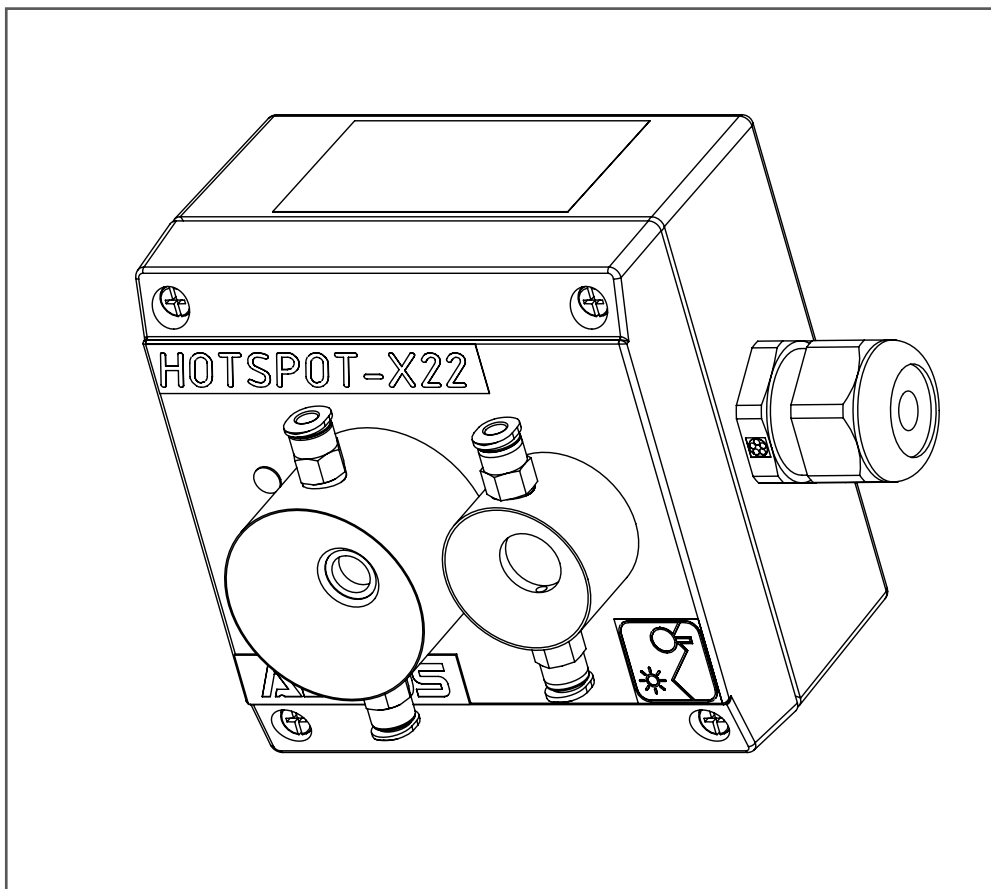




## **Supplementary Instruction Manual for X22-Detectors**

# IR-Temperature Detector

Supplementary Instructions for HOTSPOT-X22  
Article number: 410-2410-017  
Index: EN21  
Release date: 26.02.2020

– Translation –

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**Subject to technical changes!**

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## Abstract

The Advanced Discovery System (ADICOS) is used for early detection of fires in industrial environments. It is comprised of various separate detector units. With aid of suitable arrangement and parameterization the system meets a specified detection goal, without being susceptible to interference.

The detector units are connected to the ADICOS Central Software with aid of the M-Bus. It allows the parameterization of each individual detector and the storage of all sensor data for statistical evaluation.

The ADICOS HOTSPOT-1000 is an IR fire detector used for optical and spatially resolved fire and heat detection. It is well suited for these applications:

- Detection of hot surfaces
- Detection of flames
- Detection of moving hot spots (pockets of embers)
- Monitoring of machinery and parts

ADICOS HOTSPOT-X22 detectors are designed for operation within explosive atmospheres of ATEX zone 22.



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## 1 About this manual

### 1.1 Objective

This manual describes the special requirements on installation, wiring, commissioning, and operation of ADICOS detectors for explosive atmospheres of ATEX zone 22. They are exclusively addressed to knowledgeable specialist personnel (→ Chap. 2, Safety instructions).

