Operating Instructions
Enclosure GMS810/GMS811

Endress+Hauser
People for Process Automation

Described product
Product name: Enclosure GMS810/GMS811
Basic device: Series GMS800 gas analyzers

Manufacturer
Endress+Hauser SICK GmbH+Co. KG
Bergener Ring 27
01458 Ottendorf-Okrilla
Germany

Legal information

Original document
This document is an original document of Endress+Hauser SICK GmbH+Co. KG.

CE

Glossary

AC	Alternating Current
DC	Direct Current
IP *XY*	International Protection (also: Ingress Protection); degree of protection of a device according to IEC/ DIN EN 60529. The digit *X* designates protection against contact and impurities, *Y* protection against moisture.
PVDF	Polyvinylidene fluoride

Warning symbols

Hazard by explosive substances/mixtures

Hazard by toxic substances

Warning levels / signal words

WARNING
Risk or hazardous situation which *could* result in severe personal injury or death.

CAUTION
Hazard or unsafe practice which *could* result in personal injury or property damage.

NOTICE
Hazard which *could* result in property damage.

Information symbols

Important technical information for this product

Important information on electric or electronic functions

Nice to know

Supplementary information

Link to information at another place

Enclosures GMS810/GMS811

1 Important information

Product description
Main information
Additional information

1.1 Main hazards

WARNING: Mortal/health danger as a result of a gas path leakage

When the gas analyzer is used to measure noxious gases: Escaping gas can be a serious risk for persons.

- ► Take safety precautions to warn if gas escapes due to a gas leak or to channel escaping gas off safely.
- ► *Before intentional opening of the gas path (e.g. during maintenance work):* Flush the gas paths with a neutral gas until the dangerous gases have been completely eliminated. Possibly use breathing protection for safety reasons.

1.2 Primary instructions for operation

Dangerous sample gases

WARNING: Hazards by explosive or combustible gases

- ► Do not use a gas analyzer in an Enclosure GMS810/GMS811 to measure explosive or inflammable gases when no additional safety precautions have been taken.

In hazardous situations

- ► Switch-off the emergency switch or main switch of the host system.

Before putting out of operation

- ► Flush the sample gas path with a dry, neutral gas to prevent condensation in the measuring system.

1.3 Application limitations

- ► Do not use a GMS800 in an Enclosure GMS810/GMS811 to measure explosive or inflammable gases when no additional safety precautions have been taken.
- ► Do not use a GMS800 in an EnclosureGMS810/GMS811 in potentially explosive atmospheres when no additional safety precautions have been taken to ensure protection against explosions.

A defect in an internal gas path (leak) can cause an explosion risk when the Enclosure GMS810/GMS811 is used to measure inflammable gases or gases that can create an ignitable gas mixture when mixed with air.

In such application cases: Check which regulations and laws are then valid for the installation location and whether additional safety devices must be installed (e.g. enclosure pressurization and purging).

1.4 Additional documentation/information

This document is a supplement to the Operating Instructions for GMS800 gas analyzers. It supplements the “GMS800” Operating Instructions with technical information on the Enclosure GMS810/GMS811.

► Observe the delivered “GMS800” Operating Instructions.

The “GMS800” Operating Instructions also specify all further documents belonging to the individual device.

NOTICE:

► Pay primary attention to the individual information provided.

Enclosures GMS810/GMS811

2 Product description

Basic features
Product variants

2.1 Product identification

Product name:	Enclosures GMS810/GMS811
Manufacturer:	Endress+Hauser SICK GmbH+Co. KG Bergener Ring 27 · 01458 Ottendorf-Okrilla · Germany

- GMS810: 19“ enclosure with integrated control panel (BCU).
- GMS811: 19“enclosure without control panel and without I/O signal connections.

Type plate

The type plate is located on the rear of the enclosure.

2.2 Basic features

The GMS810/GMS811 is an enclosure that can be fitted in a conventional 19" rack or a suitable outer housing.

2.3 Product variants

The allowed ambient temperature during operation is restricted if a UNOR-MULTOR Analyzer module is built in (→ p. 19, § 4.3).

The Enclosure GMS810/GMS811 can be optionally manufactured with perforated top (special version) for this Analyzer module. The restriction with respect to the ambient temperature does not apply for the perforated top.

Enclosures GMS810/GMS811

3 Installation

Assembly
Connections

3.1 Assembly

3.1.1 Ambient conditions

Vibrations

► Protect the device against heavy jolts and vibrations (limit values → p. 19, § 4.3).

