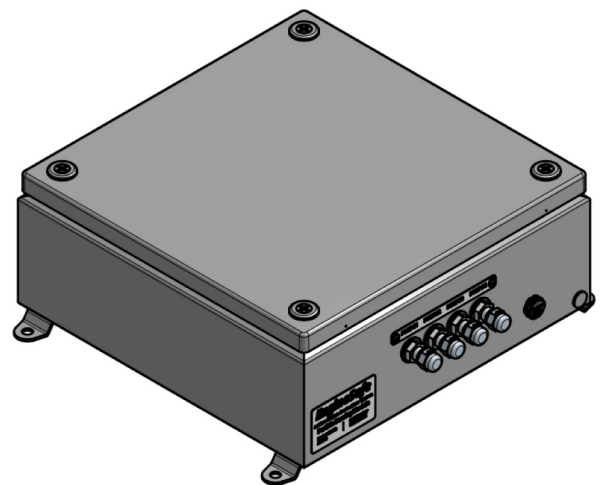
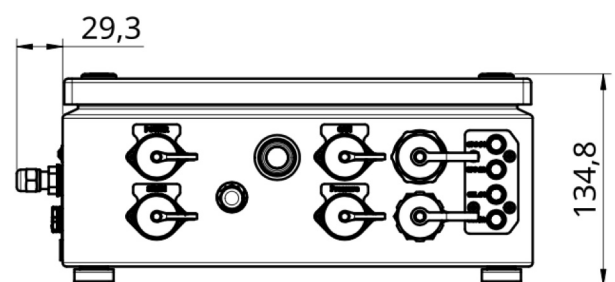
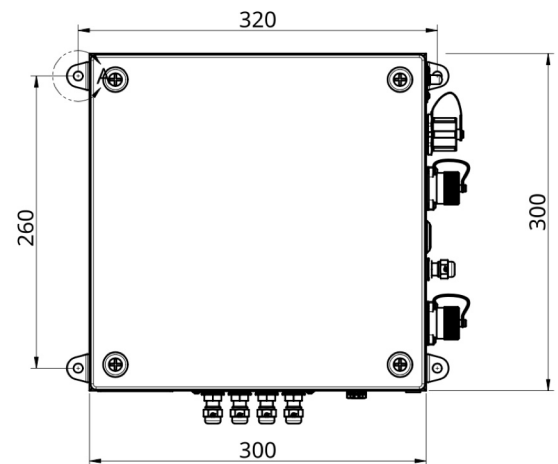
- 10V to 30V input power, 2A
- 4 programmable solenoid valves w/ thresholds
- Variable sampling rate (2 minutes to 1 hour)
- Communications
 - Cellular
 - GPS
 - CAN j1939 (option)
 - Modbus TCP (option)
 - Wifi (option)
- 3 dry contacts (Ok, Warning, Danger signals)

ECU Environmental Ratings

- Operating temperatures: -10°C to +60°C
- Storage temperature: -40°C to +70°C
- Built in anti-vibration and shock resistance
- Performs best at 10°C to 40°C

Sensors

- Particles
 - MCERTS certified
 - High accuracy laser scattering measurement
 - Contamination resistant technology
 - Particle Mass concentration (PM 1.0, 2,5)
- Pressure
 - 0-100 PSI pressure rating
 - Operational temperature: -40°C to 105°C
 - 4 inputs for extra measurements
 - 0.5-4.5 Vdc ratiometric



Mounting Holes

