

Supplementary Instruction Manual for X20-Detectors

IR-Temperatur Detector

Supplementary Instructions for HOTSPOT-X20
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– Translation –

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Brief Description

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-X20 are designed for operation within explosive atmospheres.

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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. 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!**

This information type provides information directly important for further system operation.

**WARNING!**

This information type signals a danger that can lead to fatal or severe injuries.

**DANGER!**

This information type signals a danger that directly leads to fatal or severe injuries.

1.3 Storing this manual

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

2 Safety instructions

ADICOS HOTSPOT-X20 detectors for explosive atmospheres ensure operational safety assuming proper installation, commissioning, operation, and maintenance. For this purpose, it is absolutely required to completely read, understand, and follow these instructions 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 these instructions carefully!**

2.1 Intended use

ADICOS HOTSPOT-X20 are designated for the detection of fire scenarios in potentially explosive atmospheres of zones 20, 21, and 22. In this context, the operating parameters described in Chap. 8, »Specifications« 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
2014/34/EU	European ATEX Directive
1999/92/EC	European ATEX Operation Directive
89/686/EEC	European Personal Protective Equipment Directive
DIN EN 60079	Explosive atmospheres
DIN EN 60529	Degrees of protection provided by enclosures
DIN EN 60691	Thermal-links - Requirements And Application Guide

2.3 Personnel qualification

Any work on the control 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-X20 works with an electrical voltage that can trigger an explosion in potentially explosive atmospheres.

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

2.5 Modification

**WARNING!**

Any form of unauthorized modifications or extensions are expressly prohibited!

- **In case of doubt, contact the manufacturer!**

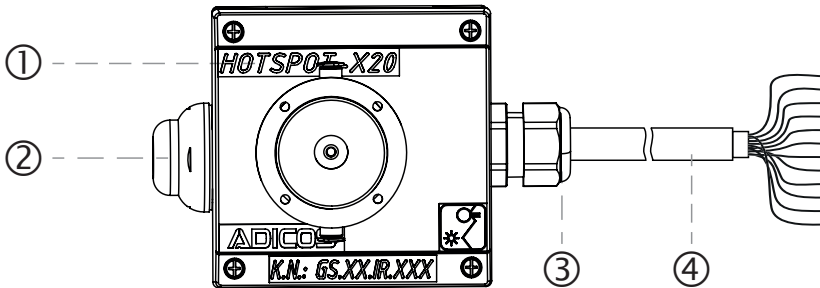
2.6 Accessories and spare parts

**WARNING!**

Only original spare parts provided by the manufacturer may be used!

3 Structure

3.1 Overview



No.	Description
①	Detector enclosure
②	Signal dome
③	Explosion-proof cable gland
④	Pre-assembled ADICOS connection cable

3.2 Cable assignment

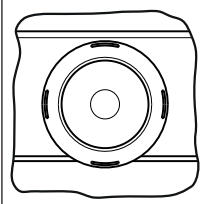
Wire	Color	Signal	Signal limit contact
1	black	Operating voltage 24 ... 40 V DC non-polarized	
1	white		
2	black	Relay output X6 e	Alarm NO ¹
2	white	Relay output X6 a	Alarm NO ¹
3	black	Relay output X7 a	Fault NC
3	white	Relay output X7 e	Fault NC
4	black	M-bus max. 40 V non-polarized	
4	white		

¹ with series resistor, standard 680 Ω

Auxiliary Relay

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

3.3 Display elements

Signal Dome	
<p>The signal dome is a translucent element. It includes the status LED to indicate the operating condition of the X20 detectors:</p> <p>Normal operation = green Alarm = red Fault = yellow</p>	

