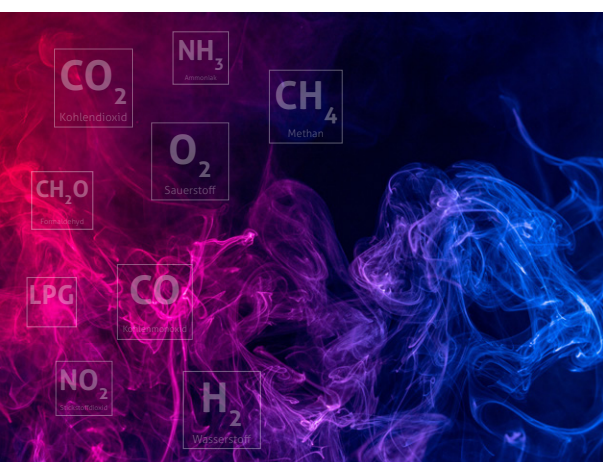


PERFECT SOLUTIONS FOR GAS ALARM SYSTEMS



Catalog 2022



Fixed Gas Detection Systems

for Buildings, Industry, Marine
and Analysis





Benedikt Winkler, Harald Schmitt and Christian Fecke

Dear business partners and interested parties,

You are currently looking at our new online catalog - and for good reason; because from now on, due to our targeted **environmental measures**, print catalogs will only be printed in very small numbers.

This task, which is so important for all of us, does not just drive us today. We are continuously working on our environmental measures. These include not only the significant reduction of our electricity consumption through the use of CHP and extensive LED lighting, but also

minimizing the use of plastic in production. Further investments in photovoltaic systems at our properties will also be implemented in the coming months and years.

For this reason, we are particularly proud of our **certifications for quality management (ISO 9001), for energy management (ISO 50001) and environmental management (ISO 14001).**

Our product portfolio includes new ATEX products from the PolyXeta®2 product series

Fixed Gas Detection Systems

Developed and manufactured for sustainable protection

with **certified metrological testing**. At the beginning of 2022, we expect DNV certification for gas sensors and controllers in the marine sector.

And last but not least: The uninterrupted and very pleasing growth of the MSR-Group of companies will also bring further positive changes to the organizational structure from January 2022:

Harald Schmitt (CEO and owner of the MSR-Group of companies) hands over a part of the operational tasks (sales, production and support) of MSR-Electronic to **Christian Fecke** (COO).



Harald Schmitt
CEO



Christian Fecke
COO



Benedikt Winkler
Head of Sales

This clears the way for further strategic expansion plans and the increase in the number of employees at home and abroad.

Benedikt Winkler takes over the management of the sales department (Head of Sales) and accelerates the successful international sales development and the expansion of the partner network.

We are on a very good path - feel free to stay on board or jump on quickly.

We look forward to working with you in 2022.



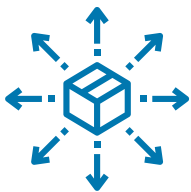
Safety First: MSR-Electronic offers extended safety and observes more than the worldwide standards.

With the Values

Of a family-owned company

The globally operating company MSR-Electronic combines modern corporate management with the values of a family business. Through its global sales network, MSR-Electronic has long standing customer relationships that are characterized by reliability and mutual trust.

When you choose the safe solutions and innovative products of MSR-Electronic, you benefit from many advantages such as quality and availability, competitiveness of the products, responsibility towards customers and business partners as well as openness to new requirements.



Innovative products



Environmentally conscious production



Worldwide distribution



Customer-oriented development

A hand holding a pen points towards the center of a digital interface. The interface features a central circular graphic with a grid pattern. Surrounding this are several white icons: a checkmark, a handshake, a lightbulb with gears, a target, a lightbulb with an exclamation mark, a scale of justice, a group of three people, and interlocking gears. The background is a blurred image of a person in a blue shirt.

CORE VALUES



PolyGard[®]2

**Gas Detection Systems for Buildings
Intelligent Parking Guidance Systems**



PolyXeta[®] 2

Gas Detection Systems for Industrial Plants



PolyMarine

Gas Detection Systems for Shipping



PolySam[®]

Gas Detection Systems for Gas Analysis



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Certificates and Approvals

Safety for all applications



Underwriters Laboratories (UL) is an independent organization in the USA that tests and certifies products with regard to their safety, with a focus on fire and personal protection. UL approval of MSR-Electronic products indicates demonstrated compliance with the safety regulations of the USA and Canada.



The safety integrity level (SIL) is a term from the field of functional safety. The safety integrity level is used to assess electrical/electronic/programmable electronic (E/E/PE) systems and refers to the reliability of safety functions. The aim of safety functions in industry is to protect the health of the people working there, the environment and goods. These safety functions are realized with the help of a safety circuit, which can consist of different operating devices such as sensors, actuators and control elements.



The **ATEX** Product Directive 2014/34/EU for equipment and protective systems intended for use in potentially explosive atmospheres sets out the rules for placing products on the market that are used in potentially explosive atmospheres. MSR-Electronic certifies with this certification that the products meet the essential health and safety requirements for design and construction as well as the requirements regarding the measuring function in hazardous areas.

International Electrotechnical Commission (IEC) is an international standards organization for standards in the field of electrical engineering and electronics.



IECEX = IECEx stands for "International Electrotechnical Commission System for Certification to Standards Relating to Equipment for Use in Explosive Atmospheres" or "international procedure for certification of electrical equipment used in hazardous areas". Similar to ATEX, IECEx has regulations that classify environments into specific hazard classes. A number of standards issued by the IEC are authoritative in this regard.



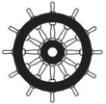
ATEX applies in Europe and IECEx worldwide (except Europe or USA).



CSA: A global leader in standards development and an internationally recognized and accredited provider of testing, inspection and certification services for the North American and global markets. MSR-Electronic products are tested in CSA's EMC laboratories. Approvals are issued by DEKRA Testing and Certification GmbH.



DEKRA Testing and Certification GmbH certifies MSR-Electronic products for the following approvals: Type examination (ATEX and measurement technology, IECEx, SIL)



The MED marking confirms that a product or piece of equipment is approved for use on ships of EU Member States and States applying the Marine Equipment Directive 96/98/EC. This procedure is called M.E.D/MED certification or approval, sometimes also called 'steering wheel' or 'wheelmark' marking and confirms, that the equipment or product is suitable for use in marine applications.



DNV is an international classification society and service provider in the fields of technical consultancy, engineering services, certification and risk management. As a classification society, DNV prepares standards for ships and offshore units, known as class rules. These rules contain regulations on safety, reliability and environmental protection that ships and mobile offshore units must comply with in international waters. The certification allows MSR-Electronic products to be used in certain maritime areas worldwide.



EAC is the abbreviation for Eurasian Conformity. The mark applies to freely marketable products and is used analogously to the European CE mark. With the EAC mark, MSR-Electronic confirms that a product has undergone a conformity procedure and complies with the prescribed technical requirements.



CE confirms compliance with the most important health and safety directives of the European Union. By affixing the CE mark, MSR-Electronic confirms that all necessary regulations are complied with and that all relevant measurements are performed and documented.

PolyGard®2

Gas detection systems for Buildings

Gas detection systems or Gas Detection Systems must be reliable at all times. In the event of gas leaks, e.g. carbon dioxide (CO₂), carbon monoxide (CO) or nitrogen oxides (NO_x), fast alerting and reliable products are required. The sensors, controllers and warning devices

from MSR-Electronic effectively protect human beings and systems in dangerous situations where combustible or toxic gases are emitted. With the help of modern communication technology, it is possible to react quickly.

+ BENEFITS

- **More safety**
More than required by all national standards
- **Exchangeable sensor with X-Change technology**
Significantly lower maintenance costs
- **Precise planning capability with overall reduced costs**
- **Integration in BMS/GLT**
(BACnet, Modbus)





MSR
**SAFETY
FIRST**

Buildings: Approvals

Safety for all applications

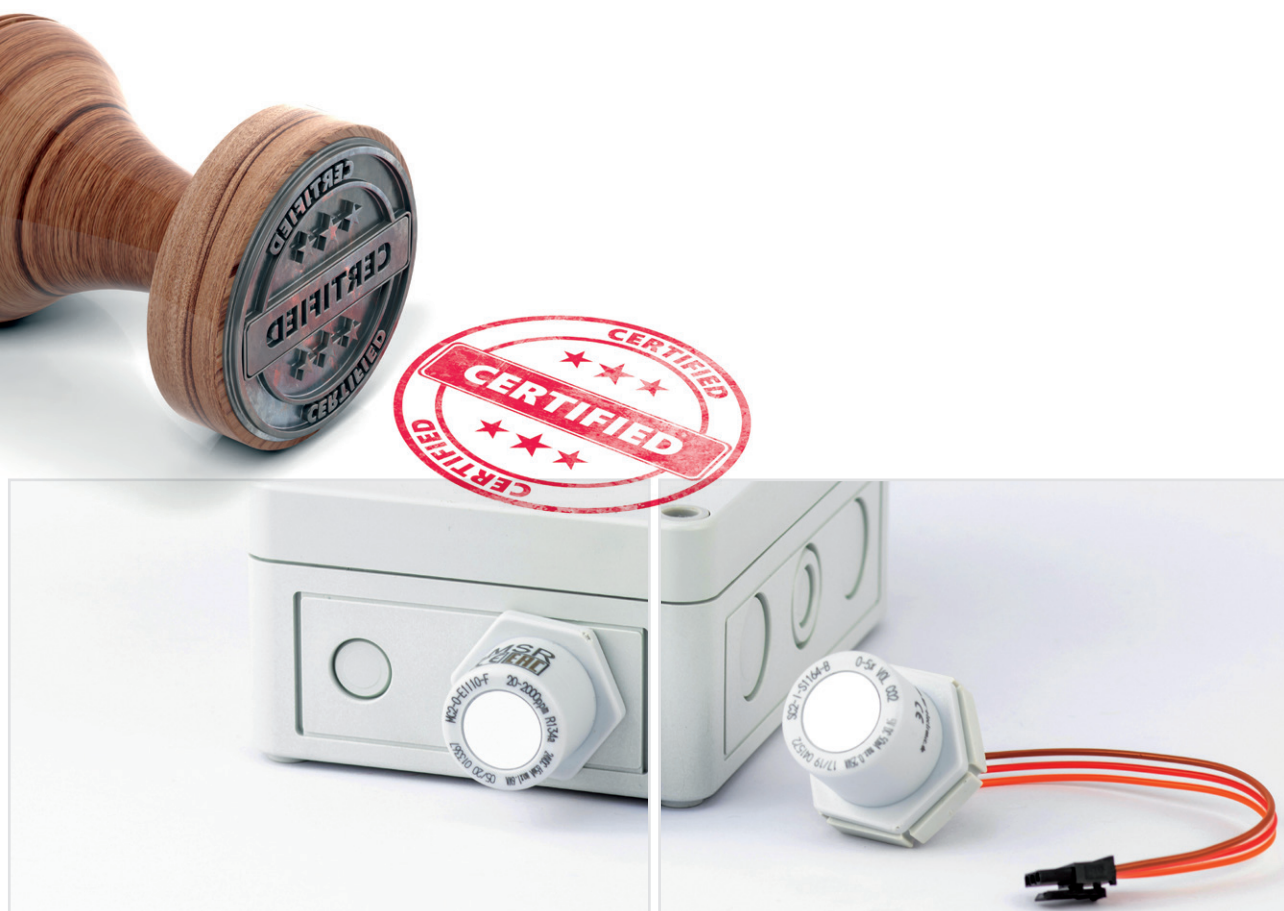
The products of MSR-Electronic comply with more than the general standards and regulations and can therefore guarantee the safety of the system.

When handling hazardous substances, special safety precautions are mandatory. This is especially true in the chemical industry, where many different hazardous substances are used.

MSR-Electronic provides innovative sensors and controllers to detect and immediately display life-threatening gases.

The products, services and training courses are based on many years of experience and have been put together with a lot of know-how and individual customer requirements.

The sensors of MSR-Electronic continuously monitor the air for combustible and toxic gases and oxygen.



Buildings: Approvals for PolyGard®2 products

Approvals

ANSI/UL 61010-1, CAN/CSA-22.2 No. 61010-1

Instrument series types: DGC-06, GC-06, EP-06, SB2, MSC2, MSB2, MGC2, WSB2, ARB2, SC2-Tox, SC2-Ex, MC2-Tox, MC2-Ex

EAC Metrological Certifications

Instrument series types: PolyGard®2 - product series

Other conformities

EU Directive 2014 / 30 / EU und 2014 /35 / EU, EN 50545-1, EN 50271, EN 61010-1, EN 50270, EN 378, EN 60079-29-1, EN 50104, EN 50402, EN 45544-1, EN 14624, EN 61508-1 -2 -3, SIL

ISO certifications for the company MSR-Electronic GmbH

Certifications for quality, environmental and energy management

ISO 9001, ISO 50001, ISO 14001



Garage, Tunnel, Loading Zones

Protection against CO / NO₂ / LPG

Garages and tunnels above a certain size (regulations vary from region to region) require a gas detection system, at least with carbon monoxide monitoring. Here, the specifications of EN 50545-1 must be complied with; e.g. at which value the system triggers an alarm and which warning devices are used. Gas sensors,

controllers and warning devices from MSR-Electronic reliably protect people and systems in these areas. In addition, the gas detection system can be precisely adapted to the respective regulation thanks to flexible setting options (e.g. switching thresholds differ depending on the federal state).



GAS HAZARDS

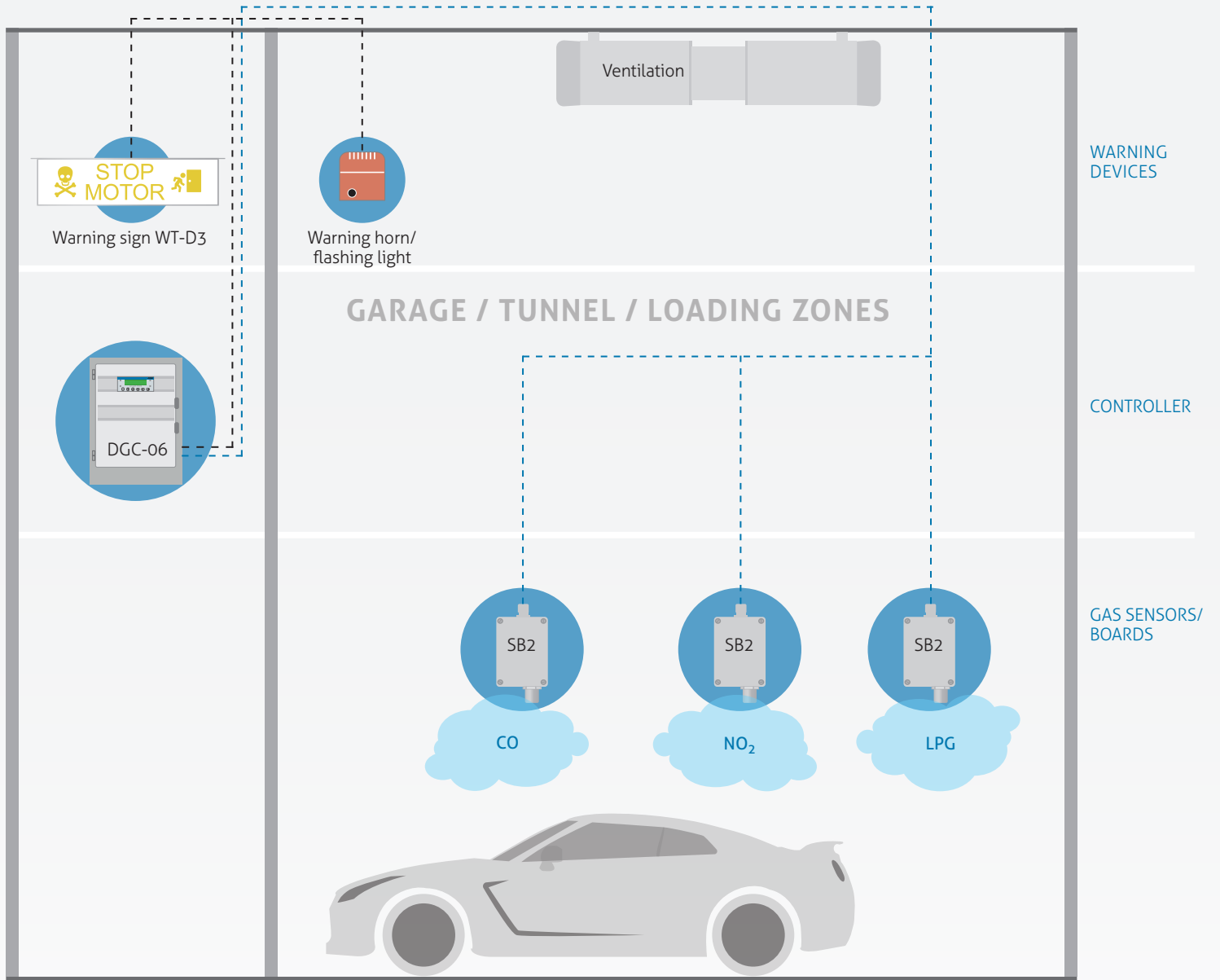
In the event that the permissible CO limit value of 30 ppm is exceeded, the legislator has reliably regulated safety-related requirements in EN 50545-1. Fixed gas detection systems are the crucial monitoring instrument of a ventilation system. It regulates the air quality in closed rooms and decides when the ventilation must be started. In the event of a risk of poisoning or fire caused by leaking LPG gas from motor vehicles, the rescue control center is informed in parallel.



BENEFITS

- Different controller models for the management of small garages up to the management of 128 gas sensors for large garages (type Digital-Gas-Controller DGC-06)
- Controller also suitable for control cabinet installation
- Modular design, therefore easily expandable
- Reduced costs due to easy maintenance, e.g. sensor head replacement (X-Change technology)
- Easy replacement of old system, easy communication with BMS, GLT
- Compliant with EN 50545-1 and EN 50271





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Refrigeration Systems

Protection against refrigerants

Refrigeration systems above a certain size must be equipped with a gas detection system. The requirements for gas detectors depend on the type of refrigerant and the specific application. Among other things, the requirements of EN 378 and EN 14624 apply here. Gas sensors from MSR-Electronic are safer than the standards require and reliably protect life and sys-

tem. Thanks to flexible setting options, the gas detection system from MSR-Electronic can be adapted precisely to the relevant regulations (e.g. switching thresholds). Depending on the number of sensors required, the large DGC-06 MSR controller or an MSC2 stand-alone controller is used.



GAS HAZARDS

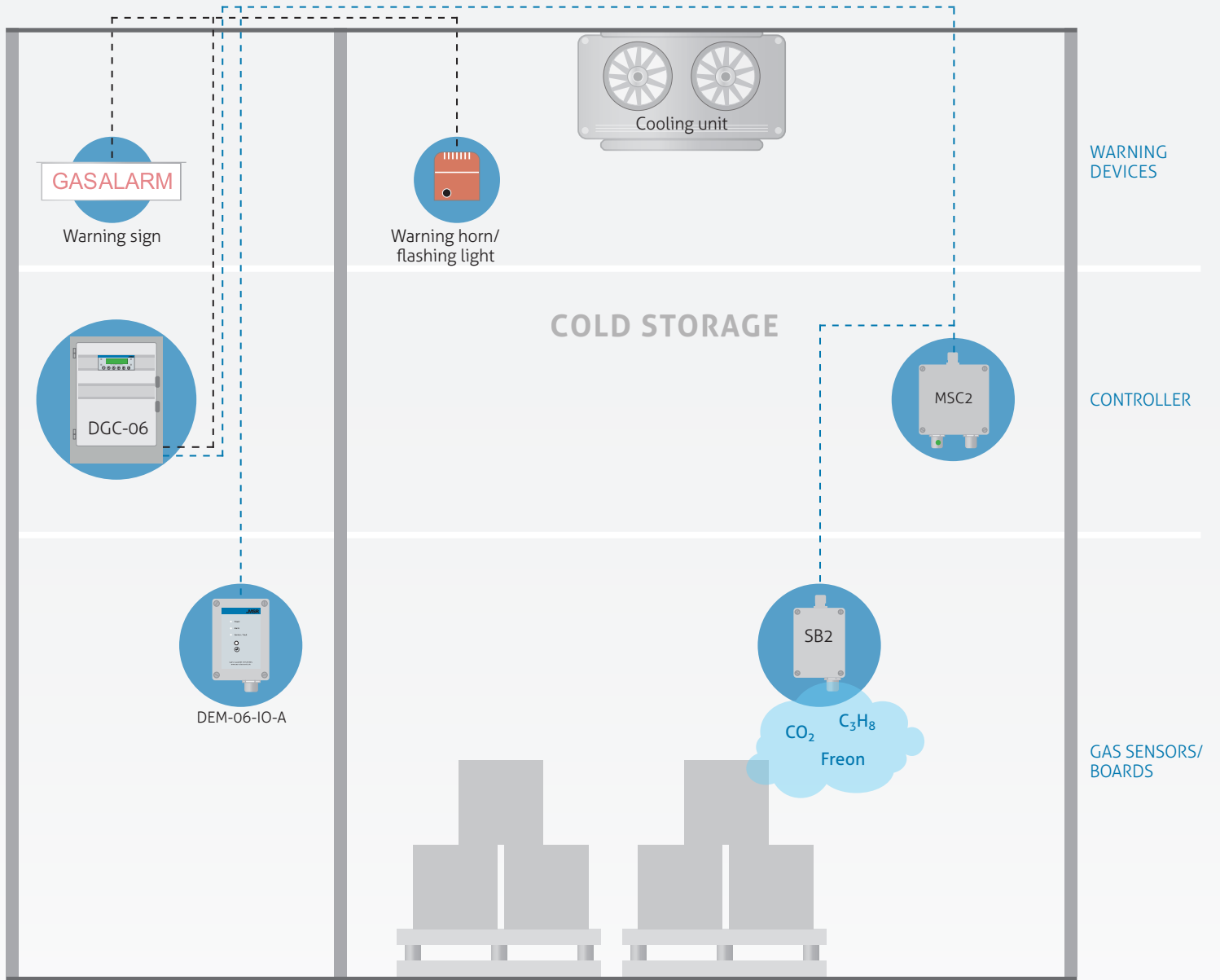
In refrigeration systems, it is necessary to distinguish between natural refrigerant gases and synthetic refrigerants. Synthetic refrigerants can affect health and must therefore be monitored for leaks in the circuits. With the natural refrigerants such as propane, ammonia and CO₂ there is on the one hand the danger of explosions in case of leakage and on the other hand also the danger of poisoning. Thus, the properties of the respective gas must be particularly taken into account here by means of suitable monitoring with the aid of sensors.



BENEFITS

- DGC-06 controller for management of up to 128 sensors for various refrigerants
- Compactcontroller for the management of up to 10 sensors, completely operable via the display
- MSC2 controller for the management of up to 3 sensors in combination with the GC-06 or as a stand-alone device, has 3 potential-free relays
- Easy and fast calibration of digital and analog sensors
- Compliant with EN 50545, EN 50271 and EN 378





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Dispensing Systems

Protection against CO₂ poisoning and O₂ deficiency

Whether in restaurants, brewing and fermentation cellars, breweries, wineries, beverage bottling plants, but also in CO₂ extinguishing systems in warehouses and production halls, wherever CO₂ cylinders, lines and tanks are required, the sensors from MSR-Electronic can be used. The DEM-06-IO-A

module secures access to enclosed spaces where CO₂ leaks may occur and indicates an increased gas concentration in real time. Thus, safety is perfectly guaranteed. MSR-Electronic offers reliable sensors, controllers and warning devices for dispensing and cooling systems.



GAS HAZARDS

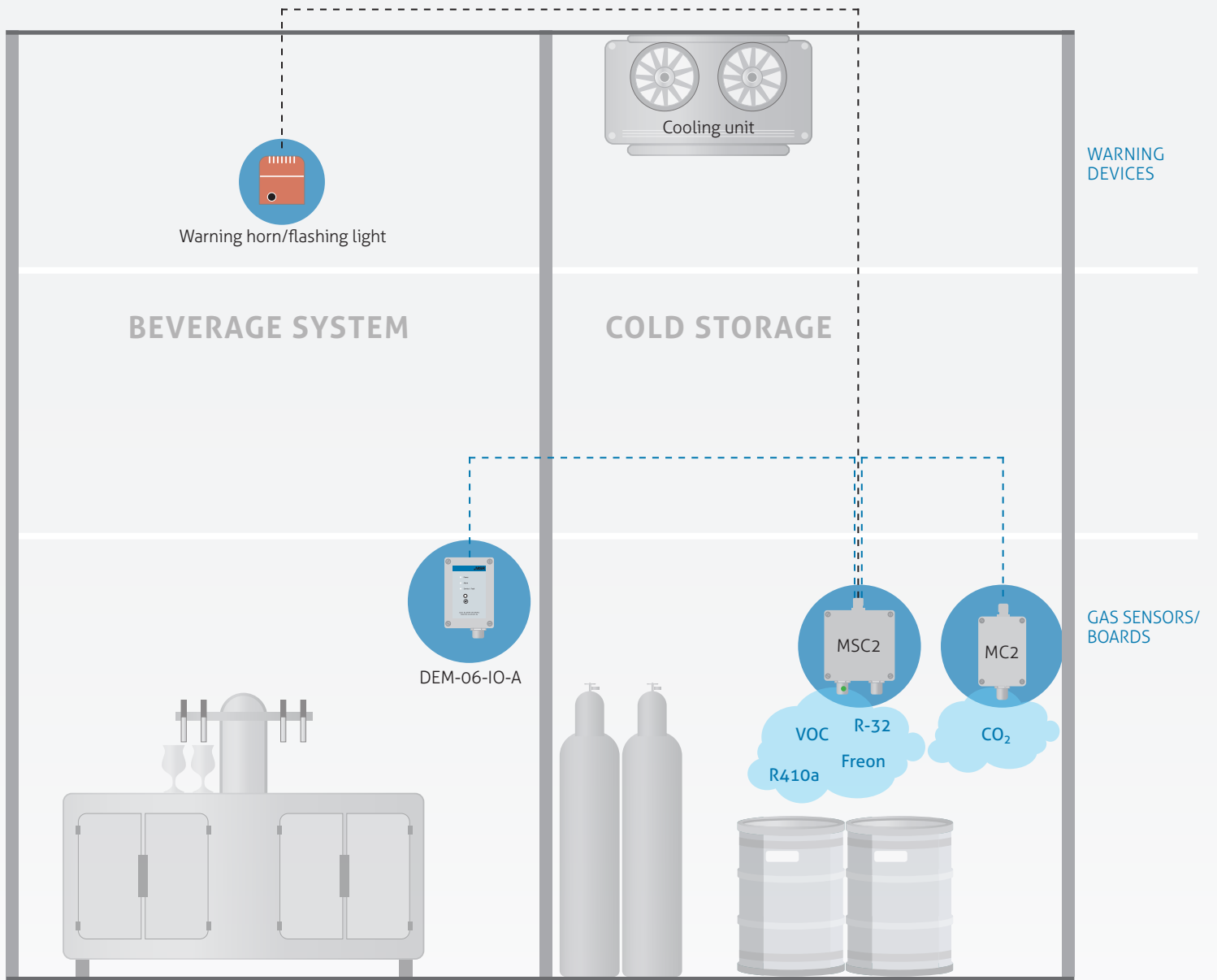
The danger of dispensing systems is often underestimated because the CO₂ is odorless and invisible. On the one hand, carbon dioxide itself is very toxic, and on the other hand, it displaces oxygen. Both dangers can be monitored by gas sensors. A combination of O₂ displacement monitoring and CO₂ concentration measurement is the safest way to operate the equipment without danger.



BENEFITS

- Safety product: More than all national standards require
- LED display: Warning before entering the room
- Integrated test and maintenance function
- Plug & Play
- Optionally also for multiple entrances: Parallel warning for the respective door
- Compliant with EN 378





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Laboratory and Medicine

Detection of different gases

When handling various hazardous substances in laboratories and medical facilities, relevant safety measures must be observed in accordance with the Hazardous Substances Ordinance (GefStoffV) and the laboratory guideline. Reliable monitoring of the wide variety of gases in the ambient air must therefore be guaranteed.

The Compactcontroller from MSR-Electronic is designed to connect up to 10 gas sensors via its own fieldbus and is used to warn of various gases. MSR-Electronic also provides reliable solutions for extended applications, e.g. for large capacity laboratories.



GAS HAZARDS

- When gases are released in laboratory recirculation stations, fume hoods and equipment for filtering of gases in research and university laboratories
- In the pharmaceutical industry: fermentation and clean room monitoring
- In medicine: cryopreservation, anatomy, forensics, pathology, histology and respiration
- In the chemical industry in the production of substances



BENEFITS

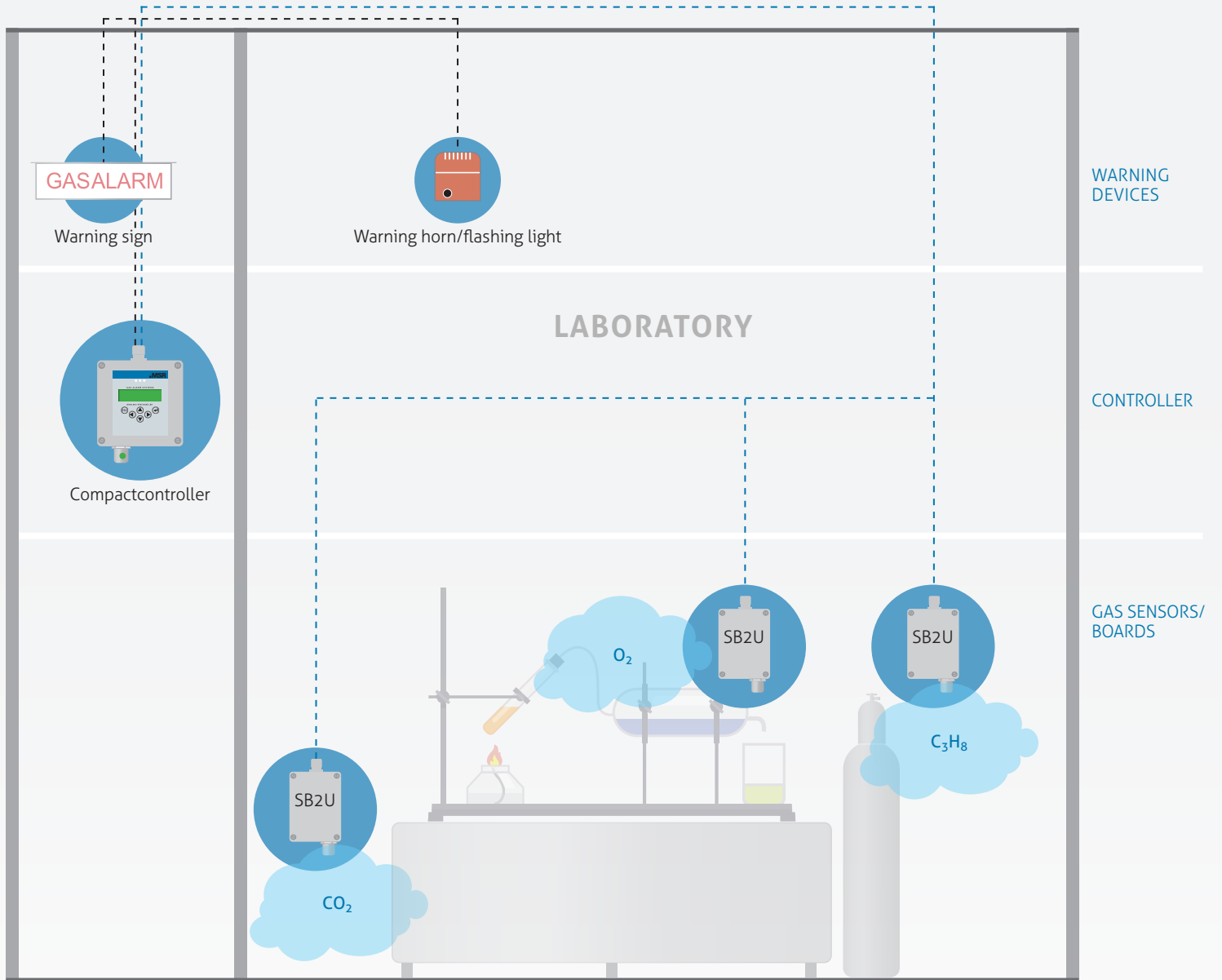
- Plug & Play
- Display for indication, configuration and calibration functions (no additional tool required)
- Automatic closing of magnetic gas valves in case of gas alarm
- Fieldbus connection for up to 10 gas sensors (SB2 units)
- Hardware and software according to SIL-compliant development process
- Modular technology (pluggable and exchangeable), reverse polarity and overload protected
- 3 relays, 2 transistor outputs, 2 digital inputs, different housing types with IP65





PDF DOWNLOAD

See the full folder here: [Safe medical and laboratory areas](#)



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Ripening Chambers

Protection against CO₂ / C₂H₄ / C₂H₄O and O₂ deficiency

In addition to the modern technology of the ripening chambers, gas sensors are required for permanent monitoring of the various gas concentrations involved in the ripening process. The sensors, controllers and warning devices from MSR-Electronic effectively protect people and equipment and monitor the system

as a central point of the entire process. With the help of modern communication technology, it is possible to react quickly. The Compactcontroller is designed to connect up to 10 gas sensors via its own fieldbus and is used to warn of different gases and is therefore ideal for the application.



GAS HAZARDS

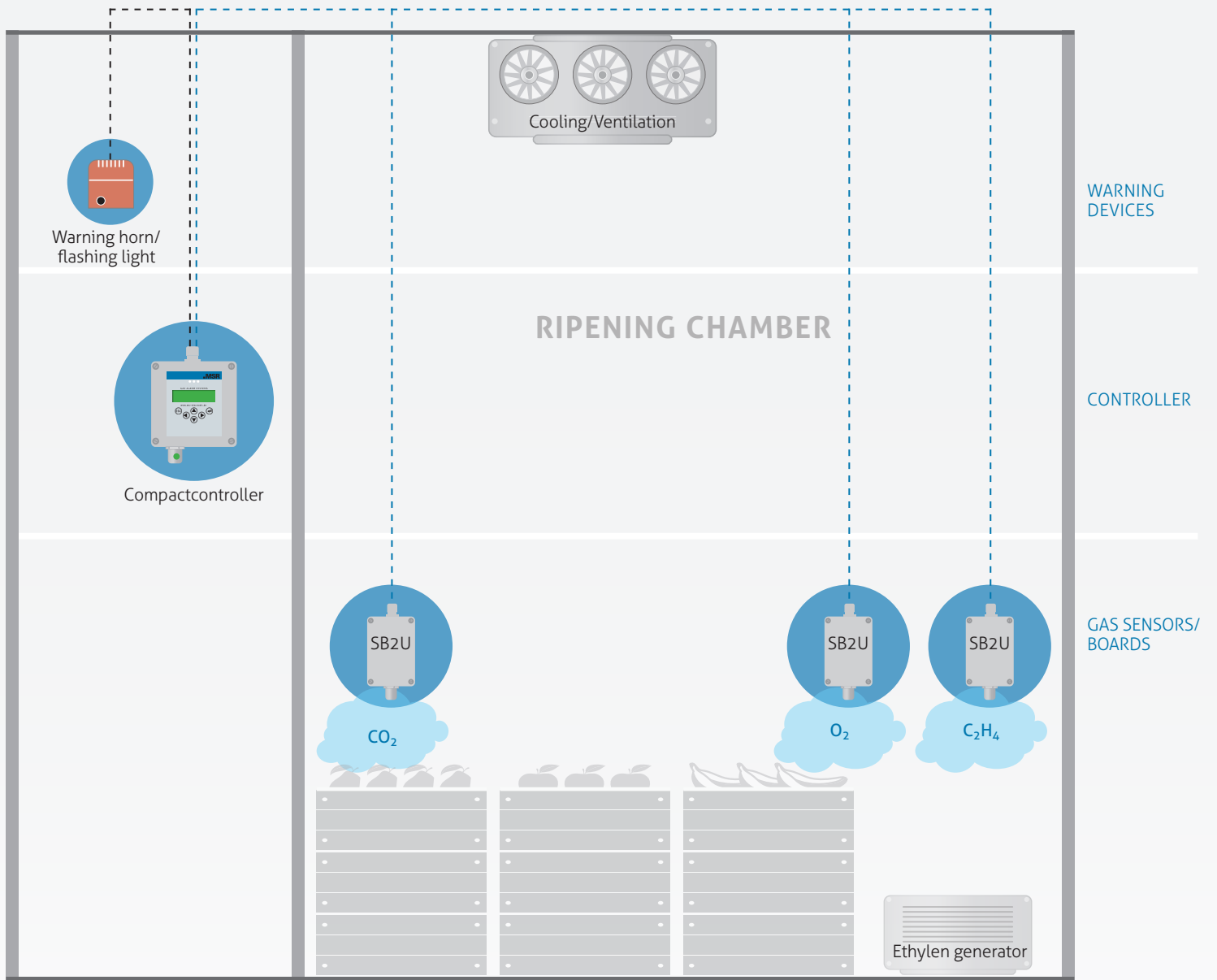
Fresh fruits and vegetables are alive and continue to breathe after harvest. This leads to oxygen consumption and the generation of carbon dioxide and water vapor. Keeping the produce fresh means slowing down the process while maintaining the quality of the product. To speed up or slow down the ripening process, different CO₂ and O₂ concentrations are set, which are permanently monitored by a gas detection system.



