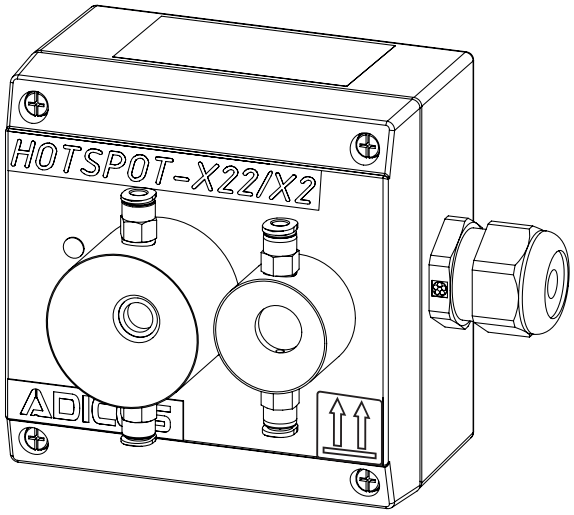
HOTSPOT-X22/X2

Industrial infrared heat detector with programmable internal signal evaluation for the detection of hot surfaces, flames and moving ember – suitable for ATEX zone 22 (dust) and ATEX zone 2 (gas)



Characteristics

- Robust design with aluminium diecast housing
- High resistance to moisture and dust (IP 65)
- Extremely fast response
- Separate alarm thresholds up to 16 zones
- Detection of embers
- Independent of building thermal conditions
- Integrated purge air adapter
- Low wiring effort due to common data and power transmission in a pre-assembled cable
- Central data acquisition and visualization via PC software
- Can be integrated into existing fire alarm systems
- Also suitable for process monitoring
- Certified for use in ATEX zone 22 and ATEX zone 2

Applications

- Production sites for coal, biomass, wood, paper, plastic, substitute fuel, etc.
- Storage facilities and bunkers with self-igniting materials
- Drives, shredders, driers, chutes and hoppers
- Silos and mills
- Chemical industry

ADICOS HOTSPOT-X22/X2 is a thermographic detectors of the Advanced Discovery System („ADICOS"), which was specifically designed to provide reliable early fire detection in harsh industrial environments. Aapplication fields are areas endangered by dust (ATEX zone 22) as well as by gas (ATEX zone 2).

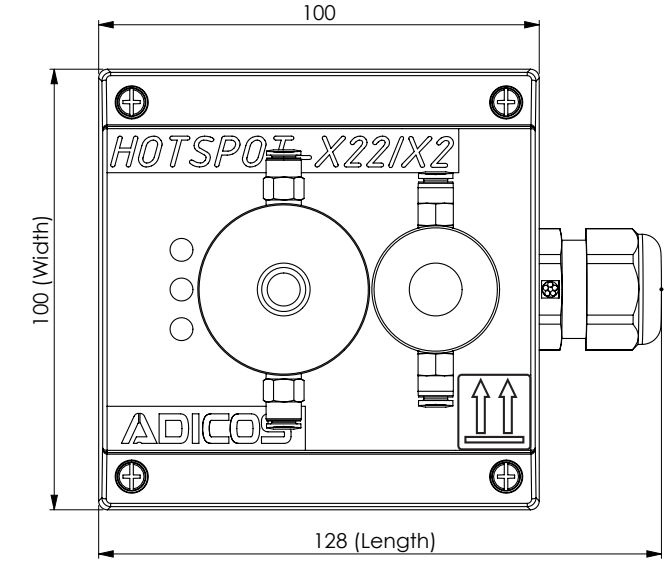
HOTSPOT-X22/X2 are parametrizable compact infrared camera systems with integrated signal processing and evaluation. An additional conventional camera assists with orientation and alignment. The sturdy design protects against the penetration of dust and moisture. Typical applications are for example the detection of overheating drives or bearings of conveyor systems, the monitoring of spontaneously inflammable bulk materials on conveyor belts or in storage facilities and in mixing processes in chemical engineering.

A simple wiring concept with prewired ADICOS system cables and specially designed connection boxes keeps the installation simple and fast.

