ADPRO® PRO

Passive-Infrared Perimeter Intrusion Detection Systems (PIR PIDS)

Installation Guide

July 2015

Document: 27386_04

ADPRO® by xtralis®

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Document Conventions

The following typographic conventions are used in this document:

Convention	Description
Bold	**Used to denote:** emphasis Used for names of menus, menu options, toolbar buttons
Italics	**Used to denote:** references to other parts of this document or other documents. Used for the result of an action.

The following abbreviations are used in this document.

Abbreviation	Description
AA	Aperture Angle
CZ	Creep Zone
PID	Perimeter Intrusion Detector
PIDS	Perimeter Intrusion Detection System
PIR	Passive-Infrared

The following icons are used in this document:

Convention	Description
	**CAUTION!** This icon is used to indicate that there is a danger to equipment. The danger could be loss of data, physical damage, or permanent corruption of configuration details..
	**DANGER!** This icon is used to indicate that there is a danger of electric shock. This may lead to death or permanent injury.
	**WARNING!** This icon is used to indicate that there is an immediate danger of falling, which may lead to death or permanent injury, such as if unsecured ladders that can slip are used. Additional information: also see guidelines on “Workplace Safety” applicable locally.
	**NOTE!** This icon is used to highlight useful advice and recommendations as well as information for an efficient and trouble-free operation.

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1 General Notes

1.1 Information about this guide

Use of the guide	This guide provides information for the safe and efficient installation/handling of the device. For defect-free functioning of the device, all instructions in this guide must be followed.
Compulsory reading	This guide must be read carefully before installation of the device.
Diagrams in this guide	The diagrams in this guide are for a basic understanding only and may differ depending on the version of your device.
Loss of guide	A replacement copy can be ordered from Xtralis if this guide is lost, or downloaded from the Xtralis Security Solutions Support site at www.xtralissecurity.com. You can find contact details on page 2.
Information in this guide	The information and safety instructions in this guide were composed in accordance with the latest standards, guidelines and rules and the state of the technology, and are based on many years of experience. The materials delivered with the device or the device features may differ from the descriptions and diagrams in this guide, depending on whether any optional items have been ordered, or special versions have been manufactured, or if there have been recent technical changes.

1.2 Warranty

Terms of Warranty	The terms of warranty are defined in the sales agreement and in the manufacturer's general terms of business.
Preconditions	The manufacturer is entitled to a final decision on a warranty claim in respect of the return of defective parts (if necessary after a test on site). The warranty period for the device does not get extended when defective parts are replaced. All changes or major repairs by the user or a third party without the written approval of the manufacturer will lead to a cancellation of the warranty.

1.3 Customer Service and Product Monitoring

Customer Service	For errors and problems which cannot be rectified with the help of the information in this guide, or for technical questions, please contact our customer service. You can find contact details on page ii.
Product Monitoring	Our aim is to improve our products continually. We are therefore interested in your experience with the product. We welcome your feedback regarding any malfunctioning of the device during the use of the product. Please inform the manufacturer of any incidents or malfunctioning.

1.4 Proper use

Xtralis ADPRO detectors are designed to detect the presence in sensitive areas of individuals without access authorization (in this guide, "intruder") and to initiate intervention measures speedily or cause a camera to switch on for a further analysis of the event.

1.5 Applicable documents

1.5.1 Guides

- ADPRO PRO E Introduction to PIR Technology Guide, document no. (27385)
- ADPRO PRO E PIR System Setup Guide, document no. (26571)
- ADPRO PRO E PIR System Design and Planning Guide, document no. (27387)
- VdS Directive System Components for Perimeter Monitoring VdS3456
- prEN50606 External Perimeter Security Systems (in development)

1.5.2 Xtralis Websites

www.xtralis.com

Xtralis Security Solutions Support Site

www.xtralissecurity.com

You can find data sheets as well as commercial information in the public area of the website. Registration is free, and our partners have access to detailed information such as guides, Xtralis white papers, presentations, images, videos, certificates, as well as software and drivers free of charge.

Landing page ADPRO PRO E Passive-Infrared Detectors

www.xtralis.com/adpro_pro_e_detectors

Xtralis Product Videos

www.xtralis.com/video.cfm

1.6 Safety precautions

This section contains an overview of all important safety precautions to be taken for smooth and reliable operation.

Non-observance of the instructions/warnings in this guide can lead to injury or death.

1.6.1 Responsibilities of the User

General	The safety instructions in this guide are meant to ensure user safety and prevent accidents. In addition, environmental protection standards must be taken into consideration in positioning the device.
Defect-free technical condition	To guarantee that the device remains in defect-free technical condition, the maintenance instructions described in this guide must be followed.

1.6.2 Personnel requirements and qualifications

This guide assumes the following qualifications for the various tasks described in the guide:

Electricians	Electricians having the educational background, experience and knowledge of standards, regulations and procedures that qualify them to work on electrical systems and risk detection.
System integrators	Skilled system integrators having the educational background, experience and knowledge of standards, regulations and procedures which qualify them for work on alarm/IT systems and risk detection.

1.7 Environmental protection

1.7.1 Damage to environment

ATTENTION:

Risk to environment through improper use!
Improper use of substances that are hazardous to the environment, and in particular their improper disposal, can cause substantial environmental damage.
Hence:

- Always follow the instructions in this guide
- Initiate appropriate measures immediately if environmentally hazardous substances are released into the surroundings. Inform the responsible local authority of the damage in case of doubt.

1.8 Transportation, Packaging and Storage

1.8.1 Transportation

Note: To prevent damage, all components should always be transported in their original packaging.

1.8.2 Packaging

- **Packaging**
  Detectors and their accessories have been adequately packaged for proper transportation/warehouse storage. Only eco-friendly materials have been used for packaging.
  Packaging protects against damage during transit, corrosion and other damage, and should not be destroyed or disposed off.
- **Handling packaging materials**
  If packaging materials are no longer needed nonetheless, you must dispose of the packaging materials in keeping with applicable statutory regulations and local guidelines.

WARNING:

Environmental damage through improper disposal!
Packaging materials are valuable raw materials which can often be used, recycled and reused in many instances. Please dispose of packaging materials in an environmentally friendly manner.
Please comply with local disposal regulations.

- **Unpacking**
  Detectors are typically delivered as an individual product along with instructions for use; no further documentation comes with the product. Documentation and resources, such as the latest version of the planning and installation guide, ADPRO PRO PIR e-data sheets and e-brochures, drivers and software tools etc., can be downloaded free of cost from the Xtralis Security Solutions Support Site at www.xtralissecurity.com
  While unpacking the detector, please take the usual electrical and electrostatic (ESD) precautions by providing sufficient earthing, and observe applicable work safety guidelines.

CAUTION:

Dismantling the detector may lead to permanent damage or even loss of warranty.
Operating a detector outside the operating voltage or temperature range specified for it can also lead to permanent damage.
A detector contains sensitive electrostatic components and should be handled accordingly.

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2 Installation

2.1 Preparatory instructions

2.1.1 Safety precautions

WARNING:

Risk of injury due to improper installation and commissioning!
Improper installation and commissioning can lead to serious injury or damage.
Hence:

- Work on the electric system should be performed only by qualified electricians
- Look out for openly accessible, sharp-edged parts.
- Before installation, make sure the device has not been damaged during transportation.
- Before installation, make sure that all transport packaging and/or transport safeguards have been removed from the device
- The housing of the intrinsically safe XtralisADPRO PRO E-detectors are made of non-metallic material.
- To prevent electrostatic charge, clean only with a damp cotton cloth!

DANGER:

Danger of fall!

There is acute danger when working with unsecured ladders. Unsecured ladders can slip and lead to falls with serious injuries.
Hence:

- Safe approach roads should be provided for all scaffolding and other places of work.
- All locations where work is performed and their access points must be sufficiently well-lit.
- All ladders must be securely fastened and long enough to provide secure support for hands and feet at all locations used.
- Additional instructions: Local guidelines on "Work Safety" must be compulsorily observed.

