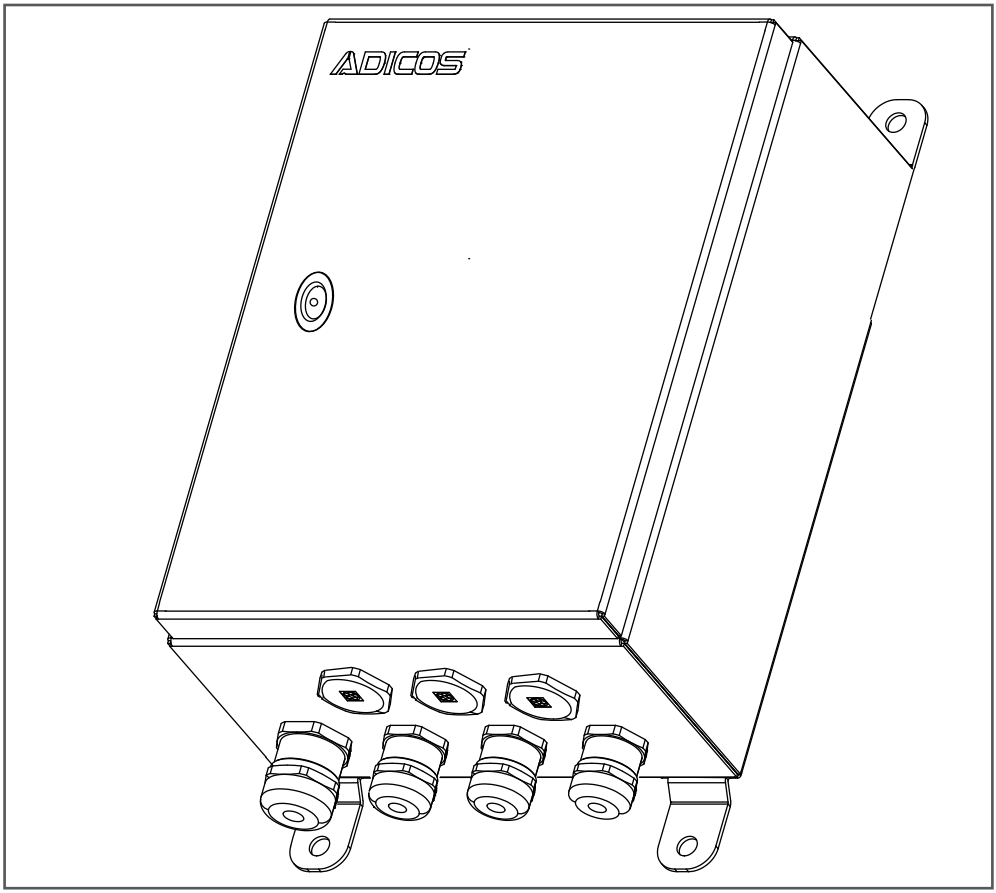

EN CE IP66

Operating Manual

Junction Box

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Junction **B**ox AAB-XL
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– 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. By parameterizing and arranging the detectors appropriately, the system fulfills a predefined detection goal. The ADICOS system ensures reliable early detection of embers and smoldering fires even in adverse environments.

ADICOS AAB-XL serve as wiring aids for ADICOS detectors. They are are extra large, high-quality surface-mounted junction boxes with internally pre-connected double-pole terminals, which enable the electrical connection of ADICOS detectors of all models to the special fire alarm system in a very simple way. Thanks to their robust mechanical design, the branch boxes are protected against the ingress of dust and moisture and can be installed and used in harsh industrial environments in the vicinity of the ADICOS detectors.

Features:

- High quality distribution box made of stainless steel
- Extra large design
- Simple assembly thanks to offset fastening straps
- Maximum moisture and dust resistance
- Optimum wiring conditions thanks to large connection space, wiring channel inside the housing, high-quality and internally pre-wired double-level terminals
- Connection of supply voltage, M-Bus, external fire alarm LOOP as well as alarm and fault contact
- Power supply terminals for external power supply unit
- Up to eight cable glands (3 x M25 and 1 x M35 pre-mounted, further 3 x M25 enclosed)

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1 About this Manual

1.1 Objective

This manual describes the proper assembly, wiring, commissioning, and operation of ADICOS junction boxes AAB-XL. Once the device has been successfully started up, this document serves as a reference in the event of malfunctions.
It is intended to be used only by properly qualified personnel (see Chap. 2 Safety Instructions).