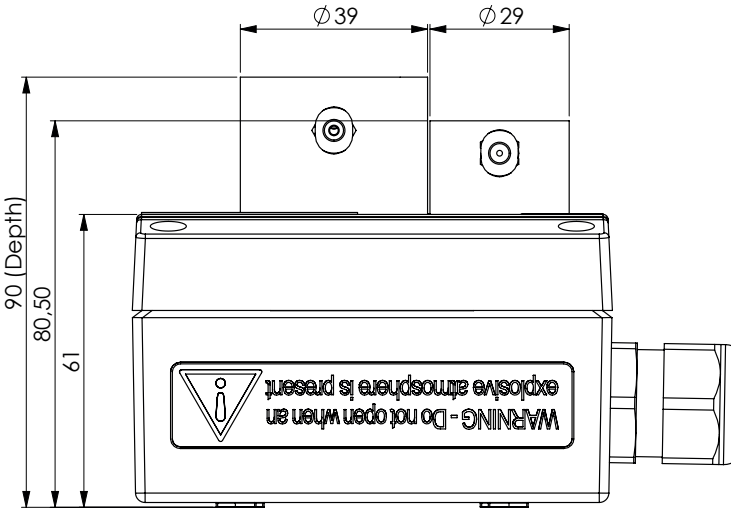
The HOTSPOT-X22/X2 is connected via an ADICOS M-BUSMASTER to a PC. Using the ADICOS system software, the measurement results can be displayed, analyzed and documented. The software allows individual parameterization and adaptation of the alarm thresholds to the atmosphere in the environment of the respective detector.

HOTSPOT-X22/X2 – Specifications

Mechanical dimensions



All dimensions in mm



Connection cable Ø13 mm prewired

Mechanical characteristics	
Enclosure	*Coated aluminum diecast (corrosion-resistant)*
Weight	*2.3 kg (with 10 m connection cable)*
Degree of protection	*IP65*
Dimensions	*128 mm x 100 mm x 90 mm (Length x Width x Depth), (Length: cable gland included)*
Explosion protection	*II 3G Ex ec nA IIC T4 Gc* *II 3D Ex tc IIIC T80°C Dc* *(Certified according to ATEX und IECEx)*
Device group	*II, category 3D / 3G*

Thermal characteristics	
Relative humidity	*≤ 95 % (non-condensing)*
Temperature range	*–10 ... +50 °C*

Electrical characteristics	
Supply voltage	*DC 21.6 ... 40 V*
Power consumption	*2 VA / 10 VA (with / without heating)*
Internal fusing	*500 mA*
M-Bus max. line length	*≈ 2 km*
M-Bus max. line capacity	*≈ 200 nF*
M-Bus baudrate	*4800 baud*
Limit contact alarm relay	*20 mA max. (Alarm NO relay)*
Limit contact error relay	*40 V / 20 mA max. (Error NC relay)*
Max. contact rating failure/alarm relay	*DC 40 V; 70mA*

Purge air requirements	
Air purity grade	*Dust ≥ 2 — Water ≥ 3 — Oil ≥ 2 (< 0.1 mg/m³)*
Air flow rate, settled air	*> 2 l/min*
Air flow rate, flowing air	*> 8 l/min (Testing may be necessary!)*

Detector characteristics	
Sensor resolution	*32 Pixel x 31 Pixel*
Optical angle	*60° x 58°*
Reaction time	*< 1 s*
Temporal resolution	0.1 s oder 1 s (depends on configuration)

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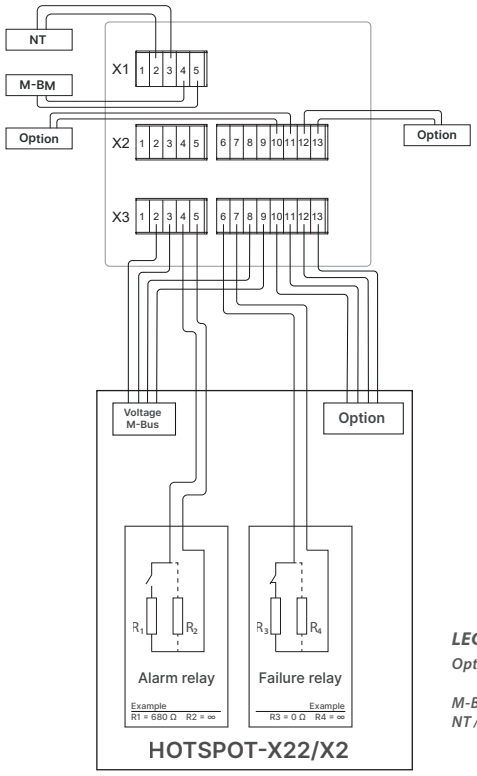
HOTSPOT-X22/X2 – Specifications