2.2 Instructions on cabling

Note: To prevent water ingress, ensure the following:

- Avoid assembly in rain and prevent soaking in the rain through appropriate means
- Maintain the minimum diameter for cables
- Always place the plastic safety washer into the unused screwed cable gland correctly

In preparation for the detector assembly, comply with local cable installation regulations and applicable norms. Standard minimum distances must be maintained particularly in the vicinity of electric high-power lines, because line signals may get affected otherwise and may lead to inaccurate measurements or even false alarms.

2.3 Lightning and overvoltage protection

WARNING:

To protect detectors from permanent damage due to a direct lightning strike when mounting on a pole, detectors (or other devices such as camera or IR lighting) must never be mounted directly at the top of the pole, instead a custom-calculated safe distance must be maintained above the detector.

WARNING:

If mounting is not possible due to circumstances on the ground (pole too short in height, for example), extensive lightning protection measures, such as installing air terminal rods as shown above, must be taken

The following norms must also be observed in this regard:

- DIN CLC/TS 61643-12 (VDE V 0675-39-12):2010-09: Overvoltage protection devices for L.T. - Overvoltage protection devices for specific applications, including DC voltage.
  - Section 12 - Principles of selection and use – Overvoltage protection devices for use in photovoltaic installations
- IEC 62305 (international) or EN 62305 (Europe) Lightning Protection
  - Section 1 - General principles
  - Section 2 - Risk Management
  - Section 3 - Protection of building installations and people
  - Section 4 - Electrical and electronic systems in building installations
- EN 61663-2 Lightning Protection – Telecommunications cables
  - Section 2 - Cables with metallic conductors

- EN 61643-11 Overvoltage protection devices for L.T.
  - Section 11 - Overvoltage protection devices for use in L.T. systems - standards and test procedures
- EN 61643-21 Overvoltage protection devices for L.T.
  - Section 21 - Overvoltage protection devices for use in telecommunications and signal-processing networks – performance standards and test procedures

These instructions do not claim to be complete and must be supplemented if necessary with other local, national and international standards (such as VdS Guideline VdS 2833, overvoltage protection measures for alarm/fire extinguisher control systems or VdS Safety Guidelines Perimeter VdS 3143).

Recommendation

You can request more information and professional advice from the following manufacturer:

STRETCH + SÖHNE GmbH + Co. KG.
Hans-Dehn-Str.1
D-92318 Neumarkt
Postfach 1640
D-92306 Neumarkt
Tel.: 0049 (0)9181 906-0
Fax: 0049 (0)9181 906-1100
E-Mail: info@dehn.de
Contact: www.dehn.de/de/kontakt

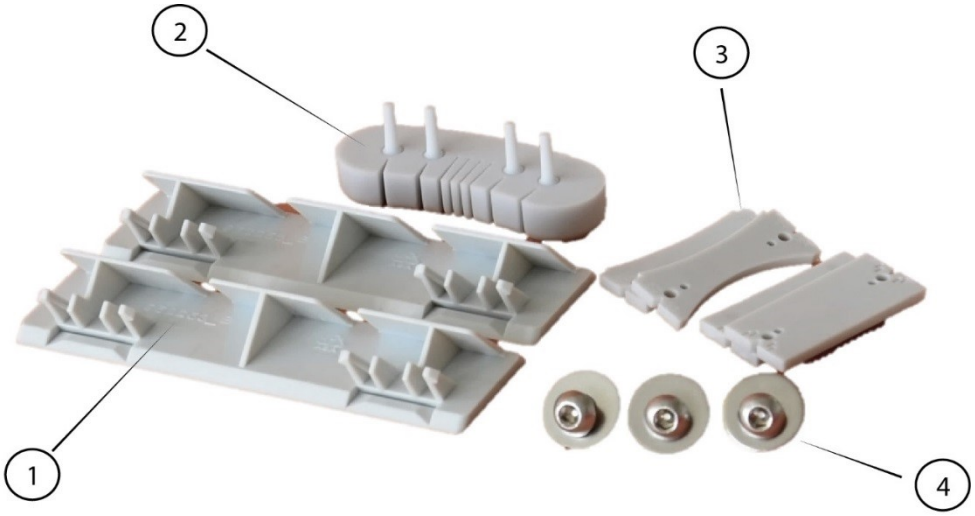
2.4 Detector Assembly

Notes:

- The range of ADPRO® PRO E-detectors offered is extensive, and we can cover only basic mounting here.
- Installation instructions for each product must be followed with respect to detector dimensions, attaching parts and specific features.
- The stipulated mounting height of 2.5 m to 4 m above ground should be maintained. 4 m is the minimum height at which the detector operates at its standard maximum range and is also optimally tamper-proof.

2.4.1 Assembly material provided

Before installation, check whether all required materials have been supplied with the detector.



1. Panels
2. Cable seal
3. Molding: straight and rounded
4. Hexagon socket screws with washers

2.4.2 Required tools

- Folding ruler
- Cross screwdriver
- Hexagon socket screw driver 4 mm
- Flat-tip screwdriver 2 mm (pole assembly)
- Suitable screwdriver, shank length at least 180 mm (wall mount)
- Engineer's pliers
- Cutter (knife)

2.5 Pole mounting of detector holder

WARNING:

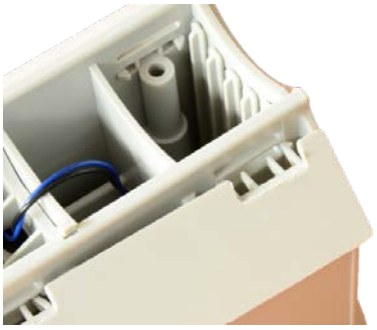
Ensure that cables are neatly in place before tightening the clamps to avoid damage to cables through forcible pressing and buckling.

Due to the low net weight of ADPRO PRO E-detectors, mounting is designed to use standard hose clamps with a screw flight (not provided).

Follow the installation instructions below:

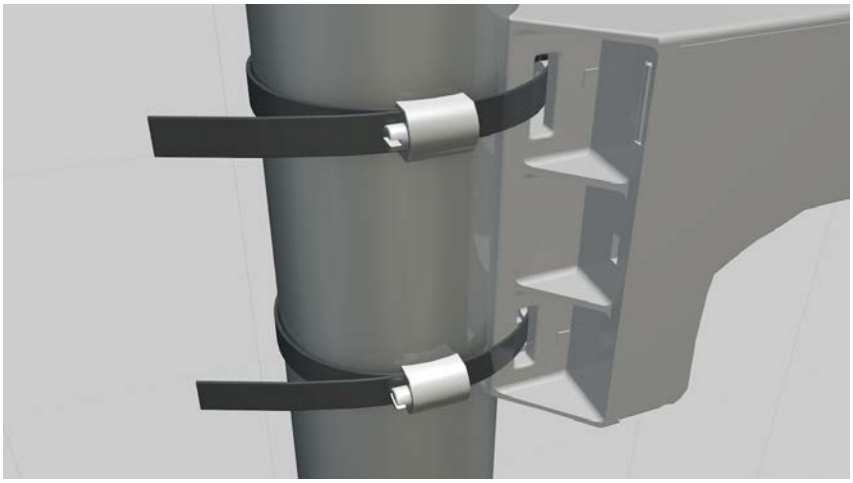
1. Break off the grooves for the screw clips from both panels as shown.

2. Insert both panels as shown. Lock the panels in place with an audible click.



3. Insert the rounded molding (marked in red here) into the detector arm as shown.

4. Choose screw clips of a suitable diameter depending on the pole.



5. Guide the cables through the cable entry point in the detector arm casing.

Notes:

- At this time, align the detector arm approximately at the pole:
- The detector should be attached on the side of the pole to make subsequent alignment using the alignment telescope easier.
- This can be configured accurately later at the time of commissioning without loosening the clips. (Installation of detector in detector holder Pg.11)

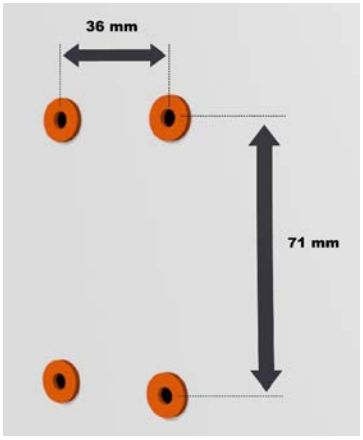
6. Manually tighten the screw clips uniformly.