4 Installation

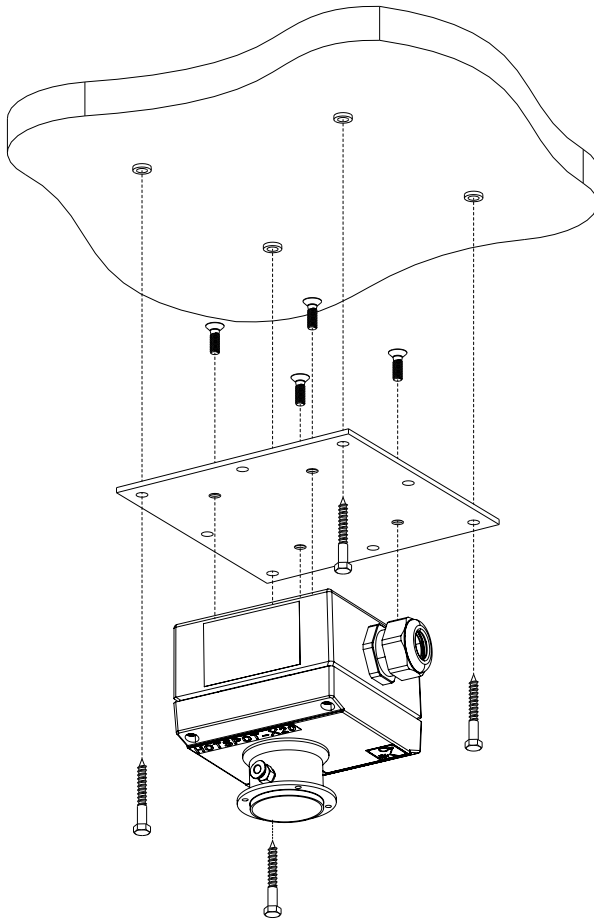
4.1 Mounting with ADICOS Mounitng Plate



WARNING!

ADICOS HOTSPOT-X20 detectors must be mounted with closed enclosure.

- Do not open enclosure!
- Use ADICOS Mounting Plate!

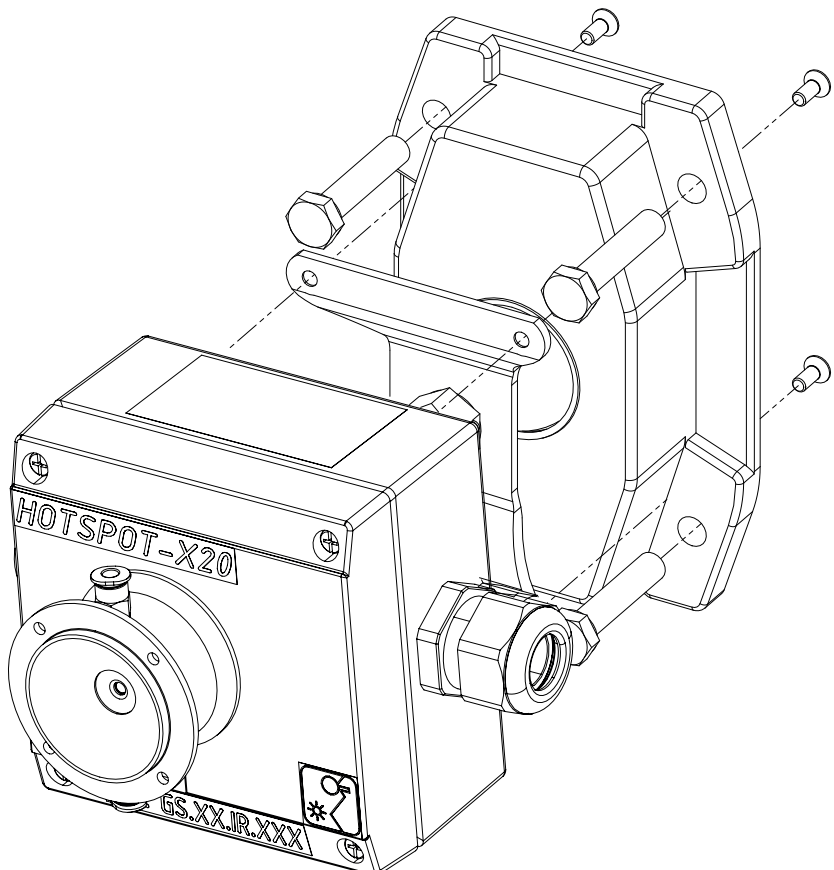


4.2 Installation on Mounting Bracket

**WARNING!**

ADICOS HOTSPOT-X20 detectors must be mounted with closed enclosure.