ADICOS topology concept

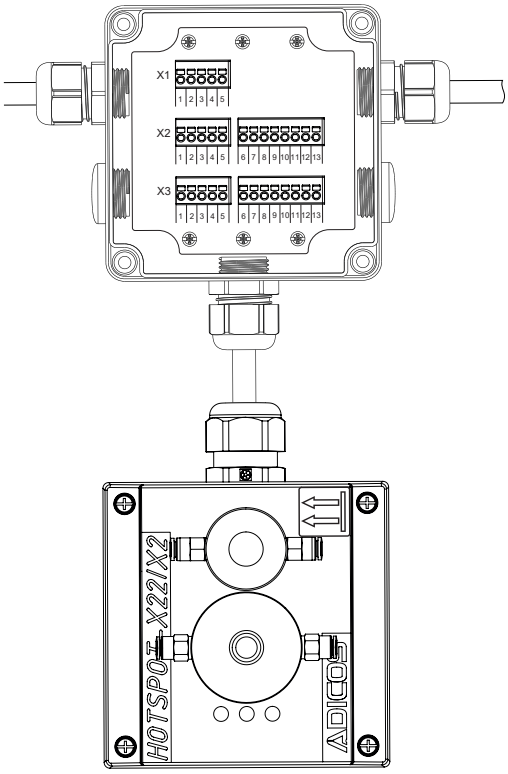


LEGEND:

Option: Fire panel interface to FDnet or LSNi (e.g. SIEMENS, BOSCH) or pre-alarm

M-Bus: Connection of ADICOS service interface

NT / USV: External power supply / uninterruptible power supply



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 analog signal

Wire	Color	Signal	Analog signal
5	black	Analog Current	4 ... 20 mA
5	white	Analog Current	4 ... 20 mA
6	black		
6	white		

Option fire panel interface

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 pre-alarm

Wire	Color	Auxiliary relay
5	black	-
5	white	Normally closed (to be ordered separately)
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 analog signal

Wire	Signal	Analog signal
9	Analog current	4 ... 20 mA
10	Analog current	4 ... 20 mA
11		
12		

