



OVERVIEW

Invertek Drive Revolution in Car Park Ventilation.

Global Solutions...

wireless control for
hundreds of applications

with Invertek Drives
the solutions start here!

- easy to use and incredible performance
- leading edge design and technology
- highly committed to innovation
- products you can rely on
- global support and suppliers

For more information, visit
www.invertek.co.uk



COMPANY

CRAWFORD CONTROLS

Control panels supplier

Rotherham, UK

New safety critical ventilation systems are revolutionising multi-storey and underground car parks thanks to Invertek Drives, Crawford Controls and a partnership between smoke ventilation company, Interactive Special Projects and fan manufacturer / ventilation consultant, Fläkt Woods.

Multi-storey and underground car parks are the logical solution for parking solutions in bustling city centres but they have stringent ventilation and fire safety issues.

The new systems use the ultra-reliable Optidrive VTC drive from Invertek to provide many installation and operational cost savings. Headroom is also increased by eradicating the need for unsightly ventilation ducts.

The galvanised ducting is replaced with a series of impulse or jet fans, fixed in strategically calculated locations. In combination with larger extraction fans, installed in plant rooms, the system ensures air is changed regularly during normal operation and smoke / fumes can be removed quickly should an emergency fire situation occur.

Each car park is installed with carbon monoxide (CO) detectors and a Fire Alarm or Smoke Detection system. When low-levels of CO are detected the fans initiate at low-speed and start agitating the air to dilute the gases and direct airflow toward the larger extract fans. If CO levels do not fall within a given period, a second higher level of detection will increase the fan speed further and so on.

Controlling fan activation and fan speeds in this way means substantial amounts of energy and unnecessary wear and tear can be saved.

On detection of a fire; the system utilises the inverter's soft-start function to ramp all the fans up to full speed, while ensuring minimum power and mechanical stress is applied to the system as a whole.

All of the fire related controls must be installed away from the car park in a safe area, usually a plant room, with only the actual detection devices in the car park. Unfortunately inverters are not ideally suited to long cable runs and can suffer from capacitance problem particularly when using MICC cable.

With assistance from Invertek Drives, Crawford Controls has been able to solve these challenges by running 'groups of fans' from a single inverter with up to 800m of cable attached in a parallel formation! All control components are mounted at the main panel and in the case of multiple fan inverters, an output choke is fitted to overcome the inherent problems of capacitance in long parallel cable runs.

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