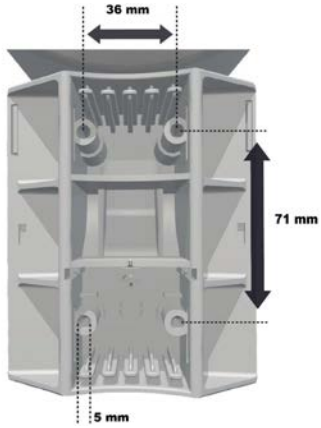
2.6 Wall installation of detector holder

Notes:

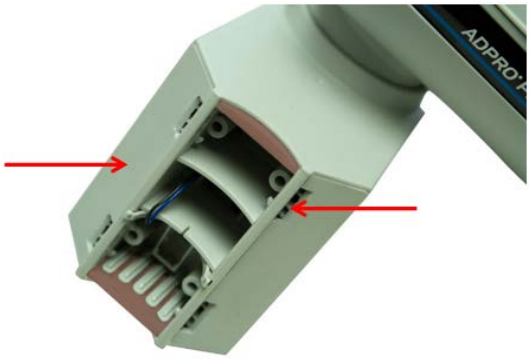
- Ensure that the wall is sufficiently sturdy. If you mount on thin and dry construction walls, use special hollow cavity plugs if necessary.
- Use sufficiently long screws with an external diameter of at most 5 mm and a flat screw head.

1. Drill and dowel as shown on a suitable wall.

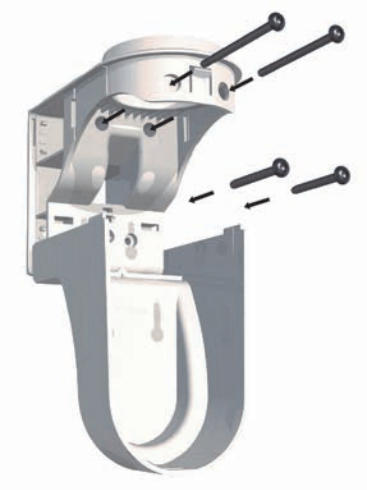




2. Insert the straight moulds (marked in red) as shown into the detector arm.

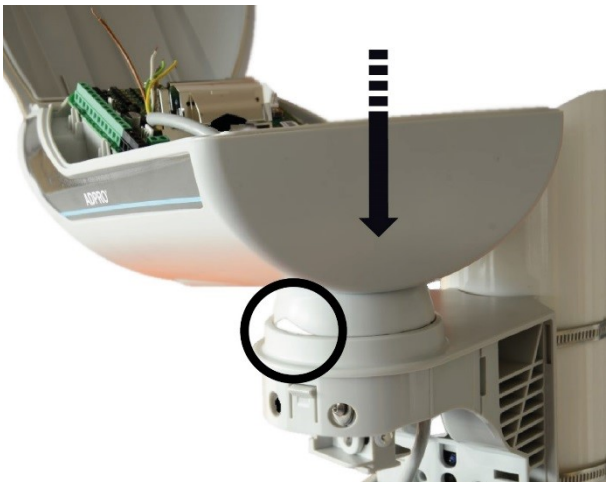


3. Screw in the detector arm as shown, using suitable screws. The upper screws should have a threaded length of a min. of 75 mm and the lower screws a min. of 60 mm.



2.6.1 Installation of detector in detector holder

1. Place the detector as shown and press it in lightly into the detector arm till it locks into place and the lateral notches are no longer visible.



2. Insert the three hexagon socket screws supplied as shown and screw these in so that the detector does not wobble appreciably but can still move horizontally. Do not tighten!

3. Align the detector horizontally carefully.

2.7 Installation

2.7.1 Cabling

In the design of the detector and integrated detector holder, great care was taken to see that cabling (cable management) could be installed very easily and quickly, and yet provide the highest level of tamper protection, a veritable boon for the installer. The centerpiece of the solution is a patented self-sealing kidney-shaped cable seal (Kidney Seal) which allows premanufactured cables with plugs to be used.

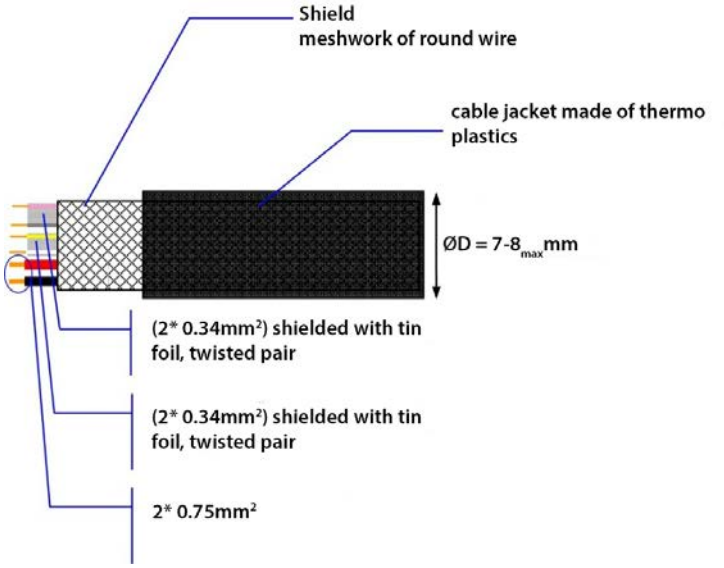
Both the cabling and the housing cover can be opened and closed easily using screwed plugs or click connectors.

WARNING:

- To protect detectors from permanent damage due to potential differences, ensure that if AC voltage is supplied, all detectors are connected identically and L1 (+) and N (-) on the secondary-side are not interchanged.
- To eliminate confusion and make your work easier, we recommend the use of colored or coded cables – even if AC voltage is used (Multiple detectors at interface module IFM-485-ST Pg.35)

2.7.2 Recommendations for cable use

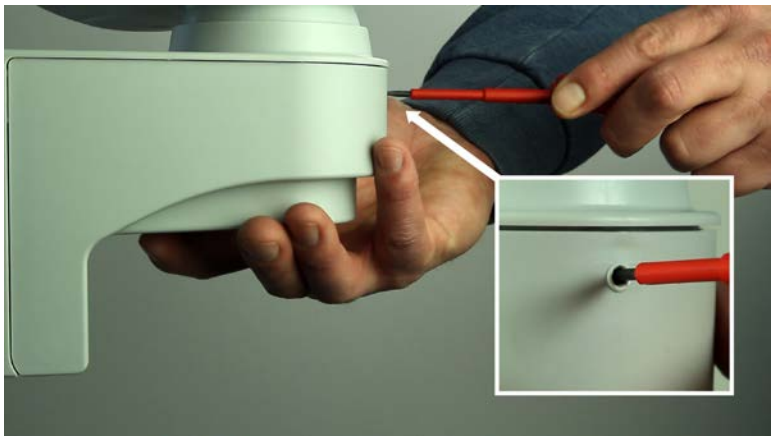
The following are the cable specifications for PRO E-detectors (cable colours may vary):



Peak voltage: 50V AC
Temperature range: -40 .. 80°C
Test voltages: Wire/wire 1500 V, wire/shield 1200 V

