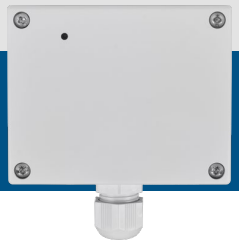


ISCMG2-4

CO sensor for parking garages

Description

ISCMG2-4 is a carbon monoxide (CO) sensor intended for applications in parking garages. The sensor has a modulating analogue output and a changeover relay output. The enclosure of the sensor is made of robust grey Acrylonitrile Butadiene Styrene (ABS) plastic, which blends perfectly in parking garage environments.

All measured parameters and configuration can be accessed remotely through our online HVAC platform — SenteraWeb via Modbus RTU communication. The device is compatible with multiple supply voltage options with wide tolerance: 24 VDC or 24 VAC ± 10%.

ISCMG2-4 is suitable for wall mounting and connections are achieved effortlessly via the pluggable screw terminal blocks of the device.

Key Features

- Enhanced device protection from overvoltage
- Modbus RTU communication for smooth implementation into HVAC systems
- RGB LED indication for monitoring the device status and measurements
- On-board LEDs for additional diagnostics of the device state
- Calibration options for refined measurement accuracy: performed via Holding Register 48 or a jumper on the PCB
- Effortless firmware updates via Modbus RTU communication
- Robust enclosure made of Acrylonitrile Butadiene Styrene (ABS) plastic

Area of Use

- Indoor or outdoor (roofed) environments with high possibility of CO pollution: parking garages, warehouses, etc.

Standards

CE

- Low Voltage Directive 2014/35/EU
- Electromagnetic Compatibility (EMC) Directive 2014/30/EU
- Commission Delegated Directive (EU) 2015/863 (RoHS 3) of 31 March 2015 amending Annex II to Directive 2011/65/EU of the European Parliament and of the Council as regards the list of restricted substances
- WEEE Directive 2012/19/EU

Warnings and Attention Points

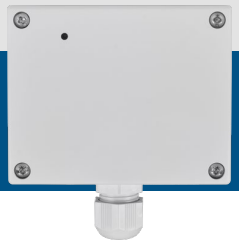
- To be used only indoors or in roofed outdoor places.
- Avoid mounting the device in locations affected by direct sunlight.
- Avoid exposure of ISCMG2-4 to high concentrations of volatile organic compounds (VOCs), silicone vapours, hydrogen sulphide and sulphuric acid gas. This could irreversibly change the characteristics of the sensing element.
- Avoid contamination by alkaline metals, especially saltwater spray.
- Avoid environments with high level of dust and oil mist. It can lead to clogging of the internal structure of the sensor. If such conditions are expected to be encountered, installation of an external air filter is recommended.
- Avoid dew condensation as it may clog the gas diffusion route.
- If ISCMG2-4 will not be used for a long time, it needs to be stored in the original package.
- This sensor requires the presence of oxygen in the operating environment to function properly.
- Turn off the power supply before all device servicing and maintenance.
- Applying overvoltage to any of the intelligent sensor parts will cause improper operation or failure to the internal circuit.
- Do not short-circuit the terminals or the input and output wiring.
- During operation, the unit must be closed.

Article Code

Article code	Supply voltage
ISCMG2-4	24 VDC or 24 VAC ± 10 %

Technical Specifications

Supply voltage	24 VDC or 24 VAC ± 10 %
Current consumption	60 mA
Supply overvoltage protection	up to 65 VDC
Measuring CO range	0–500 ppm
Analogue output	
0–10 VDC	(load resistance ≥ 1 kΩ)
2–10 VDC	(load resistance ≥ 1 kΩ)
0–5 VDC	(load resistance ≥ 1 kΩ)
0–20 mA	(load resistance ≤ 500 Ω)
4–20 mA	(load resistance ≤ 500 Ω)
PWM Push-Pull	(frequency = 1kHz, load resistance ≥ 1 kΩ, output voltage level = 12 VDC)
PWM Open Collector	(frequency = 1kHz, pull-up resistance ≥ 1 kΩ, pull-up voltage level ≤ 12 VDC)
Relay output	
Maximum switching voltage	48 VDC / 48 VAC
Rated current	2 A (resistive load)
Operating conditions	
Temperature	-10–50°C
Relative humidity	15–90 % (non-condensing)
Storage conditions	
Temperature	0–20 °C
Relative humidity	15–90 % (non-condensing)
Enclosure	
Ingress protection	IP31
Material	Grey ABS plastic