### 1.2 Explanation of symbols

This manual features a continuous structure for best possible comprehension. The following labels are used.

#### Warning signs

This manual uses the following information types.

**NOTE!**

Indicates information relevant to further operation of the equipment.

**WARNING!**

Signals a hazard that can cause death or serious injury.

**DANGER!**

Indicates a hazard that will immediately cause death or serious injury.

### 1.3 Storing the manual

Store this manual easily reachable and in direct vicinity of the detector system to enable use as needed.

## 2 Safety instructions

ADICOS HOTSPOT-X22 detectors for explosive atmospheres of ATEX zone 22 ensure operational safety assuming proper installation, commissioning, operation, and maintenance. For this purpose, it is absolutely required to completely read, understand, and follow this manual and the safety information contained.

**WARNING!**

Installation and operating errors can lead to fatal and severe injuries and damage to the industrial plant.

- **Read and follow this manual carefully!**

### 2.1 Intended use

ADICOS HOTSPOT-X22 are designated for the detection of fire scenarios in explosive atmospheres of ATEX zone 22. In this context, the operating parameters described in Chap. 8, »Technical data« must be met. Any deviating use requires prior consultation with the manufacturer.

Compliance with this manual as well as all applicable country-specific provisions is also part of the intended use.

### 2.2 Standards and regulations

The safety and accident prevention regulations applicable for the specific application must be observed during detector installation, commissioning, maintenance, and test.

The following standards and directives are of particular importance when handling potentially explosive atmospheres:

| Regulation                                         | Description                                                           |
|----------------------------------------------------|-----------------------------------------------------------------------|
| DIN EN 60079-0:2012 + A11:2013<br>IEC 60079-0:2011 | Explosive atmospheres<br>Equipment - General requirements             |
| DIN EN 60079-31:2014                               | Explosive atmospheres<br>Equipment protection by intrinsic safety "t" |
| DIN EN 60529:2014-09                               | Degrees of protection provided by enclosures                          |
| Guideline                                          | Description                                                           |
| 2014/34/EU                                         | ATEX Product Directive                                                |
| 1999/92/EG                                         | ATEX Operational Directive                                            |

### 2.3 Personnel qualification

Any work on ADICOS systems may only be performed by qualified personnel. Persons, who can perform work on electrical systems and recognize possible dangers based on their professional education, knowledge, and experience as well as knowledge of the applicable provisions, are considered qualified personnel.

**WARNING!**

Installation, commissioning, parameterization, and maintenance may only be performed by authorized and respectively trained personnel

### 2.4 Handling electrical voltage

**DANGER!**

The electronics of ADICOS HOTSPOT-X22 detectors requires an electrical voltage that can trigger an explosion in potentially explosive atmospheres.

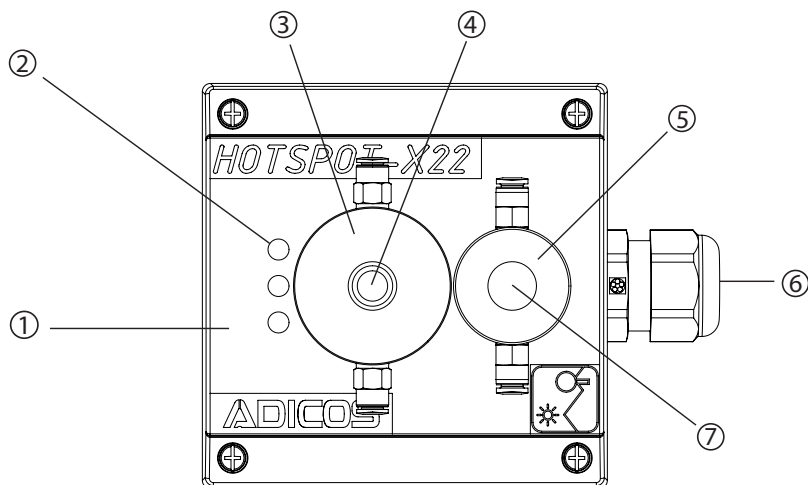
- **Do not open enclosure!**
- **De-energize the entire detector system and secure against unintentionally reactivation for all wiring work!**

### 2.5 Modification

Any form of unauthorized modifications or extensions are expressly prohibited! In case of doubt, contact the manufacturer.