BENEFITS

- Compliant with EN 378
- Display for indication, configuration and calibration functions (no additional tool required)
- Fieldbus connection for up to 10 gas sensors (SB2Units) with max. 900 m length
- Hardware and software according to SIL-compliant development process
- Modular technology (pluggable and exchangeable), reverse polarity and overload protected
- 3 relays, 2 transistor outputs, 2 digital inputs, different housing types with IP65





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Aquaculture Systems

Safety from various gases and oxygen deficiency

The advantage of fish farming in an aquaculture system (RAS or a specially designed tank) is that production is independent of location and has minimal impact on the environment and water consumption, as it is a closed system. Moreover, they can be built near consumer markets and in regions where there is not enough water or

suitable climatic conditions for selected fish species. Water treatment and sterilization play an essential role in aquaculture. This places great demands on the facilities as well as new health safety criteria for the personnel working there.



GAS HAZARDS

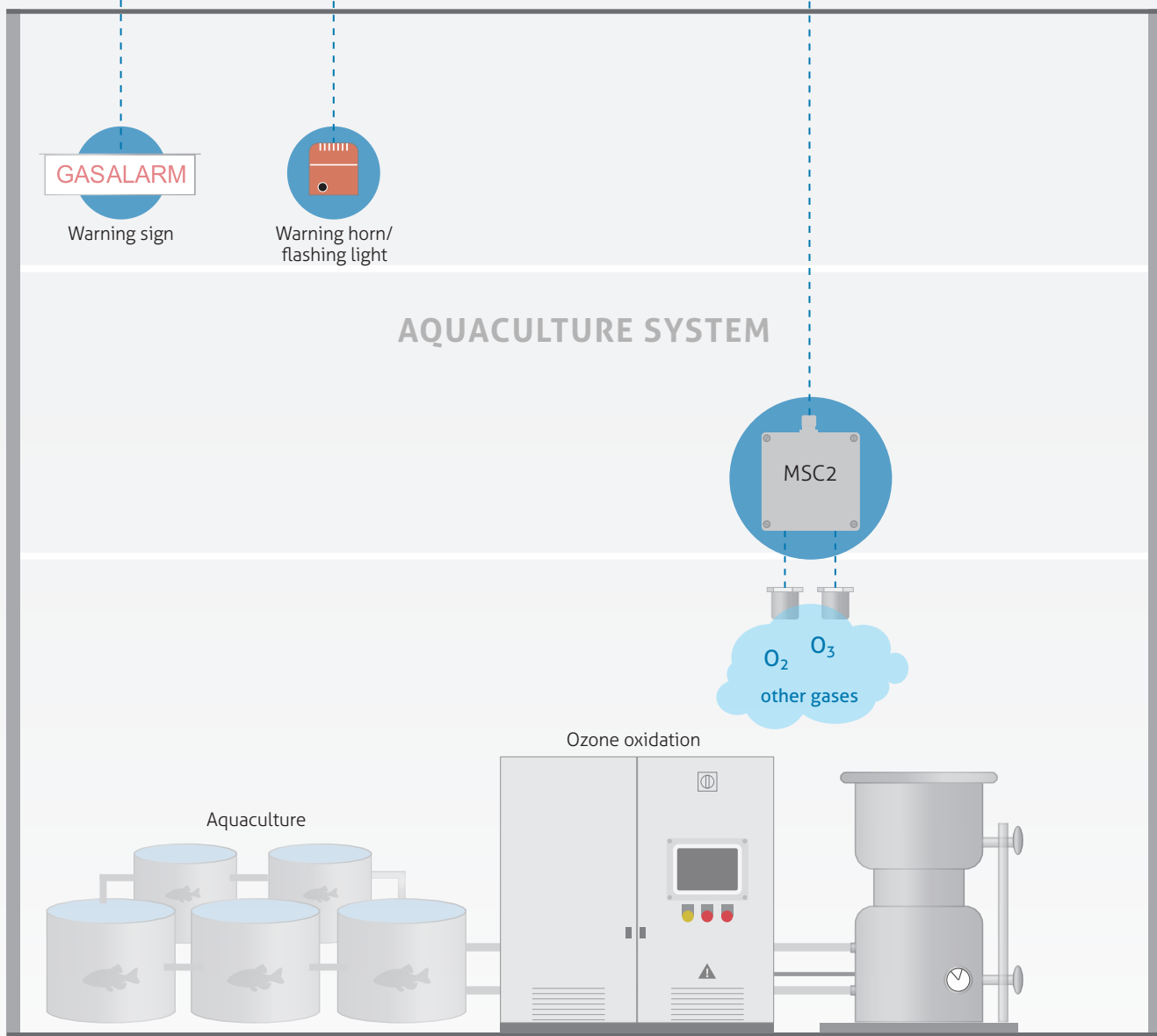
Farmed fish are sensitive to pathogens, water quality and toxic substances. High water quality and disinfection of facilities is provided by ozone oxidation or ozonation. Ozone is a health hazard and therefore dangerous to employees working in ozone production premises. Gas sensors, controllers and warning devices from MSR-Electronic offer perfect protection in case of occurring ozone gas leaks.



BENEFITS

- Continuous MAK monitoring of O₃/O₂ and other gases
- Up to 3 measuring points per controller
- Modular design, expandable up to 128 measuring points with the DGC-06 controller
- Easy integration into existing safety systems
- 3 relays, Modbus and analog measured value forwarding
- Cost-reduced calibration by sensor head exchange on site (X-Change technology)





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Beverage Industry

Protection against CO₂ / SO₂ / H₂S / C₂H₆O / CH₃OH / O₂-deficiency

In the beverage industry, the danger from gases is often underestimated. Soft drinks and beers are perceived as refreshing due to "carbon dioxide," and in still beverages carbon dioxide improves shelf life. But carbon dioxide is also indispensable for wine and sparkling wine production. MSR-Electronic offers reliable gas sensors, controllers and warning devices to

protect people and equipment from hazardous gases. When gas leaks occur, fast alarming and reliable gas detection systems are required. The Compactcontroller from MSR-Electronic is designed to connect up to 10 gas sensors via its own fieldbus and is used to warn of various gases.



GAS HAZARDS

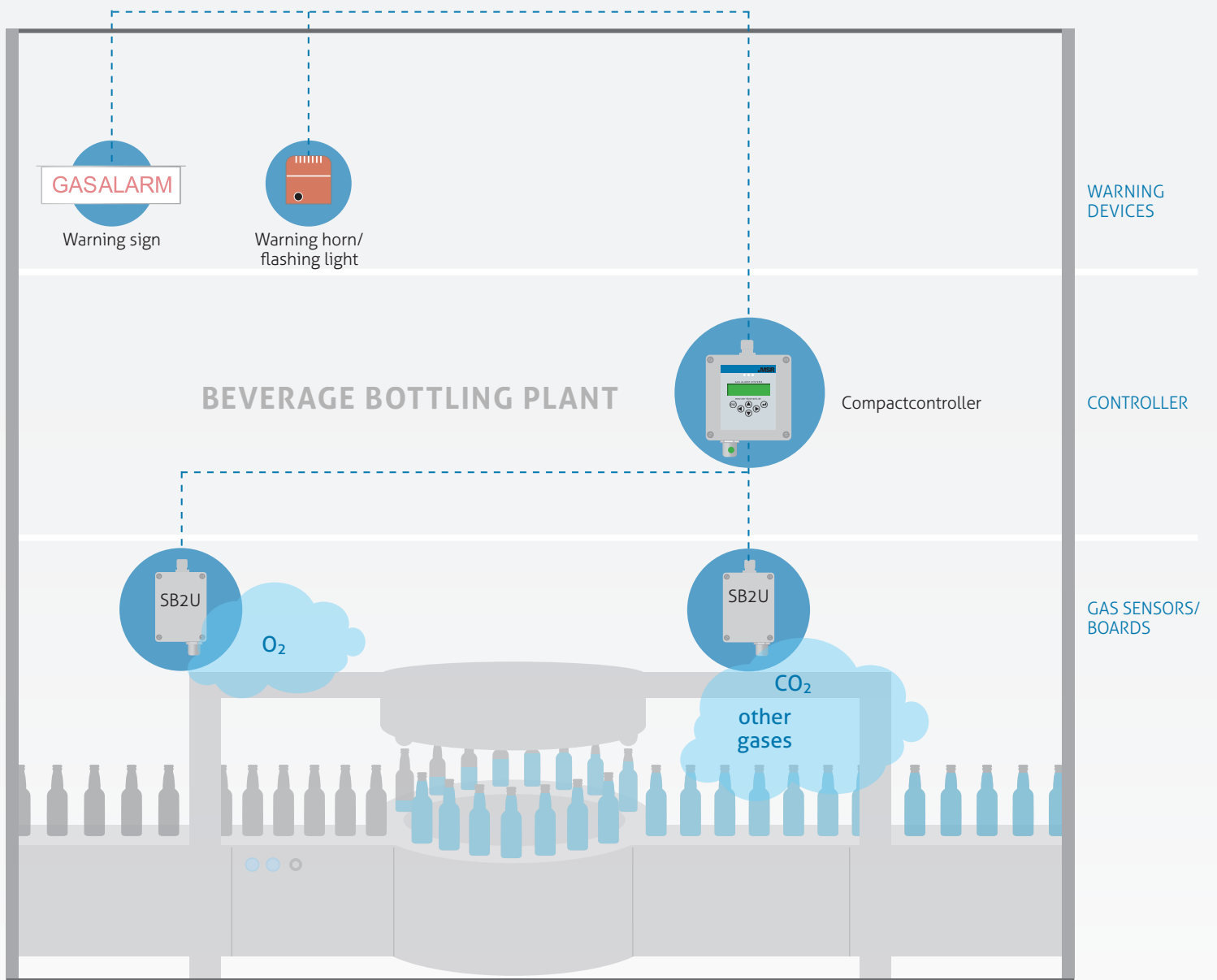
- In breweries, wineries, beverage bottling, dispensing and CO₂ extinguishing systems for warehouses
- In carbonation of soft drinks and inerting of tanks or pipelines
- Use of SO₂ as a preservative and antioxidant
- Odor problems caused by H₂S in the food industry
- Alcohol production: spirits production with toxic and flammable gases
- Monitoring of O₂ deficiency to protect people in enclosed spaces



BENEFITS

- Plug & Play and with display for current values, configuration and calibration functions
- Hardware and software according to SIL-compliant development process
- Reduced costs due to easy maintenance, e.g. sensor head change (X-Change technology)
- Intelligent sensors display information on residual sensitivity, maintenance and condition
- Less downtime and integration into existing safety systems





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Vending Machines

Safety in case of a refrigerant leakage

The global market is moving away from classic high global warming potential (GWP) refrigerants and the use of natural refrigerants is increasing. Due to the higher flammability of natural gases such as propane, installations must therefore be protected with gas detection systems.

MSR-Electronic offers the sensor SSAX1, which can be easily integrated into vending machines and reliably detects any gas leakage. MSR-Electronic offers reliable sensors, controllers and warning devices for refrigerated vending machines.



GAS HAZARDS

Gas leaks in vending machines are very dangerous because the natural refrigerants used here quickly produce an explosive gas mixture. In the event of a leak, a reliable and rapid response is necessary, otherwise vending machine users are at risk.



BENEFITS

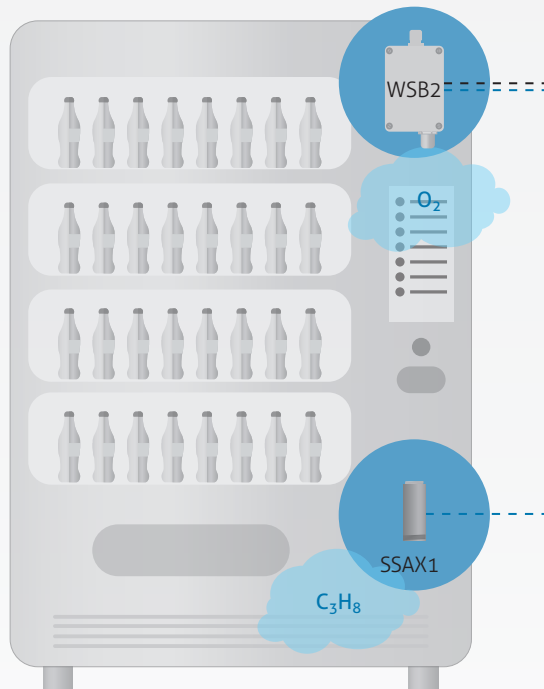
- Conforms to EN 378, ATEX and IECEx certificates for electrical explosion protection
- SSAX1 can be used for Zone 1 and Zone 2
- Continuous monitoring, reverse polarity and overload protected
- Sensor with long lifetime (infrared: > 5 years)
- High accuracy, selectivity and reliability, low zero drift
- Cost-reduced calibration due to sensor head change on site (X-Change technology)





Warning horn/flashing light

VENDING MACHINE



WARNING
DEVICES

GAS SENSORS/
BOARDS



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Additional Applications

Safe applications for buildings

Also in many other application areas where employees are permanently exposed to gas hazards, the ambient air must be continuously monitored for the concentration of toxic and flammable gases or the threatening drop in oxygen content. The gas sensors, controllers and warning devices are used e.g. for leakage monitoring of CO₂ in production areas, swimming pools or heating systems.

MSR-Electronic develops and produces reliable gas sensors, controllers and warning devices, which permanently monitor the ambient air and thus protect human life and property. The risk potential is minimized. The permanent monitoring and storage of measured values serves the primary explosion protection and thus the plant safety.

OFFICE AND PRODUCTION AREA

Protection against these gases: VOC / O₂ / CO₂

WATER TREATMENT

Protection against these gases: Cl₂ / O₃ / CO₂ / O₂

HEATING SYSTEMS

Protection against these gases: CH₄ / Methane (natural gas)

REPAIR SHOPS

Protection against these gases: CO / NO_x / LPG

BREWERIES AND WINE CELLARS

Protection against these gases: CO₂ / SO₂ / H₂S / CO / C₂H₆O

Please contact us for further application areas.





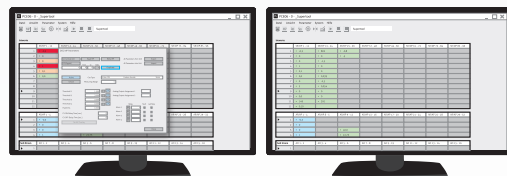
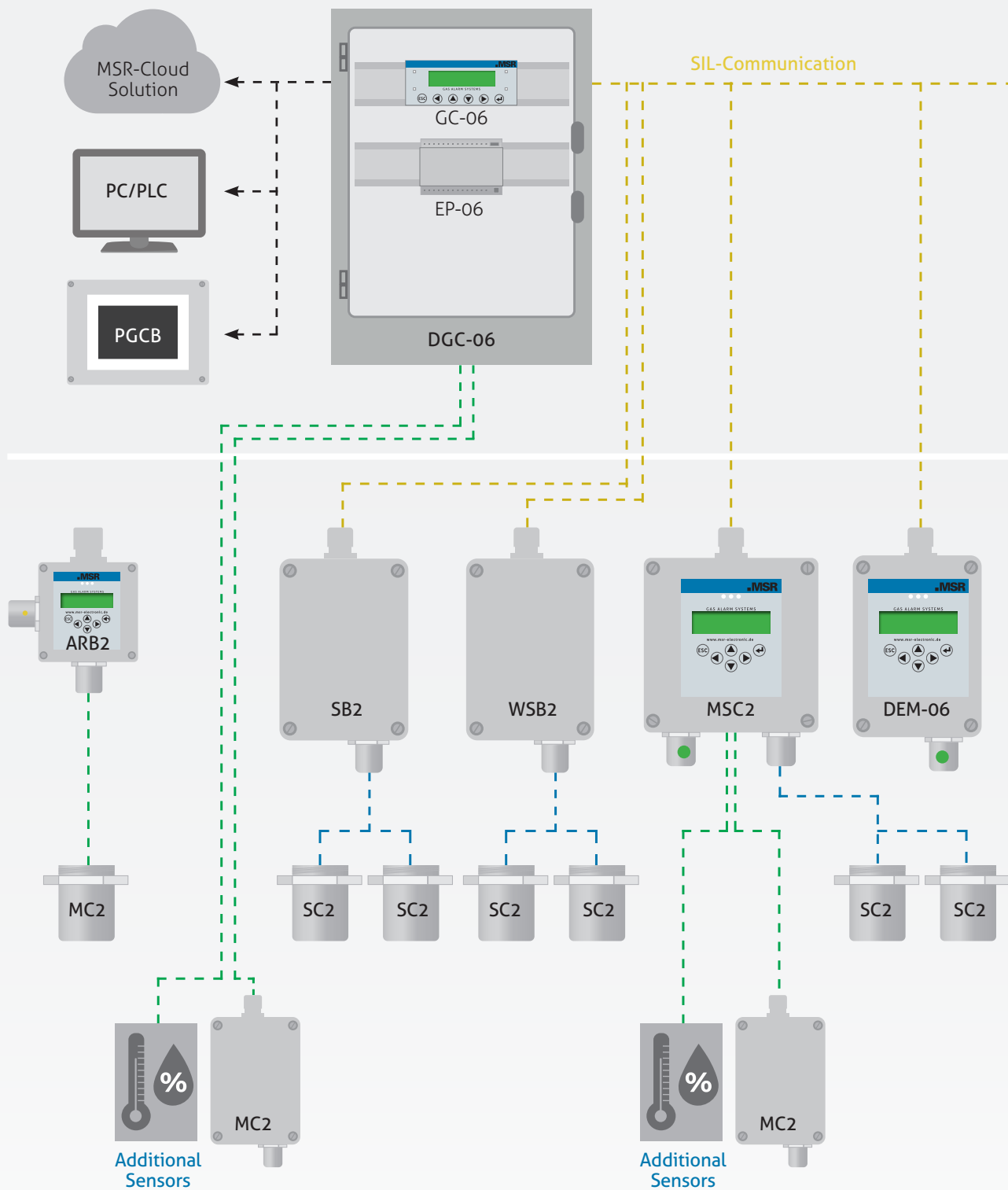
PolyGard®2





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**SAFETY
FIRST**

PolyGard®2





Interactive product overview



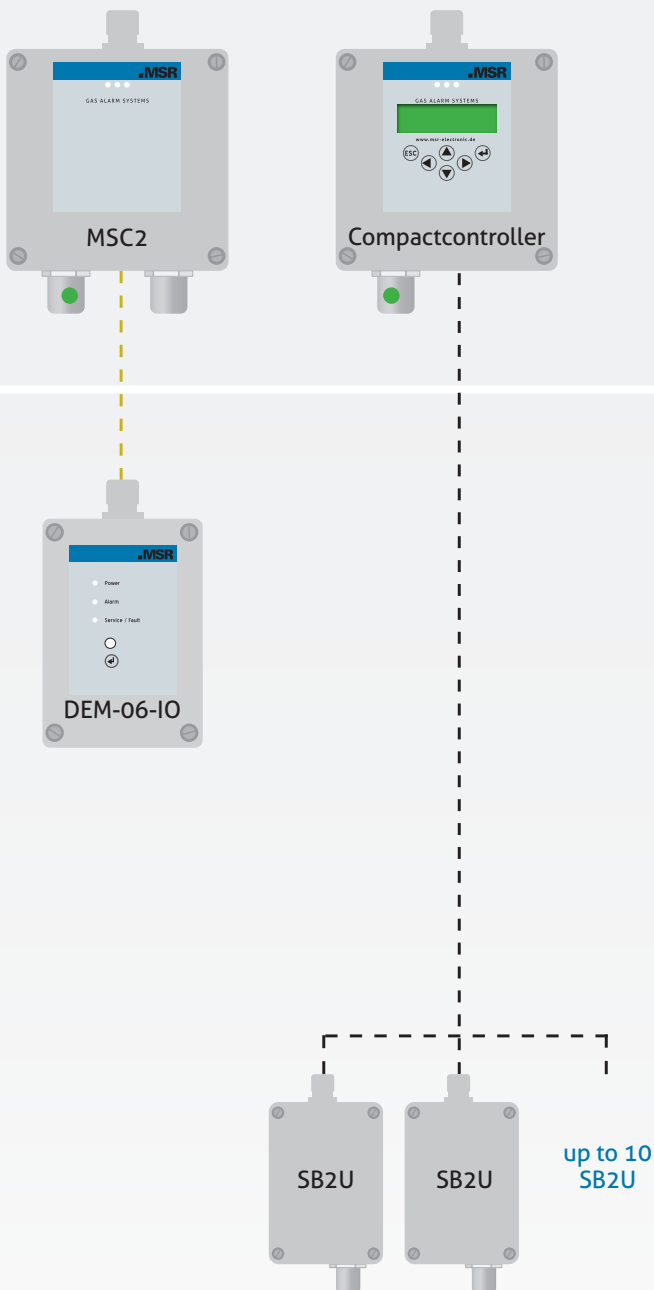
MSC2	Multi-Sensor-Controller
DGC-06	Digital-Gas-Controller
PGCB	PolyGard®2 Control Box
ARB2	Analog-Relay-Board
SB2	Sensor-Board
SB2U	SB2Unit (Compactcontroller)
WSB2	Warning and Sensor-Board
DEM-06	Door-Entrance-Module
MC2	Analog Sensor Head
SC2	Digital Sensor Head
STL06	Service-Tool

CONTROLLER

GAS SENSORS/ BOARDS

- SIL
RS-485
DGC-Bus
- Digital
L-Bus
- RS-485
Modbus
BACnet
- Analog
4-20 mA

WARNING DEVICES/ ACCESSORIES



Sensor Heads SC2 + MC2

With X-Change technology

Exchangeable sensor heads with digital and analog output signal.

MSR-Electronic develops individual gas sensors, e.g. for CO₂, CO, CH₄, CH₂O, NH₃, O₂ or H₂ and systems in which toxic or combustible gas concentrations can form. These are integrated into complex warning systems and are used, for example, in parking garages, biogas plants, refrigeration plants, petrochemical industrial plants, breweries and dispensing systems or in laboratories and medical applications as well as in hydrogen production and processing.

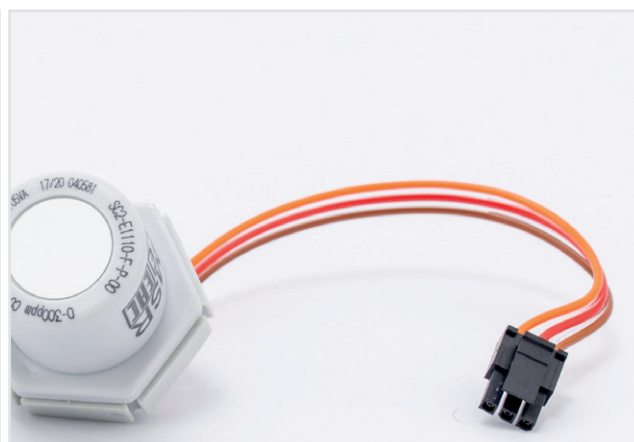
In addition to the sensor element and the measuring amplifier, the SC2 and MC2 sensors include a μ Controller for measured value pro-

cessing. Thus, various data can be processed and utilized, such as the temperature for compensation of the measured value. In addition, calibration interval and errors are monitored and transmitted to the evaluation unit.

Thanks to the X-Change technology, calibration can be performed by simply changing the sensor head or by using the integrated, convenient calibration routine directly at the system. The sensors are designed for connection to MSR-Electronic controllers and boards.



MC2 and SC2

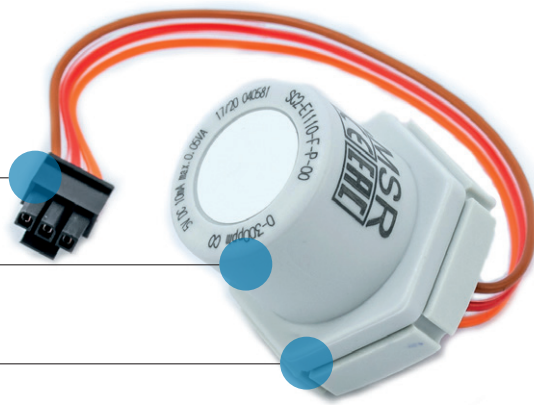


Digital Sensor Head SC2

Connection L-Bus
max. 5 m away

Laser engraving type designation

Sensor head housing IP65

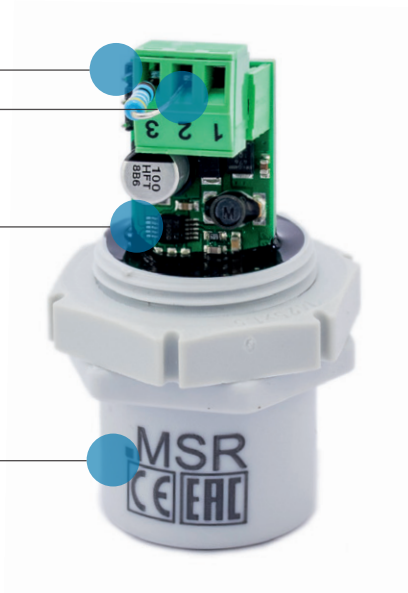


Analog Sensor Head MC2

Digital calibration
Power supply and
analog output

Sensor head MC2
with 4-20 mA / 2-10 V output

Sensor head housing IP65



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Sensor Heads SC2 + MC2

With infrared sensor element

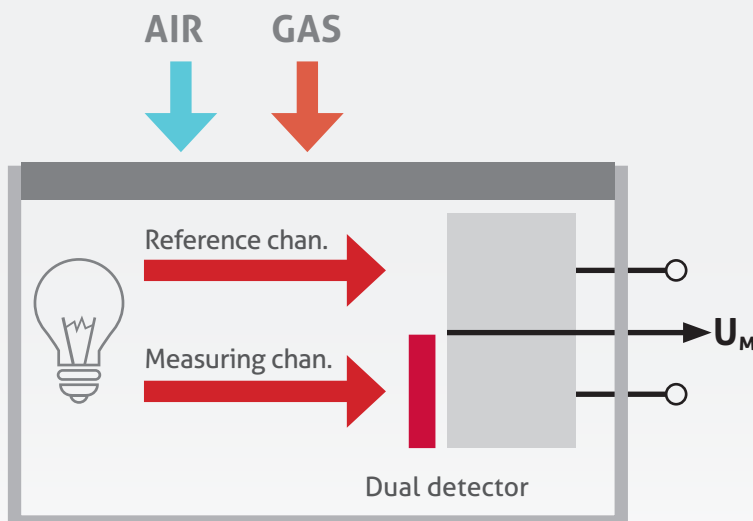
Infrared exchange sensor for precise and selective measurement of gases.

For applications where durability and high precision measurement are important. The IR measuring method with integrated temperature compensation ensures highest accuracy, selectivity and reliability. In the μ Controller all data and measured values of the sensor element are

stored fail-safe and are digitally transmitted via the local bus to the sensor-board SB2 or multi-sensor-board MSB2 or to the MSC2 or WSB2. The sensor head automatically transmits information about the maintenance interval to the controller.

+ BENEFITS

- Long life expectancy
- Low maintenance costs
- High accuracy, selectivity and reliability
- Measuring value setting time $t_{90} < 30$ sec.
- Gilded mirror surface
- Low zero drift
- Sensor with long service life and high durability
- Running-in time until operation < 60 sec.



Sensor Heads SC2 + MC2

With electrochemical sensor element

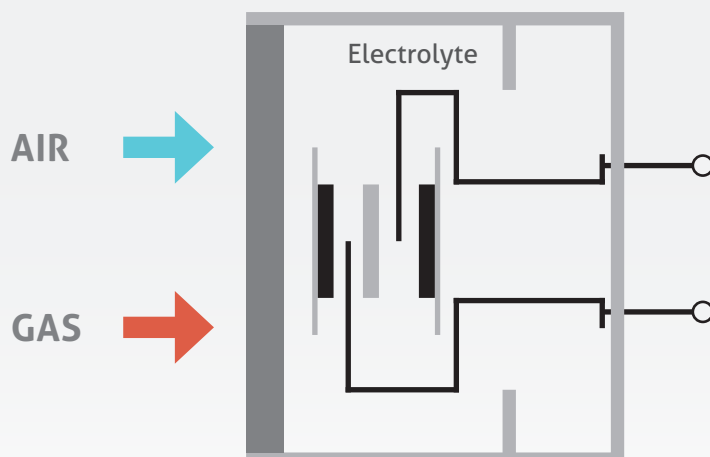
Application for toxic gases and coolants.

These sensors are used to measure mainly toxic gases such as CO, NO, NO₂ and function according to the electrochemical principle. This means that there is an electrolyte in a cell. It reacts proportionally to the presence of gas

with the formation of ions, which ultimately generates a current. This change then indicates the gas concentration. This principle has a high sensitivity and a fast reaction time, which is especially interesting for toxic gases.

+ BENEFITS

- High sensitivity
- Linear signal
- Low cross-sensitivity
- No energy is required
- Fast response time
- No poisoning by silicones



Sensor Heads SC2 + MC2

With pellistor sensor element

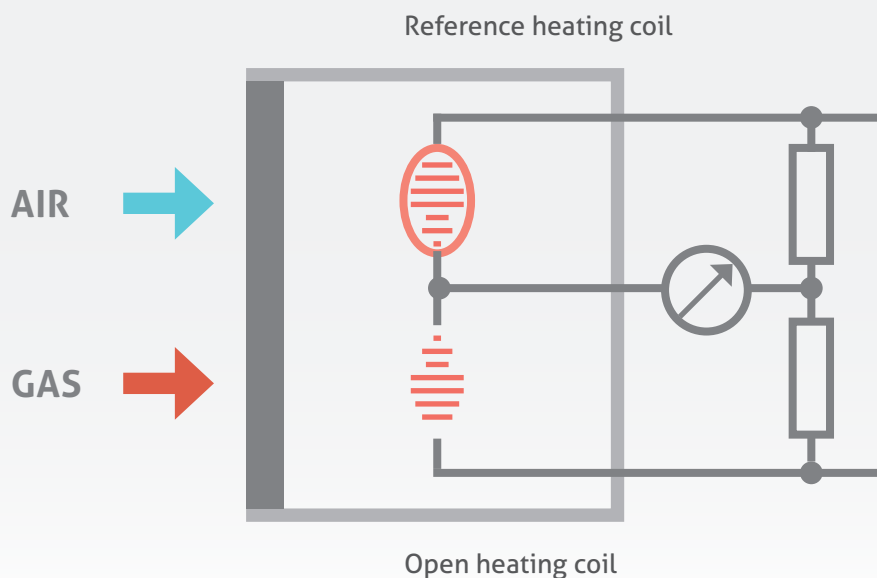
Application for combustible gases and vapors.

Pellistors or catalytic sensors consist of an active and a passive pellistor. These form a Wheatstone bridge circuit, which is operated with a heating current of approx. 450 °C. When gas is present, the resistance on the active side

changes, which generates a current flow. This method is particularly suitable for explosive gases, where high linearity and measuring accuracy is required.

+ BENEFITS

- Linear signal
- High measuring accuracy
- Temperature range -30 °C to 50 °C



Sensor Heads SC2 + MC2

With semiconductor sensor element

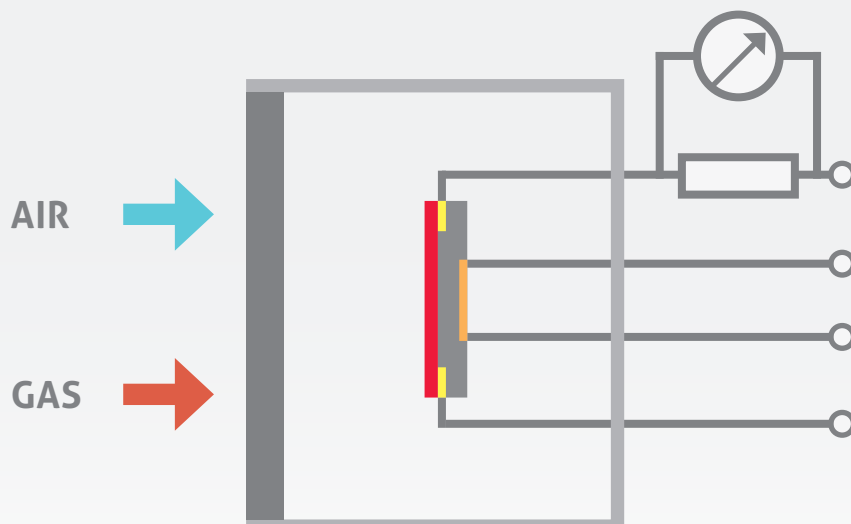
Available for combustible gases and freons.

Semiconductor gas sensors for gas detection are not made of silicon or germanium, but of N- or P-conducting metal oxides (e.g. zinc oxide, tin oxide, copper oxide). The measuring effect is based on the accumulation of certain gas atoms

on the surface of the semiconductor material, which causes a change in electrical resistance. These sensors are not very selective, but are excellent for leakage measurement.

+ BENEFITS

- Cost-effective
- Very good leakage measurement



X-Change Technology

Exchangeable sensor SC2 and MC2

Time-saving calibration of the gas sensors.

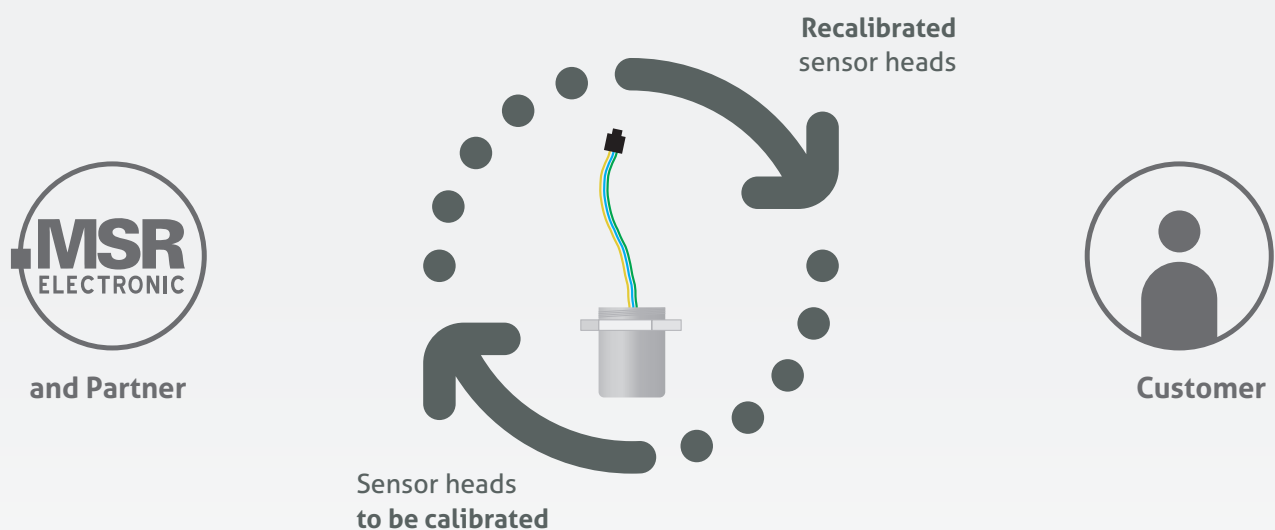
Until now, the necessary calibration of the sensors was a complex procedure and dependent on an external certified company. This was very time-consuming and expensive. The sensors had to be opened, checked and calibrated with great care at the construction site. If an error was found, it was necessary

to take the complete sensor with you and replace it afterwards. With the new X-Change technology this effort can be saved. The exchangeable sensor head can be replaced on site at any time. The transmitter therefore remains untouched. This saves time and costs.



EASY AND INDEPENDENT RECALIBRATION

- Significant time and cost savings
- Easy exchange process
- Delivery of recalibrated sensor heads
- Increased safety for your system



HOW-TO VIDEO

Watch the easy exchange process in this video.



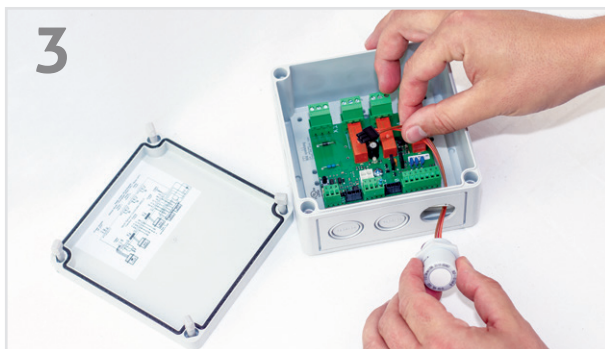
Quick and safe sensor exchange



Open the housing with a customary screw driver.



