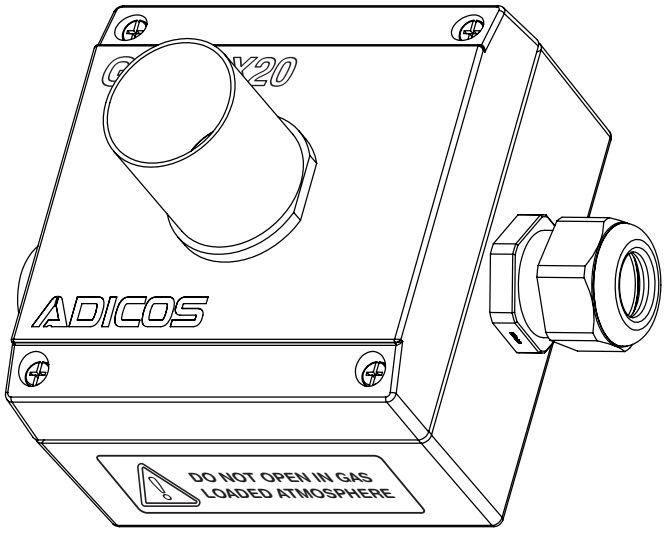
GSME-X20

Industrial-suited, parameterizable fire gas detector with multiple semiconductor gas-sensors, integrated signal evaluation and M-Bus interface for potentially explosive areas.



Characteristics

- *Type-tested for ATEX zone 20 and 21*
- *Robust design due to aluminum enclosure*
- *Highest moisture and dust resistance due to diffusion filter technology (IP64)*
- *Extremely safe against spurious alarms thanks to parameterizable sensitivity of all sensor elements*
- *Smoldering fire detection already in the incipient stage*
- *Sensor evaluation and sensitivity can be adapted to the application environment*
- *Low wiring effort due to common data and power transmission in a pre-assembled cable*
- *Can be integrated into existing fire alarm systems*

Applications

- *For ATEX zones 20 and 21*
- *Enclosed conveyance sites for dust explosive materials*
- *Storage facilities and bunkers for self-igniting materials with explosion protection classification*
- *Drives, crushers, dryers, coolers, chutes and conveyor hoppers*
- *Silos and mills*

The Advanced Discovery System (ADICOS®) is used for early detection of fires in industrial environments. It is comprised of various, separate detector units. GSME fire gas detectors detect at an early stage gases that are characteristic for developing fires. They detect both open and concealed smoldering fires.

Four parameterizable semiconductor gas sensors monitor and evaluate the concentration curve of these gases according to multi-criteria technology. This enables the GSME detectors to distinguish real fires from interference signals. The sensor elements of the detectors are protected against the ingress of dust and moisture by sinter metal filter technology.

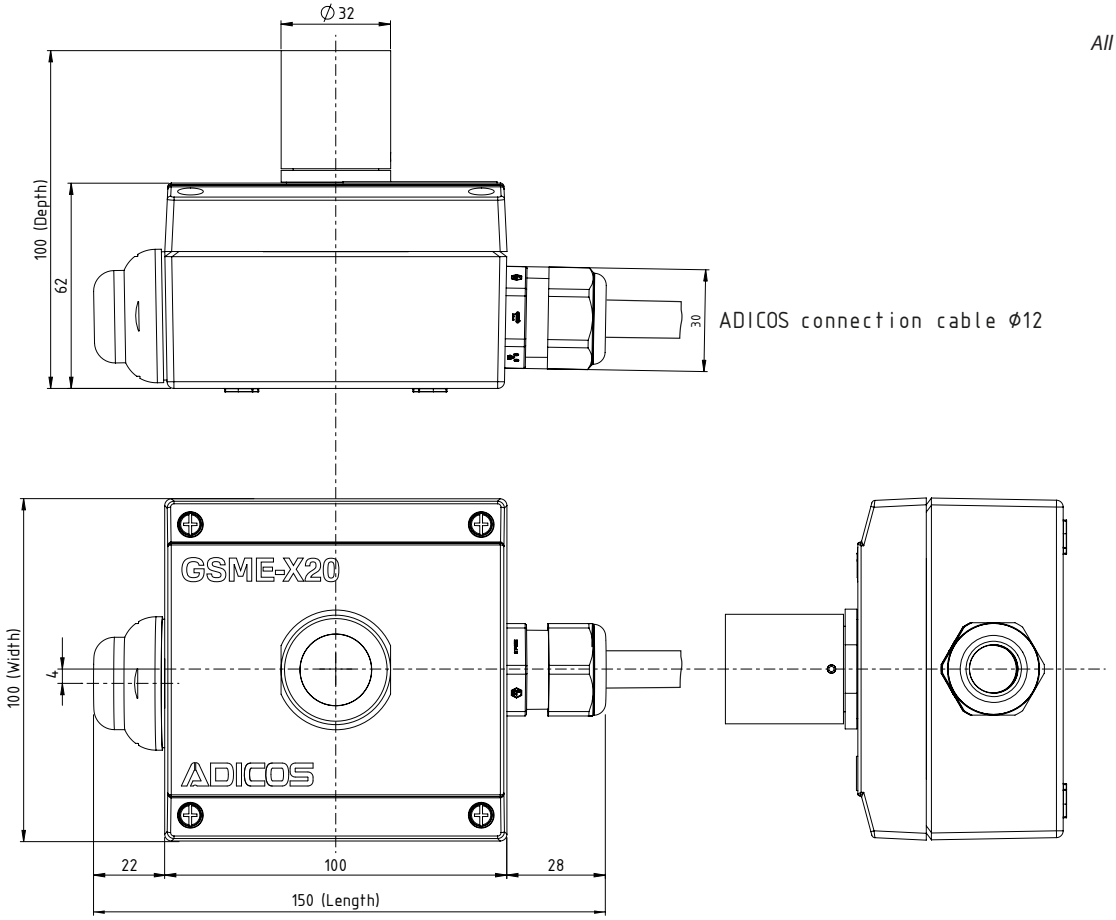
GSME-X20 detectors are type tested for potentially explosive areas of ATEX zones 20 to 22 according to ATEX and IECEx.

