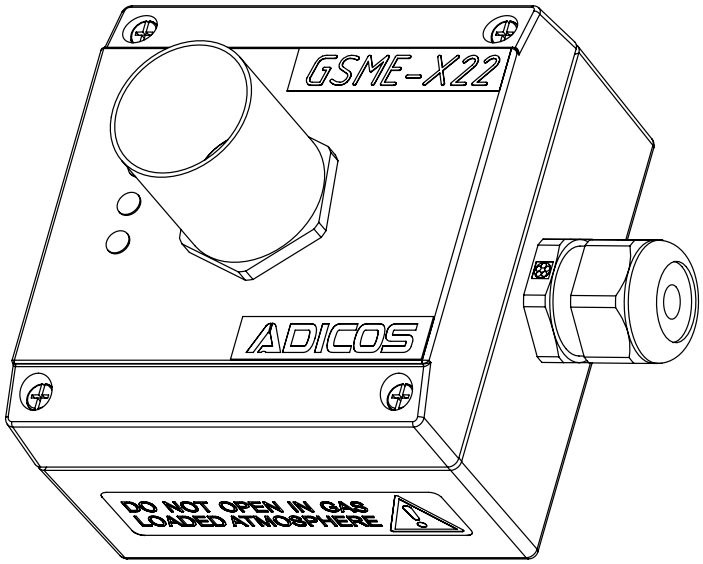
GSME-X22

Industrial fire gas detectors with bus capacity, semiconductor gas sensors and adjustable, integrated signal evaluation for potentially explosive areas



Characteristics

- Approved for ATEX zone 22
- Robust design with aluminum die-cast housing
- Highest moisture and dust resistance due to diffusion filter technology
- Extremely resistant 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

- Enclosed extraction sites for coal, biomass, wood, paper, plastic, substitute fuel, etc.
- Storage facilities and bunkers of spontaneously combustible materials
- Drives, shredders, dryers, coolers, chutes and 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 diffusion filter technology.

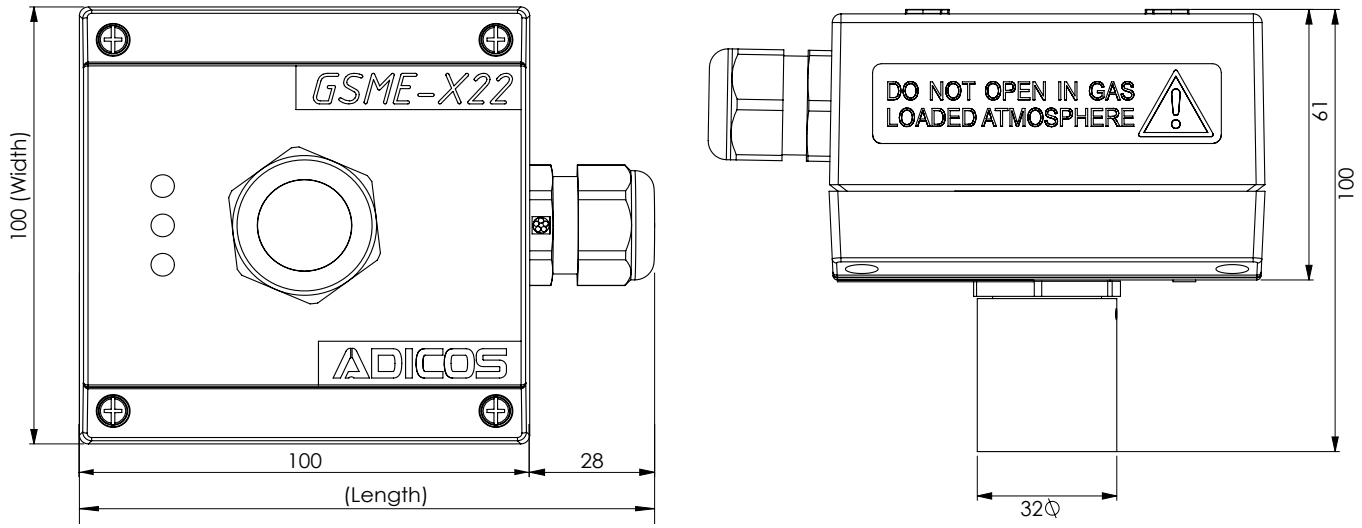
GSME-X22 detectors are approved for use in potentially explosive dust atmospheres of ATEX zone 22.