Operational objectives

Operational objectives specify the result to be achieved by following the subsequent instructions. Operational objectives are shown in **bold print**.

Instructions

Instructions are the steps to be taken in order to achieve the previously stated operational objective.
Instructions appear like this

► Indicates a single instruction

1 First of a series of instructions
2 Second of a series of instructions
3 etc.

Intermediate states

When it is possible to describe intermediate states or events resulting from the instruction steps (e.g. screens, internal function steps, etc.), they are shown like this:

▷ Intermediate state

1.2 Explanation of Symbols

This manual follows a certain structure to make it easy to work with and understand. The following designations are used throughout.

Warnings

The following types of notes are used through this manual:

DANGER!
This combination of symbol and signal word indicates an immediately dangerous situation which could lead to death or severe injuries if it is not avoided.

WARNING!
This combination of symbol and signal word indicates a possibly dangerous situation which could lead to death or severe injuries if it is not avoided.

Tips and recommendations
This type of note provides information that is directly relevant for the further operation of the device.

1.3 Abbreviations

This manual uses the following abbreviations:

Abbreviation	Meaning
ADICOS	Advanced Discovery System
AAB-XL	ADICOS Junction box – Extra Large Version
M-BM	ADICOS M-BUSMASTER
NT	ADICOS Power Supply NT V40-A3
FDnet	Field Device Network (fire alarm bus of SIEMENS fire alarm systems)
LSNi	Local Security Network (fire alarm bus of BOSCH fire alarm systems)
BMA	Fire Detection System (Brandmeldeanlage)

1.4 Storing the Manual

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

2 Safety Instructions

When properly installed, started up, operated and serviced, ADICOS junction boxes AAB-XL ensure operational safety at your facility. But it is imperative that the manual, including all safety notes, be read, understood and followed completely.

WARNING!
Personal injury and property damage!
Incorrect installation and operating errors can cause death, serious injury and damage to industrial equipment.
- **Read the entire manual and follow the instructions!**

2.1 Intended Use

ADICOS AAB-XL are junction boxes for the electrical connection of ADICOS detectors with the fire alarm cable of ADICOS systems. They additionally enable feeding-in an external voltage supply using the ADICOS power supply NT V40-A3. In this context, the operating parameters described in Chap. 10, »Technical data« must be met.

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 current safety and accident prevention regulations relevant to the specific application must be complied with when installing, starting up, servicing and inspecting the AAB-XL.
The following standards and directives are of particular importance when handling fire alarm systems in potentially explosive areas:

Regulation	Description
VDE 0100	Erection of power installations with rated voltages below 1000 V
VDE 0800	Telecommunications - General concepts - Requirements and tests for the safety of facilities and apparatus
VDE 0833	Alarm Systems for Fire
VDE 0845	Protection of telecommunication systems against lighting, electrostatic discharges and overvoltages from electric power installations; measures against overvoltages
VdS 2095	Guidelines for automatic fire detection and fire alarm systems - planning and installation
DIN 14675	Fire detection and fire alarm systems - design and operation

2.3 Personnel Qualification

Any work on ADICOS AAB-XL 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!
Personal injury and property damage!
Improperly performed work on and with the device can lead to malfuctions.

- **Installation, startup, parameterization and maintenance may be performed only by authorized and properly trained personnel.**

2.4 Modifications

WARNING!
Property damage or detector failure by any form of unauthorized modification!
Any form of unauthorized modification or extension can lead to a failure of the detector system. The warranty claim expires.

- **Never make unauthorized modifications on your own authority.**

2.5 Accessories and Spare Parts

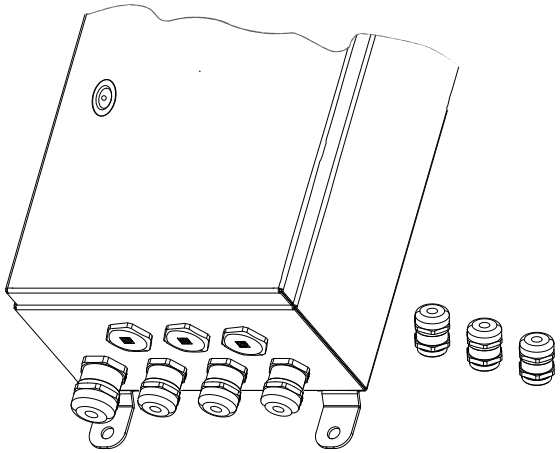
WARNING!
Property damage due to short circuit or failure of the detector system
The use of parts other than the manufacturer's original spare parts and original accessories may result in property damage due to short circuits.