Temperature

► Maintain the allowable ambient temperature during operation (→ p. 19, § 4.3).
► Avoid enclosure exposure to direct sunlight.
► Keep the enclosure cooling fins free for air circulation.

Humidity

► Choose a dry installation location free from frost.
► Maintain the allowable air humidity (→ p. 19, § 4.3).
► Prevent moisture condensation – both on the outside as well as inside the device.

***NOTICE:* Consequences arising from incorrect assembly**
- The specified measuring precision will not be achieved.
- Erratic measurement errors can occur.
- The overall measuring function can be impaired.

WARNING: Risk of explosions
► Consider the application limitations (→ p. 8, § 1.3).

3.1.2 Fitting

► Fit the Enclosure GMS810/GMS811 as usual in a 19" rack or a suitable outer housing.
► Assemble the enclosure so that the base surface of the enclosure is more or less horizontal.
► *If the top of the enclosure is perforated (special version):* Leave room for air circulation above enclosure (minimum 1 rack unit ≈ 44 mm).

► Use the rails which support the enclosure.
The enclosure can be damaged when the front plate has to carry the complete weight of the enclosure.

When a further device is installed above the Enclosure GMS810/GMS811:
► Do not assemble the devices directly over each other but leave at least 1 rack unit free between them.
This improves thermal conditions and benefits measuring precision.
This fitting method is mandatory if the top of the enclosure is perforated (special version).

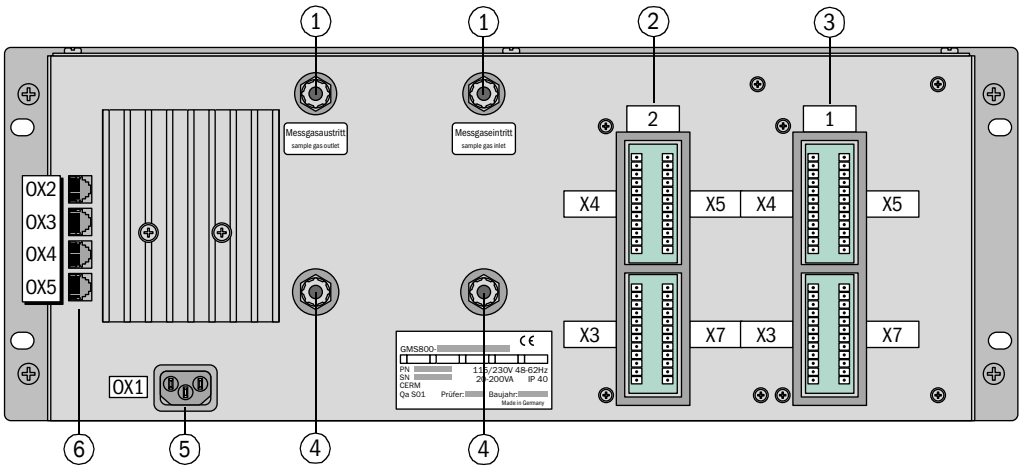
3.1.3 Establishing the degree of protection

The specified degree of protection of the enclosure is only ensured fully when the signal connections (→ p. 15, Fig. 1) are covered by the delivered plug connector housings.

► *If the specified degree of protection must be complied with:* Attach the delivered plug connectors with the plug connector housings to all signal connections and secure them (Fig. → p. 18) – even if the signal connections are not used.

3.2 Connections

Fig. 1 Connections



1	Sample gas connections (“sample gas inlet”, “sample gas outlet”)						
2	Signal connections of the second internal I/O module (only for GMS810, optional)						
3	Signal connections of the internal I/O module (only for GMS810, standard)						
4	Additional gas connections (option)						
5	Mains connection						
6	Interfaces:			RJ45 pin assignment		max. input/output voltage	ESD
		OX2, OX3	24 V	4,5 : +	7, 8: –	24 V	
			RS485 / ext. I/O	3: H	6: L	–50 … +50 V	4 kV
			CAN ext. I/O module	1: H	2: L	–25 … +25 V	4 kV
		OX4	*Reserved for special applications*				
		OX5	Ethernet (LAN)	1: Tx+ 2: Tx– 3: Rx+ 6: Rx–		5 V	2 kV

3.2.1 Gas connections

► Information and safety information, see:
→ Operating Instructions “GMS800 series”
→ Supplementary Operating Instructions for the Analyzer Modules fitted

Technical details for gas connections → p. 19, §4.4

3.2.2 Mains connection

Prepare mains connection

- ► Safety information for mains connection → Operating Instructions “GMS800 series”
- ► Install an external mains fuse → Operating Instructions “GMS800 series”
- ► Install an external mains switch → Operating Instructions “GMS800 series”

The internal mains switch can be useful during service work. The internal mains switch should not be used during operation.