### 3 Structure

#### 3.1 Overview



| No. | Description                    |
|-----|--------------------------------|
| ①   | Enclosure:                     |
| ②   | Display elements               |
| ③   | Purge air connection IR-Sensor |
| ④   | IR-Sensor                      |
| ⑤   | Purge connection camera        |
| ⑥   | Explosion Proof cable gland    |
| ⑦   | Camera                         |

### 3.2 Cable assignment

| Wire | Color | Signal                                            | Limit value contact   |
|------|-------|---------------------------------------------------|-----------------------|
| 1    | black | Operating voltage<br>24 ... 40 V DC non polarized |                       |
| 1    | white |                                                   |                       |
| 2    | black | Relay output X6 e                                 | Alarm NO <sup>1</sup> |
| 2    | white | Relay output X6 a                                 | Alarm NO <sup>1</sup> |
| 3    | black | Relay output X7 a                                 | Fault NC              |
| 3    | white | Relay output X7 e                                 | Fault NC              |
| 4    | black | M-Bus<br>max. 40 V non-polarised                  |                       |
| 4    | white |                                                   |                       |

<sup>1</sup> with series resistor, standard 680 Ω

#### Option analog signal

| Wire | Color | Signal              | Analog signal           |
|------|-------|---------------------|-------------------------|
| 5    | black | Analog Current      | 4 ... 20 mA             |
| 5    | white | Analog Current      | 4 ... 20 mA             |
| 6    | black | Analog Voltage      | 0 ... 5 V<br>0 ... 10 V |
| 6    | white | Analog Voltage, GND | 0 V                     |

#### Option Fire panel interface

| Wire | Color | Interface module         | Siemens<br>FDnet | Bosch<br>LSNi |
|------|-------|--------------------------|------------------|---------------|
| 5    | black | Interface module A - in  | FDnet (+)        | LSN a in      |
| 5    | white | Interface module B - in  | FDnet-A (-)      | LSN b1 in     |
| 6    | black | Interface module A - out | FDnet (+)        | LSN a out     |
| 6    | white | Interface module B - out | FDnet-B (-)      | LSN b2 out    |

#### Option pre alarm

| Wire | Color | Auxiliary relay |
|------|-------|-----------------|
| 5    | black | -               |
| 5    | white | NC              |
| 6    | black | NO              |
| 6    | white | C               |

## 4 Installation

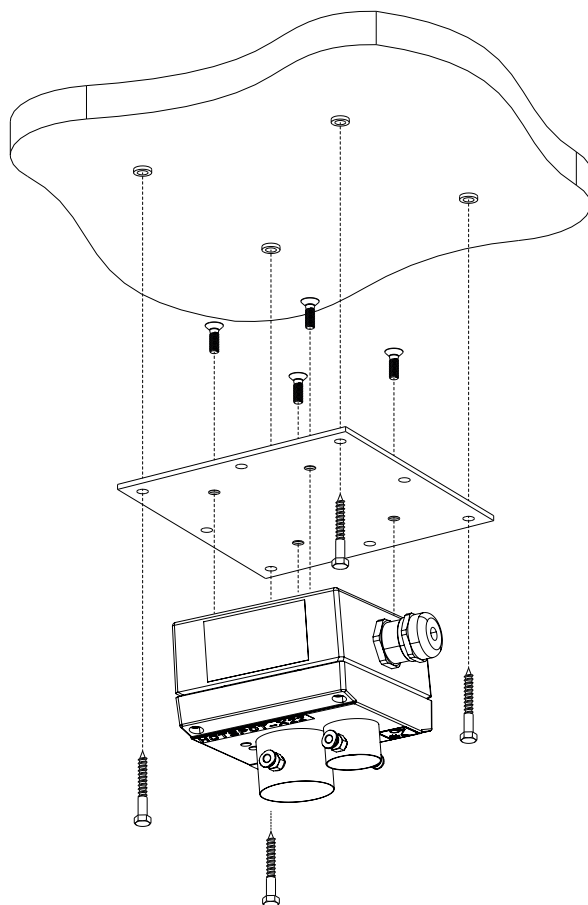
### 4.1 Mounting on Mounting Plate



**WARNING!**

ADICOS HOTSPOT-X22 detectors must be mounted with closed enclosure.

