

CO and NO₂ GAS DETECTION SYSTEM USING ELECTROCHEMICAL SENSOR

The new **SIEDEPAR** series of control panels have been designed specially for use in car parks and small installations.

It allows for the simultaneous detection of CO and NO₂ in the same loop, being able to control up to 16 detectors with the possibility of programming up to 2 groups, making it possible to carry out individual maneuvers in the case of different gases, or sectorize maneuvers in the case of the same gas being detected.

The installation of the detectors is carried out in parallel, with any type of branching being allowed.

In its 4 module line version up to 12,800m² can be covered in accordance with current (Spanish) standards.

Each detector is monitored individually, showing its status in real time on the display.

Module lines, and their programming parameters, work independently.

A programmable function is incorporated that allows leaving the detectors in test mode so they will not carry out the maneuvers in case of breakdown or lack of maintenance.

A non-expandable **SIEDEPAR MINI** version with one module line is also available, with the same characteristics than the expandable model.



MAIN CHARACTERISTICS

- ▶ Expandable from one to four totally independent module lines.
- ▶ Detector communication through 3 wires, allowing detectors to be addressed.
- ▶ Information is presented in real time, in a 16x2 character line LCD backlit display.
- ▶ Three optical indications: general fault, inhibited acoustics and ventilation status.
- ▶ Factory programmed with Spanish or Portuguese standards with the possibility of programming for Spanish, Portuguese and English languages.
- ▶ Two tension-free switched relay outputs per module line for maneuvers, fuse protected.
- ▶ One tension-free switched alarm output per module line, fuse protected.
- ▶ One general fault output.
- ▶ 13.8V 3,4A power supply source capable of controlling the presence, charge and status of a battery of up to 12V 7,5Ah.

SIEDEPAR DETECTOR

This detector includes a new type of electrochemical sensor with a low cost and great performance that allows for a useful life period of up to 5 years almost without maintenance.

Specially designed for use in car parks. Two models in two versions are available.

One model for CO detection with a range of 0-300 ppm and a resolution of ±1 ppm, and another model for NO₂ detection with a range of 0-20ppm and a resolution of ±0.5 ppm, both with a 3-wire communications format and addressable.

In the detector, maintenance and calibration have been simplified, algorithms have been created for automatic zero

and gain calibration through software, as well as an algorithm and special hardware that allows verifying sensor sensibility without the need to apply gas.

The composition of its electrolyte is respectful of the environment, its structural form cancels the risk of the electrolyte leaking, it does not use active materials in its electrodes during operation, it has a lower sensitivity to interfering gases, long life and good stability and accuracy.

CO and NO₂ GAS DETECTION SYSTEM USING ELECTROCHEMICAL SENSOR

Compliant With UNE 23.300:1984 (CO) STANDARD
Certificate LOM 14MOGA3084
Certificate of conformity from the Ministry of Industry (CO):
CDM-0080011 (SIEDEPAR) and CDM-0090011 (SIEDEPAR Mini)

MODULE LINE TECHNICAL CHARACTERISTICS

Technology.	8 bit microprocessor.
Power supply.	9V to 15V DC.
Maximum consumption.	122 mA.
Maximum line length (recommended).	Up to 400/500 m. 3 wire 3 x 1,5mm ² supply and communications
Maximum number of detectors per module line.	Up to 16 CO and NO ₂ detectors simultaneously
Programmable reading modes.	Sequential or maximums per group.
Data presentation per module line.	16 x 2 line alphanumeric character backlit LCD display + 3 leds.
Reading speed.	3s per detector – sequential mode – and 3s in total for maximums reading mode.
Outputs.	3 independent per module line, 3A 250V AC dry contact fuse protected. 1 for loop power supply 12V 3A protected with automatic self-resetting fuse, and 1 for battery 12V DC 7,5Ah, fuse protected. 12VDC 3,3Ah in the SIEDEPAR Mini 1 module line version.
General fault output.	1 potential free C, NC on standby.
Switched power source.	13,8V 3.4A SIEDEPAR 1 to 4 module lines 13,8V 1.7A SIEDEPAR Mini 1 module line.
Voltage & approximate consumption.	120-240V AC, 47-63Hz. 4.5W SIEDEPAR 4 module lines – 2.2W SIEDEPAR Mini1 module line.
Cabinet dimensions, in mm.	1-4 module lines control panel 390 x 290 x 125. SIEDEPAR Mini 1 module line 280 x 213 x 83.
Weight -kg-.	6 Kg. expandable control panel 1-4 module lines (185gr. per additional module line). 3 Kg. SIEDEPAR Mini 1 module line.
Protection level.	IP30.

SIEDEPAR CO/NO₂ , 3-WIRE DETECTOR, TECHNICAL CHARACTERISTICS

Technology	Microprocessor and electrochemical sensor.
Power supply tension	9V to 15V DC.
Consumption.	14mA (standby) 24mA (alarm).
Measuring range.	From 0 to 300ppm CO, and 0-20ppm NO ₂ .
Resolution.	±1ppm CO, ±0.5ppm NO ₂ .
Repeatability.	±1% and 3% full scale respectively.
Linearity.	Linear throughout its full scale.
Calibration gas and recommended concentration.	Precise mixture 150ppm CO + N ₂ 150ml/min. Precise mixture 10ppm NO ₂ + N ₂ 1000ml/min.
Sensor useful life.	>5 years in normal working conditions for CO and 3 years for NO ₂ .
Relative humidity.	From 5% to 90% RH, without condensation.
Atmospheric pressure.	±10%.
Operational temperature.	-10°C to +60°C.
T90 response time.	<120 s CO and <30 s NO ₂ .
Parallel communication.	Proprietary addressable protocol (1 to 16) .
Protection level.	IP20.
Materials.	ABS.
Weight (gr) and measurements, diameter/height (mm).	146, 84 x 90 x 42 without base / 90 x 74 with base.
Installation height.	1.8 / 2 m from floor CO and 1m from floor NO ₂ .
Approximate coverage.	200 m ² CO (following current Spanish standards), 100 m ² NO ₂ .