Install the mains cable

- ► Connect the power cable to the panel plug (CEE-22) on the rear side of the enclosure (→ p. 18, § 4.1).

- ► Observe the general information on mains connections (→ Operating Instructions “GMS800 series”).
- ► Technical data on mains connection → p. 20, § 4.5
- ► Establishing the degree of protection of the enclosure → p. 14, § 3.1.3

Technical requirements to the mains cable → p. 20, § 4.5

3.2.3 Signal connections (I/O module)

- ► Function and technical layout of signal connections → Supplementary Operating Instructions “I/O Module”
- ► Information for establishing the degree of protection of the enclosure → p. 14, § 3.1.3

3.2.4 Interfaces

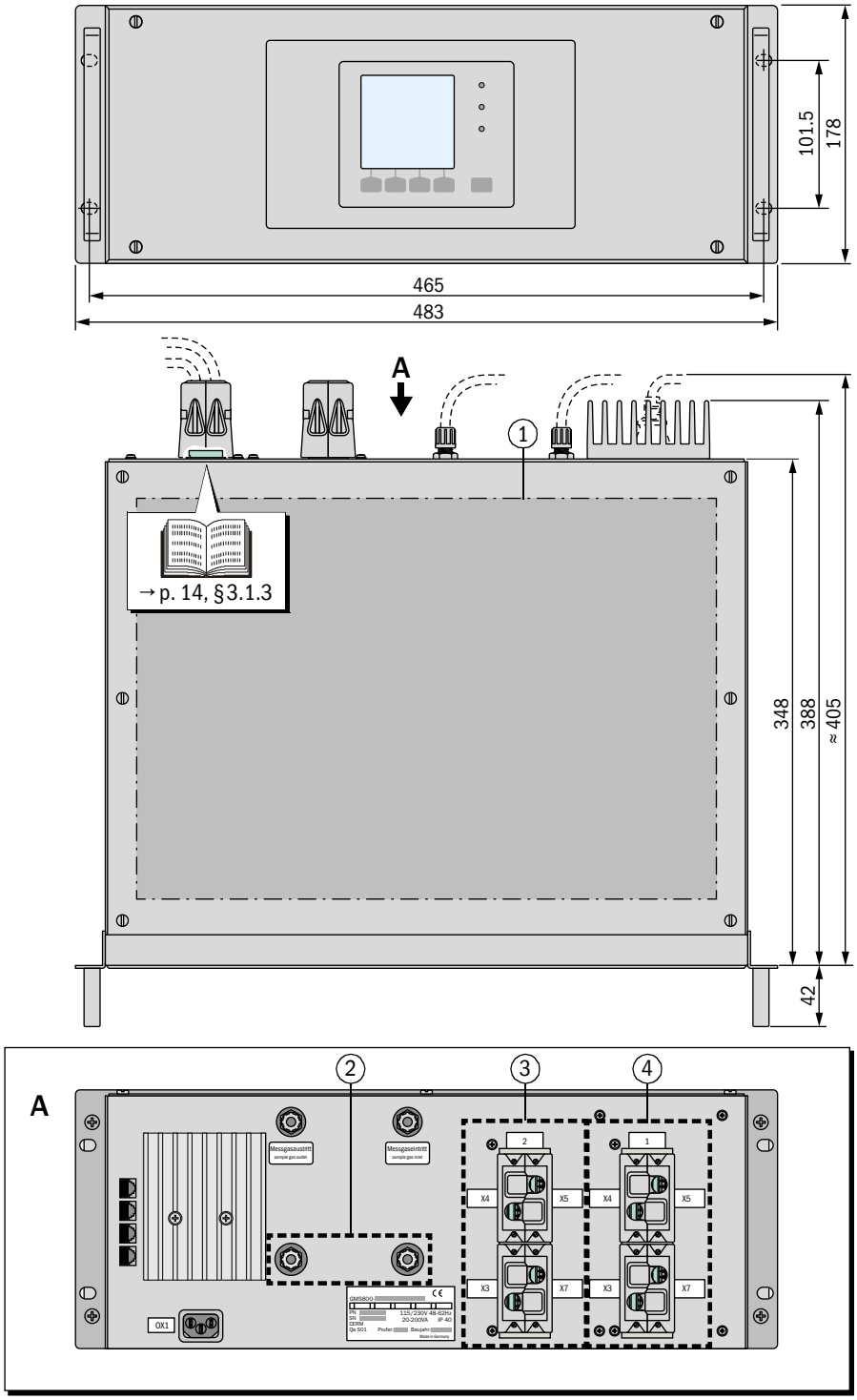
- ► Information on interfaces → Operating Instructions “GMS800 series”

