



X-AIRCONTROL

FAM-RD

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Product overview

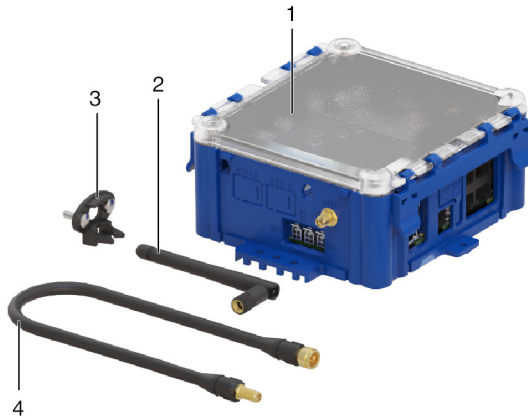


Fig. 1: FAM-RD

- | | | | |
|---|--|---|---------------------------|
| 1 | FAM-RD (Field Application Module with Radio-Duct expansion module) | 3 | Antenna mounting bracket |
| 2 | Antenna | 4 | Antenna cable, 50 cm long |

Connections and interfaces

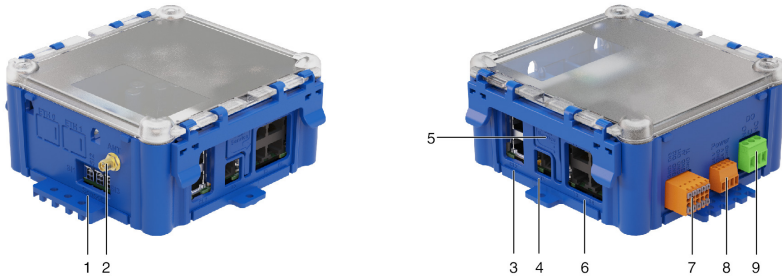


Fig. 2: Connections

Item	Description	Note
1	Sensor connections S1, S2, S3	Not used
2	Antenna connection	
3	CL1 CL2	Not used
4	T5 = X-AIRCONTROL connection	
5	Push button for enabling service port T1	
6	T1 = service and multi port T2 -T4 = multi ports	T2-T4 not used
7	Digital input 1 (DI1 + GND) Digital input 2 (DI2 + GND) Digital input 3 (DI3 + GND) Analogue input 1 (AI1 + GND) Temperature input (TI1 + GND)	Not used
8	Power = power supply	
9	Digital output DO (NO, C, NC)	Not used

General information

About this manual

This operating and installation manual enables operating or service personnel to correctly install the TROX product described below and to use it safely and efficiently.

This operating and installation manual is intended for use by fitting and installation companies, in-house technicians, technical staff, instructed persons, and qualified electricians or air conditioning technicians.

It is essential that these individuals read and fully understand this manual before starting any work. The basic prerequisite for safe working is to comply with the safety notes and all instructions in this manual.

The local regulations for health and safety at work and general safety regulations also apply.

This manual must be given to the system owner when handing over the system. The system owner must include the manual with the system documentation. The manual must be kept in a place that is accessible at all times.

Illustrations in this manual are mainly for information and may differ from the actual design.

Other applicable documentation

In addition to these instructions, the following documents apply:

- FAM-RD product information
- X-AIRCONTROL commissioning and service manual
- Project-specific wiring documents

Complete documentation



Installation and operating manual

This document is the installation manual for the product.

For more information on commissioning and operation please refer to the installation and operating manual. You can download the manual from our website www.troxtechnik.com.

TROX Technical Service

To ensure that your request is processed as quickly as possible, please keep the following information ready:

- Product name
- TROX order number
- Delivery date
- Brief description of the fault

Online	www.troxtechnik.com
Phone	+49 2845 202-400

Limitation of liability

The information in this manual has been compiled with reference to the applicable standards and guidelines, the state of the art, and our expertise and experience of many years.

The actual scope of delivery may differ from the information in this manual for bespoke constructions, additional order options or as a result of recent technical changes.

The obligations agreed in the order, the general terms and conditions, the manufacturer's terms of delivery, and the legal regulations in effect at the time the contract is signed shall apply.

