

Schützen SP-MGT4-CO2

O₂, H₂S+CO, CH₄+CO₂



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The Schützen SP-MGT4-CO2 gas detector is highly regarded for marine applications, offering reliable performance in confined space entry, inert environments and cargo monitoring while meeting IMO regulation MSC.581(110).

Gas Detection for Inert Entry

In some industries, particularly the petroleum or oil/ gas industry, reactor vessels are intentionally flooded with an inert gas such as Nitrogen, to ensure the vapour space is too low to support combustion. Nitrogen is not itself a toxic gas, but it displaces the Oxygen. So, a purged gas environment, although it eliminates the chance of fire or explosion, produces a very real threat to human life.

Schützen SP-MGT4-CO2 with a pump built in are suitable for pre-inert entry work. They allow for easy sampling up to 23 meter of prior to entry, and if used during work in the vessel they will result in quicker response.

The SP-MGT4-CO2 is designed with Infra-red sensor, where the infra-red beam will be broken by intruding gas and It is not affected by a lack of oxygen. It's all-in one.

Gas Detection for Cargo Monitoring & Confined Space Enter

Examples of Cargo Monitoring Scenarios:

Vessels: Monitoring for gas leaks or changes in gas concentrations in cargo holds, engine rooms, or other enclosed spaces on ships.

Storage Facilities: Monitoring oxygen levels, flammable gases, and toxic gases in warehouses or storage areas to prevent accidents or fires.

Confined Spaces: Assessing the safety of entering confined spaces within cargo facilities, ships, or trucks before personnel enter comply with IMO MSC.581(110).



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Key Features

KEY FEATURES

- **Multi-gas Detection: Comprehensive monitoring of multiple gases.**
- **Sampling Type with Embedded Pump & Probe: Accurate gas sampling in various environments.**
- **Real-time Monitoring: Instant feedback on gas concentrations.**
- **IP67 Rating: Water and dustproof for rugged use.**
- **High-performance Alarms: Visual, audible, and vibration alerts.**
- **Event Log: Records up to 30 events for easy tracking.**
- **IrDA Communication: Easy data transfer and management.**
- **Single Docking Station: Convenient for bump testing and calibration.**
- **Explosion-proof Certification: Complies with global safety standards.**
- **Pump Blockage Alarm: Alerts for pump blockages.**
- **Filter Contamination Check: Visual inspection for filter status.**
- **Three-button Operation: Simple and user-friendly controls.**

Extracted from MSC 110/21/Add.3 Annex 28, page 1

The IMO recognizes that many enclosed space accidents stem from a failure to systematically identify hazards, assess risks, and implement appropriate entry procedures. Investigations further highlight that the complex structural arrangements of certain spaces can hinder ventilation, illumination, and safe movement. Organizational leadership ashore and on board plays a critical role, particularly in empowering personnel to stop unsafe operations and make informed decisions to prevent accidents. Recent casualty trends underscore the ongoing need for improved risk assessment practices and increased awareness of CO₂-related hazards. The IMO Sub-Committee on Carriage of Cargoes and Containers (CCC 10) developed amendments to Resolution A.1050(27) in 2024 to combat the continued loss of life resultant from the hazards of enclosed space entry. These revisions were adopted by the 110th session of the Maritime Safety Committee on 27 June 2025 through Resolution MSC.581(110), and finally endorsed by the 34th Assembly on 3 December 2025, which formally revoked A.1050(27). The new resolution introduces a more comprehensive and structured approach to enclosed space entry, including new definitions, strengthened atmospheric testing requirements, enhanced responsibilities toward shore personnel, and updated emergency preparedness measures.

Other Accessories



IR LINK



CALIBRATION /
CERTIFICATION STATION



Specifications & Ordering Information

PART NO	PRODUCT
Schützen	
AAA104168	Schützen SP-MGT4-CO2 O2, CO/H2S, CH4/CO2(IR)
Schützen Gas Test Station	
AAA108000	Schützen SP-MGT4-CO2 Calibration & Certification Station (Launching soon)
Schützen Accessories	
2NDAS0002	Schützen Extension Probe 10M
AAA107000	Schützen Sampling Probe Package (Sampling Probe, Syringe Filter(3pcs), Tube)

Monitor Specification	
Physical characteristics	
Size	Size: 77mm(W)x146mm(H)x43mm(D)
Weight	490g
Sampling	Built-in pump (Up to 23M)
Flow rate	250~300cc
Carrying attachments	Stainless steel alligator clip
Case material	Shock resistant TPU covered Poly Carbonate (PC) absorption
Environmental protection	IP 67 (third party certified)
Display	Digital LCD display, LCD Backlight, LED Indicator
Display info	Live Reading, remaining battery life
Monitoring	
Sensor ranges/Resolution	CO: 0-500/1000 ppm, H2S: 0-100/200 ppm, O2: 0-30.0% IR LEL: 0 ~ 100%, IR CO2: 0-5%
Power	
Power source	Rechargeable Li-ion, Nominal Voltage : 3.7V, Nominal Capacity: 4000mAh
Battery life indication	Yes
Battery	TANK1: 72 hours TANK2: N Type: 52 Hours (Charging time: 4-6hrs)
Alarms	
Visual alarm	LCD Alarm Display, LCD Backlight
Audible alarm	Indicator LED Audible/ Buzzer (90dB at 10cm)
Vibrating alarm	Yes
Alarm set points	Fully customizable
Data storage	
Data logging	Logs last 30 events
Data retention	Yes – IR Link to PC
Data transmission	Infrared
Certifications/Approvals	
Explosive atmospheres	IECEX Ex ia IIC T4 Ga / Ex ia IIB T4 Ga ATEX II 1 G Ex ia IIC T4 Ga / II 1 G Ex ia IIB T4 Ga INMETRO Ex ia IIC T4 Ga / Ex ia IIB T4 Ga UL Ex ia IIC T4 Ga Class I, Division 1, Groups A, B, C, and/or D, T4 Class I, Zone 0, AEx ia IIC T4 Ga Ex ia IIB T4 Ga Class I, Division 1, Groups C, and/or D, T4 Class I, Zone 0, AEx ia IIB T4 Ga
Approved temperature ranges	-20°C ~ +50°C
Environment	10%~90%RH(non-condensing)