Enclosures GMS810/GMS811

4 Technical data

Dimensions
Ambient conditions
Gas connections type
Electrical specifications

4.1 Dimensions of Enclosure GMS810/GMS811



1 *Only for special version (→ p. 12, § 2.3)*:
Perforated area (hole diameter 0.8 mm / DIN 24041 - Rv 0.8 - 1.5)
2 Option
3 Only for GMS810, option
4 Only for GMS810, standard

4.2 Enclosure specifications

Design:	19" slide-in enclosure
Height (rack units):	4 RU [1]
Degree of protection:	IP 40 [2]
Dimensions:	→ p. 18
Weights:	17 ... 19 kg (depending on features)

[1] + 1 RU above recommended for thermal balance (→ p. 14, § 3.1)
[2] With plug connector housings installed (→ p. 14, § 3.1.3).

4.3 Ambient conditions

Installation location	
Atmospheric influences:	Only for use indoors
Allowable contamination:	Degree of contamination 2 [1]

[1] Only nonconductive contamination. Occasionally, temporary conductivity due to moisture condensation.

Climate	
Ambient air pressure:	700 ... 1200 hPa Max. operating altitude: 2000 m
Relative humidity:	10 ... 95%, non-condensing
Ambient temperature during operation: – with UNOR-MULTOR Analyzer module:	+5 ... +45 °C +5 ... +40 °C [1]
Transport /storage temperature	–10 ... +70 °C

[1] With perforated enclosure top (special version): +5 ... +45 °C

4.4 Gas connections

Designation	Material	Suitable for
Plastic clamping ring screw connection	PVDF	Hose 6x1 mm
Swagelok 6 mm	Stainless steel	Metal tube with 6 mm outer Ø
Swagelok ¼“	Stainless steel	Metal tube with ¼“ outer Ø

- Gas connections positions → p. 15, Fig. 1
- Gas connections function → Operating Instructions “GMS800 series”
- Technical gas specifications (pressure, volume flow etc.) → Supplementary Operating Instructions for the Analyzer Modules fitted

4.5 Mains connection

Mains voltages:	93 ... 132 V AC and 186 ... 264 V AC and 210 ... 370 V DC For CSA: 115 V AC, +15% / -10% or 230 V AC, +10% / -10%
Mains frequency (AC):	47 ... 63 Hz For CSA: 60 Hz (at 115 V) or 50 Hz (at 230 V)
Allowable overvoltages:	Transient overvoltages in supply network must not exceed Overvoltage category II according to IEC 60364-4-443
Power input:	50 VA / max. 300 VA
Internal mains fuses – Primary: – Secondary:	 6.3 A (not exchangeable) [1] 10 A (exchangeable fusible cutout) [2]
Mains input:	Panel plug IEC 60320 C14 [3]
Required connection cable [3] – Conductor cross-section: – Version:	 ≥ 0.75 mm^2 IEC 60227 or IEC 60245

[1] Replace the power supply unit after triggering
[2] F1 on the “fuse board” – spare part: “ET fuse F10A0”, Part No. 2062251.
“Fuse link F10A 250 V D5x20”, Part No. 6044838.
Only fuses approved by CSA may be used.
[3] Connection cable with power plug CEE 7/4 in scope of delivery. Length: 2.5 m.

4.6 Electrical safety

Protection class:	Protection class I [1]
Electrical safety:	Tested according to EN 61010-1 Low Voltage Directive 2006/95/EC
Transformer:	Safety transformer according to EN 61558 (VDE 0570)
Electromagnetic compatibility:	In accordance with EN 61326-1, EN 61326-2-1, EN 61000-6-2, EN 61000-6-4 and Directive 2004/108/EC

[1] VDE 0411 Part 1 / IEC 348

8029902/W793/V1-3/2012-09

www.addresses.endress.com

Endress+Hauser

People for Process Automation