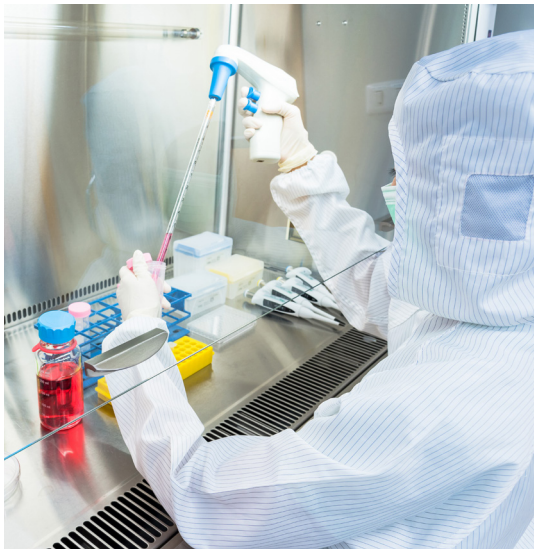
Gas Detection.

MSR ELECTRONIC

Medicine and Laboratory

Reliable gas detection of CH_4 / H_2S / CO_2 / O_2



Reliable Gas Monitoring

Perfect solutions for your medical applications

Especially the sensitive medical and laboratory areas must be constantly monitored in order to protect against hazardous substances. Gas alarm systems by MSR-Electronic are particularly flexible in this respect, as all requirements can be tailored to suit individual needs.
Whether individual sensors with connection to existing BMS systems or complex self-sufficient gas detection systems for large-scale laboratories with different areas. The gas alarm system from MSR-Electronic includes freely configurable alarm thresholds for compliance with MAK values as well as various interfaces (Modbus, Bacnet, analog output) for connection to existing BMSs. The system is adapted to your requirements by means of a modular structure.
The products from MSR-Electronic comply with more than the general standards and regulations and can therefore guarantee the protection of employees and the safety of the plant.

Gas hazards

- In the release of gases in laboratory air circulation stations, fume cupboards and systems for filtering gases in research and university laboratories
- In the pharmaceutical industry: fermentation and clean room monitoring
- In medicine: cryopreservation, anatomy, forensics, pathology, histology and ventilation
- In the chemical industry in the production of substances