Disconnect the sensor cable and unscrew the to be calibrated sensor head. **The yellow LED lights up.**



Replace the sensor head and connect the cable of the newly calibrated head to the board. **The yellow LED goes off again.**



Close the housing again and the recalibrated sensor is immediately ready for use.

Sensor-Board SB2

For connecting up to three different sensor heads

Sensor-board with RS-485 interface.

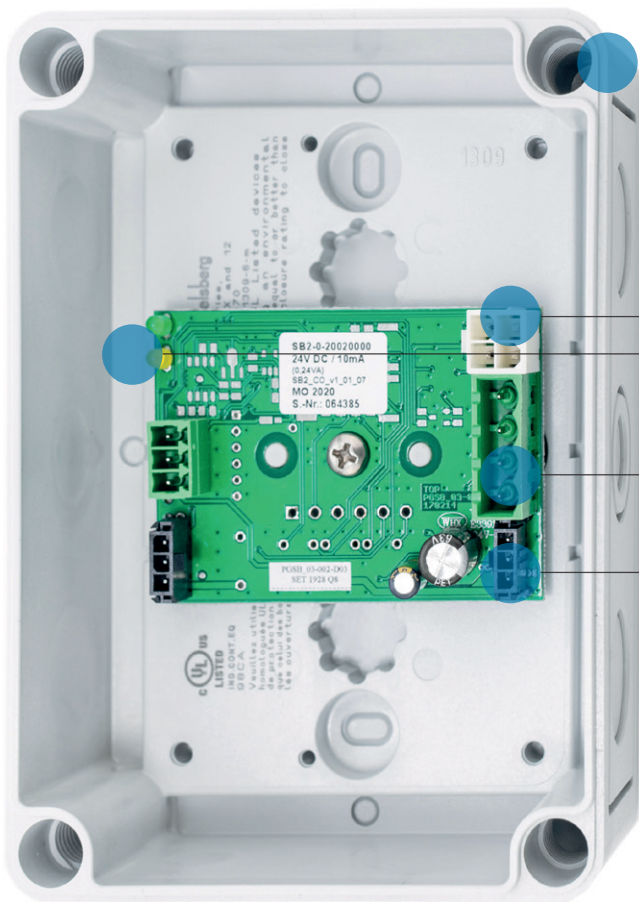
Up to 3 different sensor heads of the SC2 series can be connected to the SB2 sensor-board via the local bus. The SB2 ensures the power supply of the SC2 and provides the measured data of the sensor heads for digital

communication. Communication with the DGC-06 controller takes place via RS-485 fieldbus interface with DGC-06 protocol. Additional protocols are available for direct connection to higher-level BMS.

+ BENEFITS

- Digital processing of measured values
- Internal function control with integrated hardware watchdog
- Measured values in sensor head SC2, therefore easy change: uncalibrated <-> calibrated
- Up to 3 different sensor heads
- Sensor head can be mounted via remote-board (RB2)
- Software according to SIL2 compliant development process
- Modular technology (pluggable and changeable)





Housing IP65

Interface Service Tool STL06
Control LED (green / yellow)

DGC-06 Fieldbus power supply

Input sensor head



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Warning + Sensor-Board WSB2

With RS-485 interface, 4-20 mA output and alarm relay

Simple sensor exchange by plug connection on the local bus.

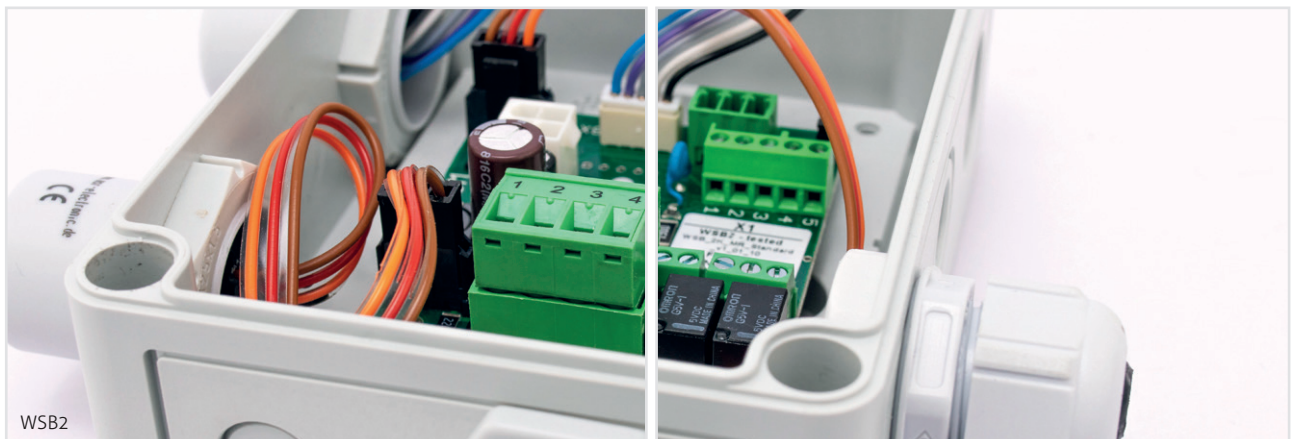
The warning and sensor-board WSB2 ensures the power supply of the sensors and processes the measured data of the sensor head (SC) for digital communication. Communication with the DGC-06 controller takes place via the RS-485 fieldbus interface with DGC-06 protocol.

The SC is connected to the local bus via a plug connection. This allows a simple SC change instead of an on-site calibration. The internal X-Change routine recognizes the exchanged SC during the change process and starts the measuring operation automatically.



BENEFITS

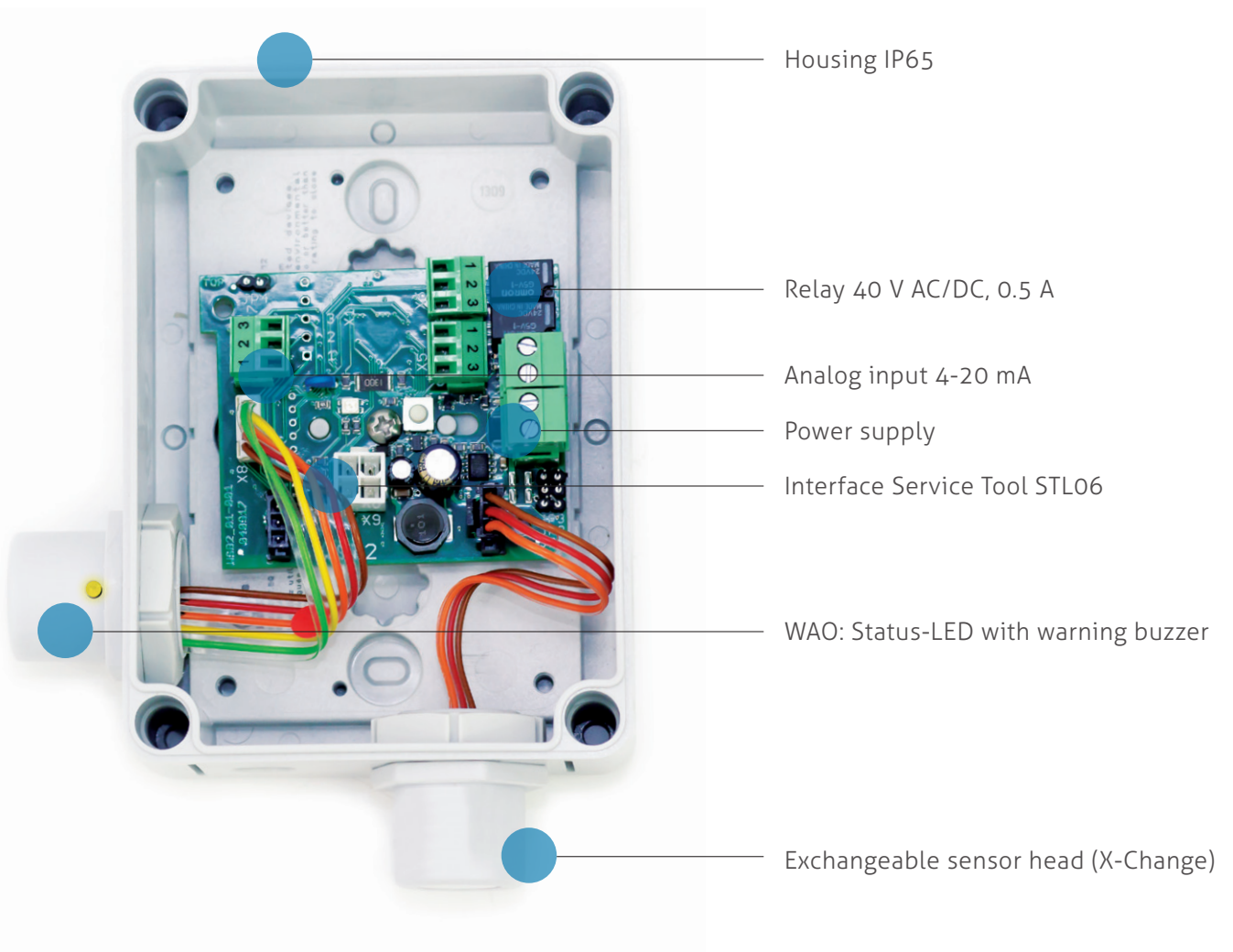
- Digital processing of measured values incl. temperature compensation
- Internal function monitoring with integrated hardware watchdog
- Up to 3 different sensor heads (2 identical SC2 possible)
- Analog input, 4-20 mA for an analog sensor
- Software according to SIL2 compliant development process
- Modular technology (pluggable and exchangeable), IP65 design
- Easy maintenance and calibration by replacing the sensor head or by convenient on-site calibration
- Serial RS-485 interface with protocol for DGC-06 (optional Modbus)
- 4-20 mA analog output
- 1 alarm relay with changeover contact, potential-free max. 30 V AC/DC, 0,5 A
- 1 fault signal relay, additionally configurable as alarm relay, with changeover contact, potential-free max. 40 V AC/DC, 0,5 A
- Display (optional)





HOW-TO VIDEO

Take a look at the commissioning of the WSB2 in this video.



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Multi-Sensor-Board MSB2

Flexible for several gases

Sensor-board for integration of the sensor head SC2 with relay.

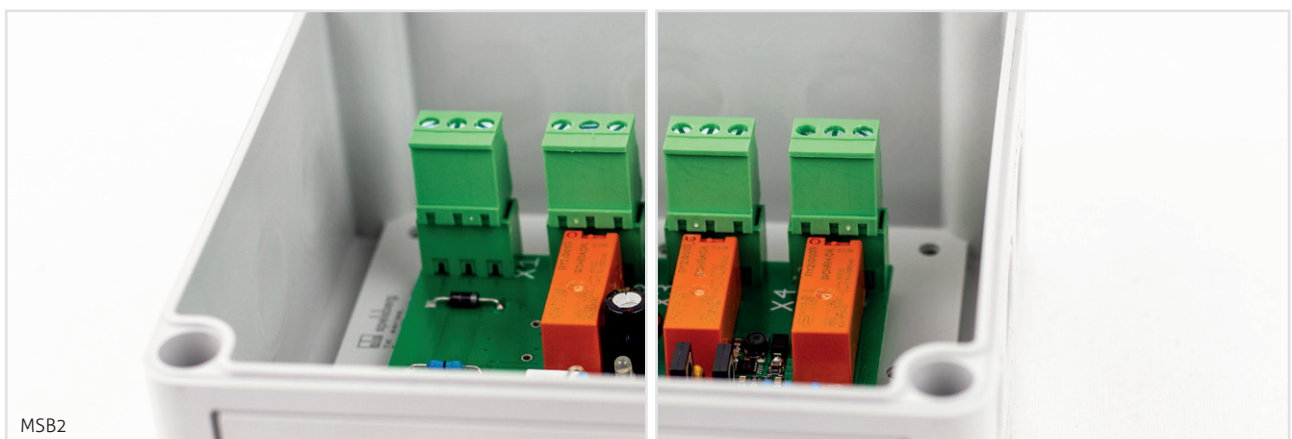
The multi-sensor-board MSB2 is designed to accommodate up to 3 sensors. It provides 3 relays next to the sensor holder, which can be controlled by 1 higher-level controller, such as

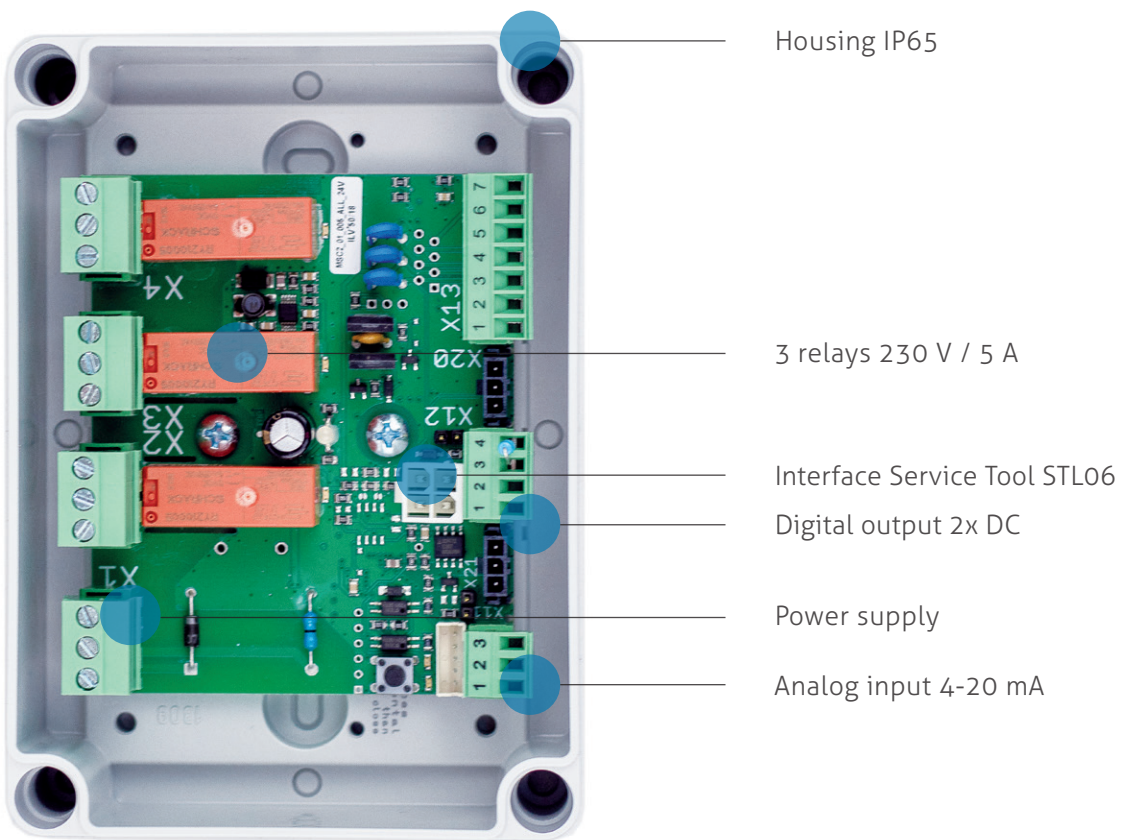
the DGC-06. The relay distribution on site saves the wiring of warning devices or fans directly to the main controller. This allows a wide range of applications even with existing wiring.



BENEFITS

- Digital processing of measured values
- Up to 3 different sensor heads
- Software according to SIL2 compliant development process
- Modular technology (pluggable and exchangeable)
- Serial RS-485 interface with protocol for DG-C06 (optional Modbus) 3 relays (230 V / 5 A)
- Optionally also available with display (built-in or remote)
- Direct control of the warning devices by DGC-06 possible, thus considerable savings in wiring
- Also available as version with extended safety for wire break and function monitoring





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Analog-Relay-Board ARB2

Monitoring and warning of gases

Gas measurement, warning and control board based on the latest technology for continuous monitoring of the ambient air.

The ARB2 is designed to connect one analog 4-20 mA sensor, e.g. MC2 sensor.

The board monitors the measured value and activates the alarm relays when the set alarm thresholds for pre and main alarm are exceeded.

In addition, the measured value is provided as 4-20 mA at the analog output. Options such as display and warning unit (WAO) ensure adaptation to the wide range of applications in the gas measurement technology.

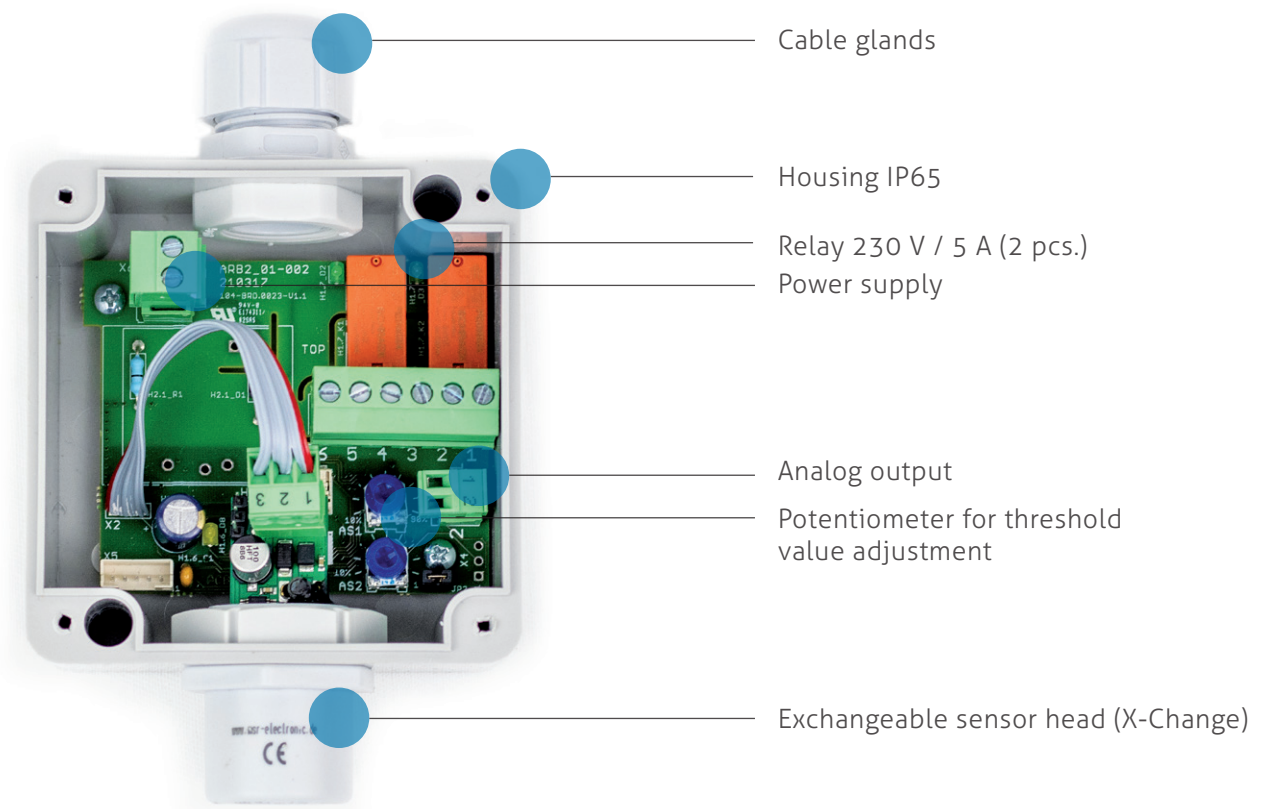
+ BENEFITS

- Easy maintenance and calibration by exchanging the MC2 sensors or comfortable on-site calibration
- Sensor can be placed up to 500 m
- Reverse polarity protected, overload and short circuit proof
- 1 analog input 4-20 mA, e.g. MC2 series and 1 analog output 4-20 mA / 2-10 V
- 2 relays with changeover contact, potential-free, max. 250 V AC, 5 A
- Various housing types with protection class IP65
- Display / WAO: Status-LED with warning buzzer (optional)
- Operating voltage 24 V AC/DC
- 100-230 V AC (optional)
- 12 V DC (optional)



ARB2, optional with sensor





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Multi-Sensor-Controller MSC2

Different sensors for different gases

Modern multi-sensor-controller MSC2 for toxic and combustible gases.

The MSC2 multi-sensor-controller monitors the measured values and activates the alarm relays when the pre and main alarm thresholds are exceeded. Various output and input options allow easy integration into existing systems. The sensors are connected to the MSC2 directly

on the board. Up to 2 (different) digital sensors can be connected or 2 analog sensors can be connected remotely. In total the MSC2 can process up to 3 sensors.

The MSC2 is therefore a small, compact version with many possible applications.

+ BENEFITS

- Hardware and software according to SIL-compliant development process
- Easy maintenance by replacing the sensor head or convenient on-site calibration
- Modular technology (pluggable and exchangeable)
- Reverse polarity protected, overload and short circuit proof
- Local bus connection for 2 sensor heads SC2 + 2 analog inputs 4-20 mA (max. 3 sensors)
- 3 relays with changeover contact, potential-free max. 240 V AC, 5 A
- 2 transistor outputs, 24 V DC, 0.1 A (positive switching)
- Serial RS-485 interface with protocol for DGC-06 or Modbus protocol
- Different housing types with IP65
- 2 digital inputs
- Operating voltage 230 V AC, with wide range input 100-240 V AC (optional)
- WAO: Status LED with warning buzzer / acknowledgement button (optional)
- Display / UPS (optional)



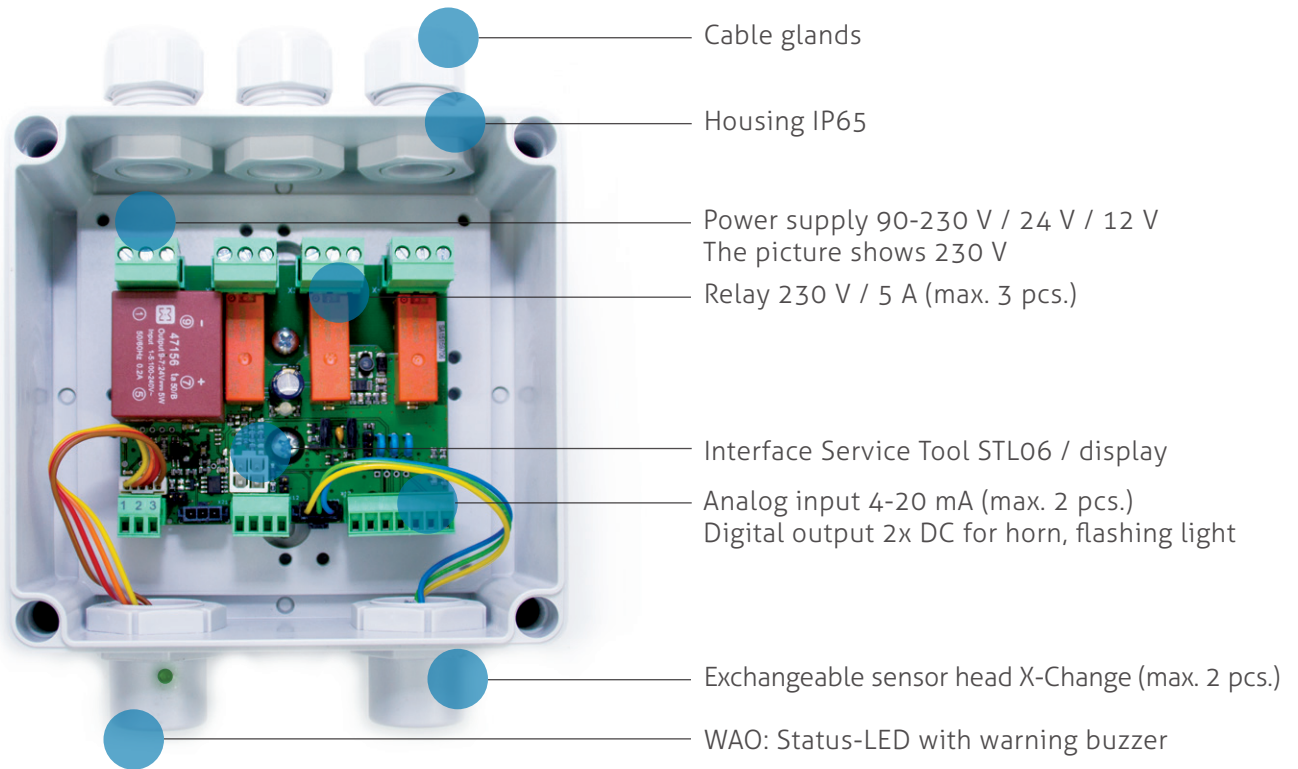
MSC2 with display





HOW-TO VIDEO

Take a look at the commissioning of the MSC2 in this video.



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Compactcontroller

Versatile and flexible in use

The Compactcontroller is designed to connect up to 10 SB2 units via the local bus.

The controller monitors the measured values and activates the alarm relays when the pre and main alarm thresholds are exceeded. The measured values are provided via an RS-485 interface for direct connection to higher-level BMS and as a 4-20 mA output. The SIL-compliant self-monitoring in the Compactcontroller as well as in the connected SB2 unit activates the fault message in case of an

internal fault in the same way as a fault in the local bus communication (SB2 unit).

Further options such as WAO (status LED and warning buzzer) and digital input for the acknowledgement function ensure adaptation to the wide range of applications in gas measurement technology. The Compactcontroller can be configured and parameterized completely without an additional hand tool.



BENEFITS

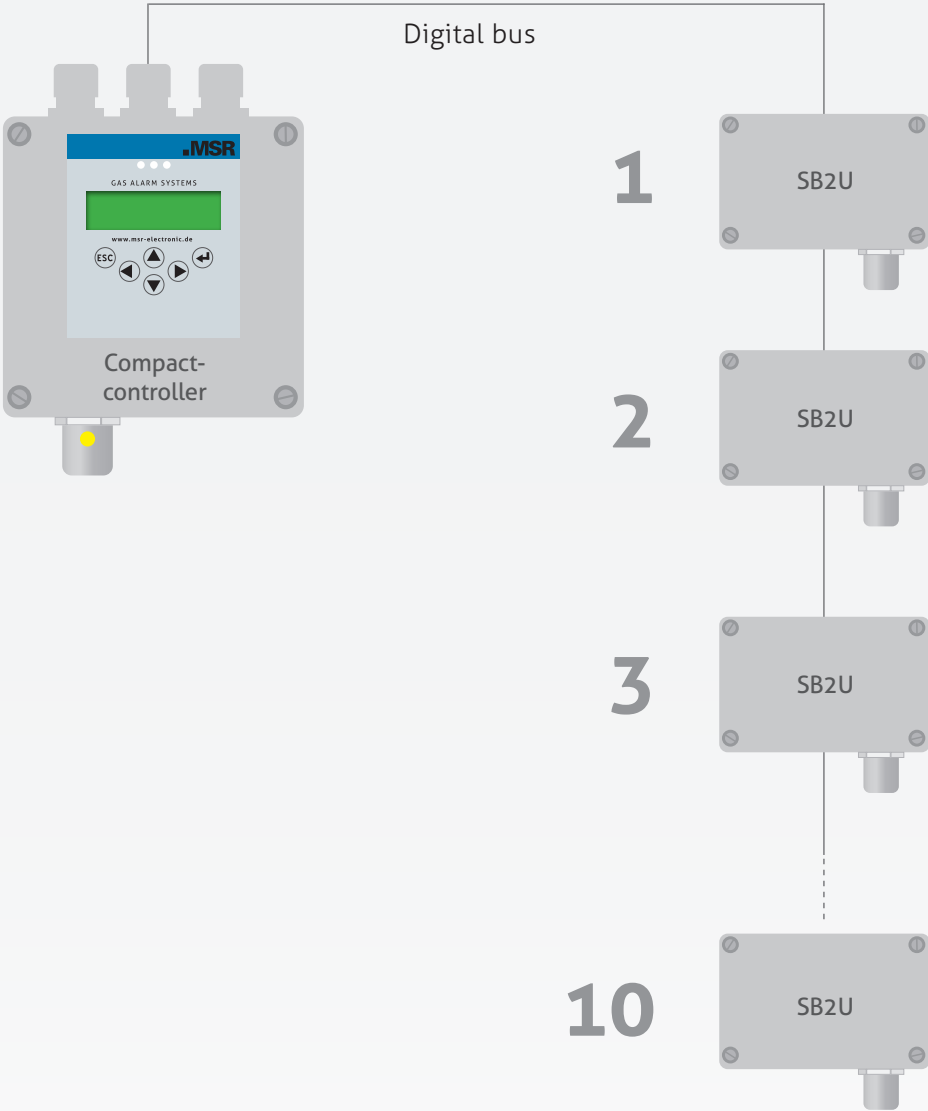
- Display for indication, configuration and calibration functions (no other tool necessary)
- Fieldbus connection for up to 10 gas sensors (SB2Units) with max. 900 m length
- Hardware and software according to SIL-compliant development process
- Modular technology (pluggable and exchangeable), reverse polarity and overload protected
- Internal function monitoring with integrated hardware watchdog
- 3 relays, 2 transistor outputs, 2 digital inputs
- Different housing types with IP65
- WAO: Status-LED with warning buzzer (optional)
- Operating voltage 230 V AC, with wide range input 100-240 V AC (optional)
- UPS (optional)



Compactcontroller with SB2Units



Compact gas detection system for up to 10 sensors



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Multi-Gas-Controller MGC2

Versatile and flexible in use

Multi-gas-controller for toxic and combustible gases, refrigerants and oxygen.

The multi-gas-controller MGC2 monitors the measured values and activates the alarm relays when the pre and main alarm thresholds are exceeded. Various output and input options

allow easy integration into existing systems. Up to 3 analog sensors can be connected remotely to the MGC2. The MGC2 thus represents the compact version for analog sensors.



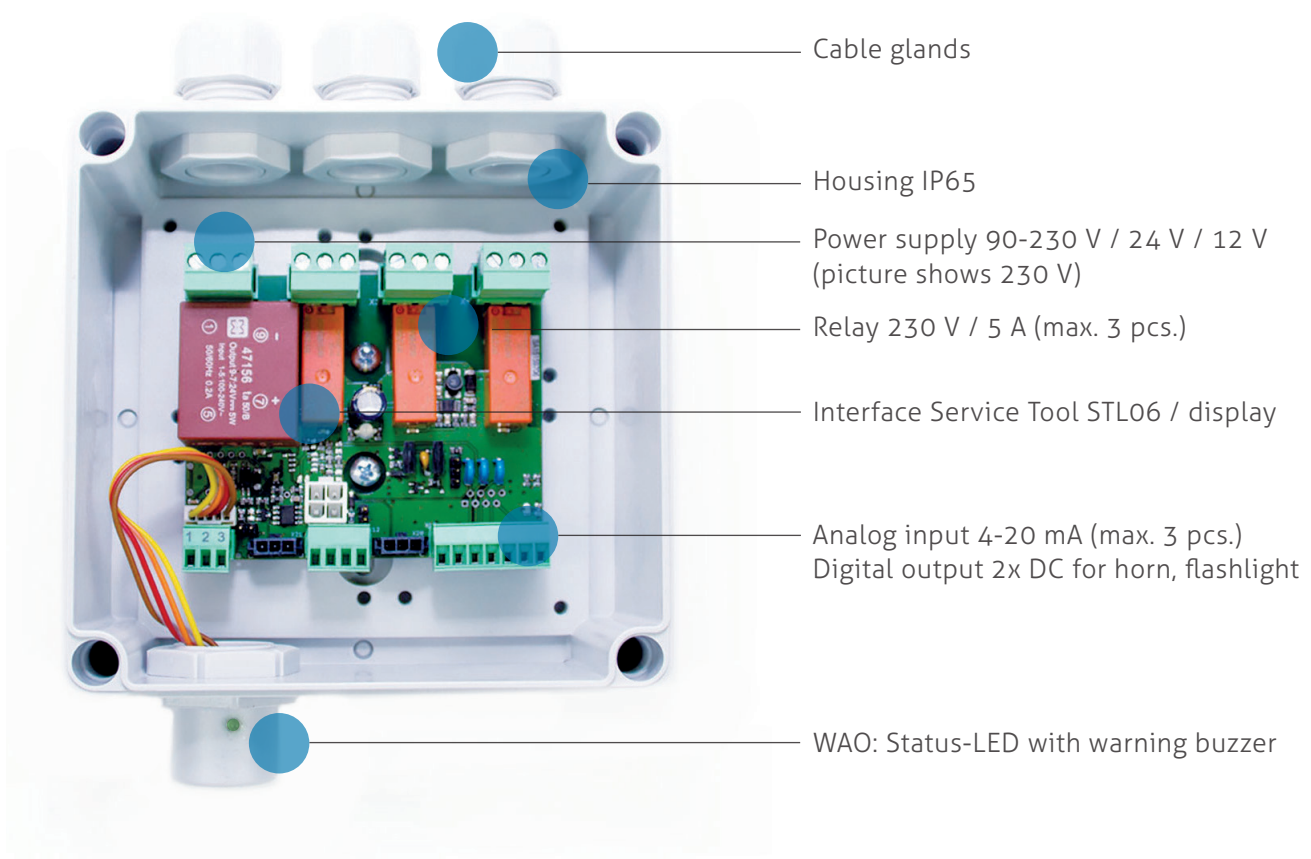
BENEFITS

- Internal function monitoring with integrated hardware watchdog
- Hardware and software according to SIL-compliant development process
- Easy maintenance by replacing the sensor head or convenient on-site calibration
- Modular technology (pluggable and exchangeable)
- Reverse polarity protected, overload and short circuit proof
- Local bus connection for 2 sensor heads SC2 & 2 analog inputs 4-20 mA (max. 3 sensors)
- 3 relays with changeover contact, potential-free max. 240 V AC, 5 A
- 2 transistor outputs, 24 V DC, 0.1 A (positive switching)
- Serial RS-485 interface with protocol for DGC-06 or Modbus protocol
- Different housing types with IP65
- 2 digital inputs
- WAO (status LED with warning buzzer) for warning, fault, operation and service (optional)
- Acknowledgement button (optional)
- Operating voltage 230 V AC, with wide range input 100 to 240 V AC (optional)
- Display / UPS (optional)



MGC2 with Display





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Add-on: Gas Selector for MSC2

Free rein for detection

The Gas selector for various gas combinations.

With the gas selector you have a simple and quick selection of the gases to be individually detected. No further tool is necessary. This makes quick configuration and adjustment easy with the gas selector. Incorrectly connected or reversed SC2 sensor heads are immediately detected as an error.

Two different measuring heads can be operated on the device. The gases from differ-

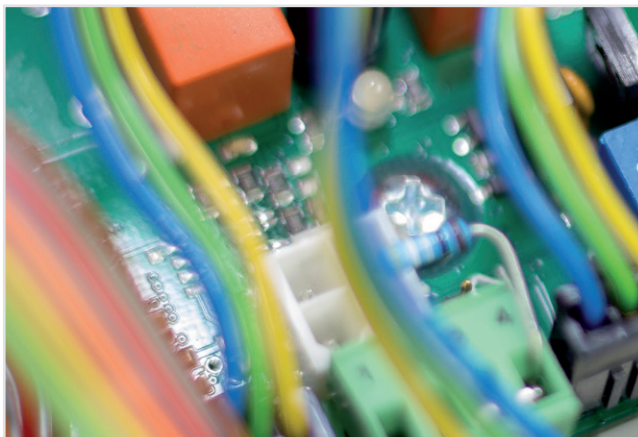
ent Freon groups or CO₂ can each be used in parallel on the device. The advantage is fast operational readiness of the devices including adaptation to different gas types.

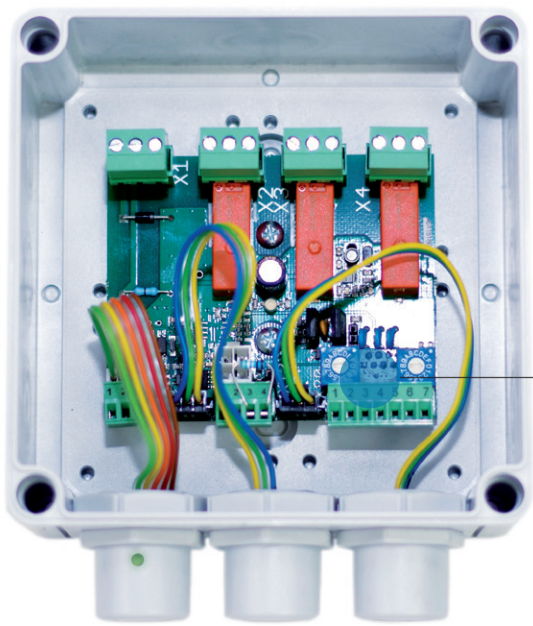
The gas selector can be ordered from a certain quantity. For more information, please contact us at info@msr-electronic.de



BENEFITS

- Basic product: MSC2
- No additional tool required
- Universally applicable
- High number of available gas combinations
- Cost and time saving





Gas selector

SETTING OPTIONS



Zero position:

No gas selected
(factory setting)



Gas selection, for example:

Position 1: CO₂ (R744)
Position 2: R134a



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Digital-Gas-Controller DGC-06

The gas monitoring center

Measuring, warning and controller system for toxic and combustible gases in garages.