With the ADICOS software, all detector states and concentration curves can be displayed graphically. Sensitivities as well as alarm thresholds can be parameterized individually for each detector.

GSME-X20 - Specification

Mechanical dimensions

All dimensions in mm



Mechanical properties	
Enclosure	*Coated die-cast aluminum (corrosion-resistant)*
Weight	*2.2 kg (10 meter cable incl.)*
Dimensions	*150 mm x 100 mm x 100 mm (Length x Width x Depth)* *(cable gland and signal dome incl.)*
Protection class	*IP64*
Explosion protection	*Ex ta IIIC 105°C Da*
Device group	*II, category 1D*

Thermal properties	
Relative humidity	*≤ 95 % relative humidity (non-condensing)*
Temperature range	*–20 ... +50 °C*

Electrical properties	
Supply voltage	*DC 21.6 ... 40 V*
Power consumption	*4 VA /14 VA (without / witht heating)*
Internal fusing	*2 x 500 mA*
M-Bus max. line length	*≈ 2 km*
M-Bus max. line capacity	*≈ 200 nF*
M-Bus baud rate	*4800 baud*
Potential-free contact alarm relay	*20 mA max. (Alarm (NO))*
Potential-free contact failure relay	*40 V or 20 mA max. (Failure (NC))*
Max. contact rating failure/alarm relay	*DC 40 V; 70mA*

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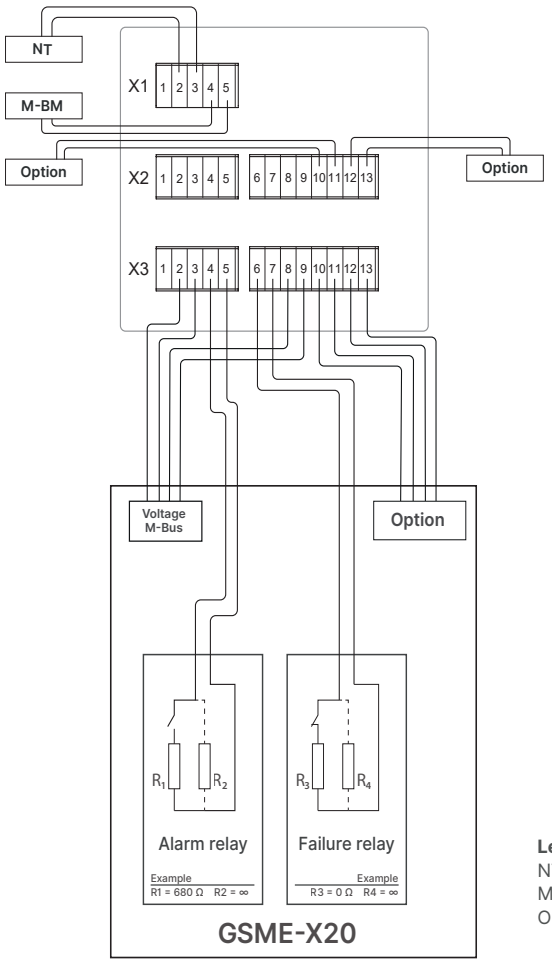
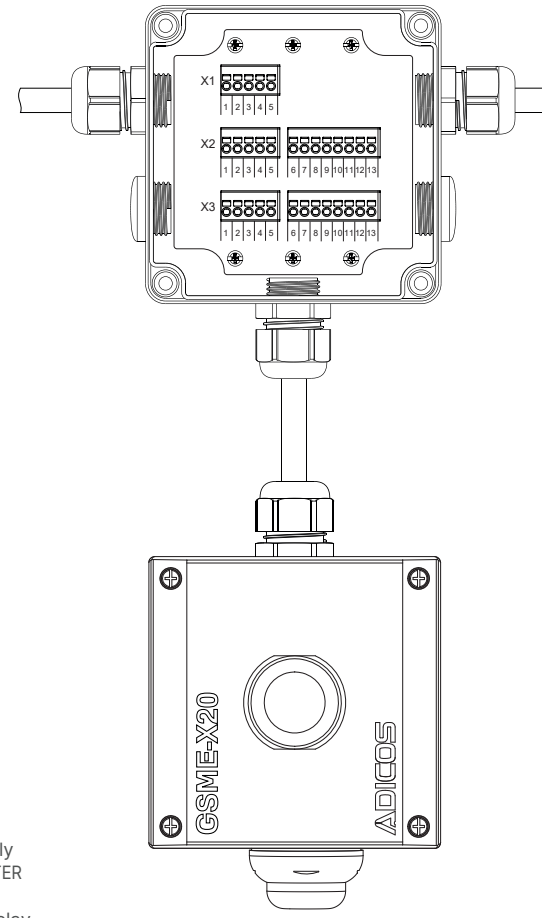
GSME-X20 - Specification