- **Only use original spare parts and original accessories!**
- **Original spare parts and accessories may only be installed by trained specialist personnel.**
- **Qualified personnel are persons as described in Chap. 2.3.**

Cable glands and blanking glands can be purchased from the manufacturer in M20 and M25 threads.

3 Scope of Delivery

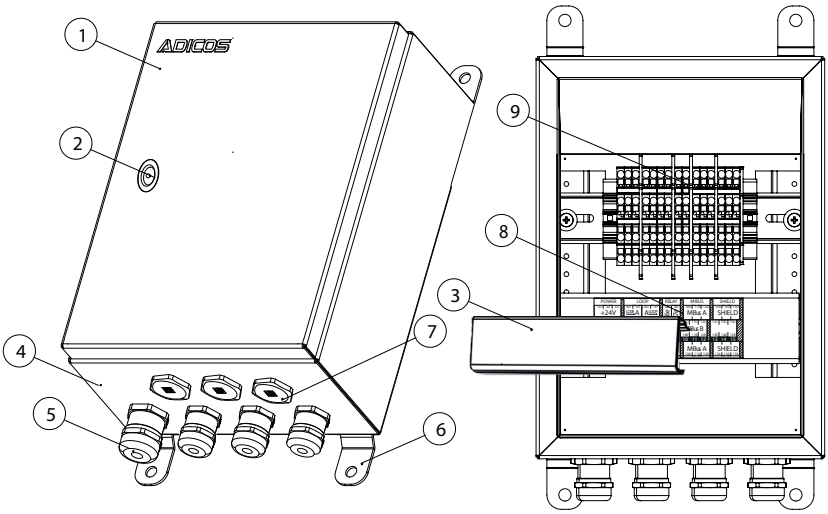
The following components are included in the scope of delivery of the AAB-XL:



Anzahl	Beschreibung
1	ADICOS AAB-XL with 3 cable glands M25 and 3 dummy cable glands M25 and 1 cable gland M35
3	Cable glands M25 (additionally)
1	key for switch cabinet, without illustration

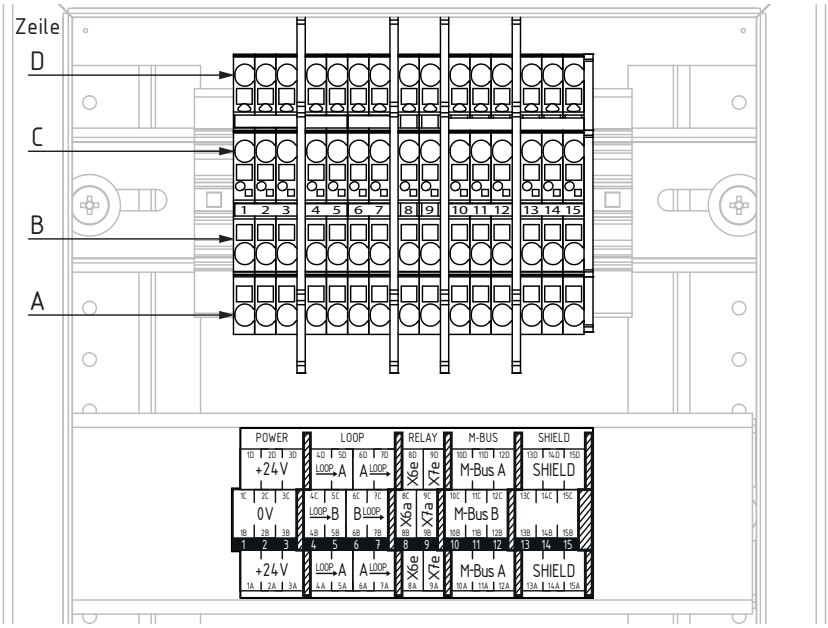
4 Structure

4.1 Overview



No.	Description
①	Enclosure cover with ground cable (not shown)
②	Lock
③	Wiring duct cover
④	Enclosure base
⑤	Cable glands
⑥	Mounting brackets (4x)
⑦	Blind glands
⑧	Wiring duct
⑨	Preconnected double deck terminals