- Do not open enclosure!
- Use ADICOS mounting plate!



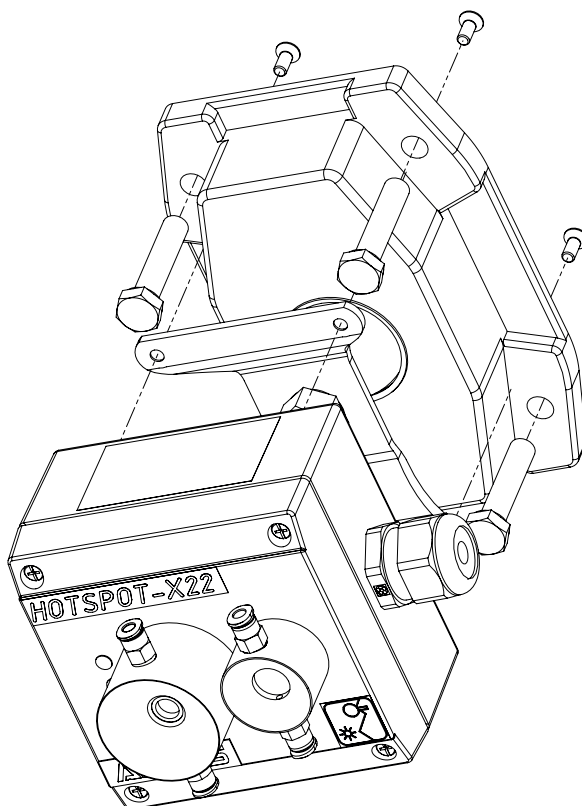
## 4.2 Mounting on Mounting Bracket



### **WARNING!**

ADICOS HOTSPOT-X22 detectors must be mounted with closed enclosure.

- **Do not open enclosure!**
- **Use ADICOS mounting foot!**



### 4.3 Wiring

**DANGER!**

The electronics of the ADICOS HOTSPOT-X22 detectors requires an electrical voltage that can trigger an explosion in potentially explosive atmospheres.

- **Do not open enclosure!**
- **De-energize the entire detector system and secure against unintentionally reactivation for all wiring work!**
- **In the case of wiring within potentially explosive atmospheres, only use explosion-proof connection boxes with respective approval!**
- **Do not bend connection cable! Observe minimum bending radius!** (→ Chap. 8, Technical data)

## 5 Commissioning

**DANGER!**

The electronics of the ADICOS HOTSPOT-X22 detectors requires an electrical voltage that can trigger an explosion in potentially explosive atmospheres.

- **Prior to switching on, check that all detectors are properly mounted and wired!**

## 6 Operation

**DANGER!**

The electronics of the ADICOS HOTSPOT-X22 detectors requires an electrical voltage that can trigger an explosion in potentially explosive atmospheres.

- **Never open the enclosure or loosen the cable gland during operation!**

## 7 Maintenance

**DANGER!**

The electronics of the ADICOS HOTSPOT-X22 detectors requires an electrical voltage that can trigger an explosion in potentially explosive atmospheres.