Warranty claims

The provisions of the respective general delivery terms apply to warranty claims. For purchase orders placed with TROX GmbH, these are the regulations in section "VI. Warranty claims" of the Delivery Terms of TROX GmbH, see www.trox.de/en/.

Copyright

This document, including all illustrations, is protected by copyright and pertains only to the corresponding product.

Any use without our consent may be an infringement of copyright, and the violator will be held liable for any damage.

This applies in particular to:

- Publishing content
- Copying content
- Translating content
- Microcopying content
- Saving content to electronic systems and editing it

Safety notes

Symbols are used in this manual to alert readers to areas of potential hazard. Signal words express the degree of the hazard.

Comply with all safety instructions and proceed carefully to avoid accidents, injuries and damage to property.



DANGER!

Imminently hazardous situation which, if not avoided, will result in death or serious injury.



WARNING!

Potentially hazardous situation which, if not avoided, may result in death or serious injury.



CAUTION!

Potentially hazardous situation which, if not avoided, may result in minor or moderate injury.



NOTICE!

Potentially hazardous situation which, if not avoided, may result in property damage.



ENVIRONMENT!

Environmental pollution hazard.

Safety

Correct use

FAM-RD is used as part of X-AIRCONTROL for radio-based data transmission through ducting.

The data is transmitted in two directions between zone module and zone master.

Correct use requires that both the transmitter module and the receiver module are placed in the same duct system, i.e. either in the supply air duct or in the extract air duct. FAM-RD must not be used outdoors.

Residual risks

A power failure will interrupt data transmission. If a system has to be highly reliable and available, you should take backup measures to prevent problems in case of a power failure.

Also, the radio communication between the various nodes of an X-AIRCONTROL system can be interrupted by interference. This, too, may lead to transmission losses.

If a system has to be highly reliable and available, a wired connection is the better option for data transmission.

Incorrect use

Do not use the product for areas of application that are not described in this manual.

Do not use the product:

- outdoors
- in wet areas
- in areas with potentially explosive atmospheres

Dangers and risks

! NOTICE!

Risk of damage to property due to large temperature differences

If any electronic components have been kept in an unheated area, condensation may form and damage the electronic components beyond repair.

- Before you start commissioning, make sure that all devices have warmed up to the ambient temperature. Only after about 2 hours will the system have reached ambient temperature.

! NOTICE!

Risk of damage to property due to foreign matter and liquids!

Foreign matter and liquids that get into the unit may damage the electronic parts.

- Remove foreign matter, if any.
- If the device emits a smell or smoke, have it checked by the manufacturer.
- If liquid gets into the module, let the module completely dry before commissioning.

! NOTICE!

Risk of damage to property!

Over tightening the fixing screws may damage the device.

- Tighten the screws only finger-tight.

Qualified staff

The work described in this manual has to be carried out by individuals with the qualification, training, knowledge and experience described below:

Skilled qualified electrician

Skilled qualified electricians are individuals who have sufficient professional or technical training, knowledge and actual experience to enable them to work on electrical systems, understand any potential hazards related to the work under consideration, and recognise and avoid any risks involved.

Delivery and storage

Supply package

Check delivered items immediately after arrival for transport damage and completeness.

Supply package

- FAM-RD
- Antenna
- Antenna cable, 50 cm long
- Antenna mounting bracket
- Installation and operating manual

Transport

- If possible, take the product in its transport packaging up to the installation location.
- Do not remove the protective wrapping until just before installation.

Storage

For temporary storage please note:

- Leave the product in its packaging and do not expose it to the effects of weather.
- Store the product in a dry place and away from direct sunlight.
- Temperature -10 °C to +70 °C, humidity 90% max. (no condensation)

Packaging

Properly dispose of packaging material.