4.2 Connections



Column	Line	Label	Assignment
1–3	**A + D**	**+24V**	Power supply (+)
1–3	**B + C**	**0V**	Power supply (–)
4–5	**A + D**	**LOOP A** →	External Fire Detection System LOOP A in SIEMENS FDnet + BOSCH LSNi a in
4–5	**B + C**	**LOOP B** →	External Fire Detection System LOOP B in SIEMENS FDnet-A (–) BOSCH LSNi b1 in
6–7	**A + D**	**LOOP A** ←	External Fire Detection System LOOP A out SIEMENS FDnet + BOSCH LSNi a out
6–7	**B + C**	**LOOP B** ←	External Fire Detection System LOOP B out SIEMENS FDnet-B (–) BOSCH LSNi b2 out
8	**A + D**	**X6e**	Input limit value contact Alarm NO
8	**B + C**	**X6a**	Output limit value contact Alarm NO
9	**A + D**	**X7e**	Input limit value contact Fault NC
9	**B + C**	**X7a**	Output limit value contact Fault NC
10–12	**A + D**	**M-BUS A**	ADICOS M-Bus
10–12	**B + C**	**M-BUS B**	ADICOS M-Bus
13–15	**A + D**	**SHIELD**	Cable shielding / PE of external power supply
13–15	**B + C**		

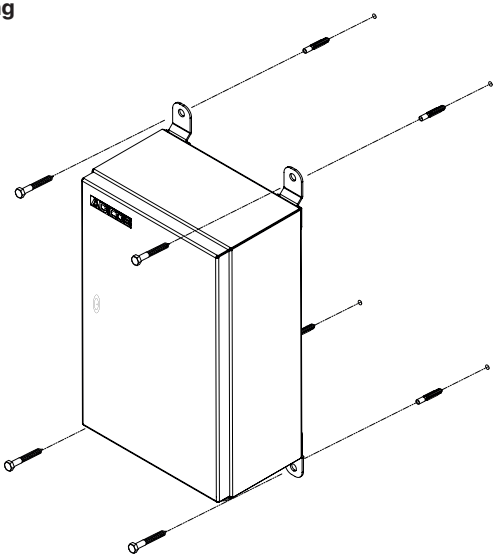
5 Installation

5.1 Selecting the Mounting Location

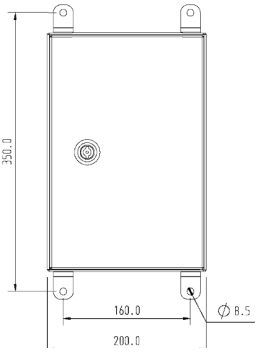
The following aspects must be considered when selecting the installation location:

- the installation floor must be sufficiently firm and as vibration-free as possible.
- the installation environment must meet the climate conditions specified in the technical data.
- install the AAB-XL near to the connected detector and well accessibly.

5.2 Mounting



Mounting the AAB-XL



1 Depending on the underground, drill mounting holes for sufficiently dimensioned screws and/or wall plugs (4x) (see drilling plan)

2 Press in the plugs

3 Insert sufficiently dimensioned mounting screws through mounting brackets in the enclosure (4x)

4 Place precisely the enclosure base with the screws onto the mounting holes with wall plugs

5 Tighten the screws (4x)

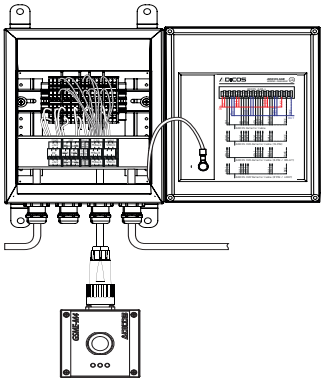
5.3 Wiring

WARNING!
Malfunctioning and failures of the detector system!
Incorrect installation of the ADICOS AAB-XL can cause malfunctioning, leading to failure of the fire detection system.

- **Wiring may only be performed by specialist personnel! (⇢ Chap. 2.3, Personnel Qualification)**
- **Use ADICOS connection cables for detector wiring only!**
- **Only use suitable fire alarm cables for the ADICOS primary line and BMA-LOOP!**

The wiring plan of the AAB-XL varies depending on system configuration and topology. The following procedure applies for all wiring variants.