Detection properties	
Sensor combination	*CO — H_2 — HC — NO_X*
Reaction time	*> 30 s*
Detection scenarios	*Smoldering fires according to EN 54-7* *Fires emerging from smoldering coals*

ADICOS wiring principle





Legend:

NT	External power supply
M-BM	ADICOS M-BUSMASTER
Option	Fire alarm panel or Pre-alarm auxiliary relay

12-pin cable, LEONI KERPEN ICONBASE

Wire	Color	Signal	Limit value contact
1	black	Operating voltage DC 21,6 ... 40 V non-polarised	
1	white		
2	black	Relay output X6 e	Alarm NO[1]
2	white	Relay output X6 a	Alarm NO[1]
3	black	Relay output X7 a	Fault NC
3	white	Relay output X7 e	Fault NC
4	black	M-Bus max. 40 V non-polarised	
4	white		

[1] with series resistor

Option Auxiliary relay

Wire	Color	Auxiliary relay
5	black	–
5	white	–
6	black	Normally open
6	white	Common

12-pin cable, OELFLEX 415CP

Wire	Signal	Limit value Contact
1	Operating voltage DC 21,6 ... 40 V non-polarised	
2		
3	M-Bus max. 40 V non-polarised	
4		
5	Relay output X6 e	Alarm NO[1]
6	Relay output X6 a	Alarm NO[1]
7	Relay output X7 a	Fault NC
8	Relay output X7 e	Fault NC