MEDICINE

Cryopreservation
Anatomy
Forensics
Pathology
Histology
Ventilation

LABORATORIES

CHEMISTRY INDUSTRY

RESEARCH

Research institutes
University laboratories

PHARMACEUTICAL INDUSTRY

Fermentation
Clean room monitoring

Laboratories and Medical Facilities

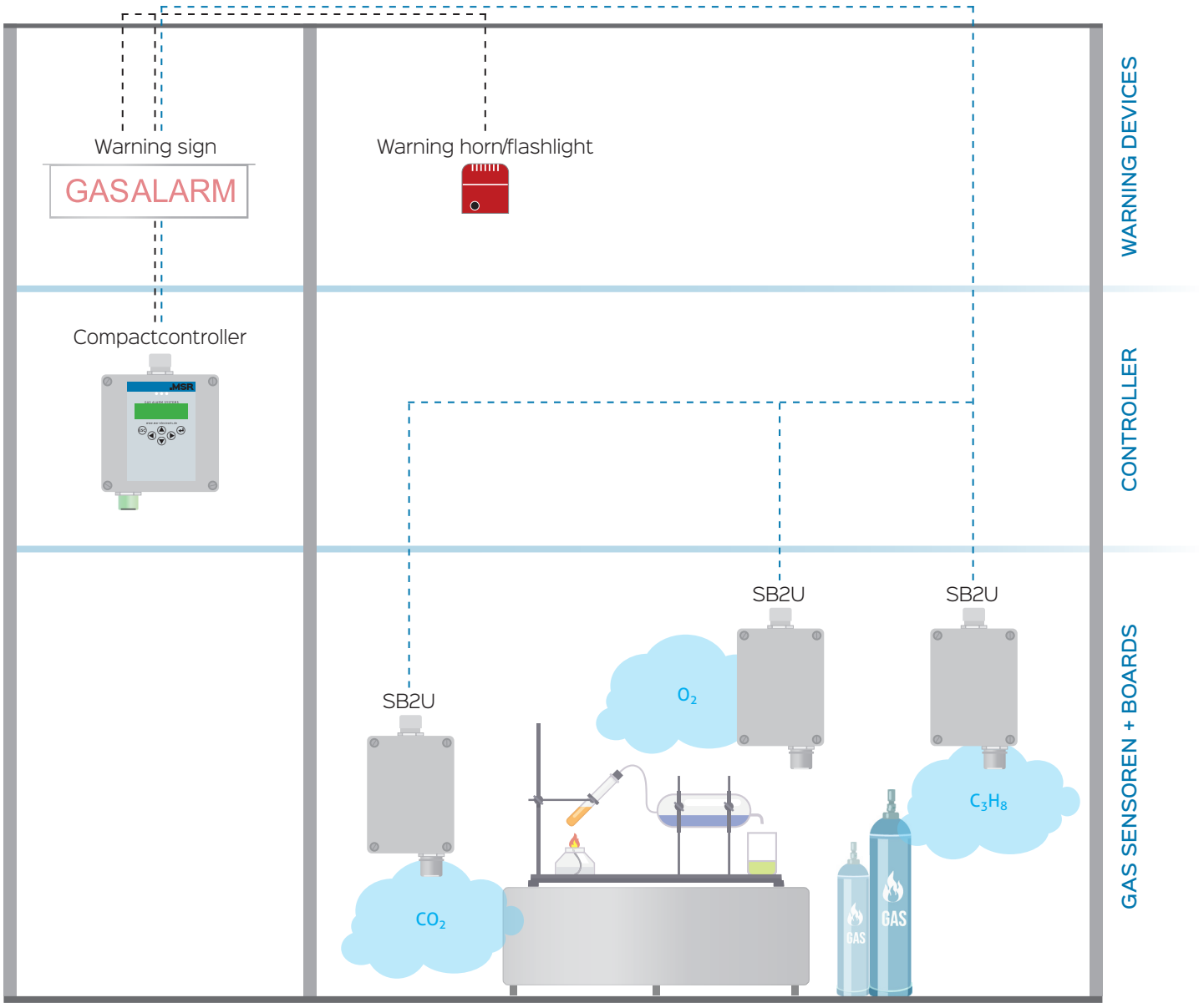
Detection of different gases

When handling various hazardous substances in laboratories and medical facilities, relevant safety measures according to the Ordinance on Hazardous Substances (GefStoffV) and the laboratory guidelines must be observed. Substances are produced, examined and monitored in production processes. For this purpose, mixtures of substances are separated, substances are detected and chemical reactions and measurements are performed. Reliable monitoring of the large number of gases in the ambient air must therefore be ensured.

The compact controller from MSR-Electronic is designed for the connection of up to 10 gas sensors via its own fieldbus and is used to warn of various gases. Multiple output and input options allow for easy integration into existing systems.

Benefits

- Display for all display, configuration and calibration functions (no tool required)
- Fieldbus connection for up to 10 gas sensors (SB2Units)
- Automatic closing of gas solenoid valves in the event of a gas alarm
- Hardware and software in accordance with SIL-compliant development process
- Modular technology (plug-in and interchangeable), reverse polarity and overload protected
- 3 relays, 2 transistor outputs, 2 digital inputs, various housing types with IP65
- Warning buzzer and status LED for warning, fault, operation and service (optional)
- Wide-ranging portfolio includes many gas and measuring ranges


Warning sign
GASALARM
Warning horn/flashlight
Compactcontroller
WARNING DEVICES
CONTROLLER
GAS SENSOREN + BOARDS
SB2U
SB2U
SB2U
O_2
C_3H_8
CO_2
GAS
GAS
Laboratory