The digital-gas-controller DGC-06 has been developed for large systems or even for extensive connections. There will hardly be a scenario in gas monitoring which this controller does not cover. From complex garages to access functions switched by gas alarm, everything is possible. The innovative DGC-06 gas-controller series is designed according to EN 50545

and can monitor and evaluate up to 128 gas sensors, 96 of which are PolyGard®2 digital and/or 32 analog sensors (4-20 mA). There are 4 freely adjustable alarm thresholds per sensor. For alarm messages, the controller system has up to 32 relays with potential-free changeover contact and up to 16 analog outputs with 4-20 mA signal.

+ BENEFITS

- 128 sensors
- Relay extendable with EP modules
- Display with LED
- Service-tool for configuration
- Direct connection to GLT, GC-06 integrated
- Units are adjustable
- UPS / data logger (optional)
- Can be integrated into switch cabinet
- Safety product, scalable
- Expandable for up to 7 EP-06 modules





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Modules

Perfect control of the actuators

Measuring, warning and controlling system for toxic and combustible gases and vapors.

The modules are designed according to EN 50545 and can be assembled for any situation by means of a simple configuration. The controllers, such as the GC-06, are the core elements of the systems. Expansion-modules, like the EP-06, provide additional inputs and outputs. Since MSR-Electronic has extensive

certification and many years of experience in the manufacture of controllers, professional preparation for complex acceptance tests is guaranteed. The modular technology allows for compact yet flexible and highly efficient systems.



BENEFITS

- Modular assembly
- Individual configuration
- Various options
- Serial bus



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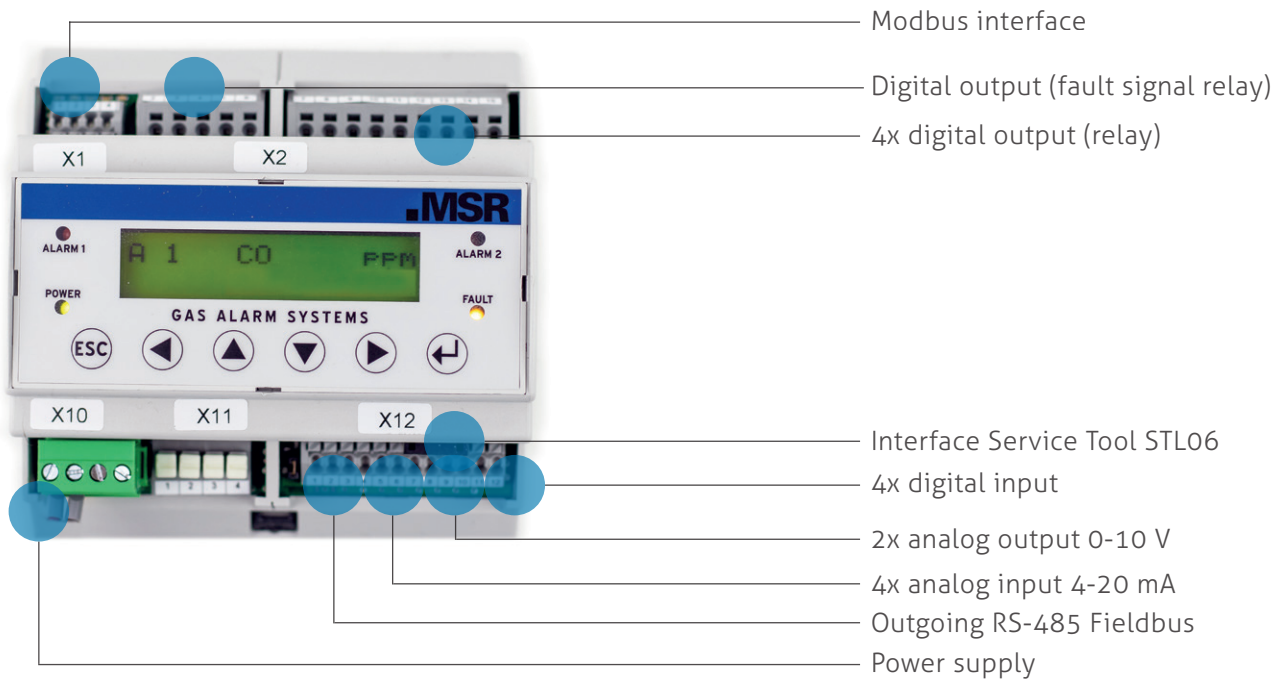
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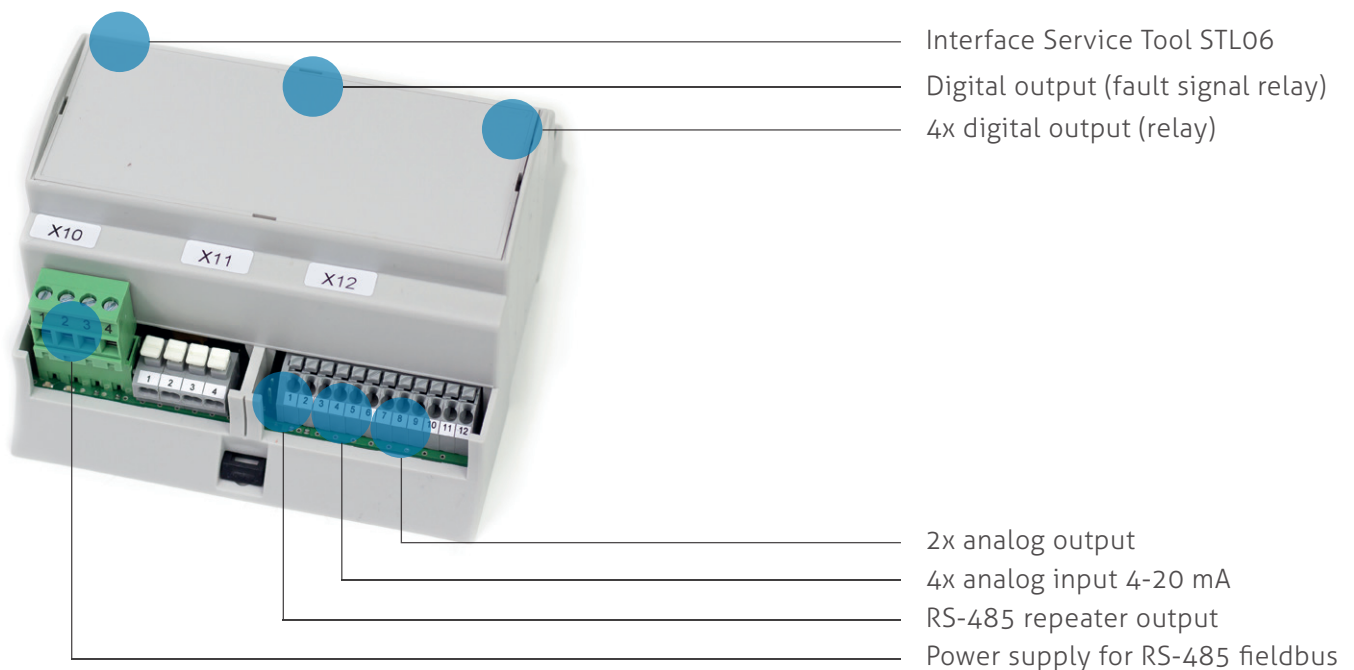
Modul GC-06



Module GC-06



Expansion module EP-06 for GC-06



Door-Entrance-Module DEM-06

Safe access monitoring

The DEM-06 module visualizes the gas alarm in real-time at all access points.

The DEM-06 door entrance modules from MSR-Electronic ensure maximum safety. If an increased gas concentration occurs in buildings, e.g. in parking garages, the entrances and

entries can only be opened in one direction: From the inside to the outside. This ensures that persons can only move outwards from the hazardous area, but never inwards.

+ BENEFITS

- Optical and acoustic warning
- For buildings with different danger zones
- Stand-alone application (without DGC controller) possible
- No intervention in the DGC controller system necessary
- Configurable for up to 96 sensors in one DGC controller system
- Cost saving

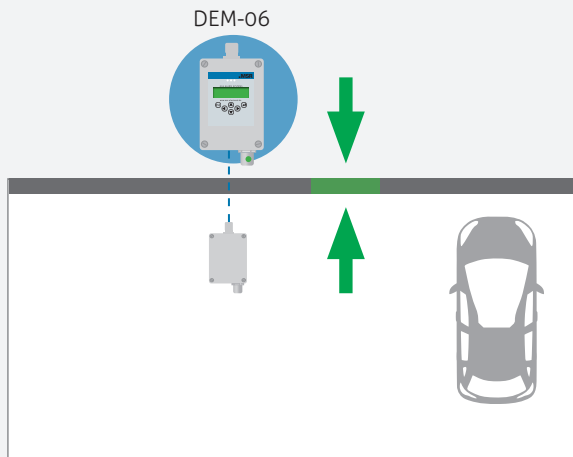


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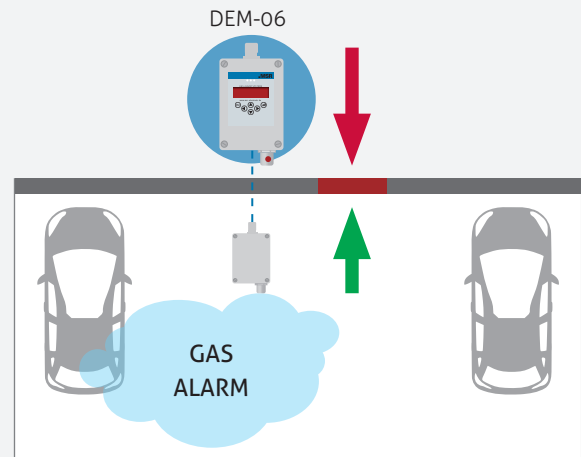
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Access monitoring parking garage

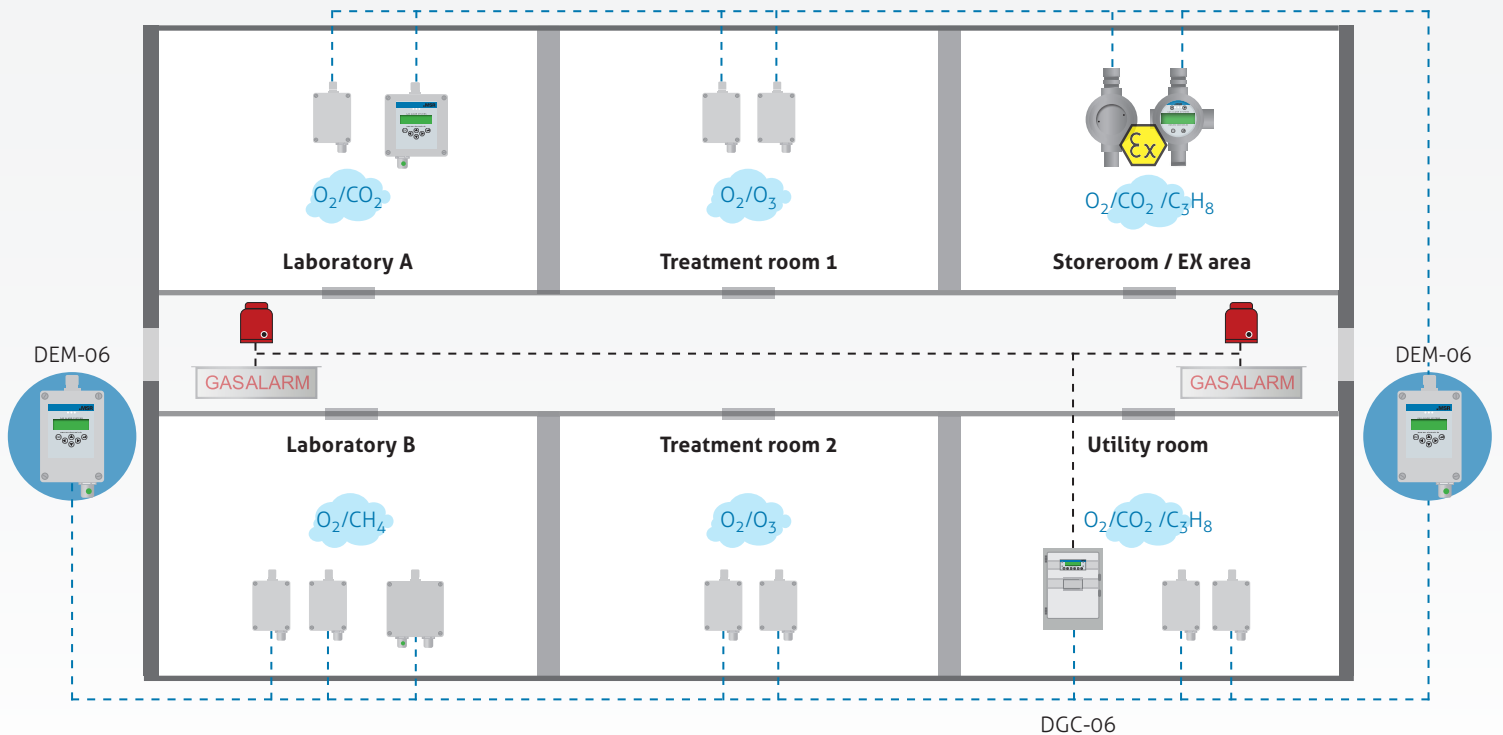


No gas alarm: Display green



For gas alarm: Display red

Access monitoring large capacity laboratory



DGC-06

Software PCE06

Perfect for gas detection system service

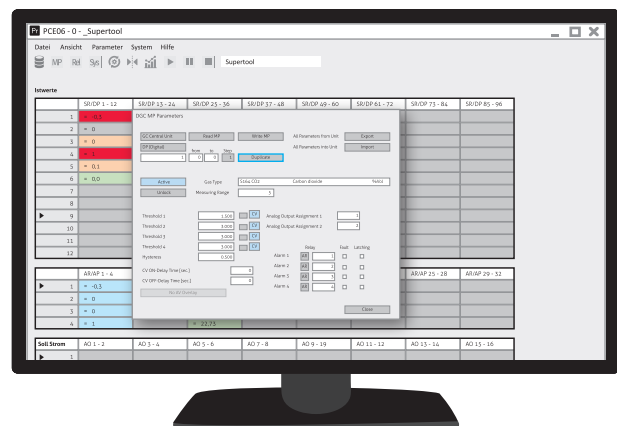
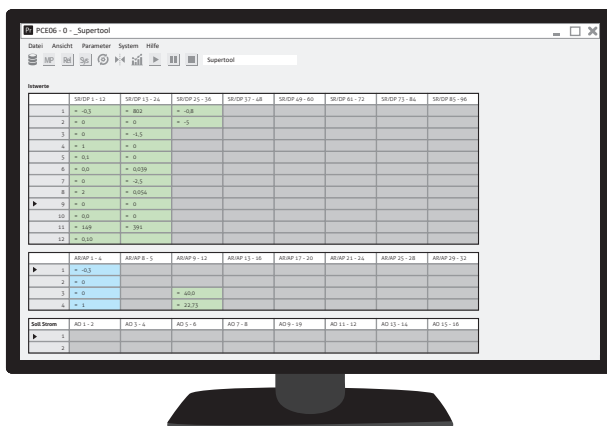
Self-supporting, menu-driven PC tool for convenient addressing, parameter setting and calibration for devices for the PolyXeta®2, PolyGard®2 and µGard® product line.

The communication to the PC is done via the supplied USB-RS-485 and USB/TTL adapter. The supply and data coupling with galvanic isolation to the devices is carried out via a cable with plug connection.

+ BENEFITS

- User-friendly design
- No installation required on the PC
- Available for operating systems Windows 7, 8, 10
- Dongle protection in the adapter, thus PC change possible without problems (turn off virus scanner for USB required)
- Communication / power supply of the adapter via a cable
- Recording and export of measured values possible
- Now available as offline version: Easy configuration and quick loading into the controller on site

Screenshots of the software PCE06Seite



Service-Tool STL06

In user-friendly design

Self-supporting, menu-driven tool for convenient addressing, parameter setting and calibration for devices for the PolyXeta®2, PolyGard®2 und µGard®2 product line.

The communication and power supply are done via a cable which is connected to the respective devices.

+ BENEFITS

- User-friendly design
- Simple menu structure
- Two-line display / 16 characters
- 6 operating keys
- 3 LEDs for status display
- Communication / power supply via a cable



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STL06



Warning Devices

Always on alert

Robust, maintenance-free and energy-saving LED technology for static or flashing control.

Warning sign

Due to the flat design in the solid aluminum profile and the low weight, a simple one-man assembly is possible. The electrical connection is carried out in the supplied WT-box without opening the warning sign. It serves as optical warning of a dangerous gas concentration or a malfunction of the ventilation system in underground car parks, tunnels, car workshops, loading zones as well as in all areas where optical warning of a dangerous gas concentration or other hazards is necessary.

Flashing light

The Xenon flashing light is made of solid plastic (ABS) according to EN 50545. It is universally applicable for fire alarm and safety technology according to VdS guidelines.

Warning horn

The warning horns consist of solid housings, e.g. plastic (ABS) according to EN 50545. It is universally applicable with 32 adjustable tones, incl. DIN tone for fire alarm and safety technology in accordance with VdS guidelines.

Warning horn/flashing light combination

The warning horn incl. flashing light made of solid plastic (ABS), according to EN 50545, is universally applicable. It consists of the warning siren and a xenon flashing light for acoustic and optical warning with separate control.



Warning sign



Warning horn/flashing light combination

Standard versions warning signs

Version D3, 642 x 203 x 22 mm

Two-sided: Text red, background white

Version D3, 642 x 203 x 22 mm

Two-sided: Text yellow, background white

Visibility information

According to the requirements for escape sign luminaires in accordance with DIN 4844, where applicable, there is a visual range of 26.4 m for backlit signs with a sign height of 132 mm and an average luminance of 200 cd / m. The material is not translucent and therefore easy to read even in bright light.



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Additional Accessories

For sensor calibration and leakage protection

Air duct system

Duct mounting set with plastic housing



BENEFITS

- Flow velocity: min. 5 000 m/h, max. 20 000 m/h
- Duct diameter: Min. 0,1 m, max. 1,0 m
- Flammability: UL 94 V2
- Tube length: 2x 1.000 mm
- Sampling tube 250 mm adaptable to duct diameter

SplashGuard

A cover that protects a SC2 or MC2 from rain and splash water from all directions.

The splash protection cap is put on the sensor head. Calibration can be performed with the mounted protective cover using a compatible calibration adapter.



BENEFITS

- Protection of SC2 and MC2 sensors against rain and splash water from all directions
- Protective cap is placed directly on the sensor head
- Calibration with mounted protective cover by means of a compatible calibration adapter



SplashGuard



Calibration adapter

For convenient gassing of sensors SC2 and MC2 and for the targeted supply of zero and test gases to the sensor head.

The adapter is optimally designed to bring the gas directly to the respective sensor head. This enables the most accurate calibration, which is absolutely necessary for proper function. The tube can be connected directly to the pressure limiter of the gas cylinder.

+ BENEFITS

- Suitable for all gases
- Easy to use
- Perfect coverage of the sensor head



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Control Box

In combination with GC-06, DGC-06

Visualize measurement data and identify hazards at a glance.

The Control Box is used in combination with the gas-controller GC-06 or DGC-06 (each with Modbus option) of a gas detection system. The display can show sensors, measured values and parameters such as alarm relay switching

thresholds. Statistics can also be queried and exported. Due to the integrated network interface, the Control Box can be integrated into an existing network and thus all measured values can be retrieved remotely.

+ BENEFITS

- Plug & Play Software
- Automatic reading of the configuration and display of the AR/SR and the measured values
- Multiple user levels possible
- Display of current values, statistics, faults, alarms etc.
- Capacitive multi-touch screen
- Easy mounting
- Subsequent installation possible
- Network interface for integration into existing network
- Access with mobile devices and PCs via web browser





Example of installation



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MSR-Cloud

Everything at a glance via PC, smartphone or tablet

Thanks to plug and play visualization, the innovative cloud solution works simply and easily, even with systems that have already been installed.

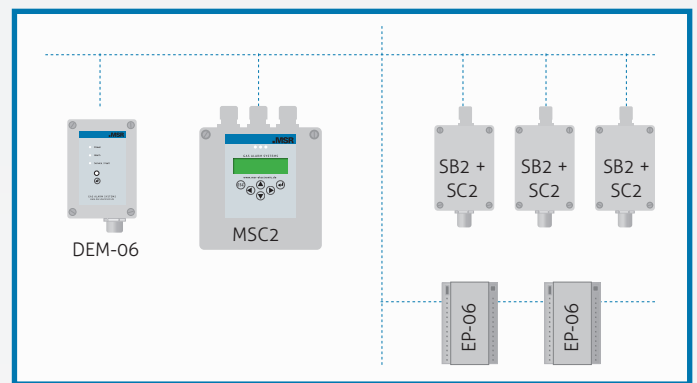
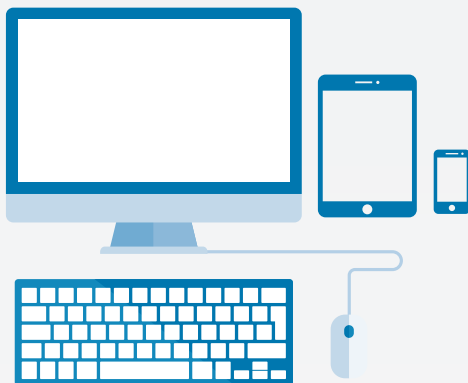
A graphical trend monitoring can be accessed via the MSR-Cloud. The intuitively designed rights management of access to the systems deserves special mention. This allows complete control over the systems, and this via worldwide access via the Internet. Not only visualizations can be displayed via the cloud. A complete overview of alarms, errors and other notifications is also

possible. These can be routed via mail or SMS. In addition, links to data sheets, operating instructions or individual files are provided. This considerably simplifies the workflow for service staff. As a planning tool, the cloud is also an ideal partner for receiving information on upcoming maintenance and service activities early on.

+ BENEFITS

- Fully customizable information
- Adjustable notifications
- Clearly arranged dashboard
- Hosting with MSR-Electronic possible
- Real-time information such as warning and maintenance messages
- Configurable structure of rights
- Multiple projects in one cloud solution
- Access via web browser or with mobile devices (cell phone, tablet, ...)
- For all devices that have a compatible browser and access to the Internet





PROJECT ADMINISTRATION

- Overview and administration of projects and user rights
- Create your own symbols and icons
- Individual notifications configurable

Parking Guidance Systems

by MSR-Traffic

Indoor and Outdoor: Ultrasonic sensors are used to record the availability of each individual parking space and manage it using a controller/control computer.

The current occupancy status is shown on LED displays at the entrance and per level. In this way, customers can be guided directly to the nearest available parking space. This not only makes searching easier and reduces traffic in the parking garage or on the outside parking lot, but also saves the customer

valuable time. Thanks to the optimally used parking spaces, the operator can also reduce ventilation costs. The systems for recording and counting incoming and outgoing cars in car parks can be implemented for one area or for individual levels.

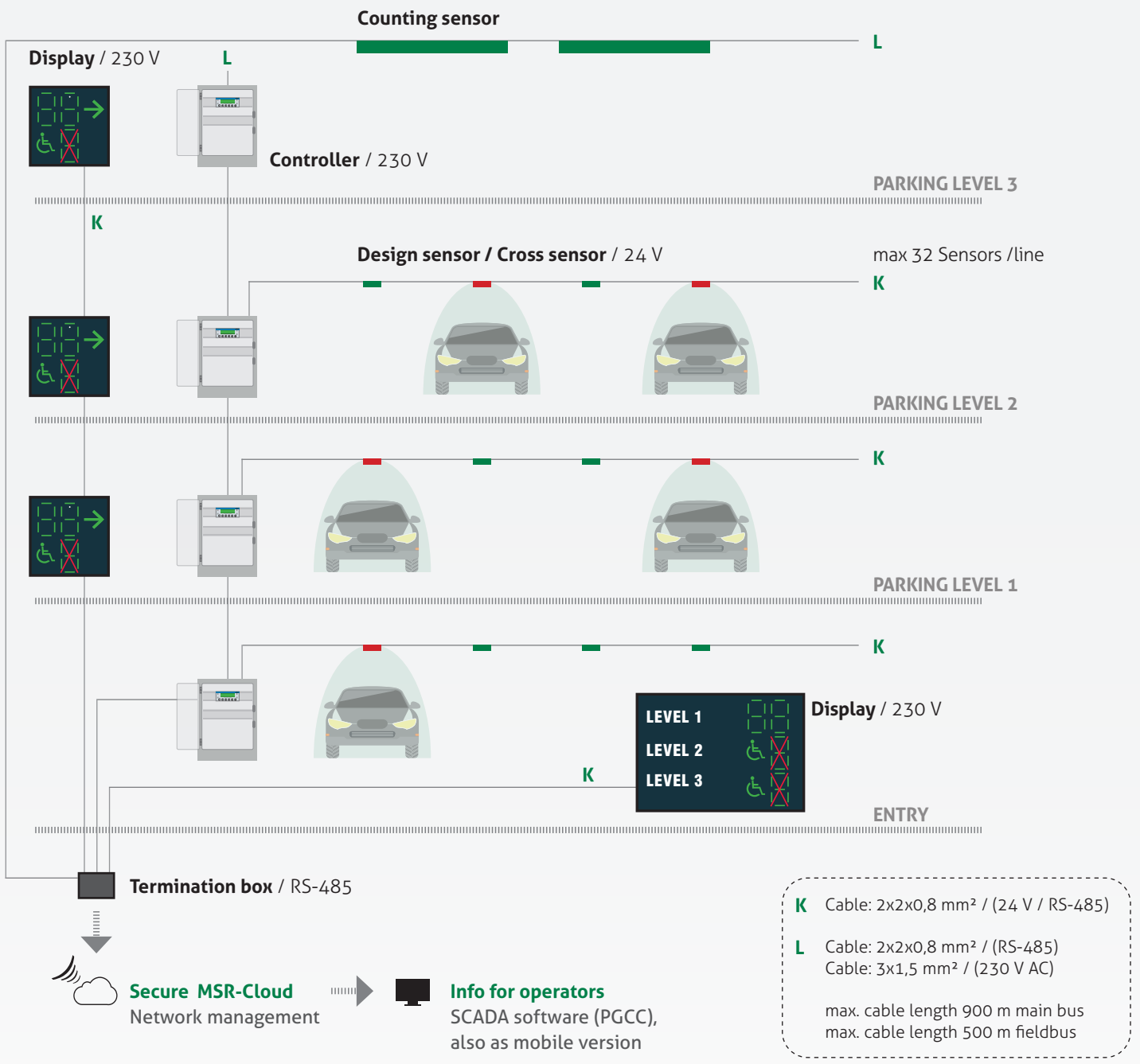
MSR-Traffic GmbH is a subsidiary of MSR-Group



BENEFITS

- Long service life
- No additional maintenance costs
- Exact recording and monitoring of all parking spaces
- Significant reduction of parking search traffic
- Minimal installation effort
- Optimization of parking space utilization
- Short payback time of the system
- Reduction of CO2 emissions and reduction of ventilation costs
- Suitable for indoor use
- High detection accuracy
- Sensor and status display in one housing





PDF DOWNLOAD MSR-TRAFFIC KATALOG

See here the catalog of intelligent parking guidance systems, indoor and outdoor.

PolyXeta® 2

Gas detection systems for industrial plants

MSR-Electronic protects health and equipment under extreme industrial conditions. In the chemical and petrochemical industry, permanent monitoring of rooms and plants in which explosive atmospheres can form is required. The protection of persons requires constant monitoring of toxic and combustible gases and vapors. Furthermore, permanent monitoring for oxygen deficiency and excess

must be carried out. MSR-Electronic offers a wide range of methods for the permanent detection of gases. On this basis, MSR-Electronic develops individual gas sensors for industrial applications where extreme environmental conditions prevail. Safety, economic efficiency and competitiveness are the main priorities at MSR-Electronic.

+ BENEFITS

- **More safety**
More than all national standards require
- **Exchangeable sensor with X-Change technology**
Significantly lower maintenance costs
- **Accurate planning with overall lower cost**
- **Integration in BMS**
(z.B. Modbus)





.MSR

**SAFETY
FIRST**

Industry: Approvals

Safety for all applications

The products of MSR-Electronic comply with more than the general standards and regulations and can therefore guarantee the safety of the system.

When handling hazardous substances, special safety precautions are mandatory. This is especially true in the chemical industry, where many different hazardous substances are used. MSR-Electronic provides innovative sensors and controllers to detect and immediately indicate life-threatening gases. The products, services and training courses are based on many years

of experience and were compiled with a lot of know-how and tailored to individual customer requirements.

The sensors from MSR-Electronic permanently monitor the ambient air for combustible and toxic gases as well as oxygen. Of course, also in Ex-zones 1 and 2.



Industry: Approvals for PolyXeta®2 products

Electrical explosion protection of sensors and devices according to ATEX/IECEX, IEC/EN 60079-0, -1 and EU Regulation 2014/34/EU

(DEKRA Testing and Certification GmbH) / Device series types: PX2, SX1, SSAX1

Metrological testing of sensors and devices according to EN 60079-29-1 for combustible gases / EN 50104 for oxygen

(DEKRA Testing and Certification GmbH) / Device series types: PX2, SX1, SSAX1

Functional test (SIL2) of sensors and devices according to IEC / EN 61508-1 -2 -3, EN 50271

(DEKRA Testing and Certification GmbH) / Device series types: PX2, SX1

Approval for marine use according to the European Directive 2014/90/EU, EU2020/1170 and international guideline DNVGL-CG-0339

Device series types: PX2, SX1, SSAX1

EAC-Metrological Certifications

Device series types: PX2, SX1, SSAX1

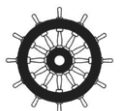
Other conformities

EU Directive 2014 / 30 / EU and 2014 /35 / EU, EN 61010-1, EN 50270, EN 378, EN 50402, EN 45544-1, EN 14624 / Device series types: PX2®, SX1, SSAX1

ISO-certifications for the company MSR-Electronic GmbH

Certifications for quality, environmental and energy management

ISO 9001, ISO 50001, ISO 14001



Biogas Plants

Protection against CH₄ / H₂S / CO₂ / O₂

When operating biogas plants, personal protection and plant safety are of crucial importance in addition to process optimization. With the gas warning products from MSR-Electronic you work preventively against

dangers. Gas sensors, controllers and warning devices are used to measure combustibile and toxic gases as well as oxygen. Leakages are thus localized at an early stage.



GAS HAZARDS

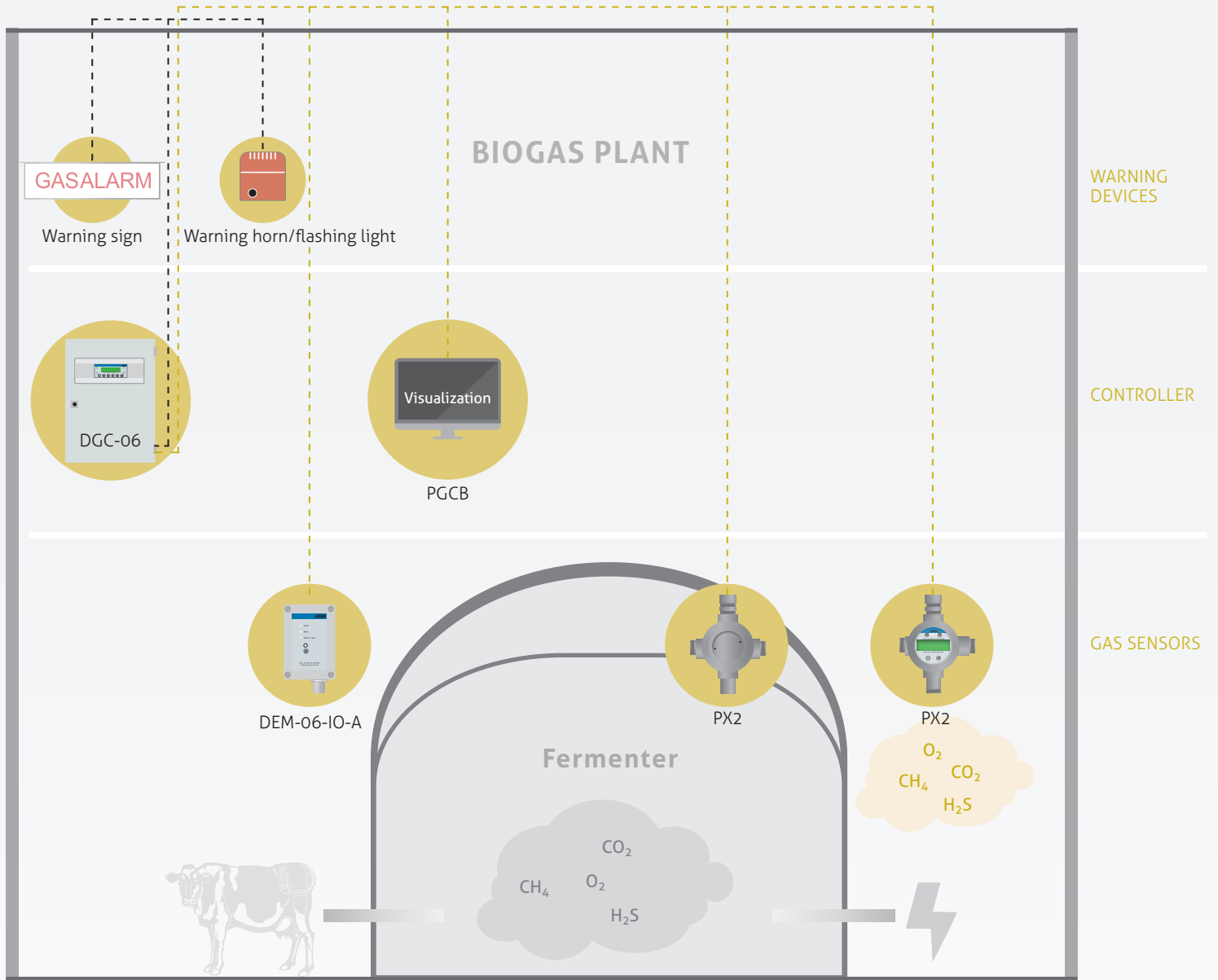
Methane can react explosively with air. This represents a high hazard potential for the operator of biogas plants. An explosive mixture exists when the concentration of methane in the air is between 4.4 and 16.5% by volume. Monitoring in pump rooms can protect people from dangerous leaks. Continuous measurement in the double diaphragm (biogas trapped air hood) ensures leak tightness and thus freedom from loss.



BENEFITS

- SIL2 certified PolyXeta®2 sensor for ATEX zones 1 and 2
- Metrological testing of sensors and devices according to EN 60079-29-1 for combustibile gases / EN 50104 for oxygen
- Solution for individual requirements, simple mounting by means of mounting bracket
- Cost-reduced calibration through sensor head exchange on site (X-Change technology)
- Easy connection to existing systems (analog, Modbus)
- 2 potential-free relays, e.g. to control warning devices





MSRSHOP24
 Configure your product here: www.msr-24.com

Petrochemical Industry

Protection against CH_4 / C_5H_{12} / C_3H_8 / H_2S / O_2 / CO / NH_3

In the chemical and petrochemical industry, permanent monitoring of rooms and plants in which explosive or toxic atmospheres can form is required. Personal protection requires the monitoring of hazardous gases in accessible areas, on the one hand to prevent accidents, and on the other to comply with MAK values and thus guarantee the health

and safety of employees. In addition, MSR-Electronic offers solutions for the protection of your plant against unwanted gas leakage and thus financial loss. Also, the MSR gas sensors can further optimize process safety. MSR-Electronic offers safe monitoring of combustible and toxic gases in petrochemical plants.