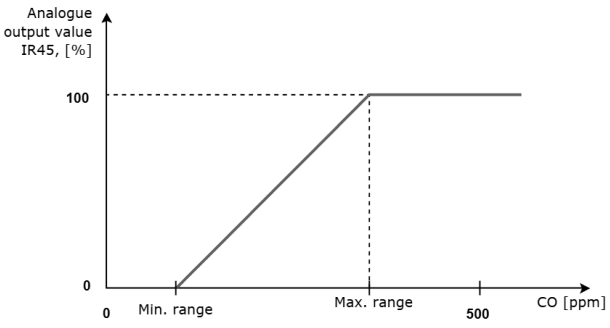
ISCMG2-4

CO sensor for parking garages

Wiring and Connections

Supply voltage and Modbus communication	
VIN	Supply voltage 24 VDC / VAC
A	Modbus RTU (RS485), signal A
B	Modbus RTU (RS485), signal /B
GND	Protective earth
Analogue output	
A01	Analogue output
GND	Analogue output, common ground
Relay output	
NO	Normally open contact
COM	Common contact
NC	Normally closed contact
Cable characteristics	Cat5 / EIB cable, cross section ≥ 0.5 mm²

Operational Diagram

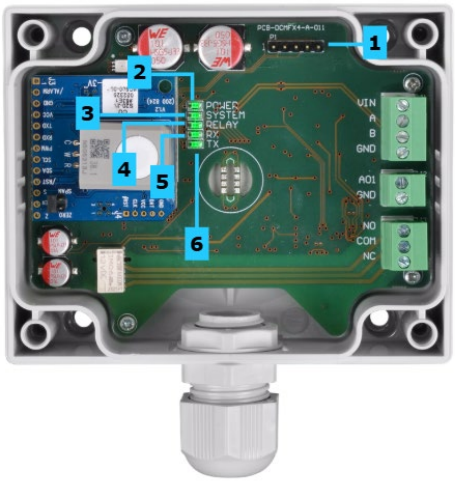


If there is no active sensor or all sensors are broken, the output value will be 0.

Global Trade Item Numbers 14 (GTIN 14)

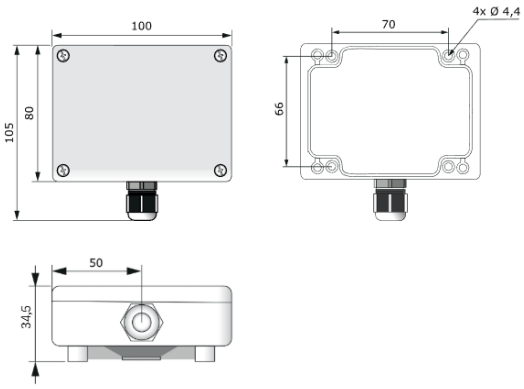
Article code	Unit	Box	Pallet
ISCMG2-4	5401003019054	5401003504505	5401003701492

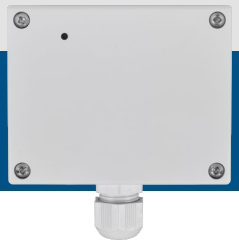
Settings and Indications



1 – PROG header, P1	1 2 3 4 5	Supply voltage 24 VDC / VAC
		On-board LED indication
2 – Power indication	ON	Internal power supply (3,3 VDC) of device is ok
3 – System indication	ON	Device is powered; system is ok
	Slow blinking	Device is powered; system error Blinking frequency: 1 Hz
	Fast blinking	Device is powered, bootloader mode Blinking frequency: 2 Hz
4 – Relay indication	ON	Relay is turned on
5 – RX indication	Blinking	Modbus request from master (client) is received
6 – TX indication	Blinking	Modbus response from the device is transmitted

Fixing and Dimensions



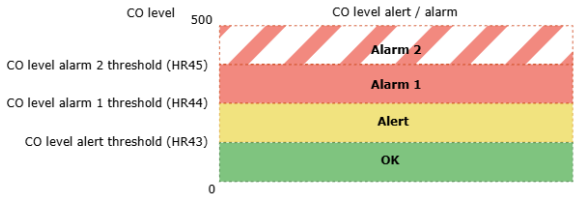


ISCMG2-4

CO sensor for parking garages

Front Cover RGB LED Indicator

Normal operation

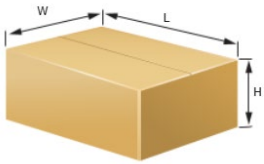


Errors and warnings

LED indication	LED colour	Description
Red & yellow blinking sequentially		Indicates there is a device error or sensor problem.
Blue blinking		Indicates that zero calibration is being performed.
Green blinking (1 Hz)		Indicates that the sensor is preheating.

RGB LED brightness is regulated by setting the value of Holding Register 222.
The LED can be turned OFF (no indication) by setting the value to '0'.

Packaging



Article code	Packaging	Length [mm]	Width [mm]	Height [mm]	Net weight [kg]	Gross weight [kg]
ISCMG2-4	Unit (1 pc.)	110	110	50	0,14	0,18
	Box (24 pcs.)	350	230	230	3,36	5,25
	Pallet (1.440 pcs.)	1.200	800	1.520	201,60	342,23