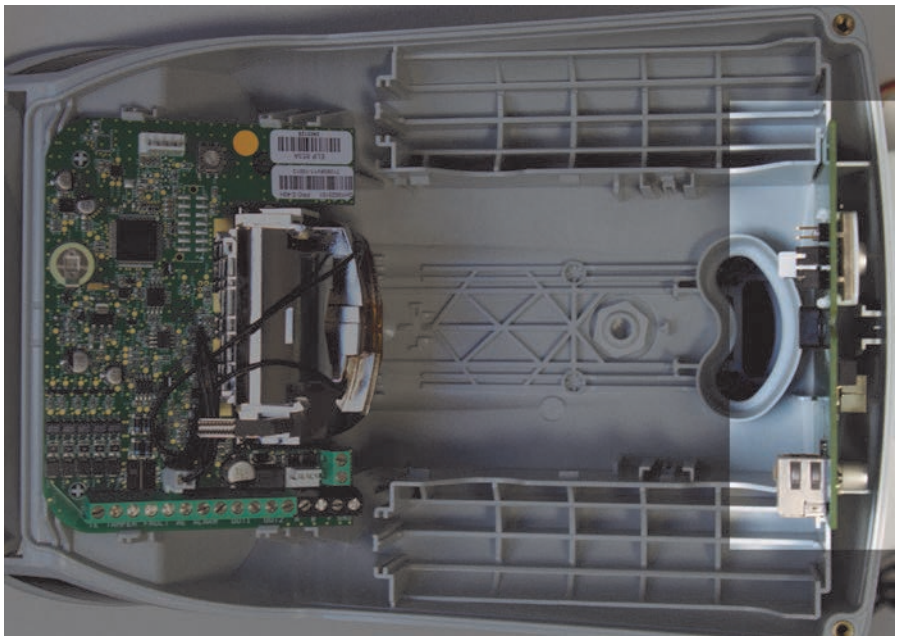
2.8 PRO E-Series Installation steps

1. Remove the cable insulation on the terminal side by approx. 3 mm.
2. Open the detector arm as shown.



3. Open the housing cover by unscrewing both housing screws.

4. Install the IP module, part number: CH12005001 (optional):
   The IP module is an accessory and is not included in delivery of PRO E detectors. Using the IP Module (IPM) converts the RS-485 bus to Ethernet and makes it available remotely through the IP address of the module. The IP module will be powered via an external PoE connection. The IP module powers the PRO E detector via an own cable (within the scope of delivery of PRO E-IPM).

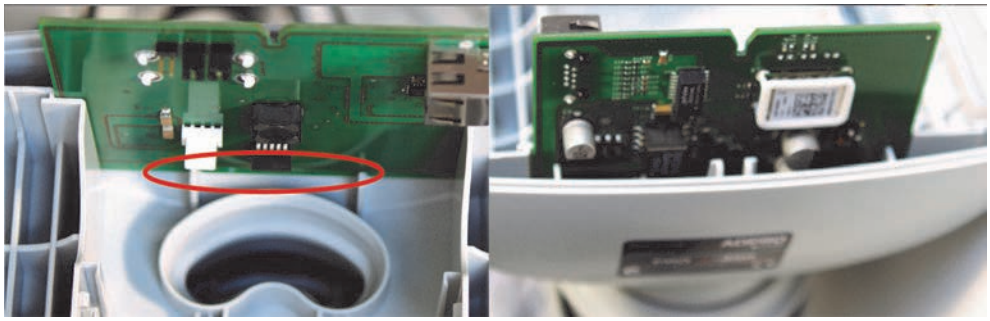


Note: If you do not use an IP module at this time, skip the installation of the IP module and continue installation from step 5.

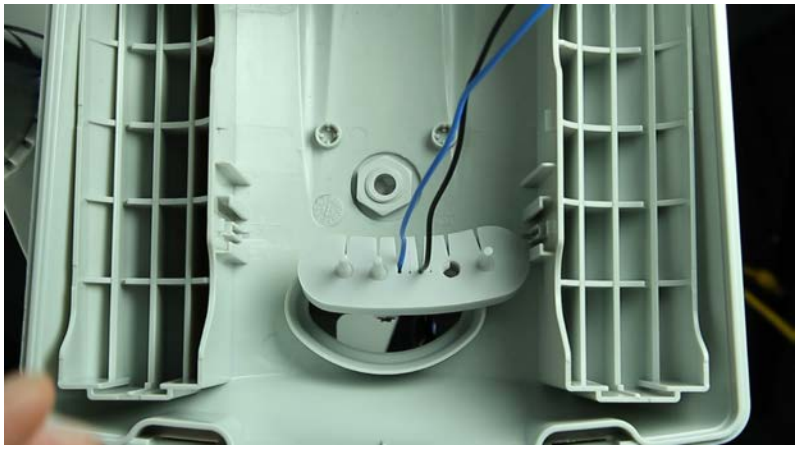
CAUTION:

To avoid damage to the IP module and cabling as well as to the detector housing, the installation instructions below must be followed.

Insert the IP module carefully as shown and push it in with moderate strength, until it locks into the slot as shown. See the ADPRO PRO E PIR System Setup Guide, document no. (26571), PRO E-IPM (IP Module) section for more details.



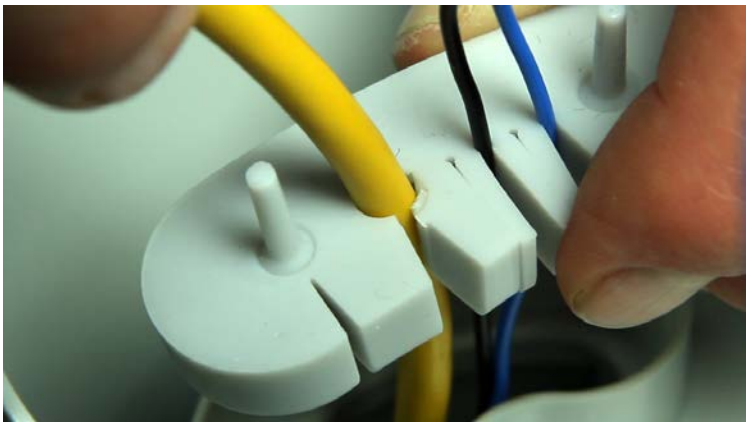
5. Take out the cable seal so that all cables can be fed without problem through the channel.



6. Feed all cables from underneath through the channel into the detector housing.

7. Check the number and diameter of all cables used.
8. For cables of larger diameters, remove material from the patented cable seal with a knife at the spots provided if necessary.

9. Feed all cables through the seal as shown, based on their diameter.



CAUTION:

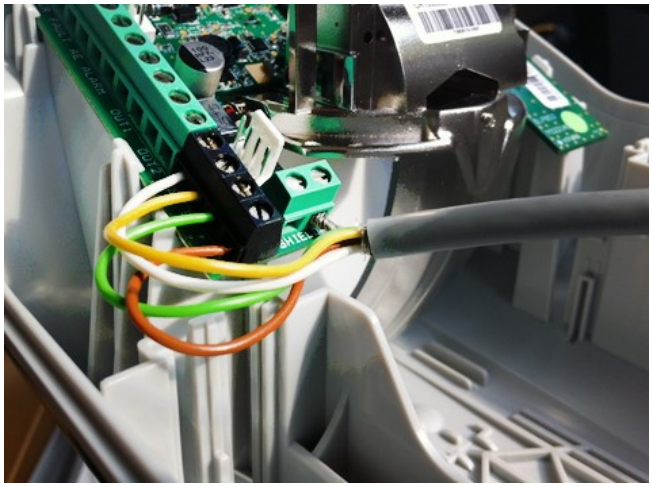
If you have erroneously removed one groove too many from the cable seal, close it with a piece of cable remnant of appropriate diameter to maintain IP 65 rating.

10. Now insert the cable seal with the cables fixed in it into the housing so that it interlocks as shown. Check that the seal is seated correctly with a positive fit.

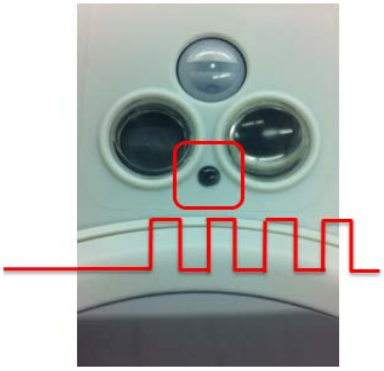
Power Supply

CAUTION:

- It is recommended to use an EN50131-6 compliant power supply.
- The minimum voltage at the detector should not fall below 11.7 VDC in any operating condition.
- For PRO E-detectors of version "H", heating power consumption must be considered when defining the main power supply.

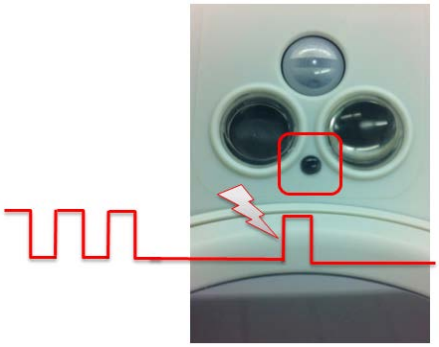


12. Connect the power supply and bus cable as shown, the red Front LED blinks slowly to indicate that the power supply is connected, as long as the cover is open.