Technical data

Dimensions

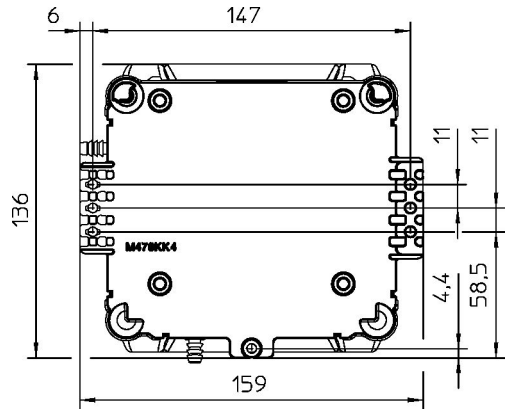


Fig. 3: Dimensions and fixing points

Technical data

Radio frequency	2.4 GHz
Max. radio transmission output	100 mW
Power rating	5 VA
Encryption	128 bit AES
Power supply	24 V AC or DC
IEC protection class	III (protective extra-low voltage)
Ambient temperature	10 to 50 °C
Protection level	IP20
CE conformity	<ul style="list-style-type: none"> ■ EMC directive 2014/30/EU ■ RoHS 2011/65/EU ■ Radio equipment directive 'RED 2014/53/EU'
Weight	500 g

Installation

General installation information

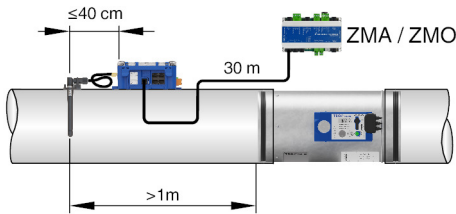


Fig. 4: Positioning

Please note:

- All modules that should communicate via radio have to be installed in the same duct system, i.e. either in the supply air duct or in the extract air duct.
- Place the antenna at least 1 m away from control dampers, shut-off dampers and measuring devices.
- The distance between the RadioDuct module and the antenna must not exceed 40 cm.
- The distance between the RadioDuct module and ZMA / ZMO must not exceed 30 m.
- Fix the antenna in the middle of the duct wall (applies to rectangular ducts).

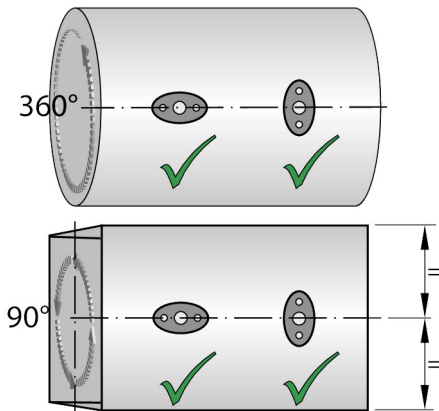


Fig. 5: Position on ducts

Fixing the antenna mounting bracket

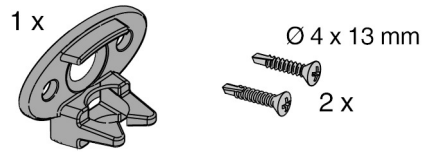


Fig. 6: Fixing material (not included in the supply package)

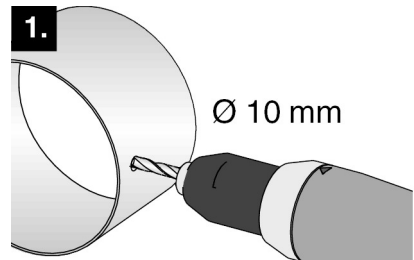


Fig. 7: Drill a hole Ø10 mm

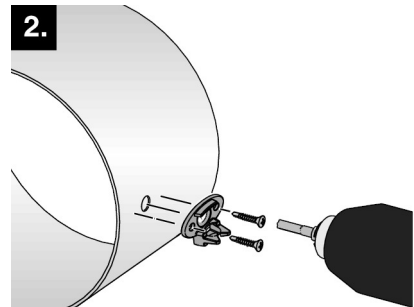


Fig. 8: Use the screws to fix the bracket

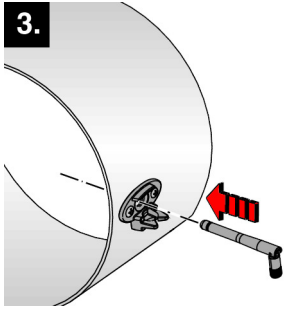


Fig. 9: Insert the antenna so that it locks into place

Electrical connection

General information

Connecting the power supply

Personnel:

- Skilled qualified electrician
- Supply voltage ↪ 'Technical data' on page 6
- Do not connect more than 5 RadioDuct modules in series using the double terminals.
- Note that a series connection with a zone master or zone module requires 24 V AC supply.