GAS HAZARDS

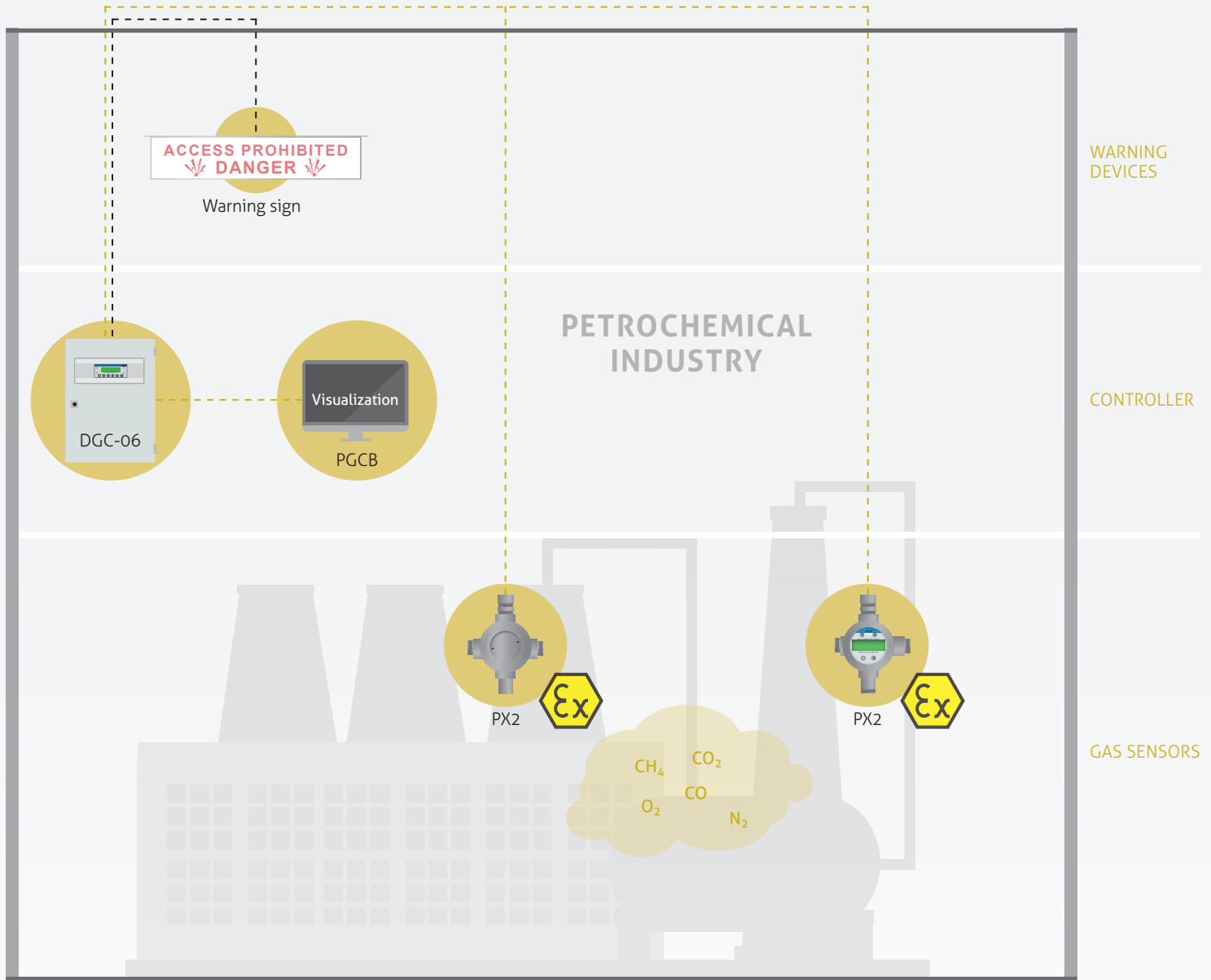
Chemicals, gases, solids and many waste products are generated in the petrochemical industry. The substances can be organic or inorganic in nature. At the reactors, storage sites and pipelines, the greatest danger is from escaping gases or volatile substances. To contain these hazards, reliable gas sensors must be used.



BENEFITS

- SIL2 certified PolyXeta[®]2 sensor for ATEX zones 1 and 2
- Metrological testing of sensors and devices according to EN 60079-29-1 for combustible gases / EN 50104 for oxygen
- Cost-reduced calibration through sensor head exchange on site (X-Change technology)
- Preconfigured devices on request, easy integration into existing systems
- Protected according to IP66, 2 potential-free relays per device
- Modular design and individual configuration





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H₂ Gas Monitoring

For research, production, logistics and mobility

The use of hydrogen as an energy carrier of the future is manifold. In addition to its use in welding or as a fuel for rockets, the focus is currently mainly on the automotive sector. H₂ is a very reactive gas, which makes constant monitoring by a gas detection system

throughout the entire life cycle essential. For successful gas monitoring, the SIL2-certified PolyXeta®2 sensor with X-Change technology is used. The permanent gas monitoring serves the primary explosion protection and thus also the plant safety.



GAS HAZARDS

Hydrogen is an excellent energy carrier, but it is also one of the most difficult substances to transport anywhere. The extreme danger of hydrogen leaks lies here in the oxyhydrogen explosion. During research work, on test rigs and during the production of the gas, leakages can occur at any time and cause catastrophic damage in the event of ignition. Also warning systems must be installed in hydrogen production from ammonia and at petrol stations to protect people and equipment from this highly flammable gas.



BENEFITS

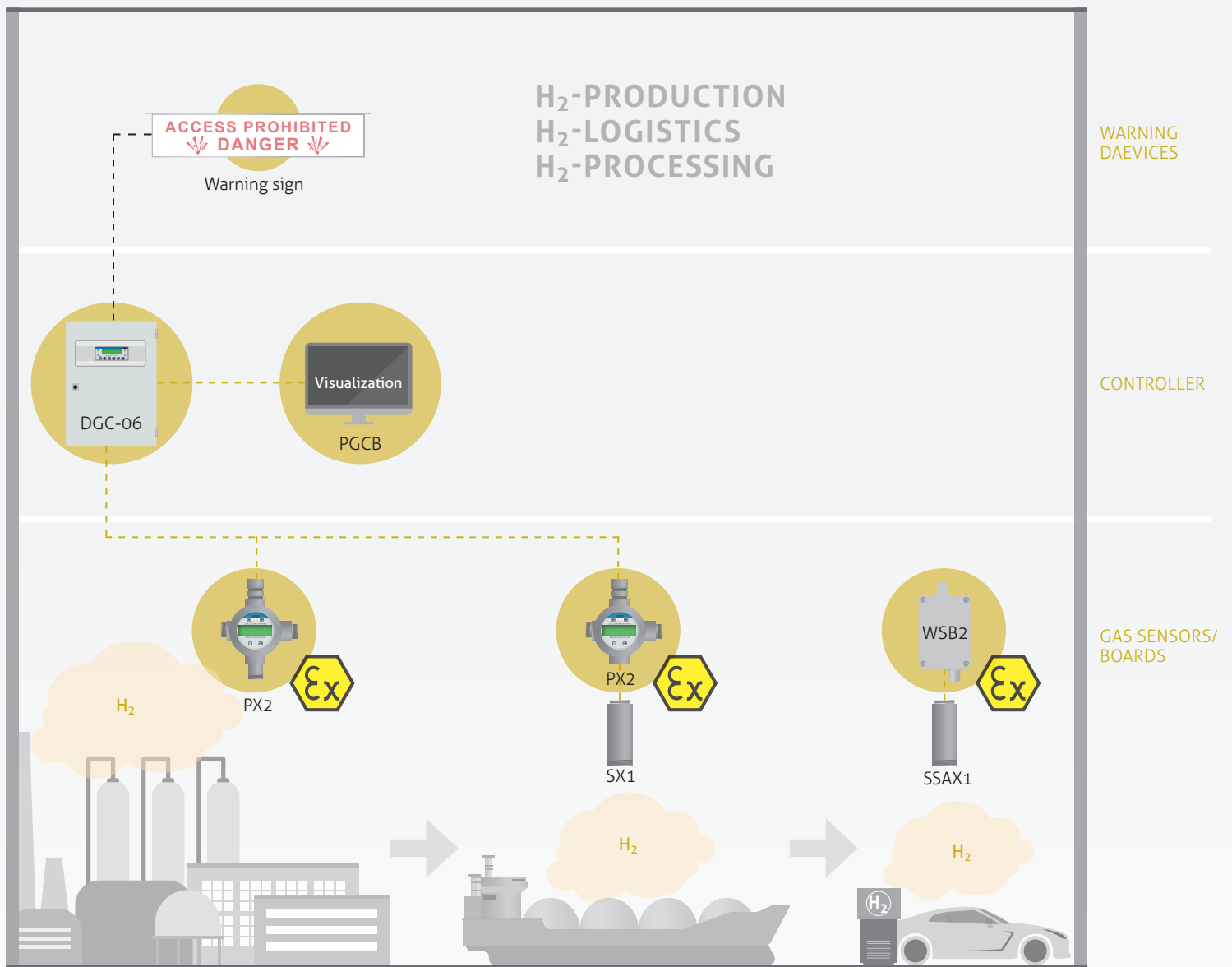
- SIL2 certified PolyXeta®2 sensor for ATEX zones 1 and 2
- Metrological testing of sensors and devices according to EN 60079-29-1 for combustible gases / EN 50104 for oxygen
- Cost-reduced calibration through sensor head exchange on site (X-Change technology)
- Solution for individual requirements, simple mounting by means of mounting bracket
- Easy connection to existing systems (analog, Modbus)
- 2 potential-free relays, e.g. to control warning device





HOW-TO VIDEO

Watch the commissioning of the PolyXeta®2 in the video here.



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Waste Management Industry

Protection against CO_2 / CH_4 / H_2S / C_6H_{14} / C_6H_6 / C_7H_8
and oxygen deficiency

Employees in the waste management industry are exposed to hazards from toxic and flammable gases in many areas. MSR-Electronic provides reliable gas sensors, gas controllers and warning devices to protect people and equipment from hazardous gases. When gas leaks occur, rapid alerting and reliable products are required. Fixed gas detection systems

monitor, for example, the oxygen supply during the combustion processes of a waste incineration plant. Furthermore, gas detectors perform real-time measurements of gaseous pollutants from the flue gas during flue gas cleaning. Continuous monitoring of emission levels and the emission of pollutants into the environment can thus be guaranteed.



GAS HAZARDS

- Flue gases in waste incineration plants / waste-to-energy plants, e.g. organ. waste incineration
- Landfill gas at waste disposal sites and adjacent residential areas
- Landfill gas wells and pipeline systems for transferring the gases to CHP units
- Oxygen deficiency in employee work areas
- Special disposal of chemicals and hazardous waste



BENEFITS

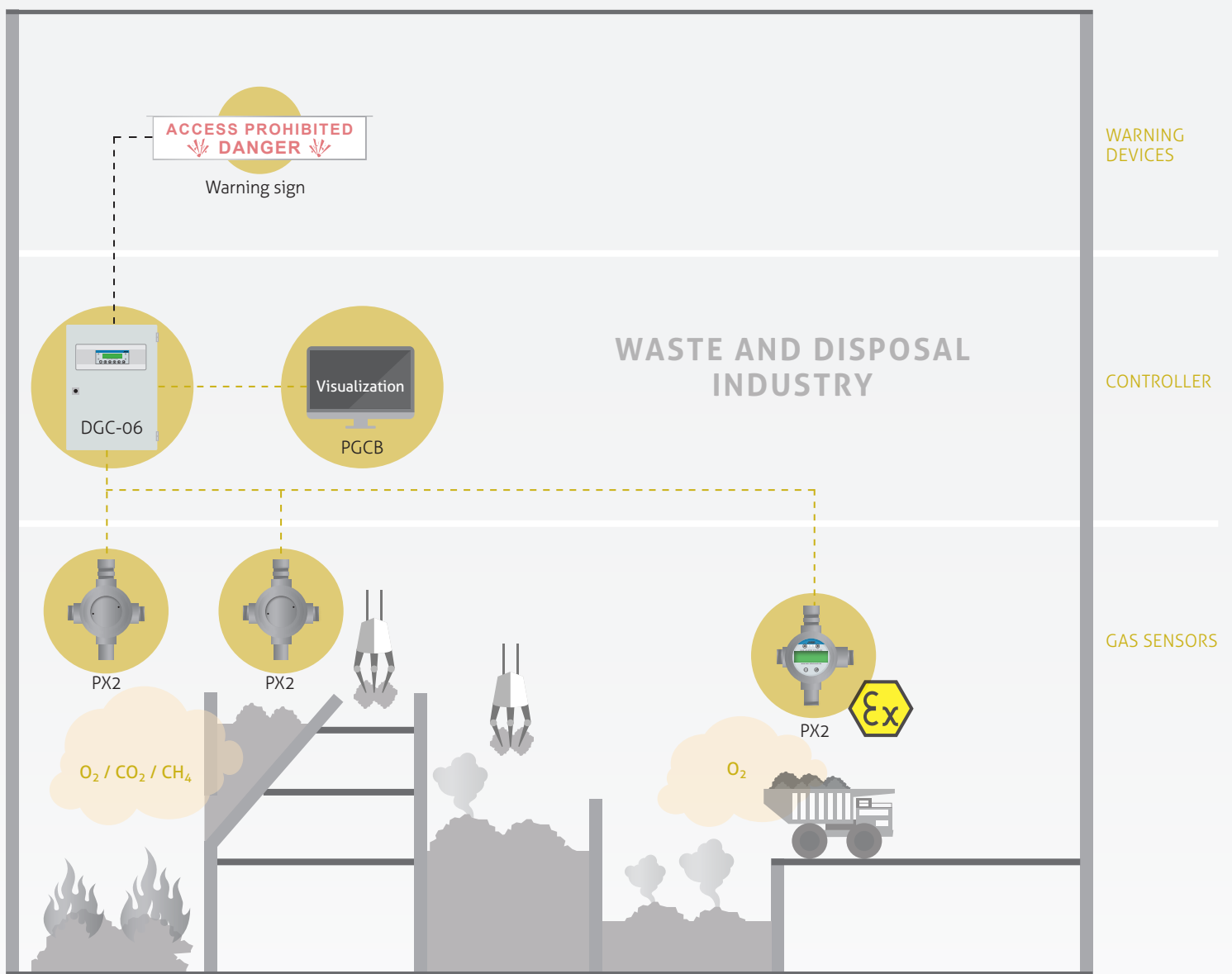
- Easy connection to existing systems (analog, Modbus), mounting via mounting bracket
- 2 potential-free relays, e.g. to control warning devices
- With or without display or keyboard
- Reduced costs due to easy maintenance, e.g. sensor head change (X-Change technology)
- Intelligent sensors display information on residual sensitivity, maintenance and condition
- Modular design and expandable up to 128 measuring points with the DGC-06 controller





HOW-TO VIDEO

Watch the commissioning of the PolyXeta®2 in the video here.



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Further Applications

Safe applications for ATEX zone 1 and zone 2

Gases that are hazardous to health are also used in many other industries. To protect workers in these areas from explosions and poisoning, the ambient air must be continuously monitored for the concentration of toxic and combustible gases or the threatening drop in oxygen content.

MSR-Electronic develops and produces reliable gas sensors, controllers and warning devices that permanently monitor the ambient air and thus protect human life and property. Thus, the risk potential is minimized. The permanent monitoring and storage of values serves the primary explosion protection and thus the plant safety.

MANUFACTURING INDUSTRY

Protection against these gases: O_2 / H_2S / CO / CO_2

MINING

Protection against these gases: CH_4 / C_5H_{12} / C_3H_8 / H_2S / O_2 / CO / NH_3

OFFSHORE

Protection against these gases: CH_4 / C_5H_{12} / C_3H_8 / H_2S / O_2 / CO / NH_3

GAS INDUSTRY

Protection against these gases: CH_4 / H_2S / CO_2 / O_2

GAS DISTRIBUTION STATIONS

Protection against these gases: CH_4 / H_2 / C_3H_8

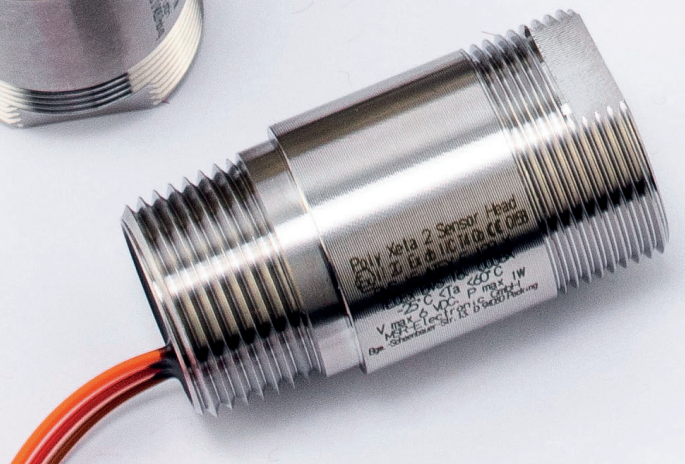
PETROL STATIONS

Protection against these gases: CO / NO_2 / LPG / CH_4 / gasoline vapors

For further applications please contact us.









PolyXeta[®] 2

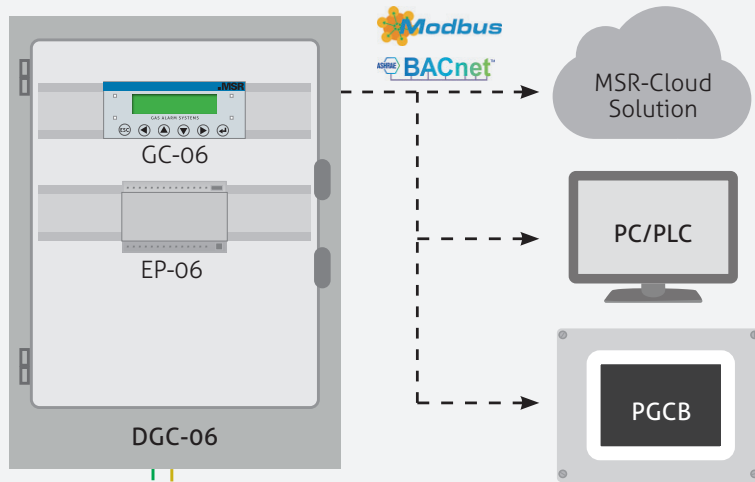
for ATEX zone 1 and 2



PolyXeta[®] 2

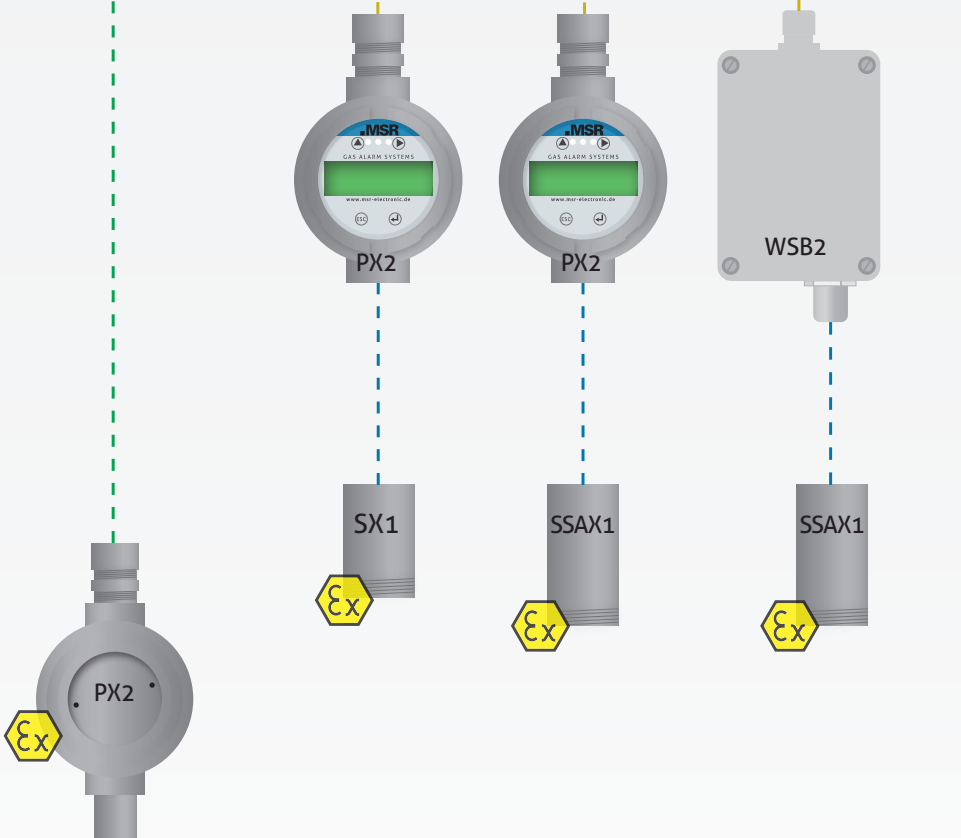
 Interactive product overview

- DGC-06 Digital-Gas-Controller
- PGCB PolyGard[®]2 Control Box
- WSB2 Warning and Sensor-Board
- PX2 PolyXeta[®]2 housing
- SX1 Sensor head
- SSAX1 Sensor head



CONTROLLER

SIL-Communication

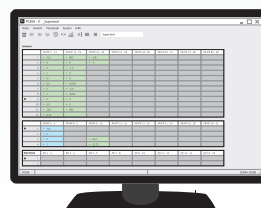
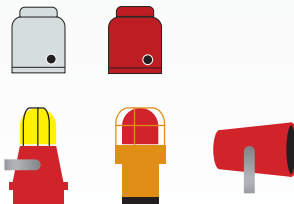


GAS SENSORS/BOARDS

- SIL RS-485 DGC-Bus
- Digital L-Bus
- RS-485 Modbus BACnet
- Analog 4-20 mA

 STOP MOTOR

 GASALARM

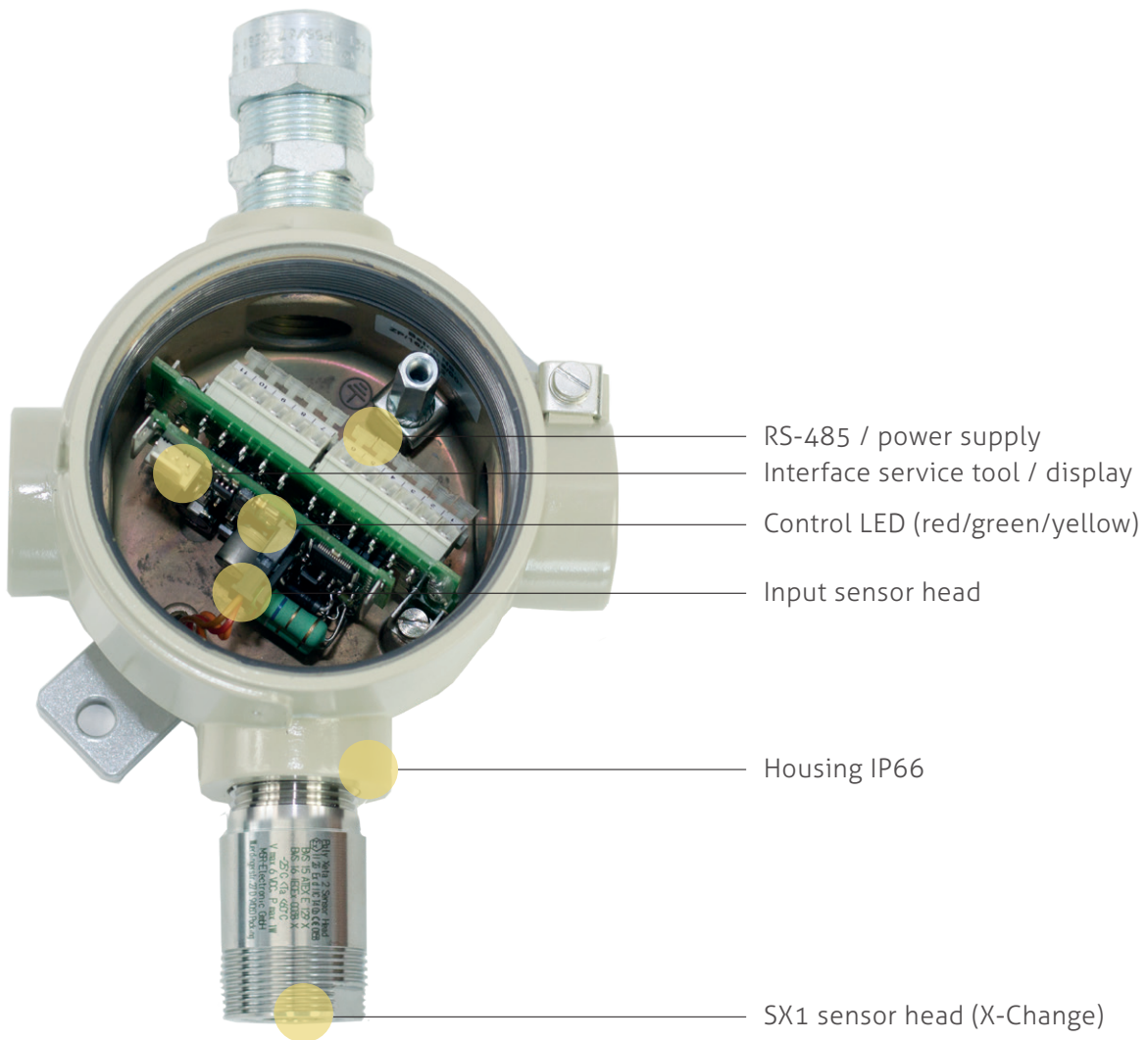


WARNING DEVICES / ACCESSORIES





HOW-TO VIDEO
Watch the commissioning of the PolyXeta®2 in the video here.



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PolyXeta[®]2 Sensor head SSAX1

Sensor for remote applications

The ATEX sensor for combustible and toxic gases.

In addition to the high-quality sensor element and the measuring amplifier, the sensor head SSAX1 contains a μ Controller for processing the measured values. All relevant data and measured values of the sensor element are stored in the μ Controller in a fail-safe manner and are transmitted digitally via the local bus to

the WSB2 or output as PWM signal (pulse width modulation). The calibration management is also integrated in the μ Controller of the sensor head. Calibration can be carried out by simply changing the sensor head or by the integrated, convenient calibration routine directly at the system.

+ BENEFITS

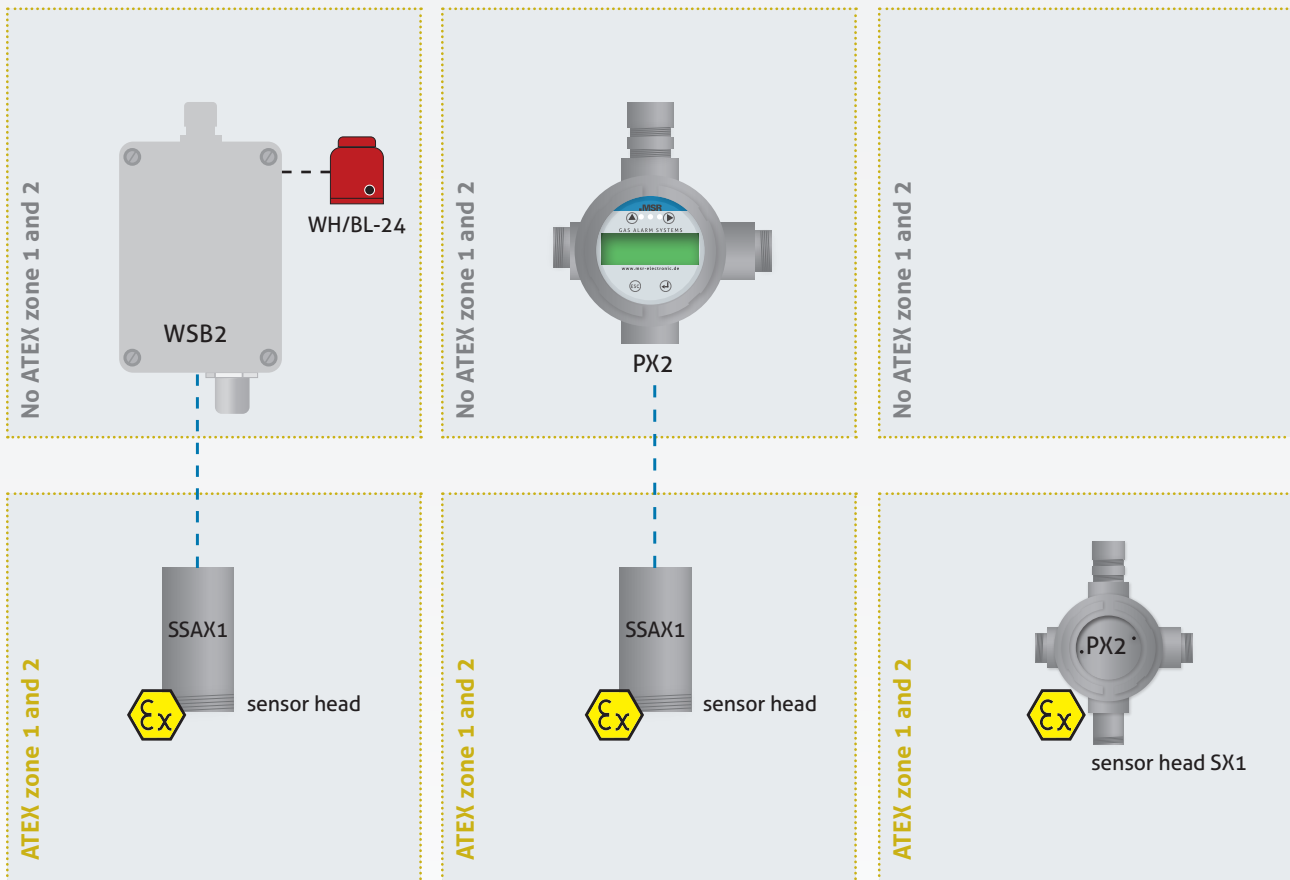
- ATEX and IECEx certificates for electrical explosion protection
- SSAX1 for zone 1 (also applicable in zone 2):
Version "Ex d" with flameproof enclosure
- Continuous monitoring of toxic and flammable gases and oxygen
- Different measuring principles depending on customer requirements and application (infrared, electrochemical sensor, pellistor)
- High accuracy, selectivity and reliability
- Easy calibration
- Reverse polarity protected
- Overload protection
- 5 m cable length



The new SSAX1 enables the ATEX certified sensor head to be placed alone in the danger zone and to be led out of the danger zone to a WSB2 with the corresponding ATEX cable in

order to carry out the evaluation of the sensor there. The SX1 is connected directly to the PX2 and can therefore be used as a complete device in the ATEX zone.

PolyXeta®2-devices and sensors in the ATEX area



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X-Change Technology

The PolyXeta®2 exchangeable sensor SX1 and SSAX1

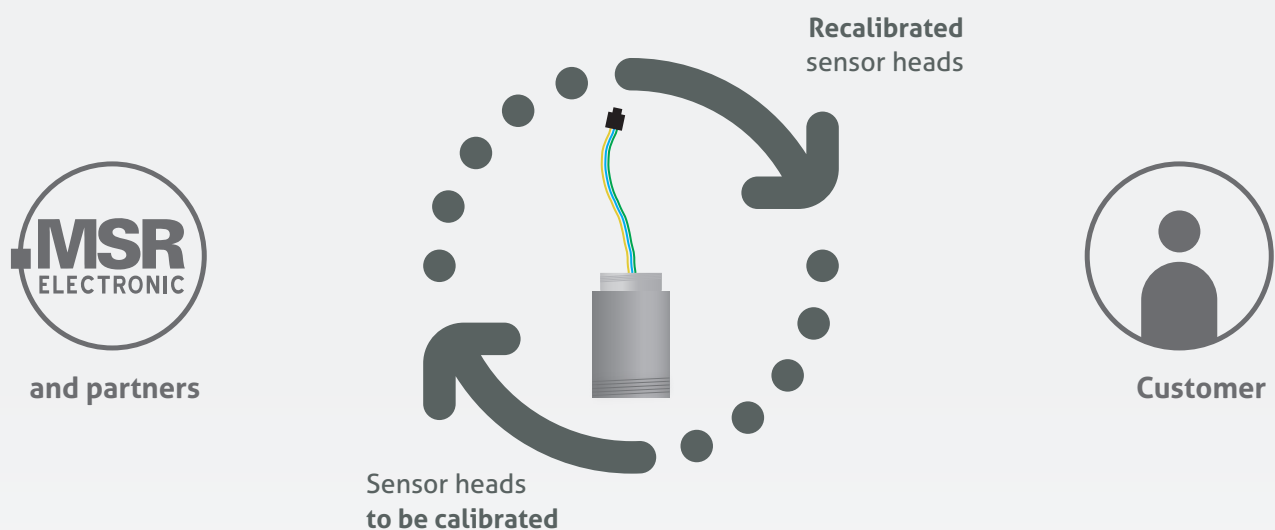
Time-saving calibration of the gas sensors.

Until now, the necessary calibration of the sensors was a complex procedure and dependent on an external certified company. This involved a lot of time and money. The sensors had to be opened, checked and calibrated with great care at the construction site. If an error occurred, it was necessary to take the

complete sensor with you and replace it afterwards. With the new X-Change technology this effort can be saved. The exchangeable head can be replaced on site at any time. The transmitter therefore remains untouched. This saves time and costs.

+ SIMPLE AND INDEPENDENT RECALIBRATION

- Significant time and cost savings
- Easy change process
- Delivery of newly calibrated sensor heads
- Increasing the safety of your plant



HOW-TO VIDEO

Take a look at the simple exchange process in the video.

Quick and safe sensor exchange



Loosen the locking screw with an Allen key (1.5 mm) and open the housing.



Loosen the sensor cable and unscrew the used sensor head. **The yellow LED lights up.**



Replace the sensor head and connect the cable of the recalibrated head to the board. **The yellow LED goes off again.**



Close the housing again and recalibrated sensor is immediately ready for use.

Gas-Controller Industry

Freely extendable for your requirements

Measuring, warning and controller system for toxic and combustible gases.

The DGC-06 digital-gas-controller has been developed for large plants or also for extensive connections. Here, there will hardly be a scenario in gas monitoring that this controller does not cover. From complex garages to access functions, which are switched by gas alarm, everything is possible. The innovative gas-controller series DGC-06 is designed according

to EN 50545 and can monitor and evaluate up to 128 gas sensors, 96 of which are digital and/or 32 analog sensors (4-20 mA). There are 4 freely adjustable alarm thresholds per sensor. For alarm messages, the controller system has up to 128 relays with potential-free changeover contact and up to 16 analog outputs with 4-20 mA signal.

+ BENEFITS

- 128 Sensors
- Relay expandable with EP modules
- Display with LED
- Service-tool for configuration
- Direct connection to GLT, GC-06 integrated
- Units are adjustable
- UPS / datalogger (optional)
- Can be installed in switch cabinet
- Safety product, scalable
- Expandable for up to 7 EP-06 modules

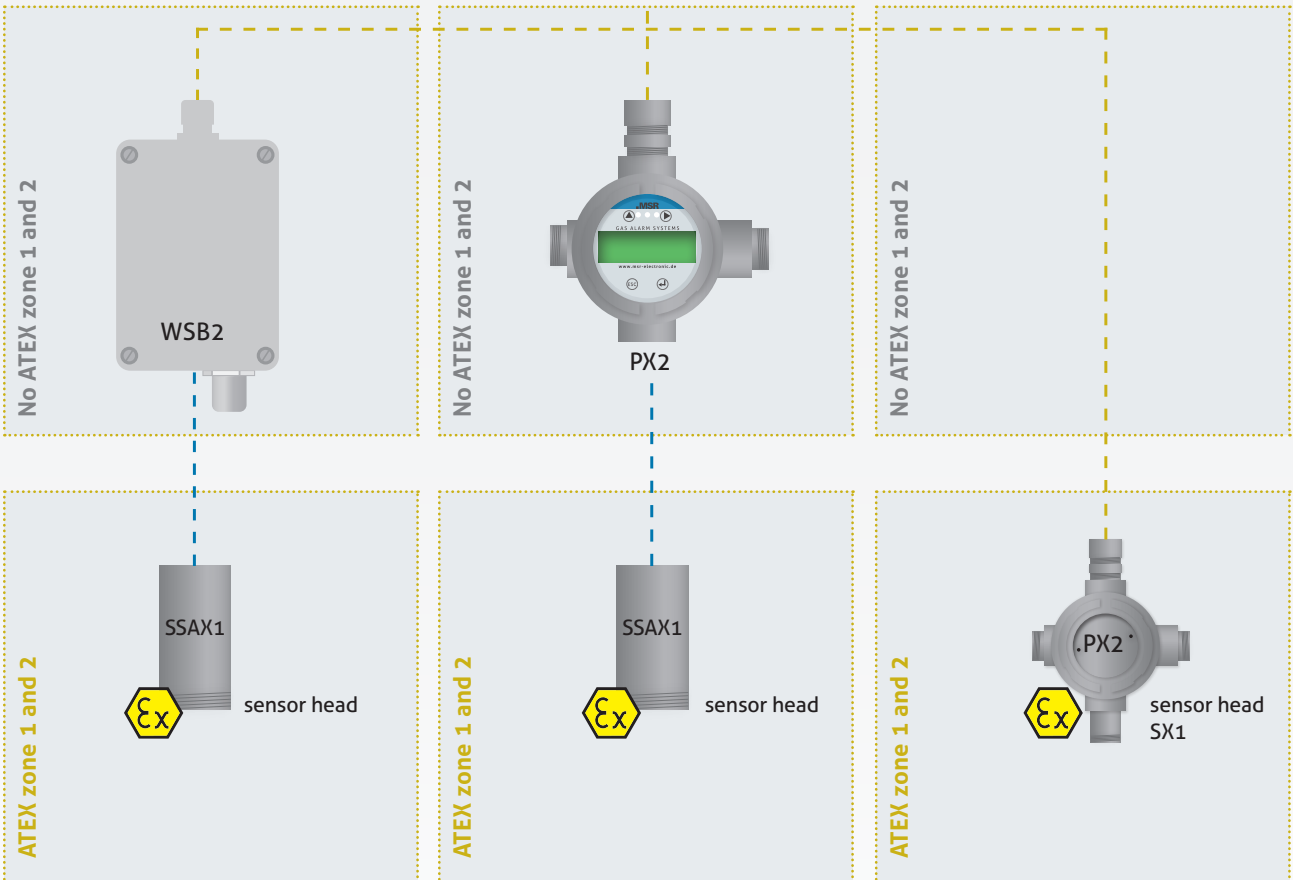
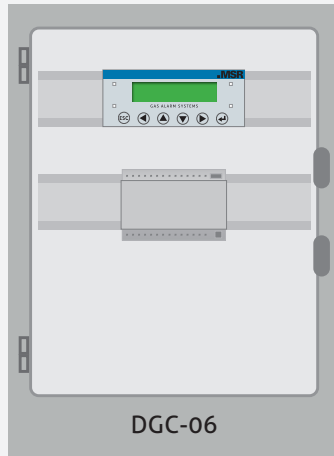


DGC-06 display



DGC-06





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Modules

Measurement, warning and control

Extend the control.