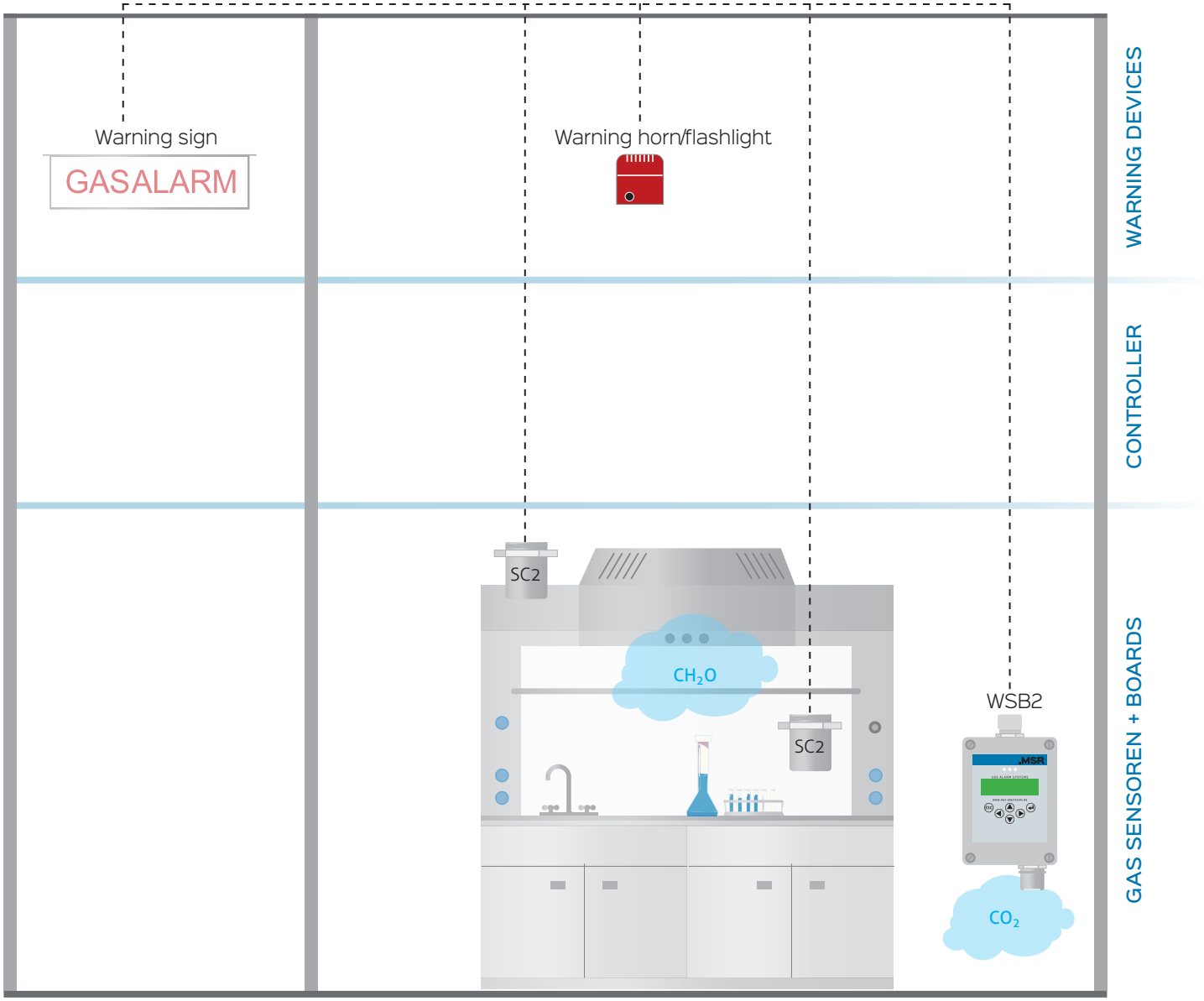
Air Circulation Stations and Fume Cupboards

Room and filter monitoring.

Air circulation stations, fume cupboards and systems for filtering gases and ambient air are often an important part of a laboratory.
Monitoring the exhaust air behavior of the fume cupboard and the ambient air in the work area for toxic and combustible gases and vapors is an important criterion for fulfilling the protective function and thus maintaining occupational safety. Up to 3 different sensor heads can be connected to the WSB2 warning and sensor board via the local bus in order to ensure safety in the working area in addition to system and filter monitoring. The power supply of the sensors is ensured by the board WSB2 and the measured values are digitally processed. Calibration can be performed by simply changing the sensor heads or by using the integrated, convenient calibration routine directly in the device.