Modbus connection

Connect FAM-RD and zone master or zone module with an RJ12 cable:

- Type AWG26/6C
- RJ12 plug (6P6C)
- Max. length 30 m

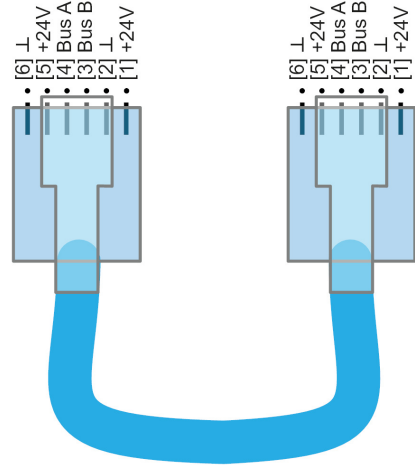


Fig. 10: 1:1 Modbus connection

Wiring examples

Zone master

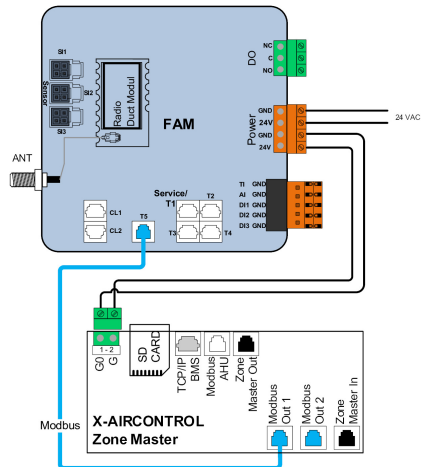


Fig. 11: Connection to zone master – data connection (Modbus) and external power supply

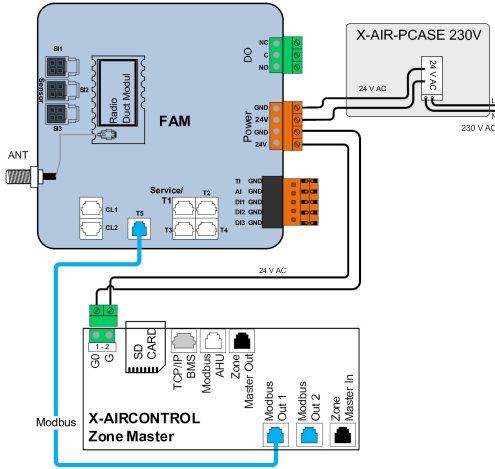


Fig. 12: Connection to zone master – data connection (Modbus) and power supply with X-AIR-PCASE230 V

Zone module

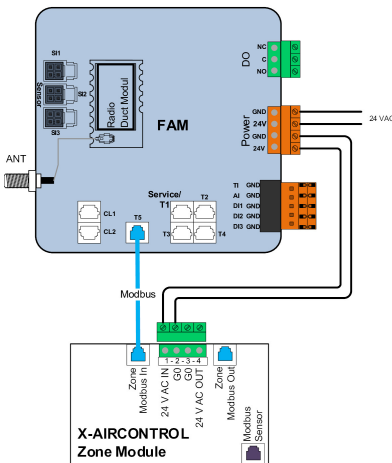


Fig. 13: Connection to zone module – data connection (Modbus) and external power supply

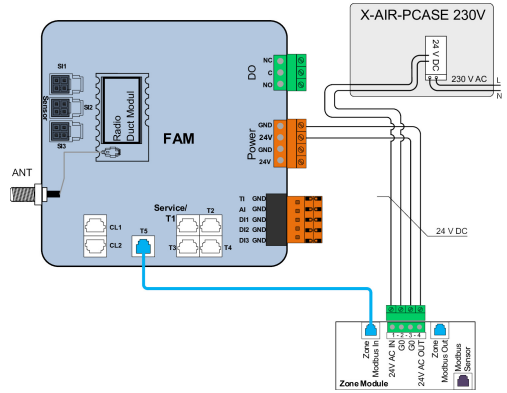


Fig. 14: Connection to zone module – data connection (Modbus) and power supply with X-AIR-PCASE230 V

Complete documentation



Installation and operating manual

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