[1] with series resistor

Option Auxiliary relay

Wire	Auxiliary relay
9	–
10	–
11	Common
12	Normally open

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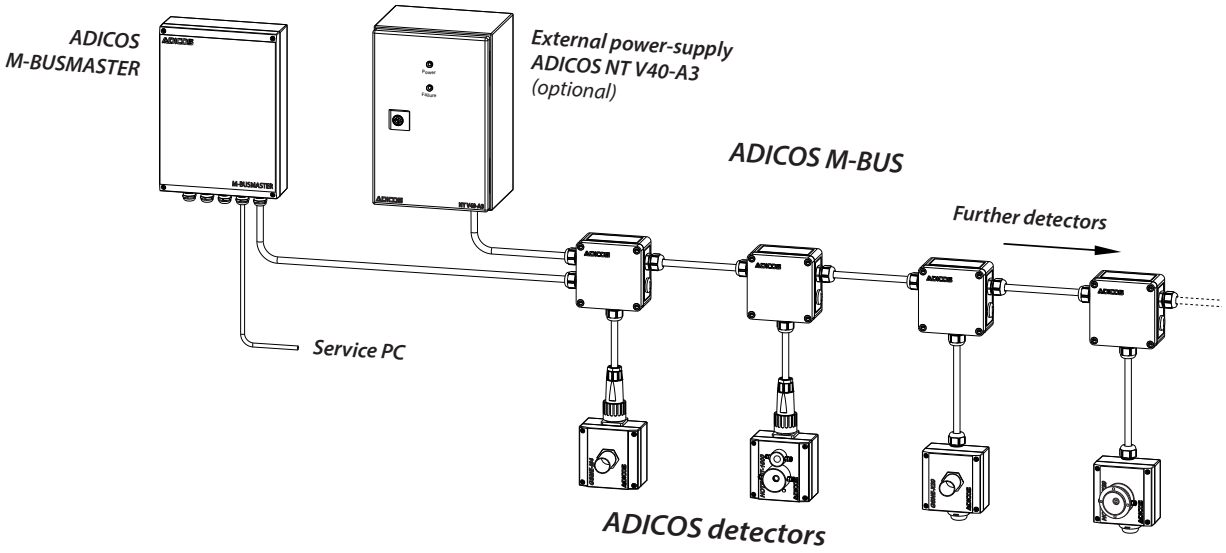
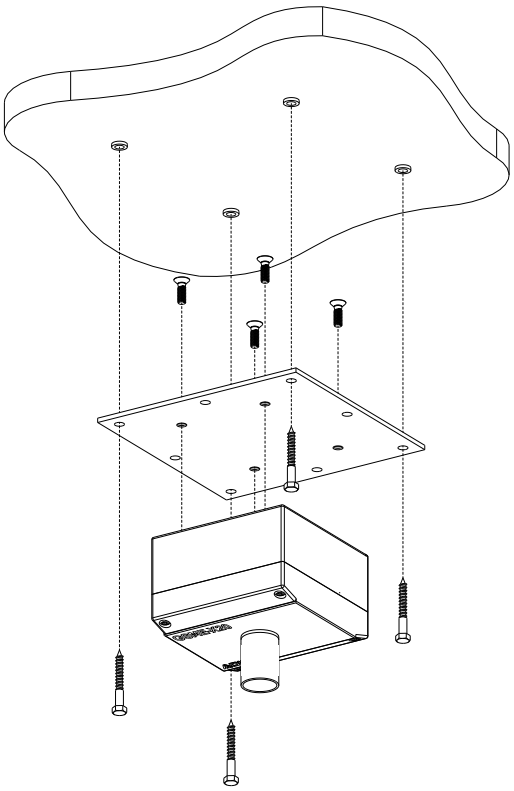
GSME-X20 - Application

ADICOS wiring principle

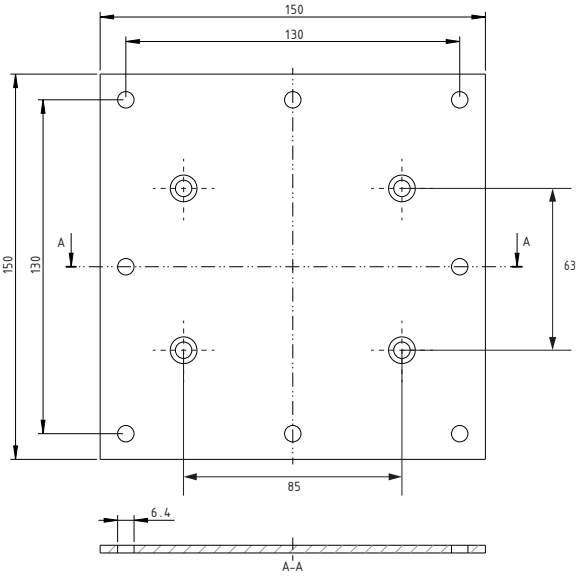


Assembly

GSME-X20 **must be mounted** *with the sintered metal filter* **down***!*

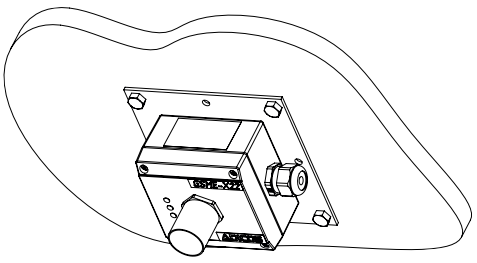


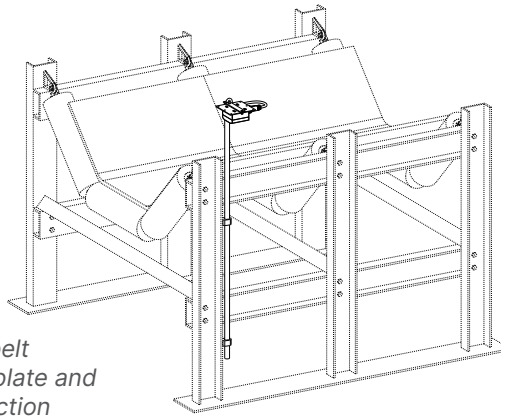
ADICOS Mounting Plate



Material:	Aluminum sheet, 3 mm
Mounting holes:	8 x Ø 6,4 mm, Spacing 130 mm or 65 mm or 183.8 mm (diagonal)

Mounting scheme:
Ceiling installation with ADICOS mounting-plate





Mounting example:
Monitoring a conveyor belt with ADICOS mounting plate and custom gallows construction

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