Benefits

- Digital measured value processing incl. temperature compensation
- Up to 3 different sensors
- Analogue input and output, 4-20 mA, Modbus (optional), 2 potential-free relays
- Display for continuous measured value indication and visual alarm (optional)
- Simple calibration by replacing the sensor head or calibrating on site
- Broad portfolio includes many gas and measuring ranges



Air Circulation Station

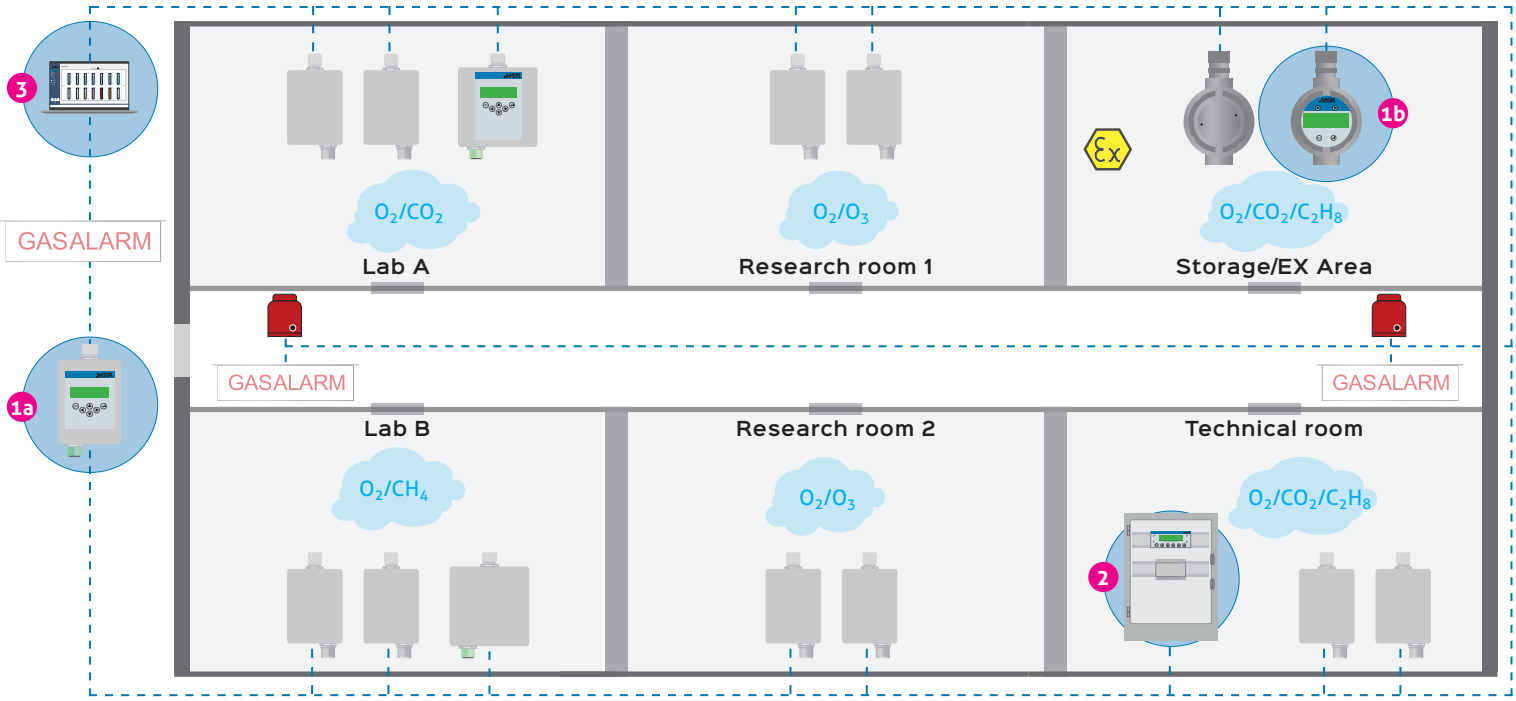
Gas Monitoring for Large Laboratories

Centralized evaluation of complex gas alarm systems.

The Digital Gas Controller DGC-06 – the central unit for gas monitoring. The controller has been specially developed for large systems or also for extensive connections. There is hardly any scenario in gas monitoring, which this controller does not cover. From complex systems to access functions that are switched via gas alarm, everything is possible. The DGC-06 gas controller series was developed in a SIL2-compliant process and meets all current standards. It can monitor and evaluate up to 128 gas sensors, 96 of which are digital and 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.
The Door Entrance Module DEM-06 offers additional security at the entrances and warns of possible dangers even before entering.