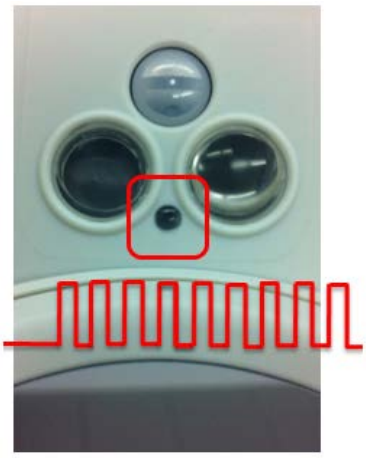
13. Close the housing cover, torque 0.5 Nm.

Closing the cover activates the Test mode. The red front LED stops blinking and flashes during alarms.



14. Align the detector (see "Alignment with the help of the telescope" on page 27), adjust the settings using the PRO software (see the ADPRO PRO E PIR System Setup Guide, document no. (26571), Use of ADPRO PRO E-Tool Software section) and confirm through walk tests.
15. Close the detector bracket.

Once the performance of the detector is satisfactory, close the bracket to start operation. Properly closed, the flap clicks in with an audible click. The red front LED blinks quickly until position and sensor readings are final. If the LED does not start blinking, please refer to "Fine adjustment of tamper switch" on page 19.



After 30-60 seconds all sensors have finalised their internal setup and are active. The front LED is permanently deactivated and the detector is fully operational.

2.8.1 Fine adjustment of tamper switch

Note: If everything is correctly wired and no component of the tamper protection mechanism reports tamper, the LED in the detector starts to blink for approx. one minute.
There are tamper switches both in the detector housing as well as in the cable routing. Before configuring the rear tamper switch, therefore, make sure that the housing and cabling are correctly closed as described above.

All ADPRO PRO E-detector are equipped with a tamper switch in series, which detects any attempt to remove the detector from its mounting point (pole or wall) in compliance with standards.
This switch must be configured such that even a minor loosening of a screw triggers a tamper alarm. The rear tamper switch must therefore be mounted on the surface finish of the pole or wall if possible.

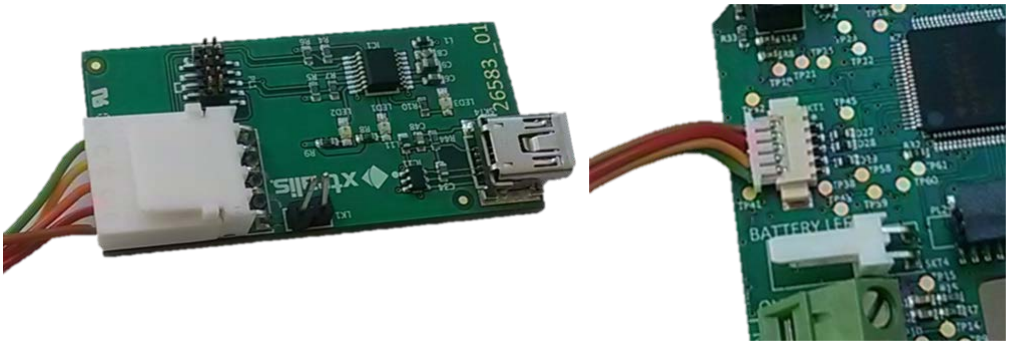
Configuring the rear tamper switch:

1. Check to see if the detector housing is properly closed.

2. Rotate the lower hexagon socket screw into the detector arm as shown until the tamper switch opens as provided and the LED starts to blink.

3. Turn the screw another two or three rotations. The LED should continue to blink.

2.9 PRO E-RF Installation steps



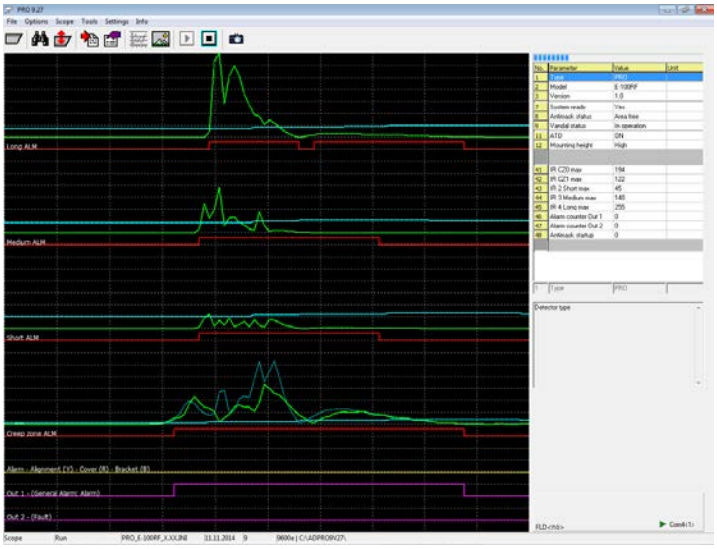
PRO E-RF detectors use the PRO E-IFM-RF as a custom data interface instead of standard RS-485 in order to reduce power consumption.

Note:

- Once connected to the PC, installation, drivers and use are the same as with the RS-485 interface (IFM-485-ST). See the ADPRO PRO E PIR System Setup Guide, document no. (26571), PRO E-Tool Software section.

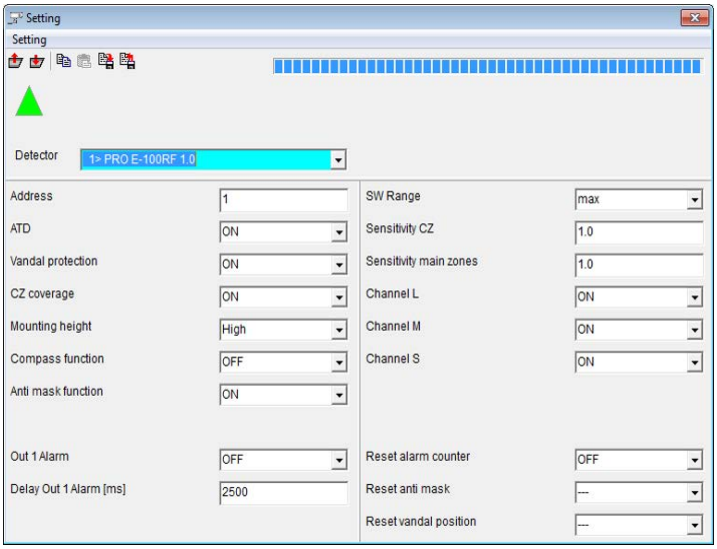
PRO software (Version 9.27 and up) fully supports PRO E wireless detectors, once connected via PRO E-IFM-RF module.

All sensors, thresholds and alarm channels appear in real time as shown below:



All settings are identical to the standard PRO E detector, but reflect PRO E-RF features (only one output, no proximity switch to reset in cover to reset).

When using SW settings, make sure that DIP switch 1 & 2 are off (default).

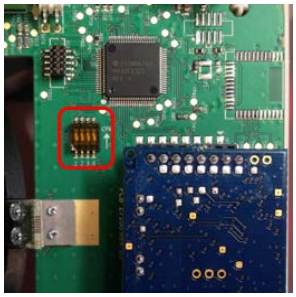


The same steps are used for commissioning both standard and wireless PRO E detectors. However, there are some differences as mentioned below:

- DIP switches
- Connecting the RF transmitter to the receiving panel
- Custom data interface
- Final commissioning procedure

Please refer to the PRO E guide for site layout, mounting, alignment, software settings, etc.(see the ADPRO PRO E PIR System Setup Guide, document no. (26571), Use of ADPRO PRO E-Tool Software section).

