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HVAC Business Unit Newsletter

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Carpark Ventilation System

SPOTLIGHT ON: Carpark Ventilation System

Why carpark ventilation system is important?

Car parking facilities come in various sizes, layouts, and locations, handling different volumes and types of vehicles. While open lots have natural airflow, enclosed parking structures like underground garages and parkades rely on mechanical ventilation to keep the air safe. Proper ventilation is crucial because, without it, exhaust from idling or slow-moving vehicles can accumulate, leading to hazardous air quality. Ventilation systems prevent the buildup of harmful gases like carbon monoxide, ensuring a safe environment for users and avoiding health risks.

Carbon monoxide, the primary exhaust gas, can reach harmful levels, and diesel-powered vehicles may also emit nitrogen dioxide. To ensure a safe, breathable environment and reduce the energy costs associated with ventilation, a gas detection system is essential in these enclosed spaces.

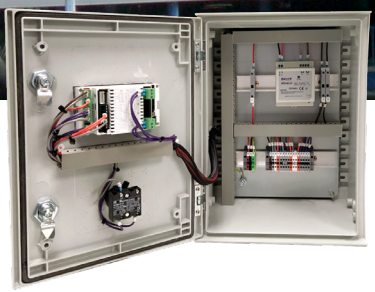
What the system offers?

The Car Park Ventilation controller enables control of car park fans (exhaust/supply/jet fans) via Modbus control signals. Multiple zones can be set up using expansion modules, for managing and monitoring car park fans and sensors.

The controller operates the car park ventilation system in accordance with AS 1668.2:2012 by checking carbon monoxide levels and regulating the ventilation system. Expansion modules can be added to the system for individual zone control and Mechanical Service Switch Board control (Auto/ Off/On). The controller can also be integrated into the building Fire system and will operate in accordance with AS 1668.1:2015.

The controller start up screen can be customized to the customer's design to display any requirement. For example: Time, Date, Customer web address etc

Contact your local Eurotec HVAC Sales Engineer or give us a call on 09 579 1990.



The Carel c.pCO Mini controller can monitor up to 256 devices via Modbus Communication. Therefore, the controller can be configured to any requirement. For a car park ventilation system, we recommend the following:

- Jet Fans – Up to 100 EC Jet fans
- CO Analog sensors – 2 per connected fan
- CO Modbus sensors – Up to 50
- Smoke sensors – 1 Smoke + 1 analog CO sensor per connected fan
- Variable Speed drives – Up to 50
- Expansion Boards – Up to 20
- Fire panel integration with manual override control for Jet fans
- Boss Supervisory System – Connects to any system via Modbus, BACnet TCP/IP, BACnet MS/TP all built in. Allows remote monitoring of system.
- Gateway – Provides wireless connectivity between Modbus devices and the controller.
- Mechanical Service Switch Board with 4 Fault Alarms, System OK indication, 3 mechanical switches for jet fans, supply fans and exhaust fans.
- Display of CO level in car park.
- Purge cycle once in a 24hr period to provide one air change.
- Ventilation rate will be varied between 15 and 45ppm.
- System will be in sleep mode when CO levels are below 15ppm.
- System will run at 100% under all fault conditions.

Carel Gateway

Converts Modbus signal to a WiFi signal, saving time and money on installation as no cable is required from the controller to the fan.

The only cabling required is from the fan to the CO sensor.

Contact your local Eurotec HVAC Sales Engineer for further information on the products mentioned in this newsletter or to discuss your project requirements.

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