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-X22 - Specification

Dimensions

All dimensions in mm



Technical Data	
Enclosure	*Coated die-cast aluminum (corrosion-resistant)*
Dimensions	*128 mm x 100 mm x 100 mm (Length x Width x Depth)* *(Length: cable gland incl.)*
Weight	*2.2 kg (10 meter cable incl.)*
Degree of protection	*IP64*
Explosion protection	*II 3D Ex tc IIIC T80 °C*
Relative humidity	≤ 95 % relative humidity (not condensing)
Temperature range	*–20 ... +50 °C*

Electrical Properties	
Supply voltage	DC 21.6 ... 40 V
Power consumption	4 VA / 14 VA (without / with heating)
Internal fusing	2 x 500 mA
M-Bus max. cable length	≈ 2 km
M-Bus max. cable capacity	≈ 200 nF
M-Bus baudrate	4800 baud
Potential-free contact alarm-relay	20 mA max. (alarm, normally open)
Potential-free contact failure-relay	40 V resp. 20 mA max. (fault, normally closed)
Max. contact rating failure/alarm relay	DC 40 V ; 70mA

Detection Properties	
Sensor combination	CO — H_2 — HC — NO_X
Reaction time	> 30 s
Detection scenarios	Smoldering fire according to EN 54-7 coal smoldering fire

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Electrical connection

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 Interface module

Wire	Color	Siemens FDnet	Bosch LSNi
5	black	FDnet (+)	LSN a in
5	white	FDnet-A (-)	LSN b1 in
6	black	FDnet (+)	LSN a out
6	white	FDnet-B (-)	LSN b2 out