As with the standard detectors, it is always recommended to use the SW interface for fine tuning, but since the specific RF interface might not be always at hand, DIP switches can be used as well:

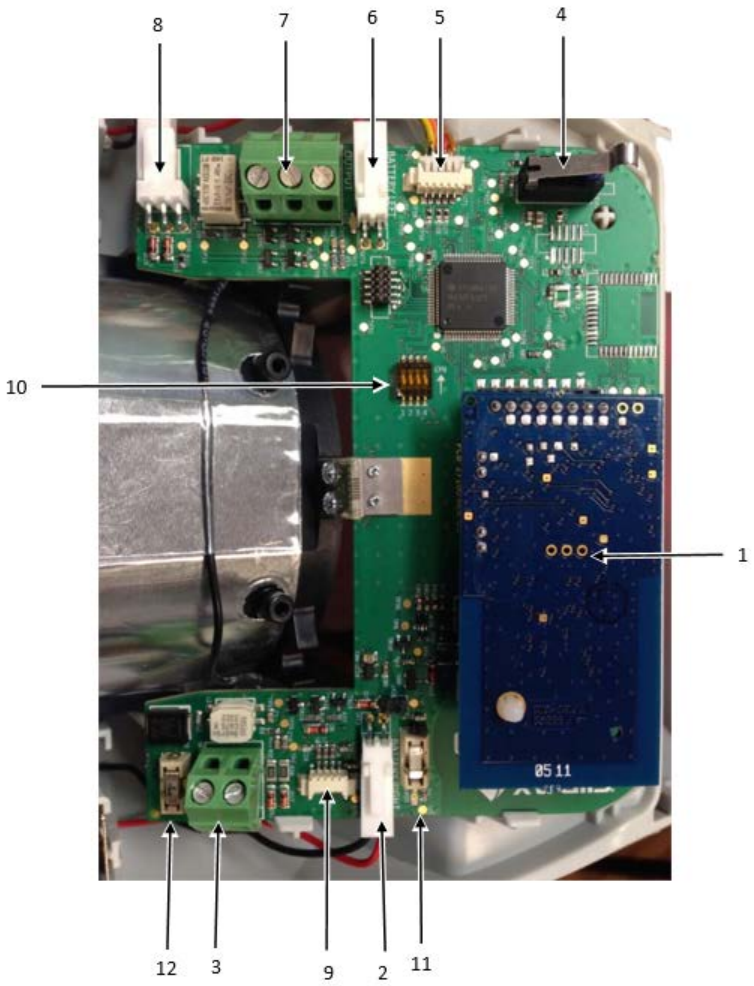


DIP 2	DIP 1	Function
off	off	SW-Mode/ Sensitivity according to SW settings (default: 100%)
off	on	HW-Mode/ Sensitivity 60%
on	off	HW-Mode/ Sensitivity 80%
on	on	HW-Mode/ Sensitivity 120%

DIP 3: ATD on/off (if DIP 1&2 are set to a HW mode setting)

DIP 4: Pulse count on/off for PRO E-18WRF; (if DIP 1&2 are set to a HW mode setting)

2.9.1 Overview PRO E-RF PCB



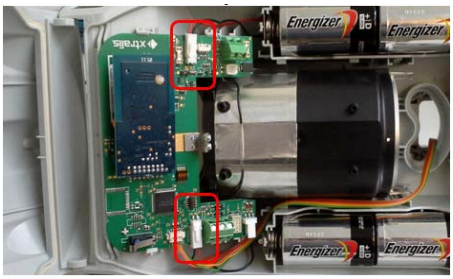
1 Inovonics wireless transmitter module, plugged in PCB
2 Right battery pack connector
3 External power source terminal
4 Cover tamper switch
5 RF Interface module connector (power/bus)
6 Left battery pack connector
7 Alarm relay terminal (NO/C/NC)
8 Bracket tamper switch connector
9 Power module connector
10 DIP switches
11 Battery power fuse
12 External power source fuse

2.9.2 Installation Steps for PRO E-RF Detectors

To install PRO E-RF detector, follow these steps:

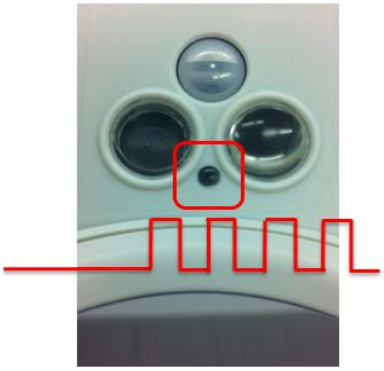
1. Mount the detector,
2. Make sure that the bracket switch is connected (SKT5), and the bracket hatch is open,

3. Connect batteries (1.5V Alkaline or 3.6V Lithium, it is recommended to use Lithium because of its better temperature stability) and external power source (if available). The external power source must be between 8.5 and 28 VDC. Any higher voltage could cause permanent and irreversible damage.

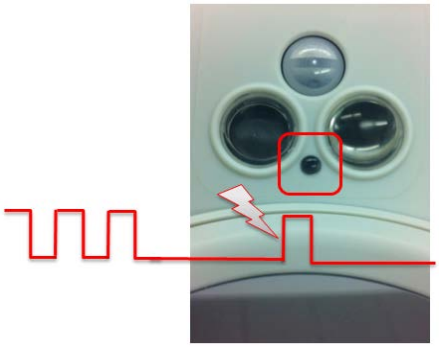


The device starts up.

As long as cover is open, the red LED blinks slowly.



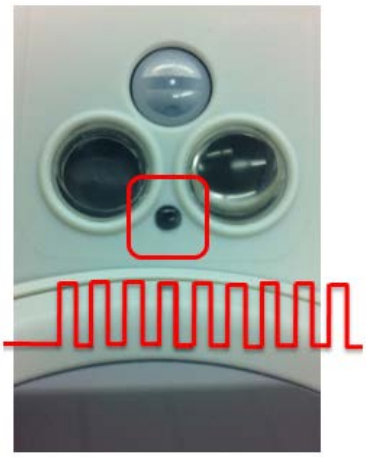
4. Start the Test mode:
   a. Close cover, tighten screws, leave bracket open. You will notice the following:
      - Red LED stops blinking
      - Device enters walk test mode
      - Alarms are indicated by the red LED
      - While in test mode, the detector wirelessly transmits alarm channel 1 during alarms to indicate alarms at the alarm panel and constantly sets alarm channel 2 to indicate being in Test mode.



b. Go through setup:
Alignment, walk tests, software settings, fine tuning alignment.

When the performance is satisfactory, close the bracket.

Front LED will start blinking fast.



If LED does not start blinking, make sure the tamper switch in bracket is closed by turning front screw until LED does start blinking.

Make sure the detector has an unobstructed view below and around it.

After 30-60 seconds, internal settings are done and the front LED will be permanently deactivated.

The detector now starts operating and you will notice the following:

- Alarms in the main zone will be transmitted as Alarm 1
- Fault/low batteries will be transmitted as Alarm 2
- All tamper and 360PROtect alarms are transmitted as Alarm 1 and 2 simultaneously
- Every 120 seconds a tamper alarm is transmitted as a “still alive/heartbeat” signal to avoid an “inactivity” alarm
- Low voltage input level on the Inovonics transmitter will internally trigger the “low power” alarm on the panel

Inovonics Receivers

The included Inovonics Receivers can send alarms to all compatible panels, see http://www.inovonics.com/products/add-on-receivers/

and
http://www.inovonics.com/products/serial-receivers/

Please register the detector PRO E-RF transmitters at the receiving panels according to the respective Inovonics manual (section “setup point”) with the following details:

- Set supervision time to 2 minutes.
- Register the transmitter as “Security” device (not “repeater”)
- Make sure, that the transmitter is registered as 2-alarm-inputs device
- Set the alarm output type to “follower”
- Outputs are matched with the following events:
  - Alarm 1: Intruder in main zone or creep zone (360PROtect)
  - Alarm 2: (unchanged)
  - Alarm 1&2: anti masking or any tamper alarm; always on during commissioning
  - Tamper: used as "alive signal"; triggered every 120 seconds if no other alarm occurs to avoid inactivity alarm; do not assign output
  - Low power: automatic alarm triggered by Inovonics transmitter when input voltage for it is too low. (The detector has no control over that feature)
  - Inactivity: triggered when panel receives no messages for more than the set supervision time (120 seconds)

2.10 Final check

Check the functioning of the detector after installation. This will ensure that all interface connections have been correctly installed. The goal is not to fine-tune the detector conclusively at this point, but to test its basic functioning so that nothing stands in the way of a smooth commissioning of the detection system subsequently.