The modules are designed to perfectly complement the centralization of the overall PolyXeta®2 system. The controllers, such as the GC-06, are the core elements of the systems. Extension modules, like the EP-06, provide additional inputs and outputs. Since MSR-Electronic has extensive certification and

many years of experience in the manufacture of controllers, professional preparation for complex acceptance tests is guaranteed. The modular technology allows for compact yet flexible and highly efficient systems.

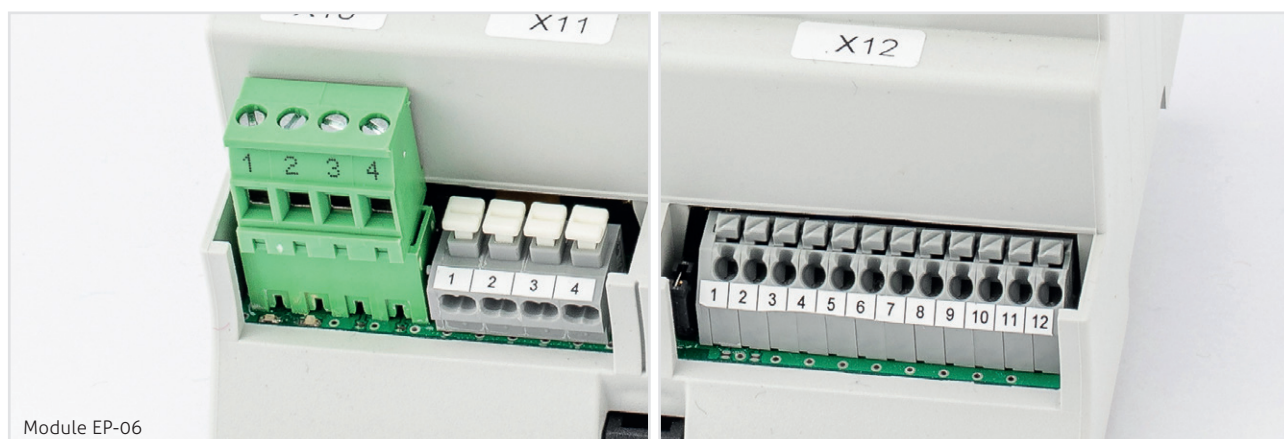
+ BENEFITS

- Extension module with
 - 4 analog inputs (4-20 mA)
 - 4 alarm relays with potential-free changeover contact
 - 2 analog outputs (4-20 mA)
- For connection to the PolyXeta®2 gas-controller module DGC-06
- Modular design of the system possible
- Individual configuration
- A wide range of options
- Serial Bus

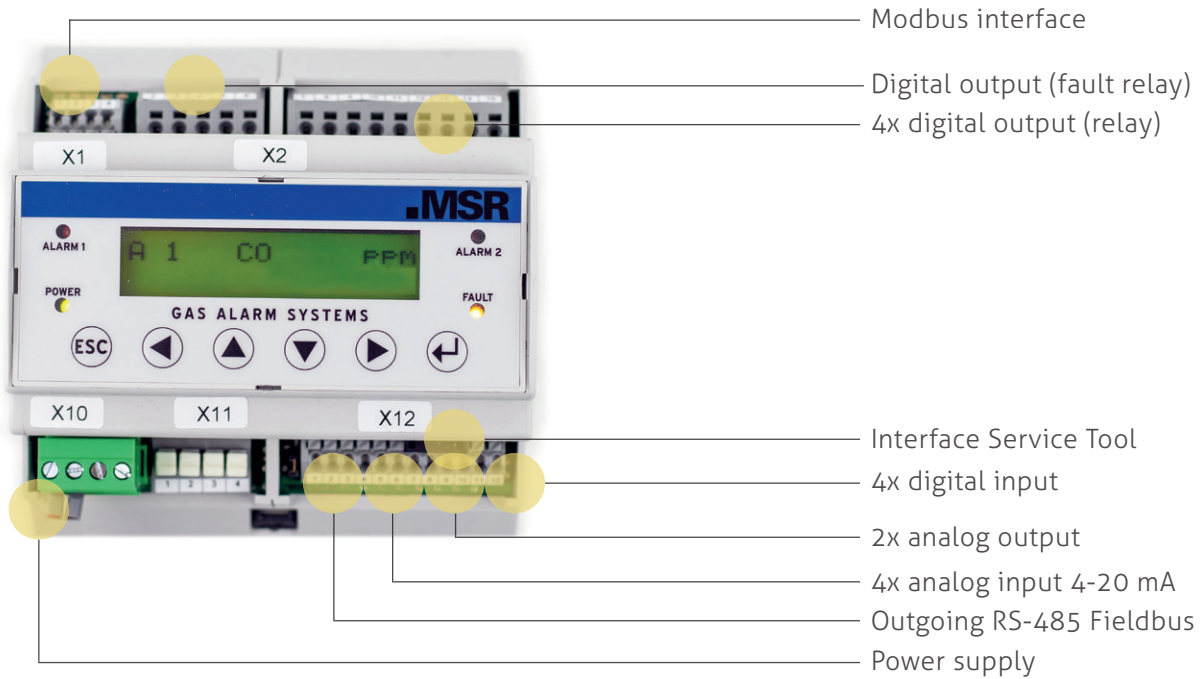


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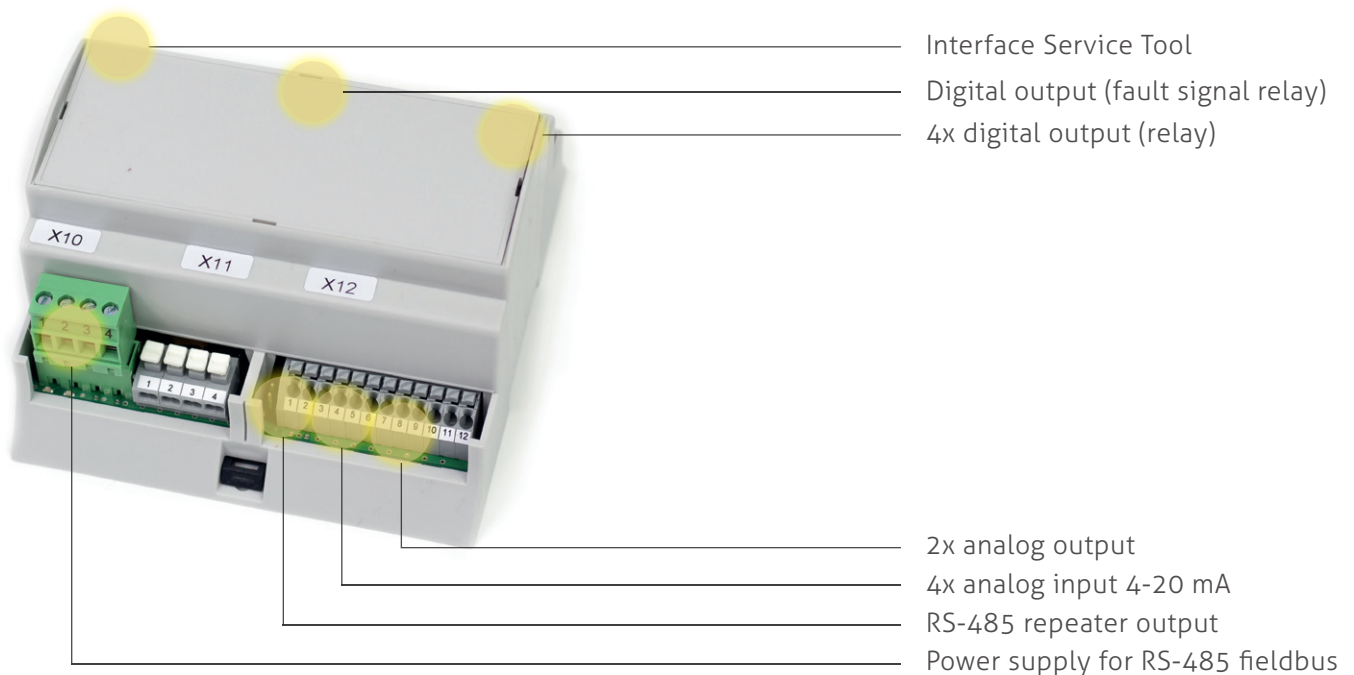
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Module GC-06



Extension module EP-06 for GC-06



Warning Devices

Reliable warning in ATEX zone 1 / 2

For areas where special requirements exist due to explosive substances.

MSR-Electronic offers an extensive repertoire of acoustic and optical signaling devices with various approvals for use in hazardous areas. The signal transmitters of the Ex-series are characterized by a particularly robust design and insensitivity to environmental influences and chemicals. These are information, warning and emergency signals for safety, hazard and

fire alarm systems, building, industrial and commercial automation, disaster warning and danger areas. The products are suitable for use in gas and steam atmospheres as well as in dust atmospheres. MSR-Electronic offers Ex-signal towers, optical, acoustic and optical-acoustic Ex-signal devices.

+ BENEFITS

- Compatible with all controllers from MSR-Electronic
- For use in zone 1 and zone 2
- Durable and robust





WARNING HORN AND XENON FLASHING LIGHT

- Explosion-proof LED multifunctional light
- Double / triple door opener flash



OMNIDIRECTIONAL XENON FLASHING LIGHT

- Xenon flashing light
- Suitable for zone 1 and 2
- Approved according to IECEx, ATEX, Ex EAC



WARNING HORN

- Suitable for zone 1 and 2
- Flame retardant ABS



MSRSHOP24

Configure your product here: www.msr-24.com

PolyMarine®

Gas detection systems for ships

Ships are risk areas, as there is no possibility to escape. This means that dangers must be recognized early on in order to avert higher hazards. With PolyMarine® products from MSR-Electronic you are on the safe side on board. The product series offers perfect protection

against gas leakage on board. These leaks are often not detectable by the sense of smell or only when an accident would no longer be preventable. The gas detection systems and warning devices of PolyMarine product series offer reliable safety.

+ BENEFITS

- **More safety**
More than all national standards require
- **Exchangeable sensor with X-Change Technology**
Significantly lower maintenance costs
- **Accurate planning with lower overall costs**
- **Integration in the shipping system**
(e.g. Modbus)





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PolyMarine®

Leakage protection for private shipping

Reliable and durable protection against gas leaks on board.

Gas leaks on board can quickly lead to fire and poisoning. Many of these gases are often odorless and the human sense of smell can no longer recognize this danger and is therefore

dependent on help. In addition, the escape of combustible gases can quickly cause a fire or even an explosion.

PRODUCTS

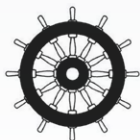
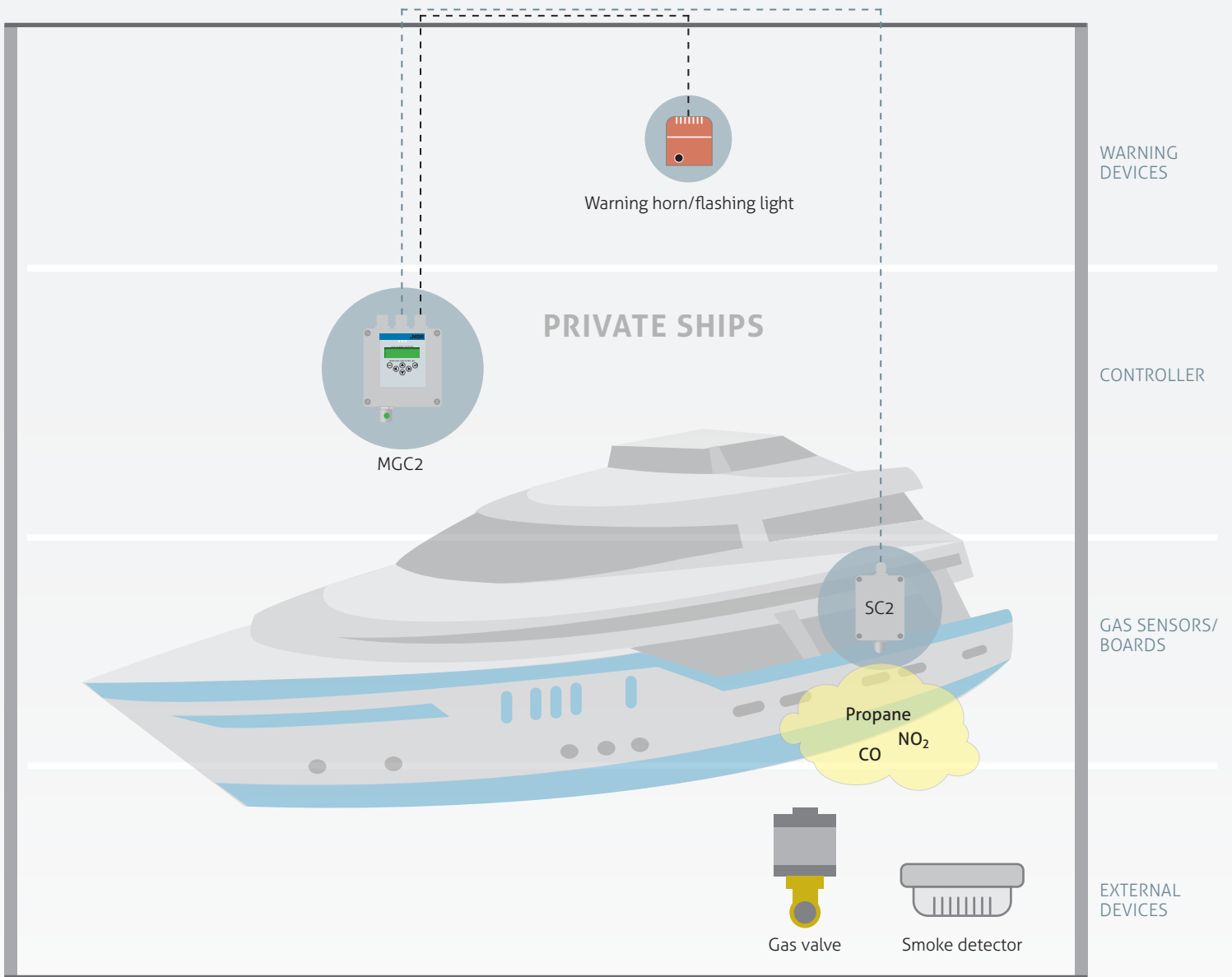
- Gas-Controller: up to 3 different gas sensors possible
- Gas sensors for CO / NO₂ / gasoline vapors or propane, incl. sensor with X-Change technology
- Warning devices: warning horn with signal lamp and alarm acknowledgement
- Control unit for the cockpit with buzzer, lamp, button and display
- Smoke detector, magnetic gas valve



BENEFITS

- SIL2 certified
- Approval for shipping according to the European Directive 2014/90/EU, EU2020/1170 and according to the international guideline DNVGL-CG-0339 (MEDB00007CE, MEDD0000272, TAA000032C)
- Reduced costs due to easy maintenance, e.g. by changing the sensor head (X-Change technology)
- Significant increase in value





PolyMarine®

Leakage protection for commercial shipping

Ships and oil rigs are risk areas, as there is no possibility of escape. This means that hazards must be identified at an early stage to avert higher risks. Gas sensors, controllers and warning devices from MSR-Electronic offer

perfect protection in the event of gas leaks occurring on board. In addition, a reliable gas detection system not only protects the lives of the crew, but can also protect the ship's cargo and even the ship itself from harm.



GAS HAZARDS

- Engine and crew rooms
- Hazardous material transports
- Detection of fuel leakage (LPG) and exhaust gases
- Gas transport ($H_2/CH_4/C_3H_8/NH_3$ etc.)
- Monitoring of inerting systems
- Wide range of sensors for gas leakage detection



BENEFITS

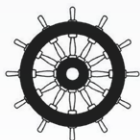
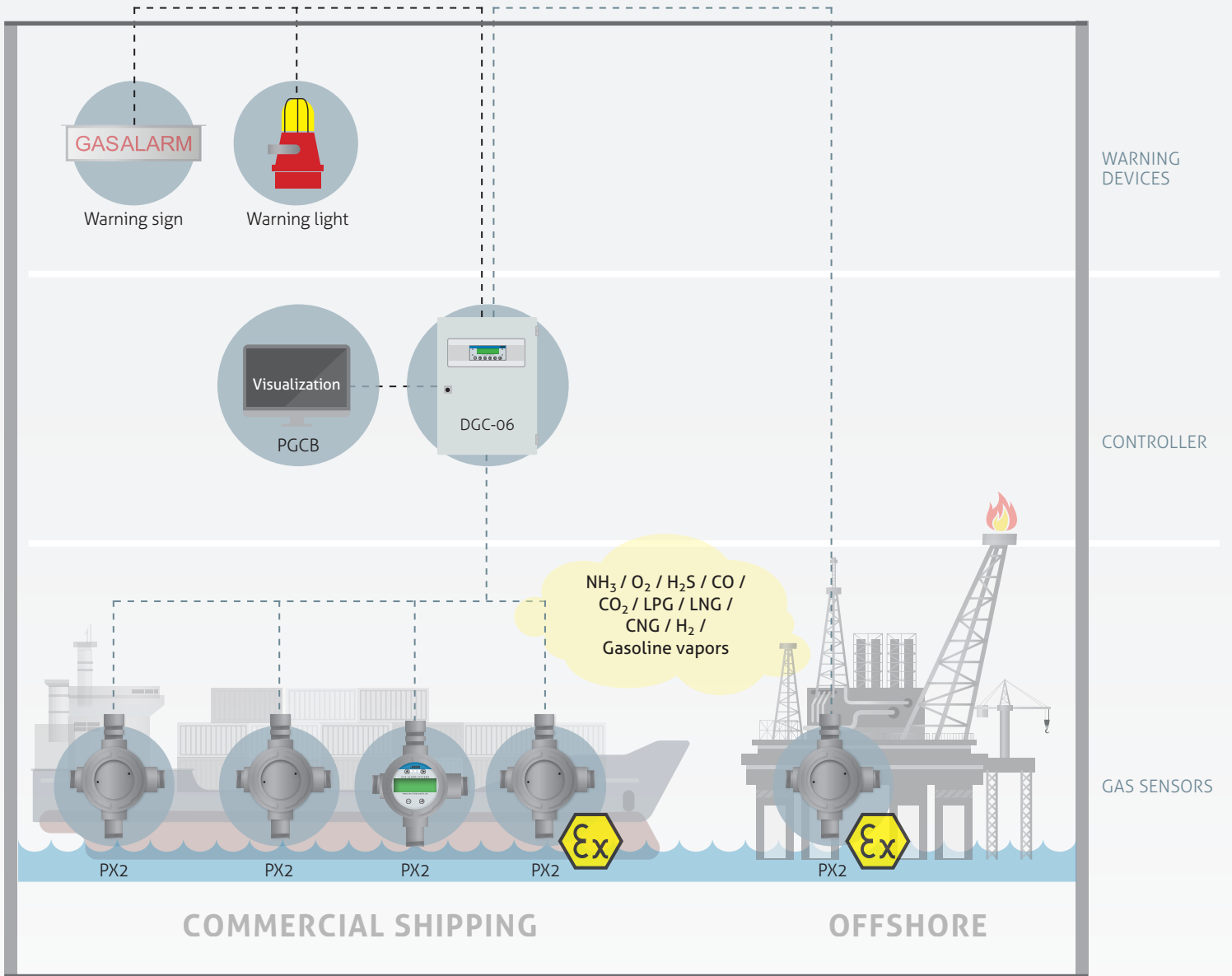
- SIL2 certified PolyXeta®2 sensor for ATEX zones 1 and 2
- Approval for shipping according to the European Directive 2014/90/EU, EU2020/1170 and according to the international guideline DNVGL-CG-0339 (MEDB00007CE, MEDD0000272, TAA000032C)
- Reduced costs due to easy maintenance, e.g. by changing the sensor head (X-Change technology)
- Intelligent sensors display information on residual sensitivity, maintenance and condition
- Less downtime, integration into existing safety systems





HOW-TO VIDEO

Watch the commissioning of the PolyXeta®2 in the video here.



On
request

PolySam®

Gas analysis system for process optimization

With PolySam® MSR-Electronic offers individual solutions for complex applications. You benefit from comprehensive analyses and optimize your energy generation yield. In addition to gas conditioning, the system offers an extensive interface function. You can go

to further control panels via Modbus, analog output or relay. These systems are individually designed together with the customer. Here each application is a separate project. However, the modular X-Change technology and the complete controller series can always be used.

+ BENEFITS

- **More safety**
More than all national standards require
- **Exchange sensor with X-Change Technology**
Significantly lower maintenance costs
- **Accurate planning with lower overall costs**





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PolySam[®] Gas Analysis

Gas analysis system for process optimization

System for gas analysis - self-regulating gas intake system with integrated controller.

With the gas analysis system, it is possible to monitor a wide variety of processes in which gases are released. The system prepares the gas mixture so that it can be analyzed independently. This is often necessary with hot exhaust gases or oxygen-free atmospheres. The analysis system also makes integration

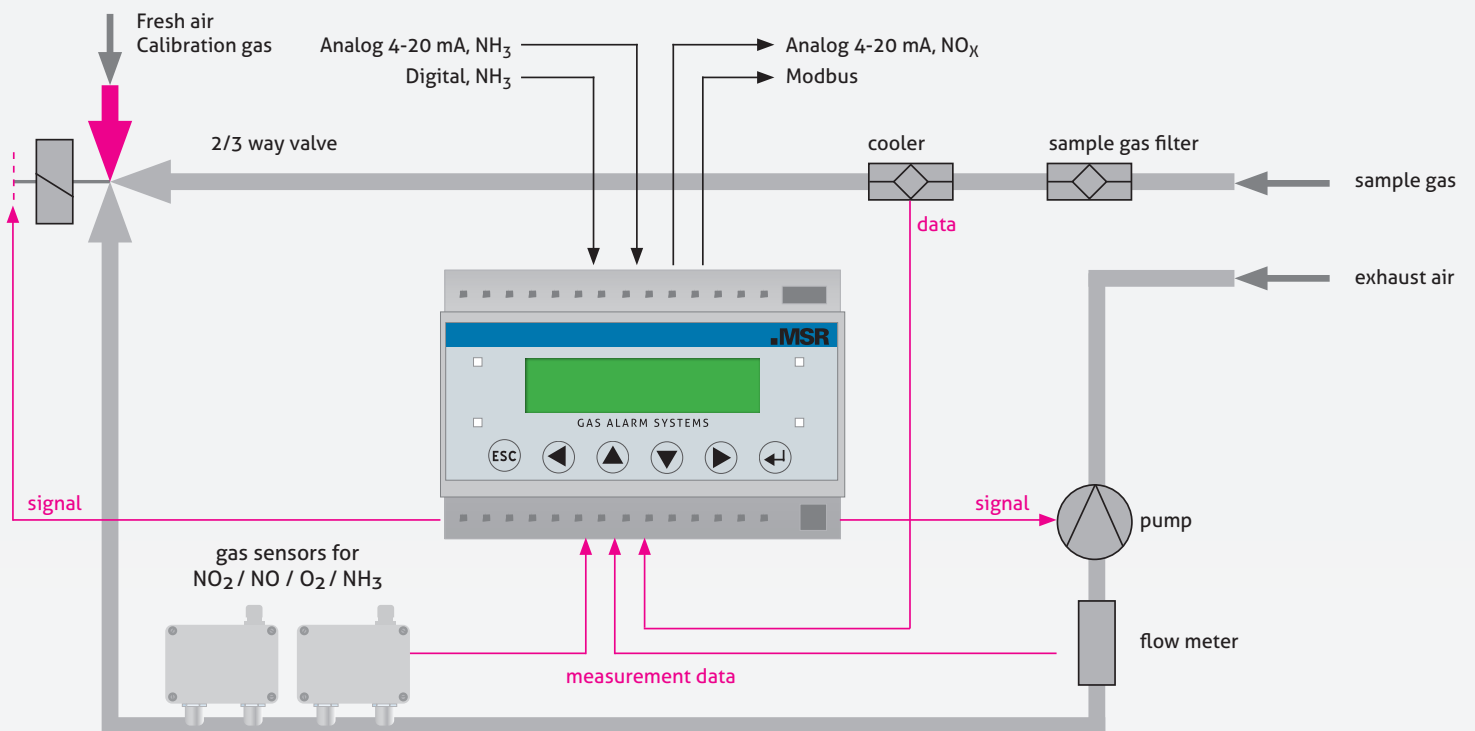
into existing systems easy. Because of different digital (Modbus, BACnet, TCP/IP) and analog (4-20 mA, 2-10 V, or various relays) connections the installation is very easy and flexible. This allows the system to be remotely monitored and controlled.

+ BENEFITS

- Ultra flexible gas analysis system
- Up to 4 gas sensors per string can be installed for evaluation
- Adjustable flow rate of the sample gas
- Automatic detection of clogged filters
- By using sample gas coolers, filters, heaters and much more, you can react to all conditions with the matching PolySam product
- Integration into process control systems possible
- Selection of different interfaces
- Also available as compact system for 1 gas



PolySam® ANALYSIS DEVICE



Appendix

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MSR Academy

User knowledge directly from the manufacturer

MSR-Electronic is a supplier of the latest safety technology in the gas detection sector. To ensure that the systems meet the high requirements of the customers, in-depth knowledge of applications, products, maintenance and legal regulations is necessary.

MSR customers have the opportunity to experience the technology up close while participating in a **BASIC webinar** and a further 2-day **ADVANCED training** course in Pocking and to get to know the gas detection system in detail

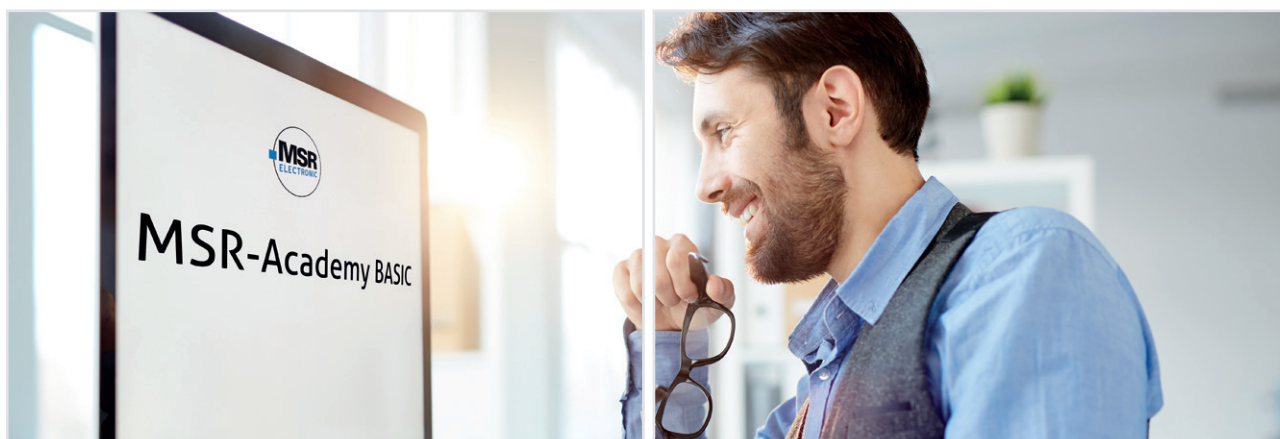
in close collaboration with the technology and development experts. This means that errors can be avoided during the design of the system and the customer can be offered a reliable gas detection system.

The training will cover our current product series, as well as legal innovations such as the European standard EN 50545 for garages and tunnels.



MSR ACADEMY

Your MSR contact person will be happy to inform you of current dates or you can find out more at www.msr-electronic.de/en/academy.



The MSR Academy supports the establishment of a professional customer service and thus offers the possibility of faster processing of day-to-day business.

+ Benefits

- Free premium support code* with regular training participation
- Precise product knowledge from the MSR product family
- News from the gas warning technology
- Mediation of complex application examples
- Close exchange with MSR development and support
- After successful training, fault messages are recognized and eliminated more quickly

* Every participant receives a premium support code after attending the **ADVANCED** training:
With the Premium code you get free support from our technicians for 18 months.



MSR Product Configurator

With Webshop www.msr-24.com

The webshop with more than 1.000 products and unique product configurator.

With this variety of applications and requirements it is not always easy to find the right gas warning product. At www.msr-24.com customers can enter the key data (e.g. application and room size) of the project in the product configurator. You will immediately

receive a proposal with the required products and the appropriate number of items, in accordance with the currently applicable standards. This can be adapted to individual requirements.



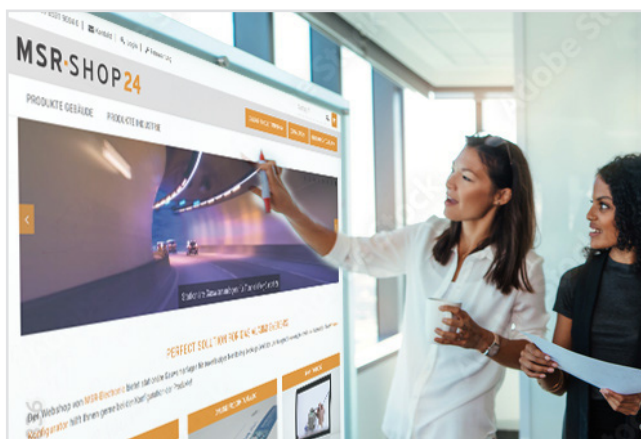
BENEFITS

- Use as configurator and/or webshop
- All products are easy to find
- Different versions of articles can be configured individually
- The selected article is displayed with product photos, a data sheet and the respective unit price



MSRSHOP24

Configure your product here: www.msr-24.com



Product configurator for gas monitoring in garages, refrigeration systems, dispensing systems and biogas plants.

1.

SELECT APPLICATION

Select application (garage, refrigeration, etc.) and specify the size of the room to be measured. The required gas sensors are then automatically displayed and can be limited as desired.

2.

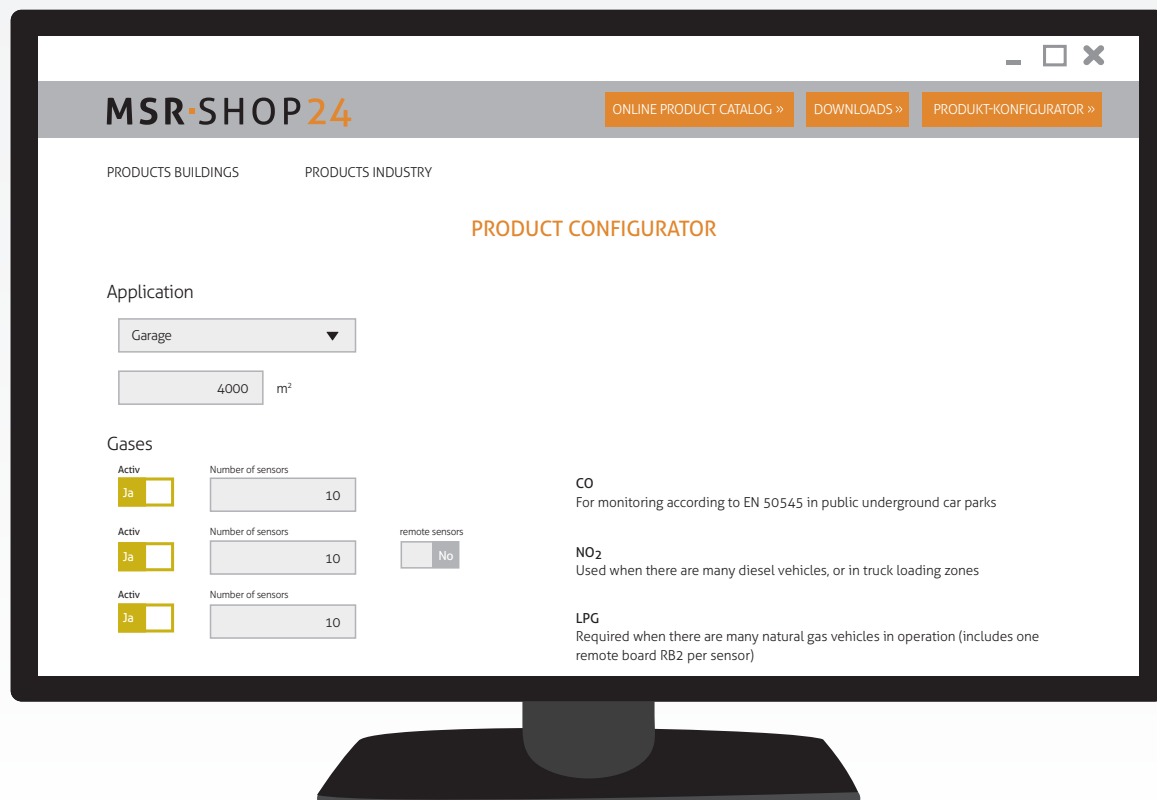
ALARM EVALUATION

Specify the number of warning sections (levels, zones, rooms) and the number of relays required for them.

3.

APPLICATION (CONTROLLER AND MODULES)

Digital or analog - in the last step you decide which way you want to measure.



OEM Customizing/Branding

Based on the modular principle

MSR-Electronic is a manufacturer of stationary gas detection systems with decades of experience in the field of building automation and gas measurement technology.

From a certain quantity for a product, customizing of the sensors and controllers is possible. This starts with individual lasering and labeling and extends to special requests for configuration and extensions.

In addition to the implementation of customer-specific requirements with regard to device approval, we support our clients in numerous

industries in complying with all current national and international regulations on product safety and technical market safety requirements.

Contact us and learn more about the possibility of personalization.

info@msr-electronic.de

YOUR PROJECT TEAM

Initiation, planning, execution, monitoring and control

A specially coordinated project team will work with you to create the product requirement profile based on the modular principle. During the individual development stages, monitored

by the MSR quality management, up to the release sample (PPAP) and subsequent series production, we are in close contact with you.



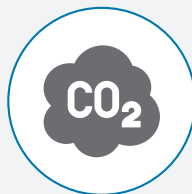
Applications

- Tunnel
- Parking garage
- Building
- Industry
- Petrochemistry
- Biogas Plant
- Shipping
- and more



Gases

- CO₂
- NH₃
- CH₄
- and more



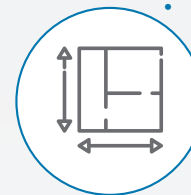
Sensor Principles

- Infrared
- Electrochemical
- Semiconductor
- Catalytic



Housing

- Design
- Form
- Color
- Logo
- Lettering
- IP protection class
- and more



Accessories

- Acoustic: horn, buzzer
- Optical: Flashing light
- Warning sign
- and more



Assembly

- Standard in housing
- Remote with cable



More Features

- Relay
- Display
- Analog / digital outputs
- Analog / digital Inputs
- Modbus, BACnet
- and more

Approvals

- EN 378
- EN 14624
- EN 50545
- EN 60079-29-1
- ATEX
- EN 60079
- and more



HOW-TO: The MSR Video World

Explanatory videos on YouTube

Explore the MSR-Electronic product world digitally.

How-to is the keyword on YouTube. MSR-Electronic explanatory videos provide brief and concise information on important details for the commissioning of selected products. Knowledge can thus be conveyed quickly.

