UNIPARK Modbus

CO / NO_2 Gas Detection Control Panel – Modbus Version

All Car Park Sizes

Calibration via Remote Control

TWIN CO/NO_2 or CO Dual Sensors



Technical specifications

Gases detected: Carbon monoxide (CO) and nitrogen dioxide (NO_2).
Measurement technology: TWIN CO/NO_2 dual electrochemical sensors and compatible analog sensors.
Number of sensors:
• Up to 60 TWIN sensors, providing 120 CO/NO_2 sensing cells.
• Up to 60 Modbus and analog sensors with BMS integration, depending on configuration.
• Up to 120 Modbus and analog sensors without BMS integration, depending on configuration.
Power supply: 90 to 240 V AC, 50/60 Hz.
Power consumption: 1 A at 240 V AC.
Display and control: 5-inch colour touchscreen, with optional 7, 10 and 15-inch displays and remote display capability.
Communication : RS485 or Ethernet.
Protocols : Modbus RTU or Modbus TCP/IP.
Ventilation control:
• Low-speed / high-speed (LS/HS) ventilation control.
• Up to 30 ventilation control outputs.
• 3 programmable time schedules.
• Remote input/output management up to 1,000 m.
Functions:
• Individual gas concentration display for each sensor.
• Calculation of 20-minute and 8-hour averages.
• Alarm and fault reporting.
• Sensor self-test and integrated buzzer.
• Data logging on a removable 2 GB SD card and transfer to a USB flash drive.
Enclosure :
• Wall-mounted enclosure or 19-inch rack installation.
• Protection rating: IP54.
• Dimensions (H × W × D): 400 × 500 × 210 mm.
• Weight: 8 kg.
• Operating temperature: 0 to +50 °C.

Product description

The UNIPARK Modbus control panel is a gas detection solution designed to monitor carbon monoxide (CO) and nitrogen dioxide (NO_2) concentrations in car parks, garages and underground facilities.

Thanks to its network of digital Modbus and analog 4–20 mA sensors, it provides centralised air quality monitoring and enables automatic control of ventilation equipment based on configured gas concentration thresholds.

Equipped with a colour touchscreen, the control panel allows easy access to real-time measurements, alarm monitoring and system supervision. Its RS485 or Ethernet communication also enables integration into a Building Management System (BMS), depending on the configuration.

Centralised and Scalable Monitoring

The control panel can manage up to 60 TWIN CO/NO_2 dual sensors, providing a total of 120 sensing cells. It also supports the connection of analog sensors, allowing the monitoring system to be adapted to the layout and size of the installation.

Each sensor is individually identified on the network, enabling individual gas concentration readings and rapid identification of anomalies.

Intelligent Ventilation Control

The UNIPARK Modbus controls low-speed and high-speed (LS/HS) ventilation systems according to configured gas concentration thresholds.

It features three adjustable time schedules, ventilation testing functions, and alarm and fault reporting to facilitate system operation and maintenance.

Monitoring and Data Traceability

The touchscreen provides real-time visualisation of gas concentrations, ventilation status and potential faults.

The control panel calculates 20-minute and 8-hour average concentrations and records measurement data on an SD card, with the option to transfer data to a USB flash drive.

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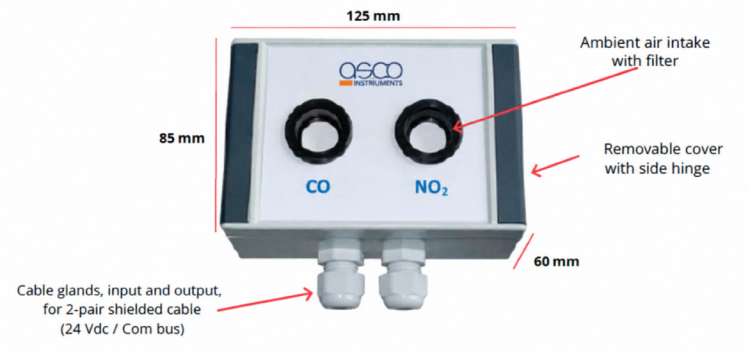
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Simplified Sensor Maintenance

TWIN Modbus sensors feature two electrochemical sensing cells dedicated to CO and NO_2 detection.

Maintenance is simplified by the ability to perform calibration directly from the control panel touchscreen or using an optional Modbus remote control, which can be connected directly to the sensor requiring calibration.

TWIN CO / NO_2 Sensors



Technology: Dual CO / NO_2 electrochemical sensing cells
Power supply: 24 V DC
Current consumption: 40 mA
Communication: RS485 / Modbus RTU
Dimensions (H × W × D): 60 × 125 × 85 mm
Weight: 550 g
Protection rating: IP65
Operating temperature: 0 to +50 °C
Indicative coverage: 500 m^2 per sensor, depending on the manufacturer's recommendations and site configuration.

Examples of Applications

- Underground and large car parks.
- Garages and automotive maintenance workshops.