Note: Do not align the detector directly with a wire fence. There should be no objects that are likely to be moved in the wind (such as branches, shrubs, fences) or water bodies in the field of view if possible.

The detection range of a PIR detector is not limited but a function of size, speed and temperature contrast of a target against its background.

The detector should be aligned so that a natural or artificial background at the end of the range terminates the field of view.

Vertical alignment is optimal when the upper edge of the field of view is at 2 m above ground at the end of the nominal detection range.

Nominal detection ranges are listed in the document "ADPRO PRO E PIR System Design and Planning Guide, document no. (27387)".

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3 Detector Alignment

WARNING:

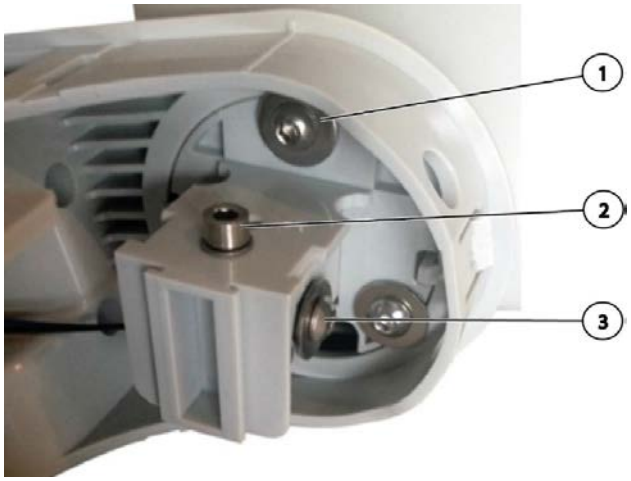
Ensure that the three screws that attach the detector to the detector arm are not tightened but kept loose.
Never align the detector by pressing down such that the field of view ends at the perimeter boundary (0 m. object height).
To ensure detector efficiency, the object height must be configured to be 1.5 m at the perimeter boundary.
Shadow nets or fence sheeting can be used to avoid detection of targets beyond the desired range. The width of this terminating material depends on the nominal width of the respective detector.

3.1 Installation of the telescope

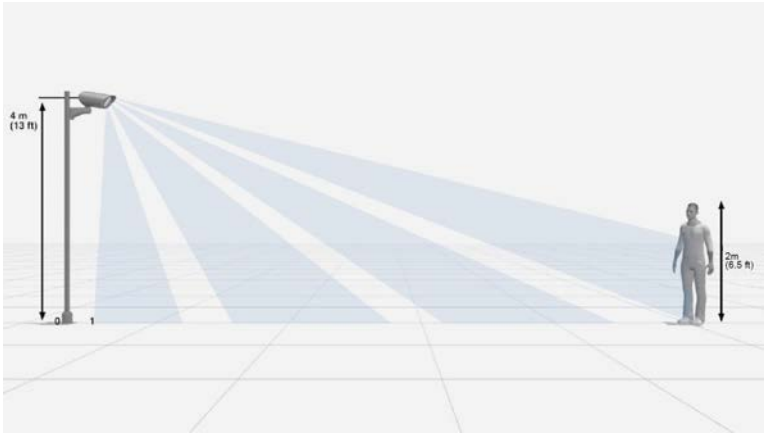
1. Install the adaptor supplied with the telescope as shown on the housing cover and slip on the telescope.
2. Attach the telescope to the adaptor with the help of the straining screws.

3.2 Alignment with the help of the telescope

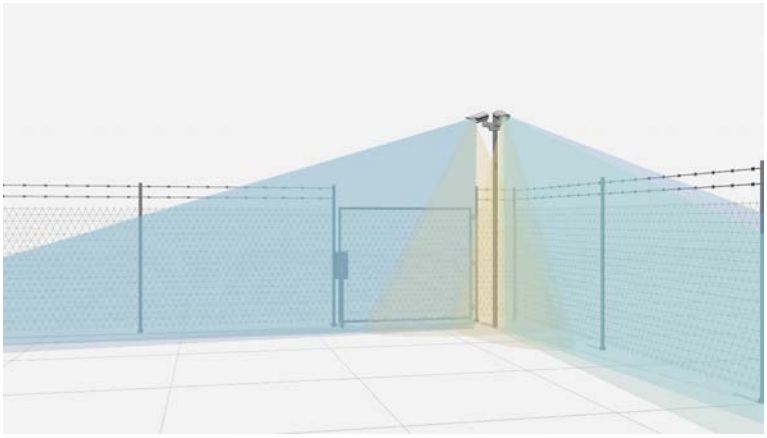
1. Take a bearing on the perimeter area to be monitored using the rear and front sight on the detector cover, or optimally use the optional telescope, as shown.



2. Loosen the three fastening screws (1) of the detector somewhat if required.
3. Loosen the locking screw (2)
4. Move the detector in the vertical direction over the spindle screw (3)



5. Sight a person or fixed point in the field of view of the detector at a height of 2 m. Use a 2-m visual warning sign or a three-legged tripod with a rod bearing 2 m marks.



6. One side of a detector edge runs along a fence or the external horizontal perimeter boundary.
7. The other edge for a curtain detector or the inner edge for a volumetric detector moves into the interior of an area through the aperture angle.
8. The visual marker or the object should be approx. in the center of the monitored area, namely, the center of the nominal maximum width.
9. Correct horizontal adjustment (namely, along the fence) is what is important during this phase.
10. The vertical dip angle can be adjusted later either manually or more conveniently with iCommission. See the ADPRO PRO E PIR System Setup Guide, document no. (26571), iCommission section.
11. Use iCommission or CT PRO 2 to check whether the detector is detecting.

3.3 CT PRO 2 – wireless walk tester

The wireless walk tester CT PRO 2 facilitates precise detector alignment over the entire nominal detection range. Optical-acoustical displays, as well as an LED bar to display the strength of the signal received at the detector make this product an absolute 'must-have' tool.

The CT PRO 2 consists of a transmitter which is connected via a connection cable to the RS-485 output of the detector and a mobile battery-operated receiver.

3.3.1 Brief description: CT PRO 2 Receiver

LEDs

- Power: A bright LED indicates that the device is switched on and the battery is okay. A weak or dimmed LED indicates insufficient voltage.
- Connectivity: This LED shows whether there is successful communication with the transmitter.
- Signal: This LED bar displays the signal strength of the signal received at the tester during a walk test.

Note: Existing CT PRO 2, which are used for the commissioning of the ADPRO PRO-detector series , can still be used. Though, the following item must be ordered: Interface adaptor cable PRO E IFC-RS-485 for PRO E-detector (item code CH12001001).

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4 Detector configuration

More information about detector configuration with a PC and ADPRO PRO-Tool-software please refer to document ADPRO PRO E PIR System Setup Guide, document no. (26571).