Benefits

- For complex and autonomous gas monitoring
- Scalable: up to 128 different sensors and 32 relays
- Automatic closing of gas solenoid valves in the event of a gas alarm
- Relays can be expanded using EP modules
- Data logger option
- Can be integrated into control cabinet
- Even changing requirements for changing gases are no problem with the modular system approach
- Simple connection to existing BMS systems
- Wide-ranging portfolio includes many gas and measurement ranges
- System grows with the size of the laboratory

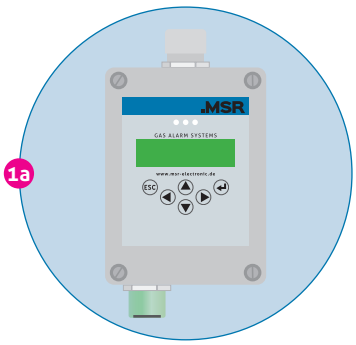


Large Laboratory

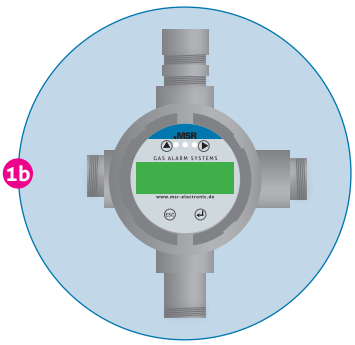
Monitoring

Control

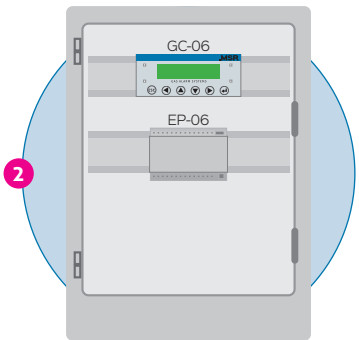
Visualising



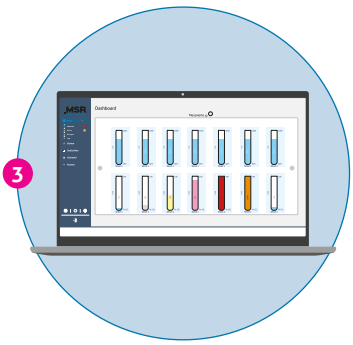
DEM-06



PX2



DGC-06



PGCC

Different Sensors for different gases

Carbon dioxide (CO_2)

The laboratory gas as a cooling medium (dry ice) is used in sample transport and storage as well as in incubators and chromatography equipment in cryogenic areas.
Risk: Carbon dioxide hinders the absorption of oxygen and leads to death if the concentration is too high.

Oxygen (O_2)

Laboratories store and work with high concentrations of oxygen used in gas production and gas mixing stations.
Risk: The displacement of oxygen by other gases.

Nitrogen (N_2)

Nitrogen is used as a cooling medium for shock freezing and for storage of medical samples in laboratories and used in cryogenics.
Risk: Danger of suffocation by oxygen displacement.

Hydrogen (H_2)

The carrier gas is increasingly used in gas chromatography and is gaining popularity as a substitute for helium, which has been the preferred carrier gas until now.
Risk: Danger of explosive gas mixtures.

Propane (C_3H_8) and Methane (CH_4)

Methane and its gas mixtures are used to operate Bunsen or Teclu burners in laboratories or as a starting product for technical syntheses.
Risk: Danger of explosive gas mixtures.

Room air monitoring

Keep an eye on the quality of the ambient air and, if necessary, bring about targeted ventilation.
Risk: Indoor air enriched with toxic gases, e.g. with CO_2, formaldehyde.

Formaldehyde (CH_2O)

In the form of formalin, it is used to fix tissue samples. It is also used as a disinfectant for cleaning large surfaces.
Risk: Toxic, carcinogenic gas.

Ozone (O_3)

Ozone is proven to be effective against bacteria, microorganisms and other pathogens and is therefore used for disinfection in various applications.
Risk: Toxic, headache, cough and irritation of the respiratory tract.

Warning and sensor board WSB2

Multi sensor controller MSC2

PolyXeta® PX2

Digital sensor SSAX1

MSRSHOP24
Configure your products here.

Gas Detection.

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