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

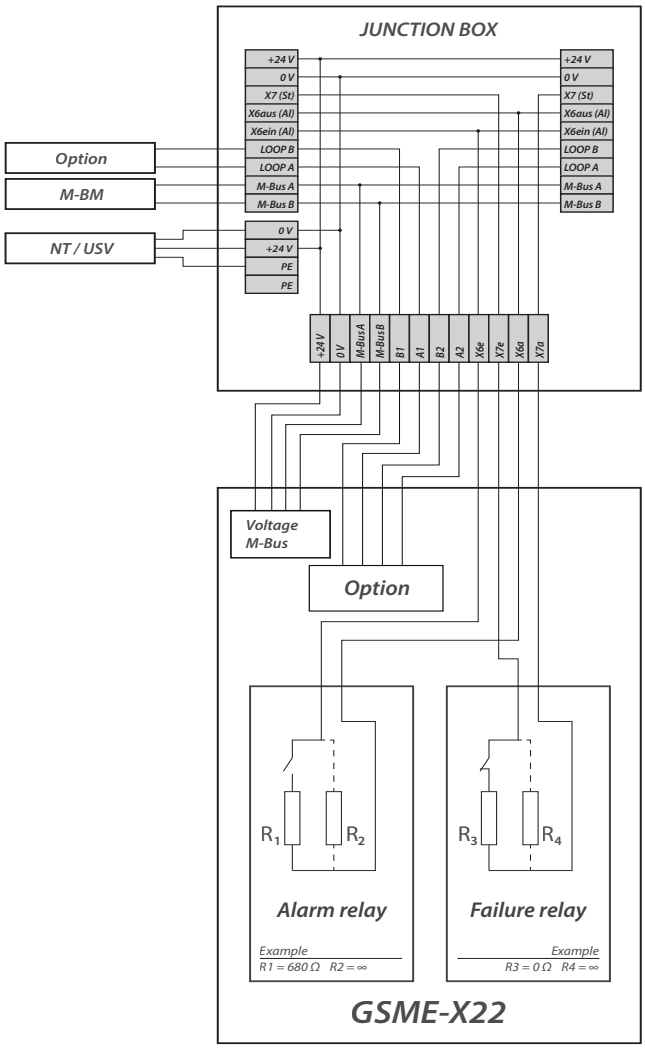
[1] with series resistor

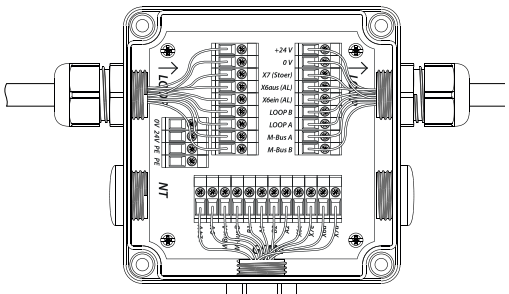
Option Interface module

Wire	Siemens FDnet	Bosch LSNi
9	FDnet-A (-)	LSN b1 in
10	FDnet (+)	LSN a in
11	FDnet-B (-)	LSN b2 out
12	FDnet (+)	LSN a out

Option Auxiliary relay

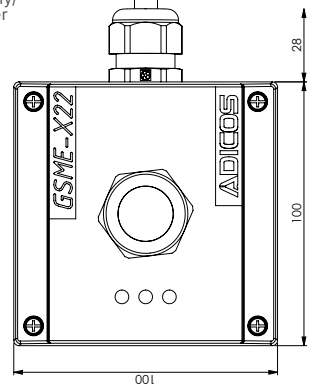
Wire	Auxiliary relay
9	–
10	–
11	Common
12	Normally open





Legend:

Option	Interface module for FDnet or LSNi or pre-alarm auxiliary relay
M-BM	ADICOS M-BUSMASTER
NT / USV	External power supply/ uninterruptible power supply



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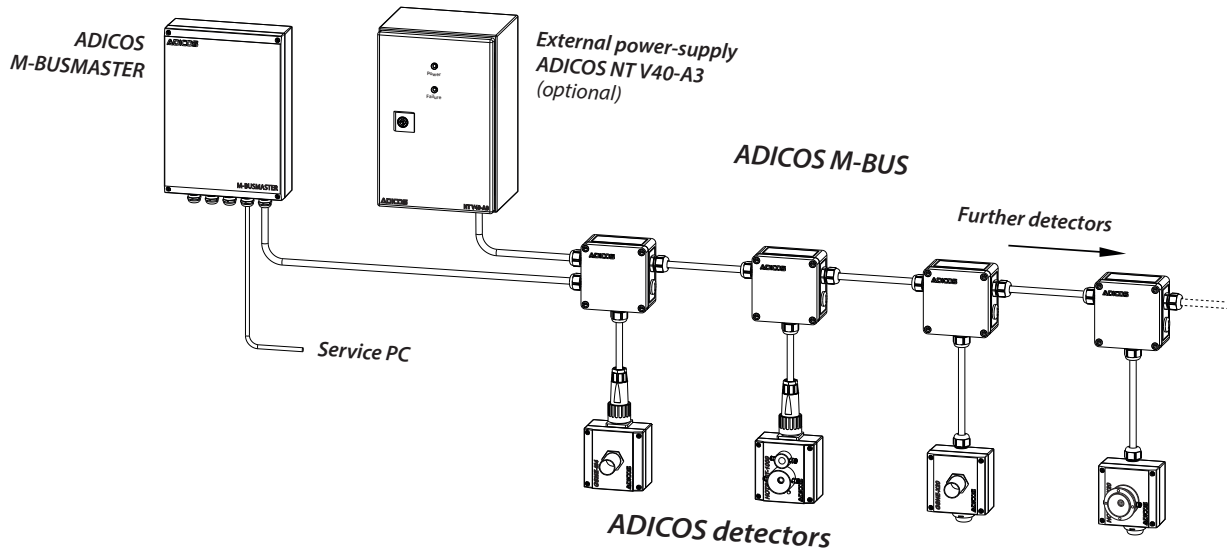
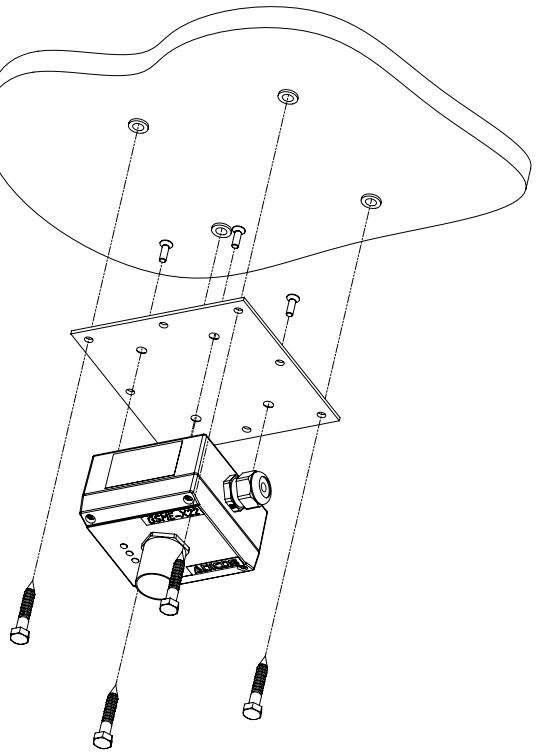
GSME-X22 - Application