- **Do not open enclosure!**
- **De-energize the entire detector system and secure against unintentionally reactivation for all wiring work!**
- **Replace the closed detector including connection cable only!**

## 8 Technical data

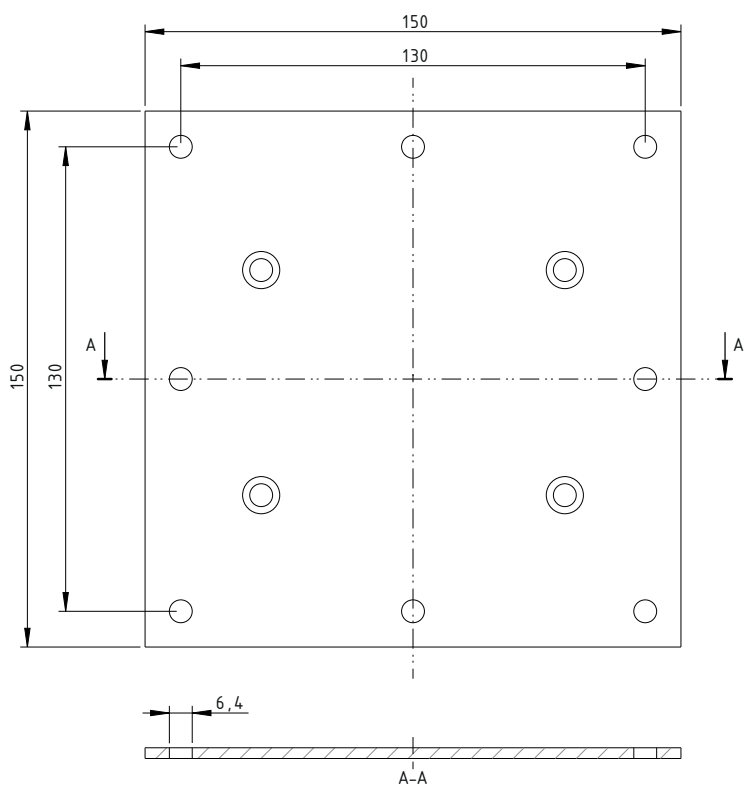
| General                                           |      |                                                                                                              |
|---------------------------------------------------|------|--------------------------------------------------------------------------------------------------------------|
| Model:                                            |      | HOTSPOT-X22                                                                                                  |
| Item No.:                                         |      | 410-2001-120                                                                                                 |
| Enclosure dimensions:                             | mm   | 128 x 100 x 90 (h x w x l)                                                                                   |
| Weight:<br>(incl. 7 meter cable):                 | kg   | 2                                                                                                            |
| Enclosure:                                        |      | Aluminum die casting, powder-coated                                                                          |
| Electrical properties                             |      |                                                                                                              |
| Rated Voltages:                                   | V    | DC 24                                                                                                        |
| Voltage range:                                    | V    | DC 21,6 ... 40                                                                                               |
| Max. Power consumption:<br>(excl. heating):       | VA   | 2                                                                                                            |
| Max. Power consumption:<br>(incl. heating):       | VA   | 10                                                                                                           |
| M-Bus-Voltage (Signal):                           | V/mA | max. 40 V non-polarized / max. 30 mA                                                                         |
| Thermal data                                      |      |                                                                                                              |
| Ambient Temperature:                              | °C   | -10 ° ... + 50 °C                                                                                            |
| Maximum<br>surface temperature                    | °C   | T80 °C                                                                                                       |
| IP:                                               |      | IP 64                                                                                                        |
| Optional communication modules (input parameters) |      |                                                                                                              |
| BMZ-ModulSinteso FDnet:                           | V    | DC 33 V; max. 10 mA                                                                                          |
| ADICOS<br>Coupling module 4-20 mA:                | V    | DC 35 V; max. 20 mA                                                                                          |
| BMZ-Modul Bosch LSN:                              | V    | DC 36 V; max. 20 mA                                                                                          |
| Pre-alarm relay module:                           | V    | DC 40 V; max. 10 mA                                                                                          |
|                                                   | V    | DC 24 V; max. 20 mA                                                                                          |
| Information regarding explosion protection        |      |                                                                                                              |
| Explosion protection class:                       |      | II 3D  tc IIIC T 80 °C Dc |
| Max.<br>Surface temperature:                      |      | T 80 °C                                                                                                      |
| Device group:                                     |      | II, category 3D                                                                                              |

**NOTE!**ADICOS X22-Detectors are rated **Protection by enclosure "tc"**.

- **An Ex barrier is not mandatory!**

## 9 Appendix

### 9.1 ADICOS Mounting Plate



## 9.2 ADICOS Mounting Bracket