Wiring ADICOS AAB-XL



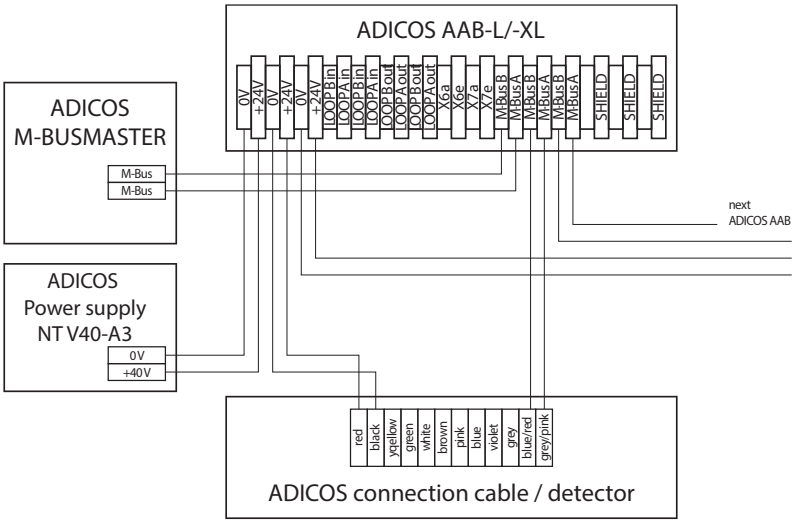
1 Open enclosure cover
2 Open cable glands
3 Route cables through the cable glands into the enclosure
4 Strip wire ends 8 ... 10 mm strip insulation
5 Connect the cores to the terminals according to the wiring diagram. To do this, press the stripped wire end firmly into the connection holes of the terminals
6 Close cable glands
7 Close enclosure cover

In the case of wiring variants with more than four cables:

Installing additional cable glands

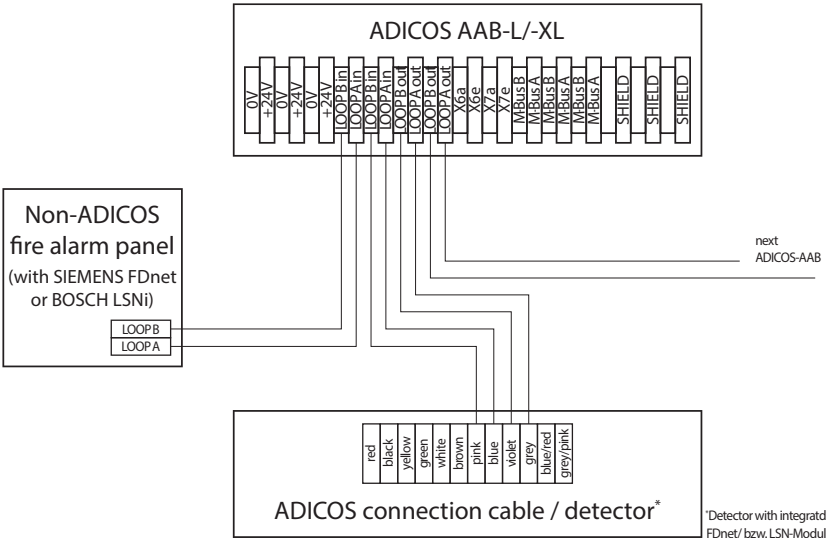
1 Open enclosure cover
2 Loosen M25 blind cable glands and lock nuts
3 Mount supplied M25 cable glands with locknuts in holes (tightening torque 12.0 Nm)