Basically, e-learning is location-independent. Usually only a laptop, tablet or smartphone and an Internet connection are required. Complex things simply explained.



MSR-Electronic YouTube Channel



Commissioning

Warning and sensor-board WSB2



Recalibration

MSR sensors with service tool STL06



Commissioning

Multi-sensor-controller MSC2



X-Change Technology

Simple exchange process PolyXeta®2 sensor head



Commissioning

PolyXeta®2



X-Change Technology

Simple exchange process PolyGard®2 sensor head



Recalibration

MSR sensors with display version



MSR-Electronic

Fixed Gas Detection Systems,
Made in Germany



MSR ON LinkedIn

**Network with MSR-Group on www.linkedin.com
and receive regular news from MSR-Electronic.**

Commissioning/Maintenance

With international partner network

MSR-Electronic offers together with its certified partners commissioning, installation and maintenance of fixed gas detection systems.

As a manufacturer of gas detection equipment, MSR-Electronic has an international network of partners to be able to offer these services worldwide. The service offerings are developed in close cooperation with the service providers

and coordinated jointly with the customer. In this way, customers receive a complete package with all the requested services from a single source.

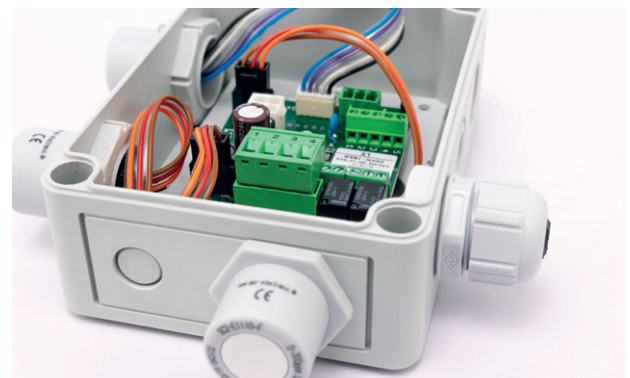


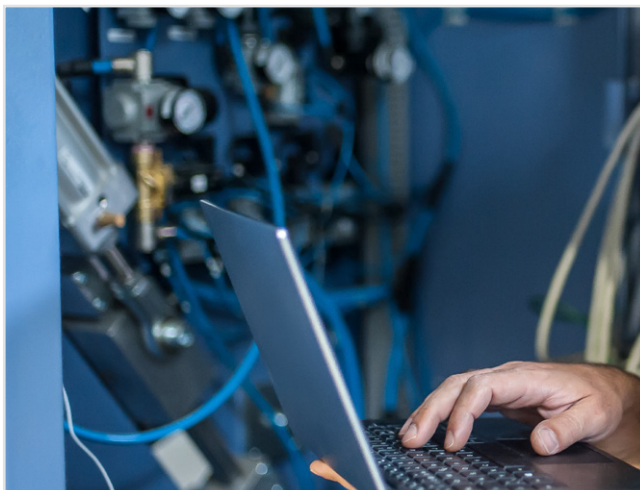
The configuration - the basic setting of the controller is a decisive component during commissioning or maintenance of the gas detection systems on site. The controller is the heart of the gas detection system. The individual measured values and requirements of the customer are stored here.

During **commissioning** of the gas detection system, there is also the addressing of the bus participants, the setting of the warning thresholds to valid standards and the checking of the triggering devices.



During **maintenance**, the entire system is first visually inspected after the maintenance interval has expired. The preset configuration of the controller is tested for up-to-dateness and the gas sensors are recalibrated during maintenance. This ensures that correct values always reach the evaluation unit or the controller.





During **calibration**, the gas sensors are recalibrated based on their natural deviation after the specified interval.

During this calibration, the zero point is set first, i.e. the sensor is gassed in its natural ambient air or with zero gas and calibrated to this value.

The 2nd value to be calibrated should be between 30 % and 90 % of the measuring range of the sensor. This calibration is then performed with the gas to be measured. For example, a carbon monoxide (CO) sensor with a measuring range of 300 ppm is calibrated with a test gas between 90 ppm and 275 ppm.

Furthermore, triggering devices such as warning signs, warning horns or flashing lights are tested during maintenance. The switching contacts, operating display and fault message

are also checked. If an emergency power supply is available, its functional activity is also verified. Afterwards, the system receives an inspection sticker and the completion of the maintenance is noted in the inspection book. All test procedures as well as necessary, upcoming maintenance are documented in the maintenance protocol and the absence of defects is certified.

For an existing gas detection system, it is absolutely necessary to observe the maintenance intervals. This helps to always obtain correct sensor values in the evaluation unit. It also ensures that the plant will function properly in the event of increased gas volumes and that people and equipment will be safe.

Analog Sensor Head MC2

Toxic Gases

Item No.	Gas		Measuring range
EL.-Chem. Sensor			
MC2-X-E1110-C	Carbon monoxide	CO	0-150 ppm
MC2-X-E1110-E	Carbon monoxide	CO	0-250 ppm
MC2-X-E1110-F	Carbon monoxide	CO	0-300 ppm
MC2-X-E1110-H	Carbon monoxide	CO	0-500 ppm
MC2-X-E1125-A	Ammonia *	NH ₃	0-100 ppm
MC2-X-E1125-B	Ammonia *	NH ₃	0-300 ppm
MC2-X-E1125-C	Ammonia *	NH ₃	0-500 ppm
MC2-X-E1125-D	Ammonia *	NH ₃	0-1000 ppm
MC2-X-E1125-E	Ammonia *	NH ₃	0-5000 ppm
MC2-X-E1130-A	Nitrogen dioxide	NO ₂	0-10 ppm
MC2-X-E1130-B	Nitrogen dioxide	NO ₂	0-20 ppm
MC2-X-E1130-C	Nitrogen dioxide	NO ₂	0-30 ppm
MC2-X-E1130-E	Nitrogen dioxide	NO ₂	0-100 ppm
MC2-X-E1183-B	Hydrogen cyanide	HCN	0-50 ppm
MC2-X-E1183-C	Hydrogen cyanide	HCN	0-100 ppm
MC2-X-E1185-B	Formaldehyde	CH ₂ O	0-10 ppm
MC2-X-E1186-D	Hydrogen chloride	HCL	0-20 ppm
MC2-X-E1189-C	Ethylene	C ₂ H ₄	0-200 ppm
MC2-X-E1190-A	Ozone	O ₃	0-5 ppm
MC2-X-E1190-B	Ozone	O ₃	0-10 ppm
MC2-X-E1193-C	Chlorine	Cl ₂	0-10 ppm
MC2-X-E1193-D	Chlorine	Cl ₂	0-20 ppm
MC2-X-E1195-A2	Oxygen, 2 years	O ₂	0-25 % vol
MC2-X-E1195-A3	Oxygen, 3 years	O ₂	0-25 % vol
MC2-X-E1195-A5	Oxygen, 5 years	O ₂	0-25 % vol
MC2-X-E1195-A7	Oxygen, 7 years	O ₂	0-25 % vol
MC2-X-E1196-B	Sulphur dioxide	SO ₂	0-20 ppm
MC2-X-E1197-A	Hydrogen sulphine	H ₂ S	0-50 ppm
MC2-X-E1197-B	Hydrogen sulphine	H ₂ S	0-100 ppm
MC2-X-E1197-C	Hydrogen sulphine	H ₂ S	0-200 ppm
MC2-X-E1197-D	Hydrogen sulphine	H ₂ S	0-500 ppm
MC2-X-E1197-E	Hydrogen sulphine	H ₂ S	0-1500 ppm
MC2-X-E1199-A	Ethylene oxide	C ₂ H ₄ O	0-10 ppm
Infrared Sensor			
MC2-X-I-S1164-B	Carbon dioxide	CO ₂	0-5 % vol
MC2-X-I-S1164-C	Carbon dioxide	CO ₂	0-2 % vol
MC2-X-I464-B	Carbon dioxide	CO ₂	0-5 % vol
MC2-X-I464-D	Carbon dioxide	CO ₂	0-5000 ppm
MC2-X-I464-F	Carbon dioxide	CO ₂	0-10 % vol
* On request			

Analog Sensor Head MC2

Combustible Gases and Freons

Item No.	Gas		Measuring range
Pellistor-Sensor			
MC2-X-P3400-A	Methane	CH ₄	0-100 % LEL
MC2-X-P3402-A	LPG Liquid Petroleum Gas	LPG	0-100 % LEL
MC2-X-P3408-A	Ammonia *	NH ₃	0-100 % LEL
MC2-X-P3408-B	Ammonia *	NH ₃	0-20 % LEL
MC2-X-P3410-A	Ethylene	C ₂ H ₄	0-100 % LEL
MC2-X-P3415-A	Cyclohexane	C ₆ H ₁₂	0-100 % LEL
MC2-X-P3420-A	Ethane, R170	C ₂ H ₆	0-100 % LEL
MC2-X-P3425-A	Ethanol	C ₂ H ₅ OH	0-100 % LEL
MC2-X-P3427-A	Ethyl acetate	C ₄ H ₈ O ₂	0-100 % LEL
MC2-X-P3430-A	Benzol, Benzene	C ₆ H ₆	0-100 % LEL
MC2-X-P3435-A	n-Hexane	C ₆ H ₁₄	0-100 % LEL
MC2-X-P3440-A	Hydrogen	H ₂	0-100 % LEL
MC2-X-P3448-A	Butyl acetate	C ₆ H ₁₂ O ₂	0-100 % LEL
MC2-X-P3450-A	Methanol	CH ₃ OH	0-100 % LEL
MC2-X-P3458-A	Methyl ethyl ketone	C ₄ H ₈ O	0-100 % LEL
MC2-X-P3460-A	Iso-/n-butane	C ₄ H ₁₀	0-100 % LEL
MC2-X-P3468-A	Isobutyl alcohol	C ₄ H ₁₀ O	0-100 % LEL
MC2-X-P3470-A	Octane	C ₈ H ₁₈	0-100 % LEL
MC2-X-P3472-A	Cyclopentane	C ₅ H ₁₀	0-100 % LEL
MC2-X-P3473-A	Methyl acetate	C ₃ H ₆ O ₂	0-100 % LEL
MC2-X-P3475-A	Iso-/n-pentane	C ₅ H ₁₂	0-100 % LEL
MC2-X-P3480-A	Propane	C ₃ H ₈	0-100 % LEL
MC2-X-P3480-B	Propane	C ₃ H ₈	0-30 % LEL
MC2-X-P3480-C	Propane	C ₃ H ₈	0-5000 ppm
MC2-X-P3482-A	Isopropyl alcohol	C ₃ H ₈ O	0-100 % LEL
MC2-X-P3485-A	Acetone	C ₃ H ₆ O	0-100 % LEL
MC2-X-P3490-A	Toluene	C ₇ H ₈	0-100 % LEL
MC2-X-P3491-A	n-Heptane	C ₇ H ₁₆	0-100 % LEL
MC2-X-P3494-A	Butadiene	C ₄ H ₆	0-100 % LEL
MC2-X-P3495-A	Nonane	C ₉ H ₂₀	0-100 % LEL
MC2-X-P3496-A	Gasoline vapors	-	0-100 % LEL
Freon Sensor			
MC2-X-S20XX-XX-A	Freon	R134a, etc.	20-2000 ppm
Freon Sensor in LEL Range			
MC2-X-S2020-01-A	Freon	R32	0-50 % LEL
MC2-X-S2020-02-A	Freon	R455a	0-50 % LEL
MC2-X-S2020-03-A	Freon	R454b	0-50 % LEL
MC2-X-S2020-04-A	Freon	R1234yf	0-50 % LEL
MC2-X-S2020-05-A	Freon	R1234ze	0-50 % LEL
Infrared Sensor			
MC2-X-I400-A	Methane	CH ₄	0-100 % LEL
MC2-X-I400-B	Methane	CH ₄	0-100 % vol
MC2-X-I480-A	Propane	C ₃ H ₈	0-100 % LEL

* On request

Digital Sensor Head SC2

Toxic Gases

Item No.	Gas		Measuring range
EL.-Chem. Sensor			
SC2-E1110-C	Carbon monoxide	CO	0-150 ppm
SC2-E1110-E	Carbon monoxide	CO	0-250 ppm
SC2-E1110-F	Carbon monoxide	CO	0-300 ppm
SC2-E1110-H	Carbon monoxide	CO	0-500 ppm
SC2-E1125-A	Ammonia *	NH3	0-100 ppm
SC2-E1125-B	Ammonia *	NH3	0-300 ppm
SC2-E1125-C	Ammonia *	NH3	0-500 ppm
SC2-E1125-D	Ammonia *	NH3	0-1000 ppm
SC2-E1125-E	Ammonia *	NH3	0-5000 ppm
SC2-E1130-A	Nitrogen dioxide	NO2	0-10 ppm
SC2-E1130-B	Nitrogen dioxide	NO2	0-20 ppm
SC2-E1130-C	Nitrogen dioxide	NO2	0-30 ppm
SC2-E1130-E	Nitrogen dioxide	NO2	0-100 ppm
SC2-E1183-B	Hydrogen cyanide	HCN	0-50 ppm
SC2-E1183-C	Hydrogen cyanide	HCN	0-100 ppm
SC2-E1185-B	Formaldehyde	CH2O	0-10 ppm
SC2-E1186-D	Hydrogen chloride	HCL	0-20 ppm
SC2-E1189-C	Ethylene	C2H4	0-200 ppm
SC2-E1190-A	Ozone	O3	0-5 ppm
SC2-E1190-B	Ozone	O3	0-10 ppm
SC2-E1193-C	Chlorine	Cl2	0-10 ppm
SC2-E1193-D	Chlorine	Cl2	0-20 ppm
SC2-E1195-A2	Oxygen, 2 years	O2	0-25 % vol
SC2-E1195-A3	Oxygen, 3 years	O2	0-25 % vol
SC2-E1195-A5	Oxygen, 5 years	O2	0-25 % vol
SC2-E1195-A7	Oxygen, 7 years	O2	0-25 % vol
SC2-E1196-B	Sulphur dioxide	SO2	0-20 ppm
SC2-E1197-A	Hydrogen sulphine	H2S	0-50 ppm
SC2-E1197-B	Hydrogen sulphine	H2S	0-100 ppm
SC2-E1197-C	Hydrogen sulphine	H2S	0-200 ppm
SC2-E1197-D	Hydrogen sulphine	H2S	0-500 ppm
SC2-E1197-E	Hydrogen sulphine	H2S	0-1500 ppm
SC2-E1199-A	Ethylene oxide	C2H4O	0-10 ppm
Infrared Sensor			
SC2-I-S1164-B	Carbon dioxide	CO2	0-5 % vol
SC2-I-S1164-C	Carbon dioxide	CO2	0-2 % vol
SC2-I464-B	Carbon dioxide	CO2	0-5 % vol
SC2-I464-D	Carbon dioxide	CO2	0-5000 ppm
SC2-I464-F	Carbon dioxide	CO2	0-10 % vol
* On request			

Digital Sensor Head SC2

Combustible Gases und Freons

Item No.	Gas	Measuring range
Pellistor Sensor		
SC2-P3400-A	Methane CH ₄	0-100 % LEL
SC2-P3402-A	LPG Liquid Petroleum Gas LPG	0-100 % LEL
SC2-P3408-A	Ammonia * NH ₃	0-100 % LEL
SC2-P3408-B	Ammonia * NH ₃	0-20 % LEL
SC2-P3410-A	Ethylene C ₂ H ₄	0-100 % LEL
SC2-P3415-A	Cyclohexane C ₆ H ₁₂	0-100 % LEL
SC2-P3420-A	Ethane, R170 C ₂ H ₆	0-100 % LEL
SC2-P3425-A	Ethanol C ₂ H ₅ OH	0-100 % LEL
SC2-P3427-A	Ethyl acetate C ₄ H ₈ O ₂	0-100 % LEL
SC2-P3430-A	Benzol, Benzene C ₆ H ₆	0-100 % LEL
SC2-P3435-A	n-Hexane C ₆ H ₁₄	0-100 % LEL
SC2-P3448-A	Hydrogen C ₆ H ₁₂ O ₂	0-100 % LEL
SC2-P3440-A	Butyl acetate H ₂	0-100 % LEL
SC2-P3450-A	Methanol CH ₃ OH	0-100 % LEL
SC2-P3458-A	Methyl ethyl ketone C ₄ H ₈ O	0-100 % LEL
SC2-P3468-A	Iso-/n-butane C ₄ H ₁₀ O	0-100 % LEL
SC2-P3460-A	Isobutyl alcohol C ₄ H ₁₀	0-100 % LEL
SC2-P3470-A	Octane C ₈ H ₁₈	0-100 % LEL
SC2-P3472-A	Cyclopentane C ₅ H ₁₀	0-100 % LEL
SC2-P3473-A	Methyl acetate C ₃ H ₆ O ₂	0-100 % LEL
SC2-P3475-A	Iso-/n-pentane C ₅ H ₁₂	0-100 % LEL
SC2-P3480-A	Propane C ₃ H ₈	0-100 % LEL
SC2-P3480-B	Propane C ₃ H ₈	0-30% LEL
SC2-P3480-C	Propane C ₃ H ₈	0-5000 ppm
SC2-P3482-A	Isopropyl alcohol C ₃ H ₈ O	0-100% LEL
SC2-P3485-A	Acetone C ₃ H ₆ O	0-100% LEL
SC2-P3490-A	Toluene C ₇ H ₈	0-100% LEL
SC2-P3491-A	n-Heptane C ₇ H ₁₆	0-100% LEL
SC2-P3494-A	Butadiene C ₄ H ₆	0-100% LEL
SC2-P3495-A	Nonane C ₉ H ₂₀	0-100% LEL
SC2-P3496-A	Benzindämpfe -	0-100% LEL
Freon Sensor		
SC2-S20XX-XX-A	Freon R134a, etc.	20-2000 ppm
Freon Sensor in LEL range		
SC2-S2020-01-A	Freon R32	0-50 % LEL
SC2-S2020-02-A	Freon R455a	0-50 % LEL
SC2-S2020-03-A	Freon R454b	0-50 % LEL
SC2-S2020-04-A	Freon R1234yf	0-50 % LEL
SC2-S2020-05-A	Freon R1234ze	0-50 % LEL
Infrared Sensor		
SC2-I400-A	Methane CH ₄	0-100 % LEL
SC2-I400-B	Methane CH ₄	0-100 % vol
SC2-I480-A	Propane C ₃ H ₈	0-100 % LEL

* On request

Analog-Relay-Board ARB2

Item No.	Description
STANDARD	
ARB2-N-20010	Analog-Relay-Board, N-housing, 24 V DC, sensor unit installed
OPTIONS	
ARB2-N-20000	Analog-Relay-Board 24 V
ARB2-A-XXXXX	A-Housing
ARB2-G-XXXXX	G-Housing
ARB2-N-XXXXX	N-Housing
ARB2-X-2XXXX	24 V AC/DC
ARB2-X-X1XXX	With display
ARB2-X-XX1XX	Optical/acoustic detector (WAO), mounted on housing
ARB2-X-XXX2X	Accessory kit for remote sensor
ARB2-X-XXXXA	Version UL/CSA 61010-1 (not with housing type N)

Multi-Sensor-Board MSB2

Item No.	Description
STANDARD	
MSB2-A-230323000	Multi-Sensor-Board, A-housing, 24 V
OPTIONS	
MSB2-0-XXXXXXXXXX	Without housing
MSB2-A-XXXXXXXXXX	A-housing
MSB2-C-XXXXXXXXXX	C-housing
MSB2-E-XXXXXXXXXX	E-housing
MSB2-X-7XXXXXXXXXX	100-240 V AC / 24 V DC, 15 VA
MSB2-X-XX4XXXXXXXXXX	Optical/acoustic detector (WAO), mounted on housing
MSB2-X-XXX3XXXXXXXXXX	Analog output & RS-485 with Modbus protocol
MSB2-X-XXXXXX2XX	With display/keypad
MSB2-X-XXXXXXXXXA	Version UL/CSA 61010-1

Sensor-Board SB2

Item No.	Description
STANDARD	
SB2-A-200200000	Sensor-Board in A-housing, 24 V DC, RS-485 with DGC-06 protocol
RB2-A-100000000	Remote-Board for one SC2 for remote connection at the SB2, A-housing
RB2-O-100000000	Remote-Board for one SC2 for remote connection at the SB2, without housing
OPTIONS	
SB2-C-XXXXXXXXXX	C-Housing
SB2-5-XXXXXXXXXX	Stainless steel housing
SB2-X-XX3XXXXXXXX	Optical/acoustic detector (WAO), mounted on housing
SB2-X-XXX4XXXXXX	RS-485 with Modbus protocol
SB2-X-XXX8XXXXXX	MSR_D_Bus
SB2-X-XXXXXX2XX	With display/keypad
SB2-X-XXXXXXXXXA	Version UL/CSA 61010-1 (only housing type A & C)

Warning and Sensor-Board WSB2

Item No.	Description
STANDARD	
WSB2-A-220311000	Warning and Sensor-Board, A-housing, 2 relays
WSB2-A-200311000	Warning and Sensor-Board , A-housing, without alarm relay/fault signal relay
OPTIONS	
WSB2-C-XXXXXXXXXX	C-Housing
WSB2-E-XXXXXXXXXX	E-Housing
WSB2-X-7XXXXXXXXXX	100-240 V AC / 24 V DC, 15 VA
WSB2-X-XX3XXXXXXXX	Optical/acoustic detector (WAO), mounted on housing
WSB2-X-XXX3XXXXXX	Analog output & RS-485 with DGC-06 & Modbus protocol
WSB2-X-XXX4XXXXXX	Only RS-485 with DGC-06 & Modbus protocol
WSB2-X-XXXX2XXXXX	Digital input with acknowledgement button on housing
WSB2-X-XXXXXX2XX	With display/keypad
WSB2-X-XXXXXXX1X	3x SC2 mounting slot
WSB2-X-XXXXXXX2X	2x SC2 mounting slot & remote input terminal
WSB2-X-XXXXXXX3X	2x SC2 mounting slot for same gas type & remote input terminal
WSB2-X-XXXXXXX5X	1x SSAX1 mounting slot (for ATEX compliant sensor)
WSB2-X-XXXXXXXXXA	Version UL/CSA 61010-1 (housing Typ A, C, E)

Multi-Sensor-Controller MSC2

Item No.	Description
STANDARD	
MSC2-C-230322000	Multi-Sensor-Controller, C-housing, 24 V
MSC2-C-530322000	Multi-Sensor-Controller, C-housing, 230 V, 5 VA
MSC2-C-230322200	Multi-Sensor-Controller, C-housing, 12V / 24 V, with display/keypad
MSC2-C-530322200	Multi-Sensor-Controller, C-housing, 230 V, 5 VA, with display/keypad
OPTIONS	
MSC2-C-XXXXXXXXXX	C-Housing
MSC2-E-XXXXXXXXXX	E-Housing
MSC2-E-7XXXXXXXXXX	100-240 V AC / 24 V DC, 15 VA
MSC2-E-9XXXXXXXXXX	UPS 100-240 V AC / 24 V DC, 15VA, 0.8 Ah
MSC2-X-XX4XXXXXXXX	Optical/acoustic detector (WAO), mounted on housing
MSC2-X-XXX3XXXXXX	Analog output & RS-485 with DGC-06 protocol (Modbus incl.)
MSC2-X-XXXX4XXXXX	1x digital input & acknowledgement button on the housing
MSC2-X-XXXXXX2XX	With display/keypad
MSC2-X-XXXXXXXXXA	Version UL/CSA 61010-1 (housing A, C, E)

Compactcontroller

Item No.	Description
STANDARD	
MSC2-C-23032020K	Compactcontroller, C-housing, 24 V DC, with display/keypad
MSC2-C-23032020C	Compactcontroller, C-housing, 24 V DC, with display/keypad, version UL/CSA 61010-1
OPTIONS	
MSC2-C-XXXXXXXXXX	C-Housing
MSC2-E-XXXXXXXXXX	E-Housing
MSC2-E-7XXXXXXXXXX	100-240 V AC / 24 V DC, 15 VA
MSC2-E-9XXXXXXXXXX	UPS 100-240 V AC / 24 V DC, 15VA, 0.8 Ah
MSC2-X-XX4XXXXXXXX	Optical/acoustic detector (WAO), mounted on housing
MSC2-X-XXX3XXXXXX	Analog output & RS-485 with DGC-06 protocol (Modbus incl.)
MSC2-X-XXXXXX2XX	With display/keypad
MSC2-X-XXXXXXXXXA	Version UL/CSA 61010-1 (housing C, E)

Multi-Gas-Controller MGC2

Item No.	Description
STANDARD	
MGC2-C-230323000	Multi-Gas-Controller, C-housing, 24 V
MGC2-C-530323000	Multi-Gas-Controller, C-housing, 230 V, 5 VA
MGC2-C-230323200	Multi-Gas-Controller, C-housing, 24 V, with display/keypad
MGC2-C-530323200	Multi-Gas-Controller, C-housing, 230 V, 5 VA, with display/keypad
OPTIONS	
MGC2-C-XXXXXXXXXX	C-Housing
MGC2-E-XXXXXXXXXX	E-Housing
MGC2-X-7XXXXXXXXXX	100-240 V AC / 24 V DC, 15 VA
MGC2-X-9XXXXXXXXXX	UPS 100-240 V AC / 12 V DC, 15 VA, 0.8 Ah
MGC2-X-XX4XXXXXXXX	Optical/acoustic detector (WAO), mounted on housing
MGC2-X-XXX3XXXXXX	Analog output & RS-485 with DGC-06 protocol (Modbus incl.)
MGC2-X-XXXX4XXXXXX	1x digital input & 1x acknowledgement button on the housing

Door-Entrance-Module DEM-06

Item No.	Description
DEM-06-C-S100	Door-entrance-module, slave version, internal buzzer & 1x open collector output
OPTIONS	
DEM-06-A-XXXX	A-Housing
DEM-06-X-S200	2x open collector outputs with reset input
DEM-06-C-S300	Mounting together in the MSB2-housing

Digital-Gas-Controller DGC-06

Item No.	Description
STANDARD	
DGC-06-2-0-1-010000000	Power unit: 230/110 V AC <-> 24 V DC, 6.5 Ah, 4 relays, 1-row housing
DGC-06-2-0-2-010000000	Power unit: 230/110 V AC <-> 24 V DC, 6.5 Ah, 4 relays, 2-row housing
DGC-06-2-0-3-010000000	Power unit: 230/110 V AC <-> 24 V DC, 6.5 Ah, 4 relays, 3-row housing
DGC-06-2-0-4-010000000	Power unit: 230/110 V AC <-> 24 V DC, 6.5 Ah, 4 relays, 4-row housing
DGC-06-3-0-X-XXXXXXXXXX	UPS: 230/110 V AC <-> 24 V DC, 2,2 Ah
DGC-06-4-0-X-XXXXXXXXXX	UPS: 230/110 V AC <-> 24 V DC, 7,2 Ah
DGC-06-0-0-X-XXXXXXXXXX	Supply 24 V DC
OPTIONS	
DGC-06-2-0-1-1XXXXXXXXXX	Mains fault flashing light
DGC-06-2-0-1-XX1XXXXXXXX	Data Logger incl. USB stick
DGC-06-2-0-1-XXX1XXXXXX	Interface Modbus RTU/RS-485
DGC-06-X-X-X-XXXXXX1XX	Cable entry from below
DGC-06-X-X-X-XXXXXX2XX	Cable entry from below and above
DGC-06-X-X-X-XXXXXX1X	Housing lockable

Gas-Controller Module GC-06 and Extension Module EP-06

Item No.	Description
GC-06-000000-00	Gas Controller Module
GC-06-1XXXXX-00	Mains fault flashing light
GC-06-X2XXXX-00	Door mounting with mounting panel
EP-06-XX0	Extension module

Control Box and Tools

Item No.	Description
PGCB	
PGCB-GC06-07-0	PolyGard Control Box, with 7" touchscreen, without power supply, without housing
PGCB-GC06-07-A	PolyGard Control Box, with 7" touchscreen, with power supply and housing
STL06 – SERVICE TOOL	
STL06-PGX2-P7	Partner tool for display, calibration, addressing and parameter changes
STL06-PGX2-A7	Plant tool for display, calibration, addressing and parameter changes*
STL06-MC2-A1	Tool for product line PolyGard® (MC2) for display and calibration
PCE06 – PC-TOOL	
PCE06-PGX2-PF-X	Partner-Tool for display, calibration, addressing, parameter changes and history
PCE06-PGX2-AF-X	Plant PC Tool for display, calibration, addressing and parameter changes and history*
* Ordered by the partner for end customers	

Warning Devices

Item No.	Description
BL-24	Flashing light
WH-24	Warning horn, 24 V DC
WH-230	Warning horn, 230 V AC
WH/BL-24	Warning horn/flashlight combination, 24 V DC
WH/BL-24-TAST	Warning horn/flasher combination, 24 V DC + button
WH/BL-230	Warning horn/flashlight combination, 230 V AC
WT-D3-30-222-GW	LED warning sign D3 - EN 50545-1
WT-G1-30-111-RW	LED warning sign G1 - VDI 2053 GASALARM
WT-A1-30-127-RR	LED warning sign A1 - standard Austria
WT-A2-30-214-RR	LED warning sign A2 - standard Austria
WT-A3-30-122-RR	LED warning sign A3 - standard Austria
OPTIONS	
WT-XX-XX-XXX-XX	Warning sign in IP54
WT-ST-XX-XXX-XX	Special labeling
WT-XX-31-XXX-XX	Power supply 24 V AC/DC, with horn
WT-XX-40-XXX-XX	Power supply 230 V AC
WT-XX-41-XXX-XX	Power supply 230 V AC, with horn

Accessories

Item No.	Description
ADAPTER	
STA06-MC2	Converter for STL06-PGX2 tool for communication with the MC2 series
ACCESSORIES	
C2-Z2	Air duct mounting set for MC2, SC2
C2-Z4	Calibration adapter for MC2, SC2 (plastic sleeve without hole on the side)
C2-Z6	Calibration adapter for MC2, SC2 (plastic sleeve with hole on the side)
C2-Z5	SplashGuard (splash protection cap) for MC2 and SC2
SP6-00	Sensor protector / guard rail, stainless steel, 6 mm
OT-01	Tool for opening the stainless steel housing

Intelligent Parking Guidance Systems

Item No.	Description
PC SYSTEMS	
PC	Server interface > 500 sensors
PC-Comfort-1	Server for small systems incl. 3 RS-485 ports < 500 sensors
T-Box-Ethernet	Modbus – TCP/IP converter for virtual machines
PC SOFTWARE	
PG-CC	ParkGard® Control Center - SCADA Software
SENSORS	
PU-02-2	Ultrasonic indoor sensor (design)
PU-02-4	Ultrasonic indoor sensor (cross)
PU-02-PK	USS with pot. free contact
PU-02-5	Status LED parking space indicator, with extension
PU-02-8	Status LED parking space indicator, in plastic housing
PU-02-3	Ultrasonic indoor counting sensor, 1.900 x 65 x 90 mm (L x W x D)
CONTROLLER	
PCL-MU-1	MSR level controller 1, can control up to 32 ultrasonic sensors
PCL-MU-2	MSR level controller 2, can control up to 64 ultrasonic sensors
PCL-MU-3	MSR level controller 3, can control up to 96 ultrasonic sensors
PCL-MU-4	MSR level controller 4, can control up to 128 ultrasonic sensors
DISPLAYS	
ParkGard® LED - Matrix-I	Freely programmable matrix LED display indoor IP45
ParkGard® LED - Matrix-O	Freely programmable matrix LED display outdoor 54



Sensor PolyXeta[®] 2

Toxic Gases for Zone 1 and Zone 2

Item No.	Item No.	Gas	Measuring Range
Zone 1	Zone 2		
EL-Chem. Sensor			
PX2-1-X-E1110-C-XX	PX2-2-X-E1110-C-XX	Carbon monoxide CO	0-150 ppm
PX2-1-X-E1110-E-XX	PX2-2-X-E1110-E-XX	Carbon monoxide CO	0-250 ppm
PX2-1-X-E1110-F-XX	PX2-2-X-E1110-F-XX	Carbon monoxide CO	0-300 ppm
PX2-1-X-E1110-H-XX	PX2-2-X-E1110-H-XX	Carbon monoxide CO	0-500 ppm
PX2-1-X-E1125-A-XX	PX2-2-X-E1125-A-XX	Ammonia*	NH3 0-100 ppm
PX2-1-X-E1125-B-XX	PX2-2-X-E1125-B-XX	Ammonia*	NH3 0-300 ppm
PX2-1-X-E1125-C-XX	PX2-2-X-E1125-C-XX	Ammonia*	NH3 0-500 ppm
PX2-1-X-E1125-D-XX	PX2-2-X-E1125-D-XX	Ammonia*	NH3 0-1000 ppm
PX2-1-X-E1125-E-XX	PX2-2-X-E1125-E-XX	Ammonia*	NH3 0-5000 ppm
PX2-1-X-E1130-E-XX	PX2-2-X-E1130-E-XX	Nitrogen dioxide NO2	0-100 ppm
PX2-1-X-E1183-B-XX	PX2-2-X-E1183-B-XX	Hydrogen cyanide HCN	0-50 ppm
PX2-1-X-E1183-C-XX	PX2-2-X-E1183-C-XX	Hydrogen cyanide HCN	0-100 ppm
PX2-1-X-E1186-D-XX	PX2-2-X-E1186-D-XX	Hydrogen chloride HCl	0-20 ppm
PX2-1-X-E1195-A2-XX	PX2-2-X-E1195-A2-XX	Oxygen, 2 years O2	0-25 % vol
PX2-1-X-E1195-A3-XX	PX2-2-X-E1195-A3-XX	Oxygen, 3 years O2	0-25 % vol
PX2-1-X-E1195-A5-XX	PX2-2-X-E1195-A5-XX	Oxygen, 5 years O2	0-25 % vol
PX2-1-X-E1195-A7-XX	PX2-2-X-E1195-A7-XX	Oxygen, 7 years O2	0-25 % vol
PX2-1-X-E1197-A-XX	PX2-2-X-E1197-A-XX	Hydrogen sulphide H2S	0-50 ppm
PX2-1-X-E1197-B-XX	PX2-2-X-E1197-B-XX	Hydrogen sulphide H2S	0-100 ppm
PX2-1-X-E1197-C-XX	PX2-2-X-E1197-C-XX	Hydrogen sulphide H2S	0-200 ppm
PX2-1-X-E1197-D-XX	PX2-2-X-E1197-D-XX	Hydrogen sulphide H2S	0-500 ppm
PX2-1-X-E1197-E-XX	PX2-2-X-E1197-E-XX	Hydrogen sulphide H2S	0-1500 ppm
Infrared Sensor			
PX2-1-X-I464-B-XX	PX2-2-X-I464-B-XX	Carbon dioxide CO2	0-5 % vol
PX2-1-X-I464-D-XX	PX2-2-X-I464-D-XX	Carbon dioxide CO2	0-5000 ppm
PX2-1-X-I464-F-XX	PX2-2-X-I464-F-XX	Carbon dioxide CO2	0-10 % vol
OPTIONS			
PX2-X-1-XXXX-X-XX	Relay set		
PX2-X-2-XXXX-X-XX	LC Display		
PX2-X-3-XXXX-X-XX	Relay set and LC display		
PX2-X-X-XXXX-X-P1	Aluminum pressure housing for 1x cable entry incl. screw connection		
PX2-X-X-XXXX-X-P3	Aluminum pressure housing for 1x cable entry incl. screw connection		
	* On request		