ADICOS wiring principle

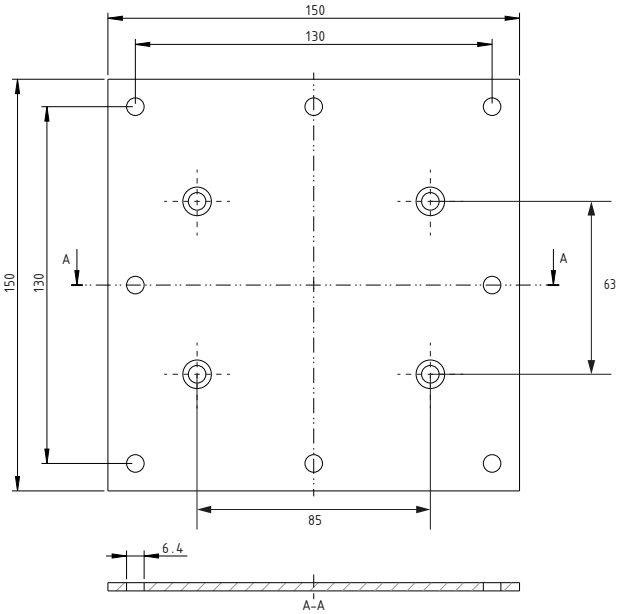


Assembly

GSME-X22 **must be mounted** *with the sintered metal filter* **down***!*

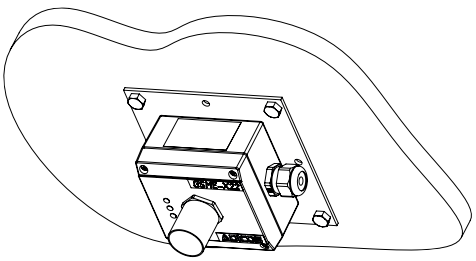


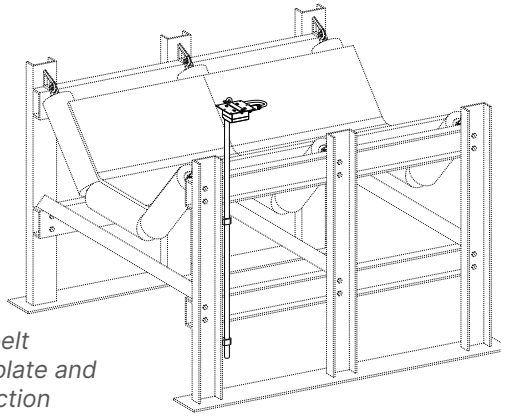
ADICOS Mounting Plate



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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