Bus, coach and heavy goods vehicle depots.

- Maintenance facilities for petrol, diesel or CNG-powered vehicles.
- Bus stations and fleet management facilities.

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UNIPARK Pneumatic

Pneumatic CO / NO_2 Gas Detection Control Panel for Car Parks

Multi-point Air Sampling

Up to 16 Measurement Channels

Ventilation Control



Technical specifications

Gases detected: Carbon monoxide (CO) and nitrogen dioxide (NO_2).
Measurement technology: Pneumatic air sampling system with sequential analysis of air collected from different sampling points.
Number of channels: Up to 16 measurement channels with cyclic sampling.
• Sampling system: Integrated or remotely mounted pump on a bracket, depending on configuration.
• Sampling network: Air sampling tubes connected to different locations throughout the car park.
Power supply: 90 to 240 V AC, 50/60 Hz.
Current consumption: 1 A at 240 V AC.
Display and control: 5-inch colour touchscreen, with optional 7, 10 and 15-inch displays and remote display capability.
Communication: RS485 or Ethernet.
Protocols: Modbus RTU or Modbus TCP/IP.
Ventilation control:
• Low-speed / high-speed (LS/HS) ventilation control.
• Up to 30 ventilation control outputs.
• 3 programmable time schedules.
• Remote input/output management up to 1,000 m.
Functions:
• Cyclic air analysis across the different measurement channels.
• Display of measured gas concentrations.
• Calculation of 20-minute and 8-hour averages.
• Alarm and fault reporting.
• Integrated buzzer.
• Data logging on a removable 2 GB SD card and transfer to a USB flash drive.
Enclosure:
• Wall-mounted enclosure.
• Protection rating: IP54.
• Dimensions (H × W × D): 500 × 400 × 210 mm.
• Weight: 8 kg.
Operating temperature: 0 to +50 °C.

Product description

The UNIPARK Pneumatic control panel is a gas detection system designed to monitor carbon monoxide (CO) and nitrogen dioxide (NO_2) concentrations in car parks and underground environments.

Its operation is based on a pneumatic sampling system that sequentially draws air from different locations throughout the car park via a network of tubes connected to the control panel.

The sampled air is analysed to monitor gas concentrations and activate alarms or ventilation equipment according to configured thresholds.

Particularly suitable for upgrading existing installations, this solution allows an older pneumatic control panel to be replaced while retaining the existing sampling tubes, provided they are in suitable condition.

Multi-Point Gas Detection by Air Sampling

The UNIPARK Pneumatic can monitor up to 16 measurement channels through cyclic sampling.

Unlike systems based on a network of electronic sensors distributed throughout the car park, this system draws air from different sampling points through tubes connected to a central analysis unit.

This technology enables centralised gas concentration analysis and monitoring of multiple areas using a single control panel.

A Solution Designed for System Modernisation

One of the main advantages of the UNIPARK Pneumatic is its ability to replace older aspirating gas detection control panels.

During refurbishment, existing sampling tubes can be retained, provided they are in good condition and compatible with the new installation.
However, thorough cleaning of the sampling network is recommended before recommissioning to ensure optimal air sampling flow.

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Automatic Ventilation Control

The control panel operates low-speed and high-speed (LS/HS) ventilation systems based on measured gas concentrations and programmed thresholds.

It also provides alarm and fault reporting, ventilation system monitoring, and three programmable operating time schedules.

Intuitive Interface and Measurement Monitoring

Equipped with a colour touchscreen, the UNIPARK Pneumatic allows users to view measured gas concentrations, ventilation system status, and any alarms or faults.

The control panel also calculates 20-minute and 8-hour average gas concentrations and records data on an SD card, with the option to transfer data to a USB flash drive.

Pneumatic Operating Principle

The system operates through a network of air sampling tubes distributed across the different areas to be monitored.

Sampling: Ambient air is drawn from sampling points installed throughout the car park.

Transport: Air samples are conveyed to the control panel through the sampling tubes.

Analysis: The control panel sequentially analyses the different measurement channels to determine gas concentrations.

Control: When the configured thresholds are exceeded, alarms and ventilation equipment can be activated.

The control panel can be equipped with an integrated or remotely mounted pump, depending on installation requirements.

Examples of Applications

- Underground car parks equipped with a pneumatic air sampling network.
- Replacement of obsolete CO / NO_2 gas detection control panels.
- Multi-storey car parks and garages.
- Bus, coach and heavy goods vehicle depots.
- Maintenance facilities for internal combustion engine vehicles.
- Facilities requiring multi-point gas monitoring through air sampling.
- Centres de maintenance de véhicules thermiques.
- Installations nécessitant une surveillance multipoints par aspiration.

Diagrams and Visuals to Include:

Pneumatic Sampling Diagram: Illustration of the tubing network connecting the various air sampling points to the control panel.

Operating Principle Diagram: Illustration of the airflow path from the air sampling inlets through gas analysis to ventilation control.

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