Option fire panel interface

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 pre-alarm

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

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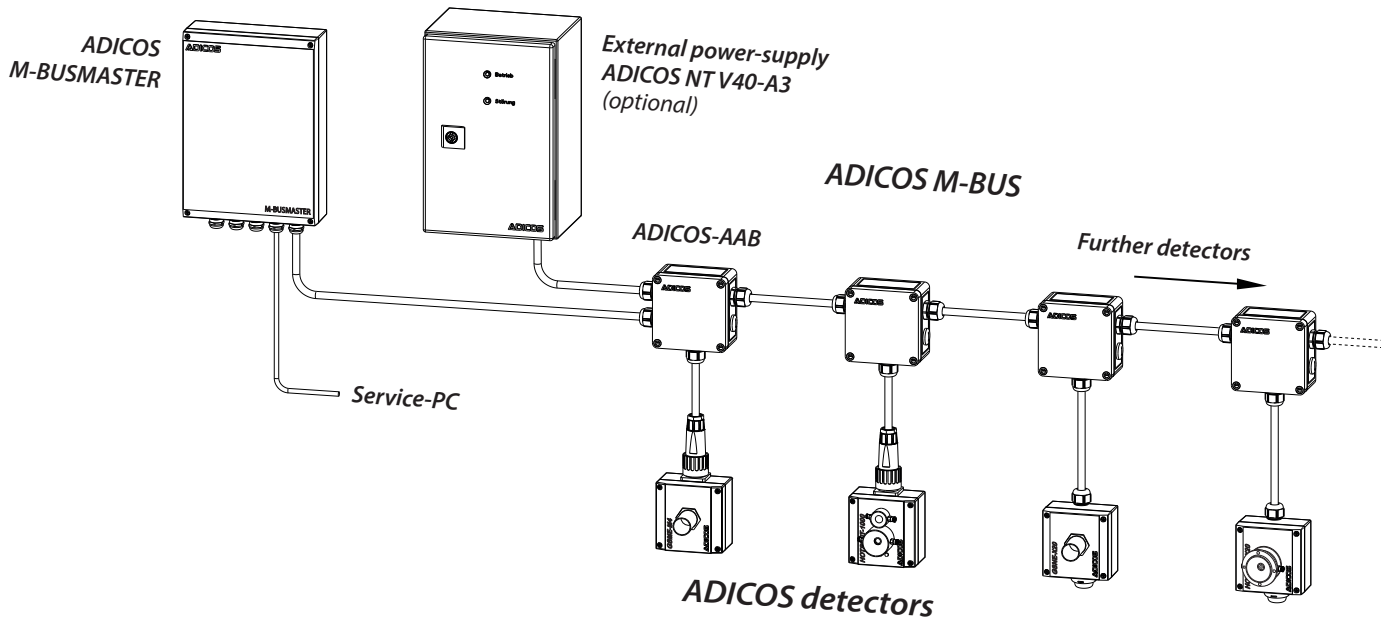
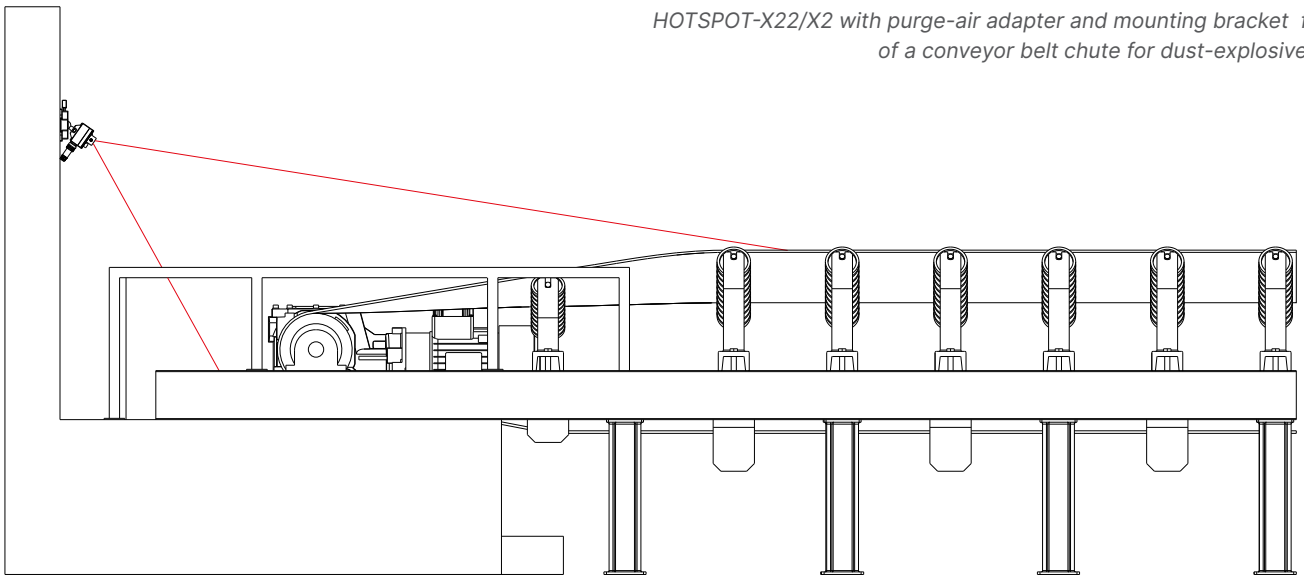
HOTSPOT-X22/X2 – Application

ADICOS topology concept

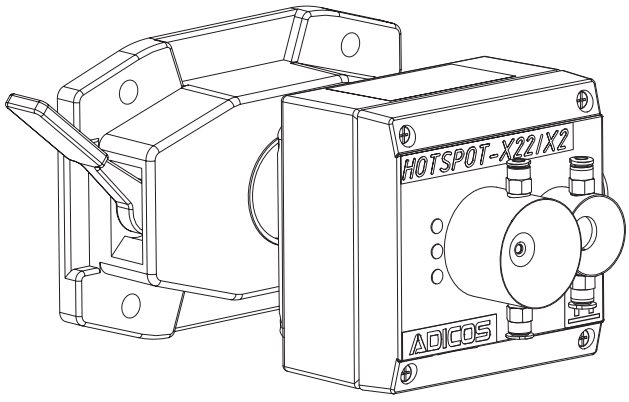


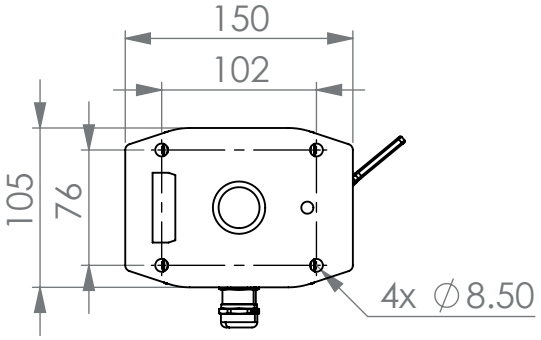
Application example

HOTSPOT-X22/X2 with purge-air adapter and mounting bracket for monitoring of a conveyor belt chute for dust-explosive bulk material



HOTSPOT mounting bracket with ball joint





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