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CPS

Fixed gas detection for parking facilities and tunnels

INTRODUCTION

The **Car Park System™** was designed to comply with the high air quality safety standards enforced in such European countries as Germany, the Netherlands and Belgium (VDI 2053). The **CPS™** car park air monitor accurately and reliably protects the public and employees from airborne toxic gases in parking facilities and tunnels.

Available in wall- and rack- mounted versions, the **CPS™** central controller and its various modules are user-programmable for specific applications. The system's networking technology also enables the **Car Park System™** to adapt to any installation up to:

- 256 sensors capable of monitoring 6 different gases
- 256 addressable relays
- 64 logic inputs
- 256 analog outputs

Several servo controls can be used: low speed/high speed, delays, forced operation, night mode, etc.

TECHNICAL FEATURES

• WALL-MOUNT DIMENSIONS

320 mm x 180 mm x 95 mm (12.6"x 7.09"x 3.74")
Degree of protection: IP 54
Cable Glands: 5 M20 cable glands – Diameter: 5 to 12 mm for power supply and local relays 9 grommets - Diameter: 5 to 7 mm or PG-9.
Rack-mount dimensions: Length: 19" - Height: 4 U (176 mm)
Degree of protection: IP 31

• OPERATING CONDITIONS

Ambient temperature: -10°C to +40°C
Storage temperature: -20°C to +85°C
Humidity: 5 to 95% non-condensing
Main power supply:
Voltage: 85 to 264 VAC Current: 1.5 A (115 VAC) / 0.8 A (230 VAC)
Internal back-up battery: Optional, 600 mA/h capacity
Consumption: 140 mA + 12 mA per measurement line (240 mA max.)

• MEASURING LINES

Capacity: 8 lines of 32 modules
Cable type: 2 shielded twisted pairs RS-485 cable
Module power supply: 12 to 30 VDC power supply delivered to modules via the central controller
Digital Module Network:
ModBus RS-485, 1-32 addresses selected with mini switches
Isolation: 1500 V between the power supply and the digital network
Display: Backlit LCD display screen (2 lines of 32 characters each – 1 line of pictograms) 3 operation status LEDs: OK, Fault, Alarms
Keyboard: Intuitive 7-key
Local buzzer: Audible alarm and fault signals
Integrated printer: Optional for rack-mounted version

• ALARMS

Number of alarms: 6 per sensor (Out of range – Fault)
Programmable thresholds: For instantaneous or averaged values, increasing or decreasing values, and manual or automatic rearming
3 local internal relays: R1 (alarm/fault) – R2 (alarm) – R3 (alarm)
Digital Outputs: ModBus RS-485 protocol (connection with a centralized supervision device) - RS-232 or USB

• APPROVALS

Low Voltage Directive: This device is in compliance with the security requirements of Directive 73/23/EEC, modified by Directive 93/68/EEC, based on standard 61010-1 and its second amendment
Metrology: Underground parking facilities: according to VDI 2053
EMC Electromagnetic compatibility: According to EN 50270

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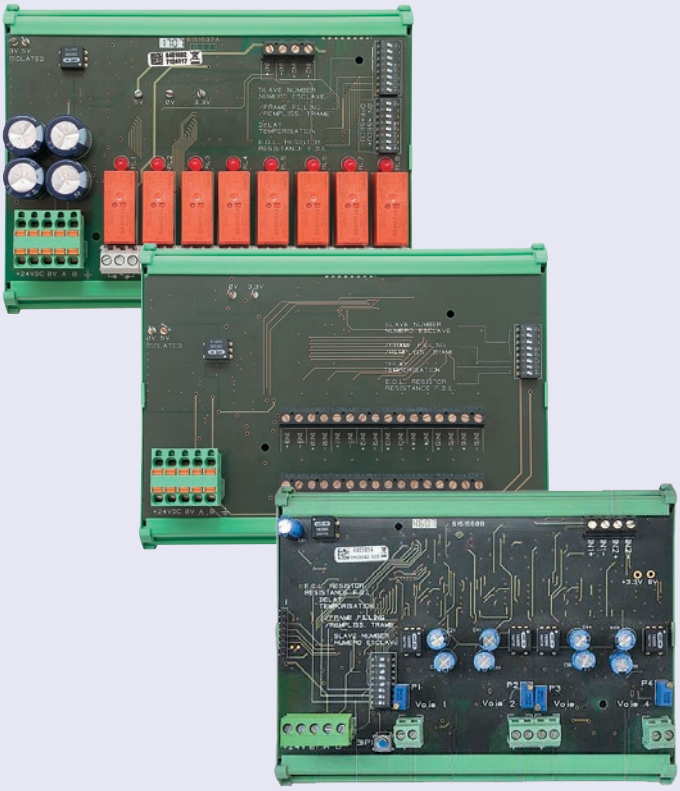
• CP10 SENSOR MODULE

Dimensions: 118 mm x 110 mm x 60 mm (4.65" x 4.35" x 2.36")
Degree of protection: IP 54
Cable glands: 2 M16 cable glands 4-8 mm diameter – power supply / local relays
Consumption: 2.5 mA for the toxic sensor (max 4-20 mA).
50 mA explo: max 90.7 mA
Status indication after calibration:
Red/green electroluminescent diode
Calibration: Automatic, non-intrusive
Sensor replacement:
Sensor replacement switch on the interior of the CPS 10 case