- Do not open enclosure!
- Use ADICOS Mounting Bracket



4.3 Wiring



DANGER!

The electronics of ADICOS HOTSPOT-X20 detectors require 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, Specifications)

5 Commissioning



DANGER!

The electronics of ADICOS HOTSPOT-X20 detectors require 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 ADICOS HOTSPOT-X20 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

7.1 Detector replacement



DANGER!

The electronics of ADICOS HOTSPOT-X20 detectors require 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 disassembly work!**
- **Replace the closed detector including connection cable only!**

8 Specifications

Specifications regarding explosion protection

		HOTSPOT-X20
Explosion protection class:		Ex ta IIIC 105°C Da / IP6x
Surface temperature:	°C	< 105
Device group:		II, category 1D
Type approval:		Certificate according to 2014/34/EU
Bending radius connection cable	mm	> 91,5



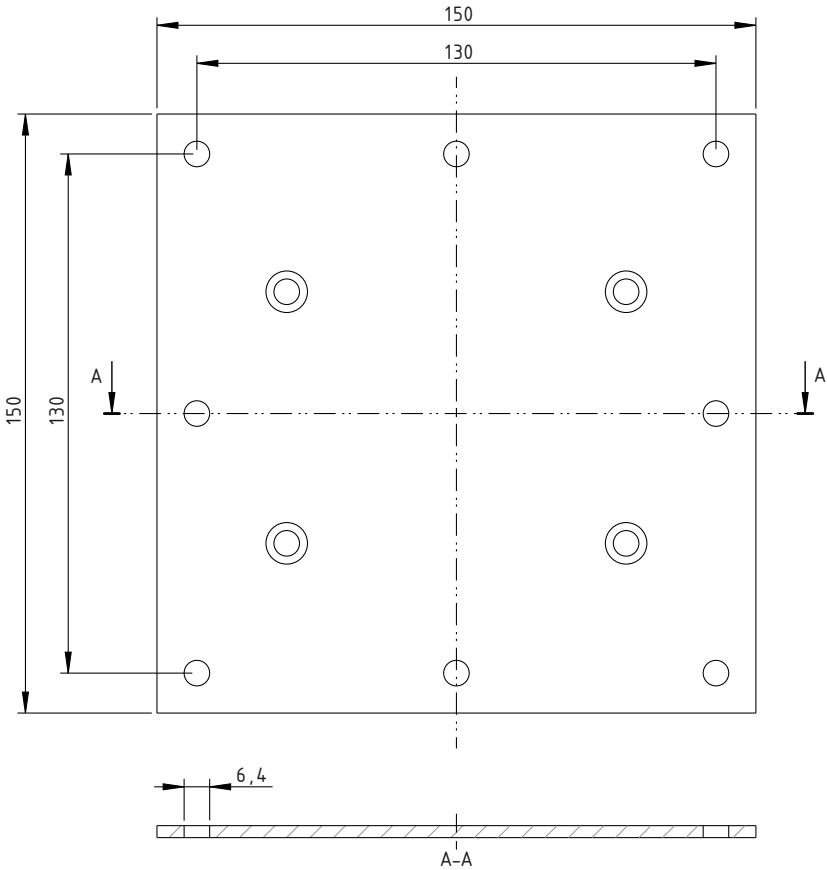
NOTE!

ADICOS HOTSPOT-X20 detectors are rated **Protection by enclosure "ta"**.

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

9 Appendix

9.1 ADICOS mounting plate



9.2 ADICOS Mounting Bracket