ADICOS M-BM and external power supply



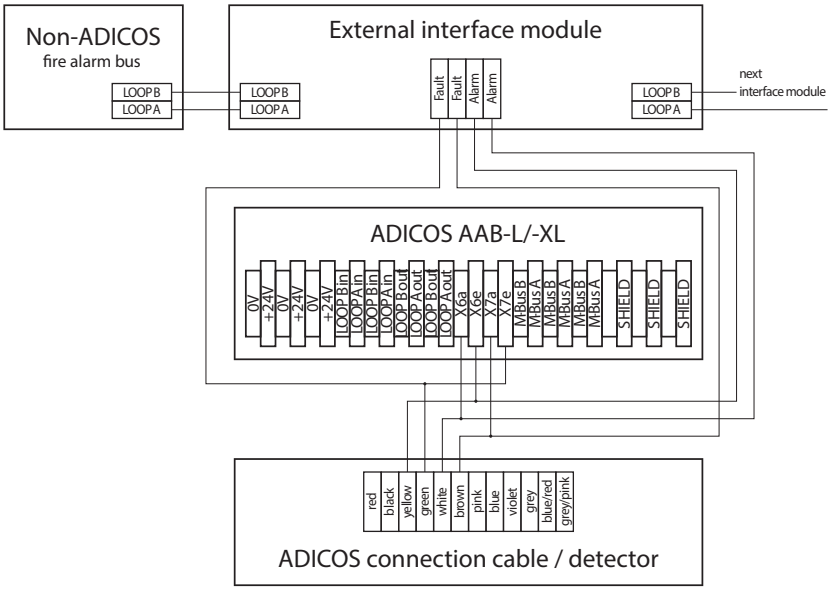
Fire Detector Loop with FDnet/LSNi (internal fire panel interface)

Tips and recommendations
For integration in BOSCH or SIEMENS fire alarm systems, ADICOS detectors must be equipped with an interface module by the manufacturer!

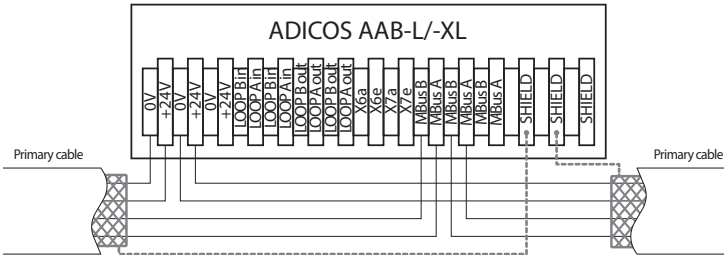


Other fire detector bus systems (external interface)

Tips and recommendations
For integration in other Non-ADICOS fire alarm systems suitable external interface modules are required.



Primary cable shielding



6 Commissioning

WARNING!
Equipment damage!
ADICOS systems work with electrical current, which can cause equipment damage if not installed properly.
- **Before switching on the system, verify that all components are properly mounted and wired.**
- **Commissioning may be performed only by properly trained personnel. (See Chap. 2.3 Personnel Qualification)**

Tips and recommendations
The ADICOS AAB-XL is a passive component.

7 Operation

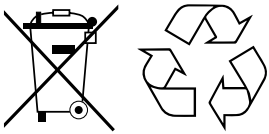
Tips and recommendations
The ADICOS-AAB-XL is a passive component. Its operating state depends on the
superordinate central unit.

8 Maintenance

In genereal the ADICOS AAB-XL does not require special maintenance.

9 Disposal

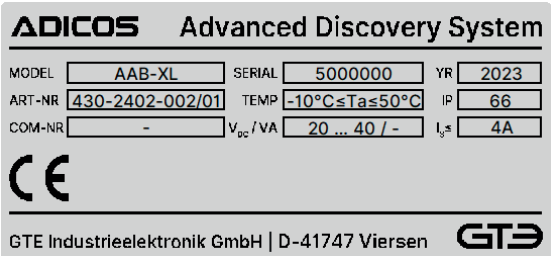
Return the product to the manufacturer after the end of the useful life. The manufacturer ensures environmental-friendly disposal of all components.



10 Technical Data

General information		
Model		AAB-XL
Article No.		430-2402-002
Dimensions (W x H x D)	mm	200 x 300 x 150
Weight	kg	4.5 (4.75 accessories incl.)
Degree of protection		IP66
Enclosure		Stainless steel junction box
Installation		Surface-mounted
Cable gland tightening torque	Nm	12.0
Electrical properties		
Cable diameter M25 glands	mm	9 ... 17
Cable diameter M35 glands	mm	11 ... 21
Max. cable cross-section	mm^2	4
Nominal cross-section	mm^2	2.5
Environmental conditions		
Permissible environment temperature	°C	-10 ... +50
Relative humidity	%	≤ 95 (non-condensing)
Installation environment		vibration-free

10.1 ID Plate



Model	Device model	SERIAL	Serial number (variable)	YR	Year of production (variable)
ART-Nr	Article number (variable)	TEMP	Ambient temperature	IP	Degree of protection
COM-Nr.	Commu-nication number (variabel)	V_{DC}/VA	Voltage range / maximum power consumption	I_s	Internal fusing (Short-circuit current)
	CE marking				