Sensor PolyXeta[®]2

Combustible Gases and Freone for Zone 1 and Zone 2

Item No.	Item No.	Gas	Measuring Range
Zone 1	Zone 2		
Pellistor Sensor			
PX2-1-X-P3400-A-XX	PX2-2-X-P3400-A-XX	Methane CH ₄	0-100 % LEL
PX2-1-X-P3402-A-XX	PX2-2-X-P3402-A-XX	Liquid Petroleum Gas LPG	0-100 % LEL
PX2-1-X-P3408-A-XX	PX2-2-X-P3408-A-XX	Ammonia *	NH ₃ 0-100 % LEL
PX2-1-X-P3408-B-XX	PX2-2-X-P3408-B-XX	Ammonia *	NH ₃ 0-20 % LEL
PX2-1-X-P3410-A-XX	PX2-2-X-P3410-A-XX	Ethylene C ₂ H ₄	0-100 % LEL
PX2-1-X-P3415-A-XX	PX2-2-X-P3415-A-XX	Cyclohexane C ₆ H ₁₂	0-100 % LEL
PX2-1-X-P3420-A-XX	PX2-2-X-P3420-A-XX	Ethane, R170 C ₂ H ₆	0-100 % LEL
PX2-1-X-P3425-A-XX	PX2-2-X-P3425-A-XX	Ethyl alcohol C ₂ H ₅ OH	0-100 % LEL
PX2-1-X-P3427-A-XX	PX2-2-X-P3427-A-XX	Ethyl acetate C ₄ H ₈ O ₂	0-100 % LEL
PX2-1-X-P3430-A-XX	PX2-2-X-P3430-A-XX	Benzol, Benzene C ₆ H ₆	0-100 % LEL
PX2-1-X-P3435-A-XX	PX2-2-X-P3435-A-XX	n-Hexane C ₆ H ₁₄	0-100 % LEL
PX2-1-X-P3440-A-XX	PX2-2-X-P3440-A-XX	Hydrogen H ₂	0-100 % LEL
PX2-1-X-P3448-A-XX	PX2-2-X-P3448-A-XX	Butyl acetate C ₆ H ₁₂ O ₂	0-100 % LEL
PX2-1-X-P3450-A-XX	PX2-2-X-P3450-A-XX	Methanol CH ₃ OH	0-100 % LEL
PX2-1-X-P3458-A-XX	PX2-2-X-P3458-A-XX	Methyl ethyl ketone C ₄ H ₈ O	0-100 % LEL
PX2-1-X-P3460-A-XX	PX2-2-X-P3460-A-XX	Iso-/n-Butane C ₄ H ₁₀	0-100 % LEL
PX2-1-X-P3468-A-XX	PX2-2-X-P3468-A-XX	Isobutyl alcohol C ₄ H ₁₀ O	0-100 % LEL
PX2-1-X-P3470-A-XX	PX2-2-X-P3470-A-XX	Octane C ₈ H ₁₈	0-100 % LEL
PX2-1-X-P3472-A-XX	PX2-2-X-P3472-A-XX	Cyclopentane C ₅ H ₁₀	0-100 % LEL
PX2-1-X-P3473-A-XX	PX2-2-X-P3473-A-XX	Methyl acetate C ₃ H ₆ O ₂	0-100 % LEL
PX2-1-X-P3475-A-XX	PX2-2-X-P3475-A-XX	Iso-/n-Pentane C ₅ H ₁₂	0-100 % LEL
PX2-1-X-P3480-A-XX	PX2-2-X-P3480-A-XX	Propane C ₃ H ₈	0-100 % LEL
PX2-1-X-P3480-B-XX	PX2-2-X-P3480-B-XX	Propane C ₃ H ₈	0-30 % LEL
PX2-1-X-P3480-C-XX	PX2-2-X-P3480-C-XX	Propane C ₃ H ₈	0-5000 ppm
PX2-1-X-P3482-A-XX	PX2-2-X-P3482-A-XX	Isopropyl alcohol C ₃ H ₈ O	0-100 % LEL
PX2-1-X-P3485-A-XX	PX2-2-X-P3485-A-XX	Acetone C ₃ H ₆ O	0-100 % LEL
PX2-1-X-P3490-A-XX	PX2-2-X-P3490-A-XX	Toluene C ₇ H ₈	0-100 % LEL
PX2-1-X-P3491-A-XX	PX2-2-X-P3491-A-XX	n-Heptane C ₇ H ₁₆	0-100 % LEL
PX2-1-X-P3494-A-XX	PX2-2-X-P3494-A-XX	Butadiene C ₄ H ₆	0-100 % LEL
PX2-1-X-P3495-A-XX	PX2-2-X-P3495-A-XX	Nonane C ₉ H ₂₀	0-100 % LEL
PX2-1-X-P3496-A-XX	PX2-2-X-P3496-A-XX	Petrol vapors -	0-100 % LEL
Freon Sensor			
PX2-1-X-S20XX-XX-X	PX2-2-X-S20XX-XX-X	Freon R134a, etc.	20-2000 ppm
Freon Sensor in LEL range			
PX2-1-X-S2020-01-A-XX	PX2-2-X-S2020-01-A-XX	Freon R32	0-50 % LEL
PX2-1-X-S2020-02-A-XX	PX2-2-X-S2020-02-A-XX	Freon R455a	0-50 % LEL
PX2-1-X-S2020-03-A-XX	PX2-2-X-S2020-03-A-XX	Freon R454b	0-50 % LEL
PX2-1-X-S2020-04-A-XX	PX2-2-X-S2020-04-A-XX	Freon R1234yf	0-50 % LEL
Infrared Sensor			
PX2-1-X-S400-A-XX	PX2-2-X-S400-A-XX	Methane CH ₄	0-100 % LEL
PX2-1-X-S400-B-XX	PX2-2-X-S400-A-XX	Methane CH ₄	0-100 % vol
PX2-1-X-S480-A-XX	PX2-2-X-S480-A-XX	Propan C ₃ H ₈	0-100 % LEL

* On request

Sensor Head SX1

Toxic Gases for Zone 1 and Zone 2

Item No.	Gas		Measuring Range
EL-Chem. Sensor			
SX1-1-E1110-C	Carbon monoxide	CO	0-150 ppm
SX1-1-E1110-E	Carbon monoxide	CO	0-250 ppm
SX1-1-E1110-F	Carbon monoxide	CO	0-300 ppm
SX1-1-E1110-H	Carbon monoxide	CO	0-500 ppm
SX1-1-E1125-A	Ammonia *	NH ₃	0-100 ppm
SX1-1-E1125-B	Ammonia *	NH ₃	0-300 ppm
SX1-1-E1125-C	Ammonia *	NH ₃	0-500 ppm
SX1-1-E1125-D	Ammonia *	NH ₃	0-1000 ppm
SX1-1-E1125-E	Ammonia *	NH ₃	0-5000 ppm
SX1-1-E1130-B	Nitrogen dioxide	NO ₂	0-100 ppm
SX1-1-E1183-B	Hydrogen cyanide	HCN	0-50 ppm
SX1-1-E1183-C	Hydrogen cyanide	HCN	0-100 ppm
SX1-1-E1186-D	Hydrogen chloride	HCl	0-20 ppm
SX1-1-E1195-A2	Oxygen, 2 years	O ₂	0-25 % vol
SX1-1-E1195-A3	Oxygen, 3 years	O ₂	0-25 % vol
SX1-1-E1195-A5	Oxygen, 5 years	O ₂	0-25 % vol
SX1-1-E1195-A7	Oxygen, 7 years	O ₂	0-25 % vol
SX1-1-E1197-A	Hydrogen sulfide	H ₂ S	0-50 ppm
SX1-1-E1197-B	Hydrogen sulfide	H ₂ S	0-100 ppm
SX1-1-E1197-C	Hydrogen sulfide	H ₂ S	0-200 ppm
SX1-1-E1197-D	Hydrogen sulfide	H ₂ S	0-500 ppm
SX1-1-E1197-E	Hydrogen sulfide	H ₂ S	0-1500 ppm
Infrared Sensor			
SX1-1-I464-B	Carbon dioxide	CO ₂	0-5 % vol
SX1-1-I464-D	Carbon dioxide	CO ₂	0-5000 ppm
SX1-1-I464-F	Carbon dioxide	CO ₂	0-10 % vol

* On request

Sensor Head SX1

Combustible Gases and Freone for Zone 1 and Zone 2

Item No.	Gas		Measuring Range
Pellistor Sensor			
SX1-1-P3400-A	Methane	CH ₄	0-100 % LEL
SX1-1-P3402-A	Liquid Petroleum Gas	LPG	0-100 % LEL
SX1-1-P3408-A	Ammonia *	NH ₃	0-100 % LEL
SX1-1-P3408-B	Ammonia *	NH ₃	0-20 % LEL
SX1-1-P3410-A	Ethylene	C ₂ H ₄	0-100 % LEL
SX1-1-P3415-A	Cyclohexane	C ₆ H ₁₂	0-100 % LEL
SX1-1-P3420-A	Ethane, R170	C ₂ H ₆	0-100 % LEL
SX1-1-P3425-A	Ethyl alcohol	C ₂ H ₅ OH	0-100 % LEL
SX1-1-P3427-A	Ethyl acetate	C ₄ H ₈ O ₂	0-100 % LEL
SX1-1-P3430-A	Benzol, Benzene	C ₆ H ₆	0-100 % LEL
SX1-1-P3435-A	n-Hexane	C ₆ H ₁₄	0-100 % LEL
SX1-1-P3440-A	Hydrogen	H ₂	0-100 % LEL
SX1-1-P3448-A	Butyl acetate	C ₆ H ₁₂ O ₂	0-100 % LEL
SX1-1-P3450-A	Methanol	CH ₃ OH	0-100 % LEL
SX1-1-P3458-A	Methyl ethyl ketone	C ₄ H ₈ O	0-100 % LEL
SX1-1-P3460-A	Iso-/n-Butane	C ₄ H ₁₀	0-100 % LEL
SX1-1-P3468-A	Isobutyl alcohol	C ₄ H ₁₀ O	0-100 % LEL
SX1-1-P3470-A	Octane	C ₈ H ₁₈	0-100 % LEL
SX1-1-P3472-A	Cyclopentane	C ₅ H ₁₀	0-100 % LEL
SX1-1-P3473-A	Methyl acetate	C ₃ H ₆ O ₂	0-100 % LEL
SX1-1-P3475-A	Iso-/n-Pentane	C ₅ H ₁₂	0-100 % LEL
SX1-1-P3480-A	Propane	C ₃ H ₈	0-100 % LEL
SX1-1-P3480-B	Propane	C ₃ H ₈	0-30 % LEL
SX1-1-P3480-C	Propane	C ₃ H ₈	0-5000 ppm
SX1-1-P3482-A	Isopropyl alcohol	C ₃ H ₈ O	0-100 % LEL
SX1-1-P3485-A	Acetone	C ₃ H ₆ O	0-100 % LEL
SX1-1-P3490-A	Toluene	C ₇ H ₈	0-100 % LEL
SX1-1-P3491-A	n-Heptane	C ₇ H ₁₆	0-100 % LEL
SX1-1-P3494-A	Butadiene	C ₄ H ₆	0-100 % LEL
SX1-1-P3495-A	Nonane	C ₉ H ₂₀	0-100 % LEL
SX1-1-P3496-A	Petrol vapors		0-100 % LEL
Freon Sensor			
SX1-S20XX-XX-X	Freon	R134a, etc.	20-2000 ppm
Freon Sensor in LEL range			
SX1-1-X-S2020-01-A	Freon	R32	0-50 % LEL
SX1-1-X-S2020-02-A	Freon	R455a	0-50 % LEL
SX1-1-X-S2020-03-A	Freon	R454b	0-50 % LEL
SX1-1-X-S2020-04-A	Freon	R1234yf	0-50 % LEL
Infrared Sensor			
SX1-1-I400-A	Methane	CH ₄	0-100 % LEL
SX1-1-I400-B	Methane	CH ₄	0-100 % vol
SX1-1-I480-A	Propane	C ₃ H ₈	0-100 % LEL
	* On request		

Sensor Head SSAX1

Toxic Gases for Zone 1 and Zone 2

Item No.	Gas		Measuring range
EL-Chem. Sensor			
SSAX1-1-E1110-C-XX-K5	Carbon monoxide	CO	0-150 ppm
SSAX1-1-E1110-E-XX-K5	Carbon monoxide	CO	0-250 ppm
SSAX1-1-E1110-F-XX-K5	Carbon monoxide	CO	0-300 ppm
SSAX1-1-E1110-H-XX-K5	Carbon monoxide	CO	0-500 ppm
SSAX1-1-E1125-A-XX-K5	Ammonia *	NH3	0-100 ppm
SSAX1-1-E1125-B-XX-K5	Ammonia *	NH3	0-300 ppm
SSAX1-1-E1125-C-XX-K5	Ammonia *	NH3	0-500 ppm
SSAX1-1-E1125-D-XX-K5	Ammonia *	NH3	0-1000 ppm
SSAX1-1-E1125-E-XX-K5	Ammonia *	NH3	0-5000 ppm
SSAX1-1-E1130-B-XX-K5	Nitrogen dioxide	NO2	0-100 ppm
SSAX1-1-E1183-B-XX-K5	Hydrogen cyanide	HCN	0-50 ppm
SSAX1-1-E1183-C-XX-K5	Hydrogen cyanide	HCN	0-100 ppm
SSAX1-1-E1186-D-XX-K5	Hydrogen chloride	HCl	0-20 ppm
SSAX1-1-E1195-A2-XX-K5	Oxygen, 2 years	O2	0-25 % vol
SSAX1-1-E1195-A3-XX-K5	Oxygen, 3 years	O2	0-25 % vol
SSAX1-1-E1195-A5-XX-K5	Oxygen, 5 years	O2	0-25 % vol
SSAX1-1-E1195-A7-XX-K5	Oxygen, 7 years	O2	0-25 % vol
SSAX1-1-E1197-A-XX-K5	Hydrogen sulphide	H2S	0-50 ppm
SSAX1-1-E1197-B-XX-K5	Hydrogen sulphide	H2S	0-100 ppm
SSAX1-1-E1197-C-XX-K5	Hydrogen sulphide	H2S	0-200 ppm
SSAX1-1-E1197-D-XX-K5	Hydrogen sulphide	H2S	0-500 ppm
SSAX1-1-E1197-E-XX-K5	Hydrogen sulphide	H2S	0-1500 ppm
Infrared Sensor			
SSAX1-1-S400-A-XX-K5	Methane	CH4	0-100 % LEL
SSAX1-1-I400-A-XX-K5	Methane	CH4	0-100 % LEL
SSAX1-1-I400-B-XX-K5	Methane	CH4	0-100 % vol
SSAX1-1-S480-A-XX-K5	Propane	C3H8	0-100 % LEL
SSAX1-1-I480-A-XX-K5	Propane	C3H8	0-100 % LEL
SSAX1-1-I464-B-XX-K5	Carbon dioxide	CO2	0-5 % vol
SSAX1-1-I464-D-XX-K5	Carbon dioxide	CO2	0-5000 ppm
SSAX1-1-I464-F-XX-K5	Carbon dioxide	CO2	0-10 % vol
* On request			

Sensor Head SSAX1

Combustible Gases for Zone 1 and Zone

Item No.	Gas	Measuring range
Pellistor Sensor		
SSAX1-1-P3400-A-XX-K5	Methane CH ₄	0-100 % LEL
SSAX1-1-P3402-A-XX-K5	LPG Liquid Petroleum Gas LPG	0-100 % LEL
SSAX1-1-P3408-A-XX-K5	Ammonia * NH ₃	0-100 % LEL
SSAX1-1-P3408-B-XX-K5	Ammonia * NH ₃	0-20 % LEL
SSAX1-1-P3410-A-XX-K5	Ethylene C ₂ H ₄	0-100 % LEL
SSAX1-1-P3415-A-XX-K5	Cyclohexane C ₆ H ₁₂	0-100 % LEL
SSAX1-1-P3420-A-XX-K5	Ethane, R170 C ₂ H ₆	0-100 % LEL
SSAX1-1-P3425-A-XX-K5	Ethyl alcohol C ₂ H ₅ OH	0-100 % LEL
SSAX1-1-P3427-A-XX-K5	Ethyl acetate C ₄ H ₈ O ₂	0-100 % LEL
SSAX1-1-P3430-A-XX-K5	Benzol, Benzene C ₆ H ₆	0-100 % LEL
SSAX1-1-P3435-A-XX-K5	n-Hexane C ₆ H ₁₄	0-100 % LEL
SSAX1-1-P3440-A-XX-K5	Hydrogen H ₂	0-100 % LEL
SSAX1-1-P3448-A-XX-K5	Butyl acetate C ₆ H ₁₂ O ₂	0-100 % LEL
SSAX1-1-P3450-A-XX-K5	Methanol CH ₃ OH	0-100 % LEL
SSAX1-1-P3458-A-XX-K5	Methyl ethyl ketone C ₄ H ₈ O	0-100 % LEL
SSAX1-1-P3460-A-XX-K5	Iso-/n-Butane C ₄ H ₁₀	0-100 % LEL
SSAX1-1-P3468-A-XX-K5	Isobutyl alcohol C ₄ H ₁₀ O	0-100 % LEL
SSAX1-1-P3470-A-XX-K5	Octane C ₈ H ₁₈	0-100 % LEL
SSAX1-1-P3472-A-XX-K5	Cyclopentane C ₅ H ₁₀	0-100 % LEL
SSAX1-1-P3473-A-XX-K5	Methyl acetate C ₃ H ₆ O ₂	0-100 % LEL
SSAX1-1-P3475-A-XX-K5	Iso-/n-Pentane C ₅ H ₁₂	0-100 % LEL
SSAX1-1-P3480-A-XX-K5	Propane C ₃ H ₈	0-100 % LEL
SSAX1-1-P3480-B-XX-K5	Propane C ₃ H ₈	0-30 % LEL
SSAX1-1-P3480-C-XX-K5	Propane C ₃ H ₈	0-5000 ppm
SSAX1-1-P3482-A-XX-K5	Isopropyl alcohol C ₃ H ₈ O	0-100 % LEL
SSAX1-1-P3485-A-XX-K5	Acetone C ₃ H ₆ O	0-100 % LEL
SSAX1-1-P3490-A-XX-K5	Toluene C ₇ H ₈	0-100 % LEL
SSAX1-1-P3491-A-XX-K5	n-Heptane C ₇ H ₁₆	0-100 % LEL
SSAX1-1-P3494-A-XX-K5	Butadiene C ₄ H ₆	0-100 % LEL
SSAX1-1-P3495-A-XX-K5	Nonane C ₉ H ₂₀	0-100 % LEL
SSAX1-1-P3496-A-XX-K5	Petrol vapors	0-100 % LEL
OPTIONS		
SSAX1-1-XXXX-X-10-K5	Local bus interface with 3-pin standard connector	
SSAX1-1-XXXX-X-20-K5	Local bus/PWM interface with 4-pin standard connector	
SSAX1-1-XXXX-X-30-K5	Local bus/PWM interface with 4-pin, customer-specific connector	
	* On request	

Gas-Controller Industry

Item No.	Description
STANDARD	
DGC-06-2-0-1-010000000	Power supply: 230/110 V AC <-> 24 V DC, 6,5 A, 4 relays, 1-row housing
DGC-06-2-0-2-010000000	Power supply: 230/110 V AC <-> 24 V DC, 6,5 A, 4 relays, 1-row housing
DGC-06-2-0-3-010000000	Power supply: 230/110 V AC <-> 24 V DC, 6,5 A, 4 relays, 1-row housing
DGC-06-2-0-4-010000000	Power supply: 230/110 V AC <-> 24 V DC, 6,5 A, 4 relays, 1-row housing
DGC-06-3-0-X-XXXXXXXXXX	UPS: 230/110 V AC <-> 24 V DC, 2,2 Ah
DGC-06-4-0-X-XXXXXXXXXX	UPS: 230/110 V AC <-> 24 V DC, 7,2 Ah
DGC-06-0-0-X-XXXXXXXXXX	Input 24 V DC
OPTIONS	
DGC-06-2-0-1-1XXXXXXXXXX	Power failure flashing light
DGC-06-2-0-1-XX1XXXXXXXX	Data logger incl. USB stick
DGC-06-2-0-1-XXX1XXXXXX	Interface Modbus RTU/RS-485
DGC-06-X-X-X-XXXXXX1XX	Cable entry from below
DGC-06-X-X-X-XXXXXX2XX	Cable entry from bottom and top
DGC-06-X-X-X-XXXXXX1X	Housing lockable

Modules

Item No.	Description
MODULE	
GC-06-000000-00	Gas-Controller-Module
EP-06-XX0	Extension module addresses 1-7, incl. repeater
OPTIONS	
GC-06-1XXXXX-00	Power failure flashing light
GC-06-XX1XXX-00	Data logger incl. USB flash drive
GC-06-XXX1XX-00	Interface Modbus RTU RS-485
STL06 - SERVICE TOOL	
STL06-PGX2-P7	Partner tool for display, calibration, addressing and parameter changes
STL06-PGX2-A7	System tool for display, calibration, addressing and parameter changes *
PCE06 - EASYCONFIG	
PCE06-PGX2-PF-X	Partner tool for display, calibration, addressing, parameter changes and history
PCE06-PGX2-AF-X	System tool for display, calibration, addressing, parameter changes and history *

* Ordered by partner for end customers

Accessories

Item No.	Description
ADAPTER	
STA06-PX2	Adapter for STL06-PGX2 & PCE06-PGX2 tool for communication with product series PX2
ACCESSORIES	
Cal01-PX2	Gas feed set for PolyXeta2 sensors, stainless steel
MSR_Pen_PX2	Magnetic pen for configuration of the PX2 on the display
SG-PX2	SplashGuard (splash protection cap) for PolyXeta2 sensors
CABLE GLAND	
ZU-PX2-CG-SN	Metal, ATEX certified, for zone 1 and zone 2
ZU-PX2-CG-PL	Plastic, ATEX certified, for zone 2
MOUNTING KIT	
Mounting-Kit	Mounting kit for SSAX1 & SC2 sensor heads in stainless steel housing

Warning Devices

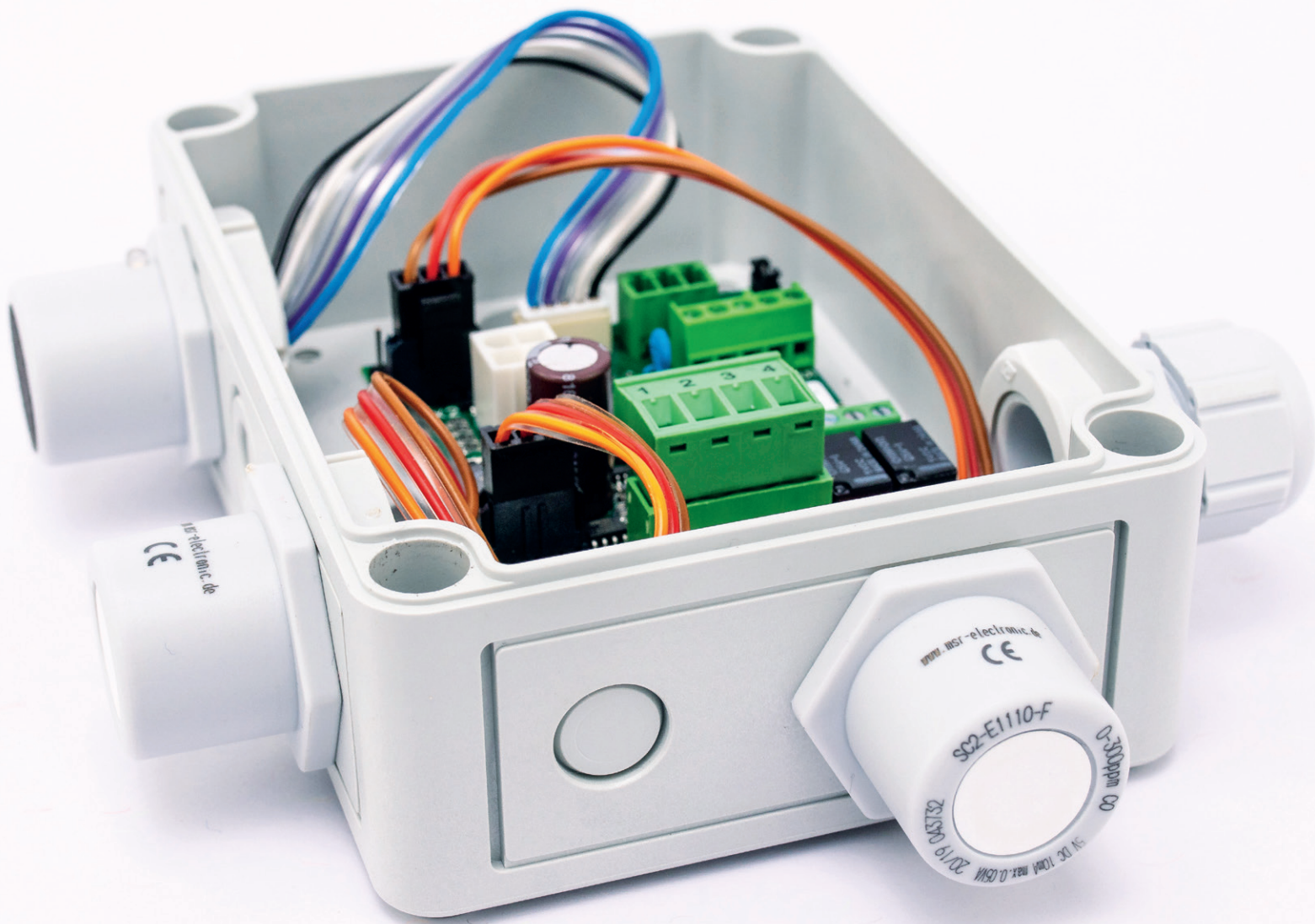
for ATEX Zone 1 and 2

Item No.	Description
BL-X	Flashing light
WH-24-X	Warning horn, 24 V DC, zone 1 and 2
WH-230-X	Warning horn, 230 V AC, zone 1 and 2
WH/BL 24-X	Combination of flashing light/horn, 24 V DC
WH/BL 230-X	Combination of flashing light/horn, 230 V AC

PolyMarine® Products

For combustible and toxic gases

Item No.	Description
CONTROLLER	
MGC2-C-13132300	Multi-Gas-Controller with attached warning device (buzzer, status-LED, 12V, reset button and 5 m cable), surface mounting
SENSORS	
MC2-0-E1110-F-0-P	Carbon monoxide (CO), 0-300 ppm, for installation
MC2-0-P3496-A-0-P	Petrol vapors, 0-100 % LEL, for installation
MC2-0-P3480-A-0-P	Propane (C3H8), 0-100 % LEL, for installation
OPTIONS	
MC2-A-XXXXX-X-X	A-housing for surface mounting
MC2-R-XXXXX-X-X	R-housing for flush mounting
ACCESSORIES	
WH-BL-24-TAST	Flashing light horn combination, 12 V / 24 V, button
RMS-PM-001	Smoke detector, 12 V / 24 V, digital output
AR-PM-001	Magnetic valve, IP65, ATEX, normally open, manual reset
CAB-PMGC-S	Cable for connecting the sensors (if not directly in the housing of the PMGC)



Housings

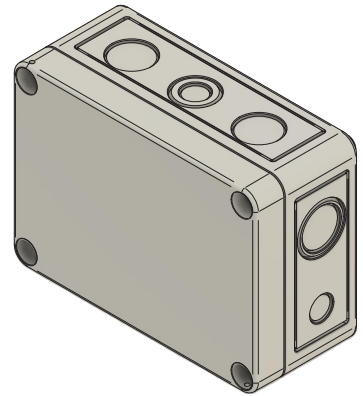
PolyGard®2

(w x h x d)

A-housing

Plastic

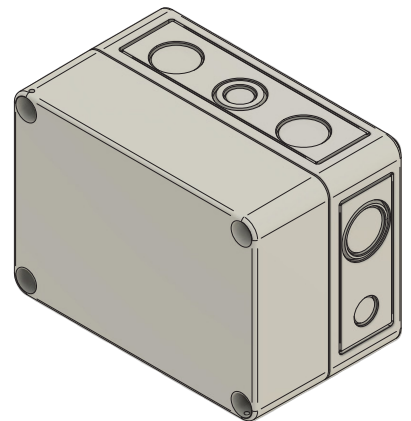
130 x 94 x 57 mm



G-housing

Plastic

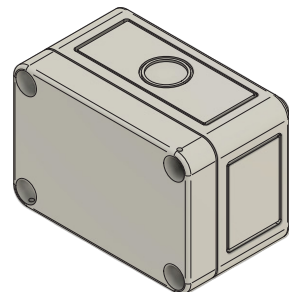
130 x 94 x 81 mm



D-housing

Plastic

94 x 65 x 57 mm



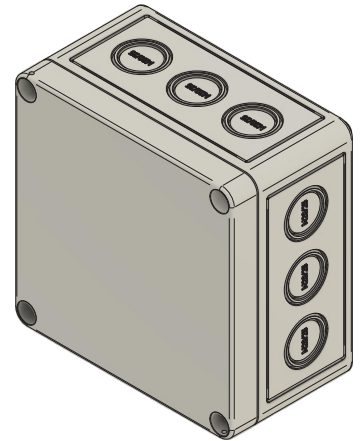
Images similar, not to scale

(w x h x d)

C-housing

Plastic

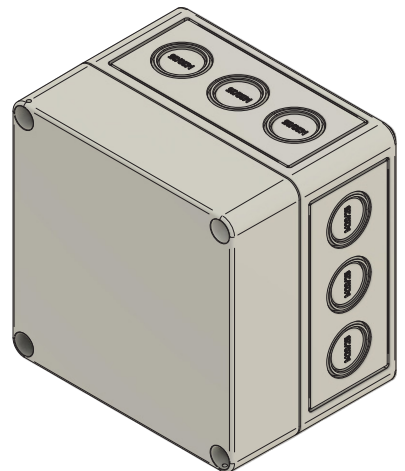
130 x 130 x 75 mm



E-housing

Plastic

130 x 130 x 99 mm



More housings

5-housing

Stainless steel

110 x 132 x 42,5 mm

N-housing

Plastic

80 x 82 x 53 mm

P-housing

Plastic

Door mounting housing

150 x 96 x 50 mm

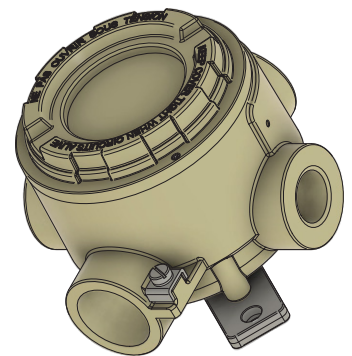
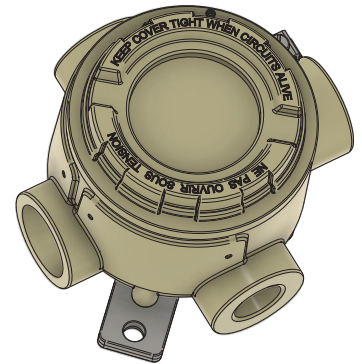
Images similar, not to scale

Housings

PolyXeta[®]2

K-housing

Aluminum pressure casting (ø) 95 x 82 mm



Images similar, not to scale

Housings

Controller

(w x h x d)

Type 1

Plastic

298 x 260 x 140 mm



Type 2

Plastic

298 x 420 x 140 mm



More housings

Type 3

Plastic

298 x 570 x 140 mm

Type 4

Plastic

410 x 655 x 140 mm

Product Abbreviations

ARB2	Analog-Relay-Board
BL-24	Flashing light
C2-Z2	Duct mounting set
C2-Z4	Calibration adapter MC2/SC2
C2-Z5	SplashGuard
C2-Z6	Calibration adapter MC2/SC2
Cal01-PX2	Calibration adapter for PX2 sensors
DEM-06	Door-Entrance-Module
DGC-06	Digital-Gas-Controller
EP-06	Expansion-Module
GC-06	Gas-Controller
MC2	Analog sensor head
MGC2	Multi-Gas-Controller
MSB2	Multi-Sensor-Board
MSC2	Multi-Sensor-Controller
MSR_Pen_PX2	Magnetic pen
OT-01	Tool for opening stainless steel housing
PCE06	PCE06 Software
PG2	PolyGard2
PGCB	PolyGard Control Box
PX2	Sensor PolyXeta2
RB2	Remote-Board
RM2	Relay-Module
SB2	Sensor-Board
SB2U	SB2Unit
SC2	Digital sensor head
SG-PX2	SplashGuard for PolyXeta2 sensors
SP6-00	Sensor protection / guard rail
SSAX1	Sensorhead SSAX1 (PolyXeta®2)
STA06-MC2	Converter for PCE06-PGX2 Service-Tool
STA06-PX2	Adapter for STL06-PGX2 und PCE06-PGX2 Service-Tool
STL06	Service-Tool
SX1	Sensor head SX1 (PolyXeta®2)
WAO	Warning unit: visual/audible indicator
WH	Warning horn
WH-24	Warning horn, 24 V DC
WH-230	Warning horn, 230 V AC
WH/BL	Warning horn/flashing light combination
WH/BL-24	Warning horn/flashing light combination, 24 V DC
WH/BL-24-Tast	Warning horn/flashing light combination, 24 V DC + button
WH/BL-230	Warning horn/flashing light combination, 230 V AC
WSB2	Warning and Sensor-Board
WT	Warning sign



Product Matrix

Combinations

	MC2 Analog	SC2 Digital	Housing	230 V AC	WAO Warning Dev.	Display
ARB2	1	0	A, C, N	1	1	with MC2
SB2	0	3*	A, C, 5	1	1	1
WSB2	1	2	A, C, E, N	1	1	1
MSB2	3*	2*	A*, C, E	1	1	1
MGC2	3*	2*	A*, C, E	1	1	1
MSC2	2*	2*	A*, C, E	1	1	1
DGC-06	32**	96 (+ SB2)	1, 2, 3, 4	1	0	1

* with restriction, see data sheet

** on controller with 7 EP-06 modules

Analog-Input	Analog-Output	Digital-Input	Relay	UPS	Stand-Alone	
1	1	0	2	0	1	ARB2
0	0	0	0	1	0	SB2
1	1	1	2	1	1	WSB2
3	1	2	3	1	0	MSB2
3	1	2	3	1	1	MGC2
2	1	2	3	1	1	MSC2
32**	16**	16**	32**	1	1	DGC-06

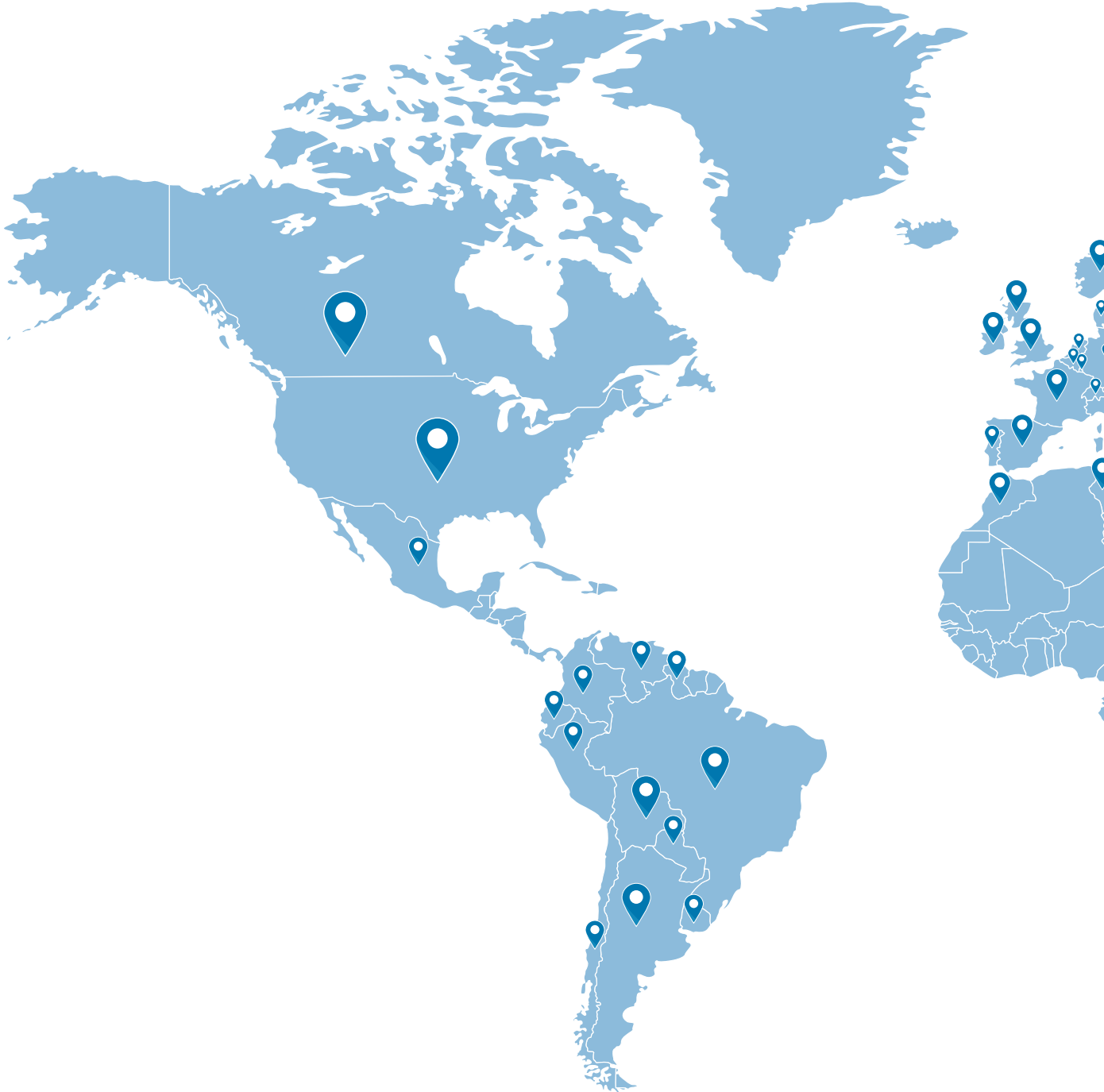
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