CPS10 Sensor



• CPS RM4 OR RM8 RELAY MODULE

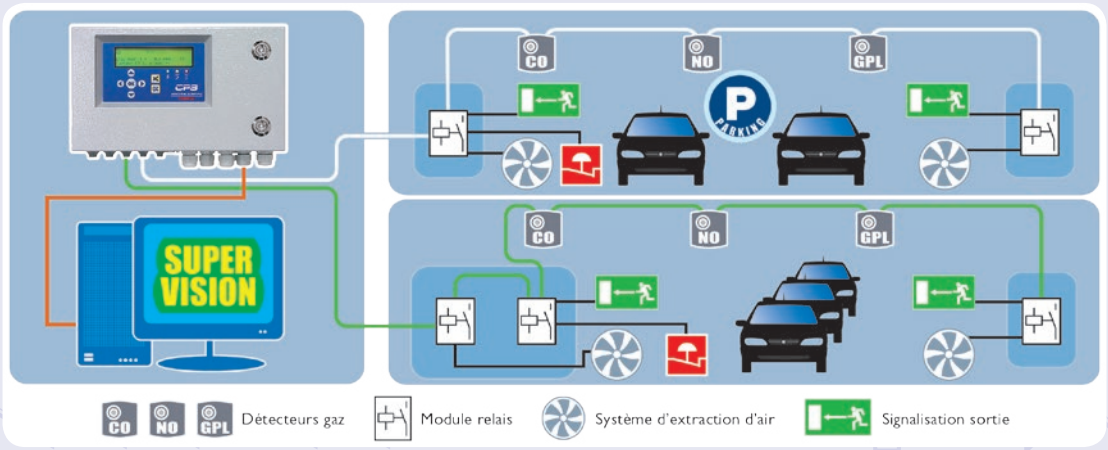
Dimensions: 125 mm x 165 mm x 60 mm (4.92" x 6.5" x 2.36")
Mounting: On DIN rail
Number of relays: 4 relays (CPS RM4); 8 relays (CPS RM8) – Contacts: RCT-type
Contact rating: 2 A / 250 V
Connection: Screwing Terminals (cable: 1.5 mm²)
Consumption: 3.4 mA (max: 5.7 mA)
Configuration: configuration of positive or negative relay security with mini switches.
Relay modules are equipped with 2 all-or-nothing inputs.

• CPS DI16 LOGIC INPUT MODULE

Dimensions: 125 mm x 165 mm x 60 mm (4.92" x 6.5" x 2.36")
Mounting: On DIN rail
Number of all-or-nothing inputs: 16
Connection: Screwing Terminals (cable: 1.5 mm²)
Consumption: 3.2 mA (max: 5.5 mA)

• CPS A04 ANALOG OUTPUT MODULE

Dimensions: 125 mm x 165 mm x 60 mm (4.92" x 6.5" x 2.36")
Mounting: On DIN rail
Number of analog outputs: 4
Connection: Screwing Terminals (cable: 1.5 mm²)
Consumption: 130 mA (max: 256 mA)



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FEATURES	ADVANTAGES
Digital central controller	**Reduced costs with less wiring:** Data from each sensor is collected in the central controller **in less than 1 second,** when pneumatic systems nee several minutes. Increased safety with a non-dilution of the sampling.
8 lines with 32 modules capacity	**Application for little or high car parks** with a number of lines selectable by the user.
Continual operation	**Important and immediate reducing of operation costs :** ventilation systems and other enslavements are optimally checked (energy saving of 40%)
Up to 256 slaves	The central controller is designed to control: • **256 6 gases detectors** • **256 addressable relays** • **64 logic inputs** • **256 analog outputs**
4 or 8 relays module	To control the enslavements
16 logic inputs modules	This module contains 16 logic inputs, linking priority commands, such as fire extinguishers directly to the central controller.
Low or High speed	Low speed (LS) relays and high speed (HS) relays are always used together, allowing you to control a **parking facility ventilation system at two speeds.**
Non-intrusive automatic calibration	
3 integrated relays	Can activate the ventilation system in the affected area of the parking facility.
Configured via COMCPS software	The software can be used to modify the settings for various sensors, alarm values…
Digital outputs	• RS485 modbus to connect to a supervision system • RS232 to connect a printer
Programmable alarmes	6 alarms per sensor (AL1, AL2, AL3, AL4, Out of Range, Fault)
Backlit LCD display	2 lines, 32 characters per line - 1 line for pictograms - 3 electroluminescence diodes to indicate operating status: OK, Fault, Alarms.
Temporisation of the programmable relays	The user can choose to activate its relays immediately after an alarme vent or after a determined period or can let the relays active even after an alarme event and during a determined time.
Access to locked menus	**For a better safety**
Automatic printing of a calibration report	The calibration data for a sensor is only printed at the end of the calibration process.

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SYSTEM ARCHITECTURE

CPS controller (rack version)

Included printer (optional)
only in rack version

COM_CPS

8 RS485 lines available
32 addressable modules max per channel
256 modules per CPS controller

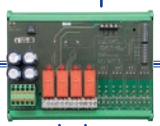
Serial printer

Analog output modules
CPS A04

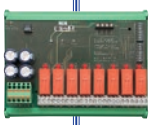
CPS10
detector

Logic input modules
CPS AI16

Relay module
CPS RM4



Relay module
CPS RM8



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