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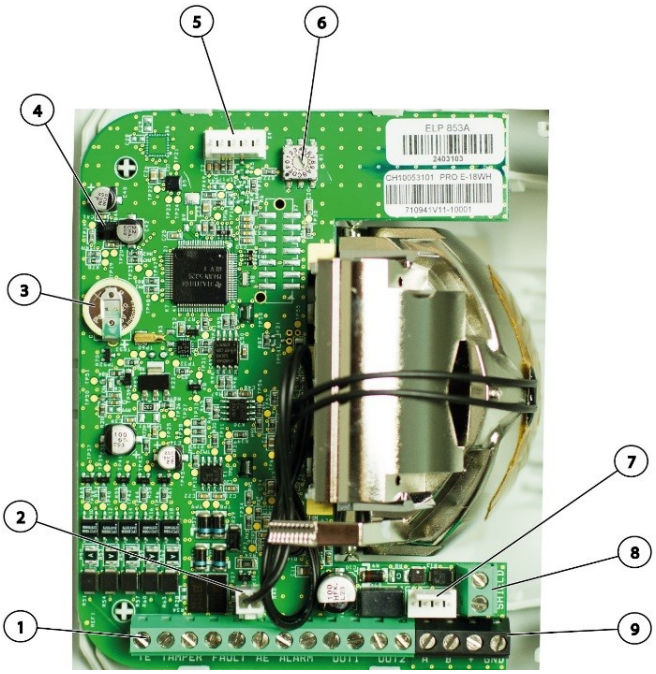
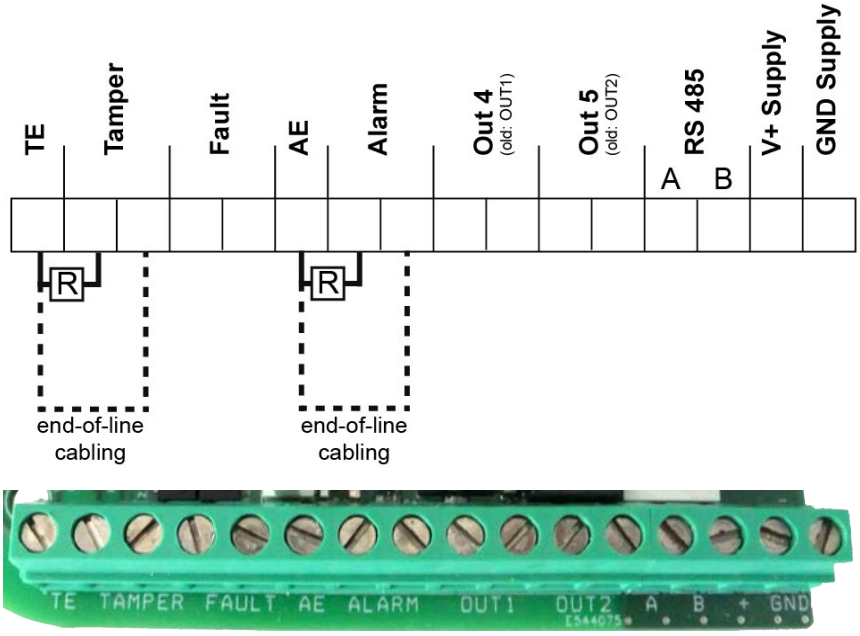
5 Overview of the circuit board



1. Alarm output terminal
2. Heating terminal
3. Backup battery
4. Light-sensitive proximity sensor
5. Tamper switch socket
6. Rotary switches (do not change)
7. Test (bus/power) or IP module (optional) socket
8. Shield terminal
9. Bus/Power supply terminal

5.1 Pin assignment Alarm Outputs

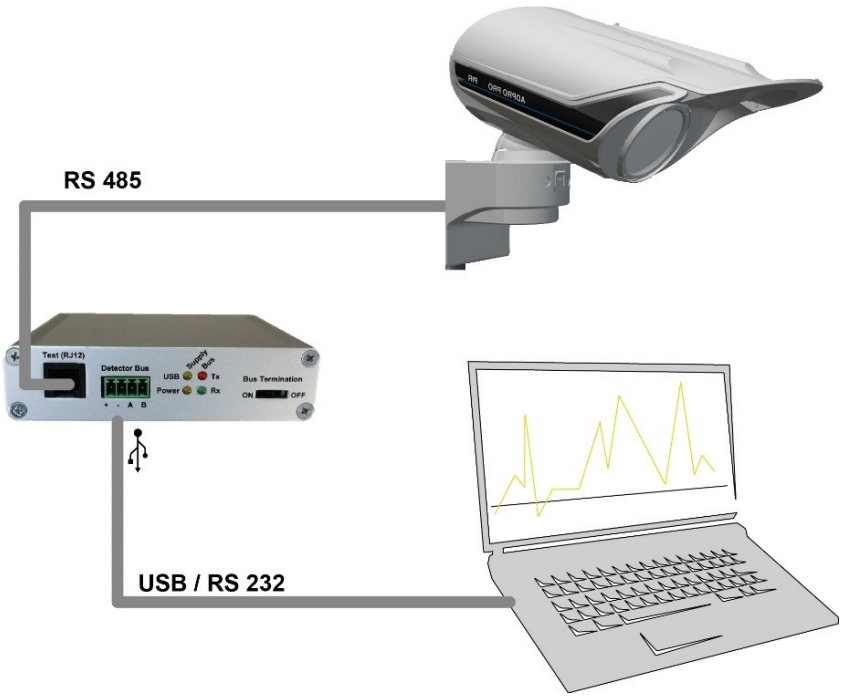


PCB-Terminal	
TE	tamper end-of-line
Tamper	tamper output
Fault	fault output
AE	alarm end-of-line
Alarm	alarm output
Out 4	free programmable output
Out 5	free programmable output
RS 485	RS-485 terminal
V+ Supply	power supply (+)
GND Supply	power supply (-)

5.2 Interface module IFM-485-ST

5.2.1 Single detector at the interface module IFM-485-ST

1. Connect the detector's RS485 BUS to the interface module IFM-485-ST via the green 4-PIN plug on the circuit board or via the A/B lines.
2. Then connect the interface module to the PC on which you have installed the PRO software using a USB cable or RS-232 cable.



5.2.2 Multiple detectors at interface module IFM-485-ST

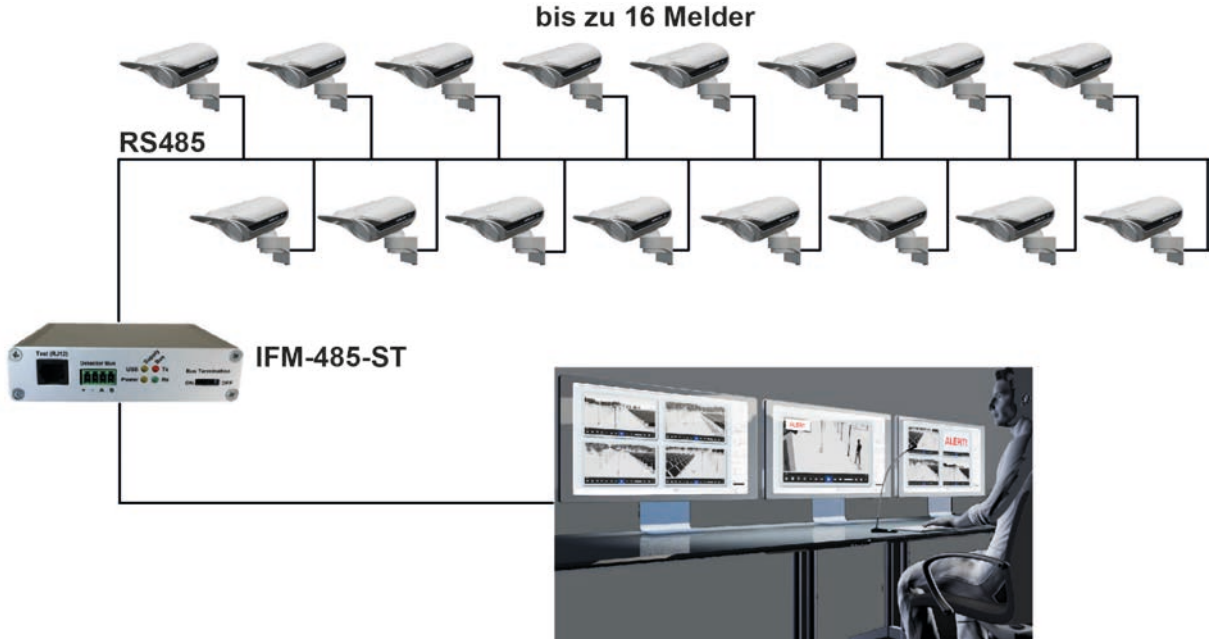
Perform the following steps to connect more than one detector to a PC via the RS485 data bus:

1. First, connect each detector individually to a computer on which the PRO software is installed and assign it an individual address (1-255) in the software settings. Each address may be allocated only once.
2. The detectors can then be interconnected through parallel or star cabling.
3. Add a terminating resistor of 120 Ω between the RS485 and RS485 B connections on the circuit board of the last detector in the bus. The (switched) resistor is already built into the interface module IFM-485-ST. This completes the data connection to both ends of the bus.

Ensure that the total cable length (including tap holes) does not exceed 1000 m.

Notes:

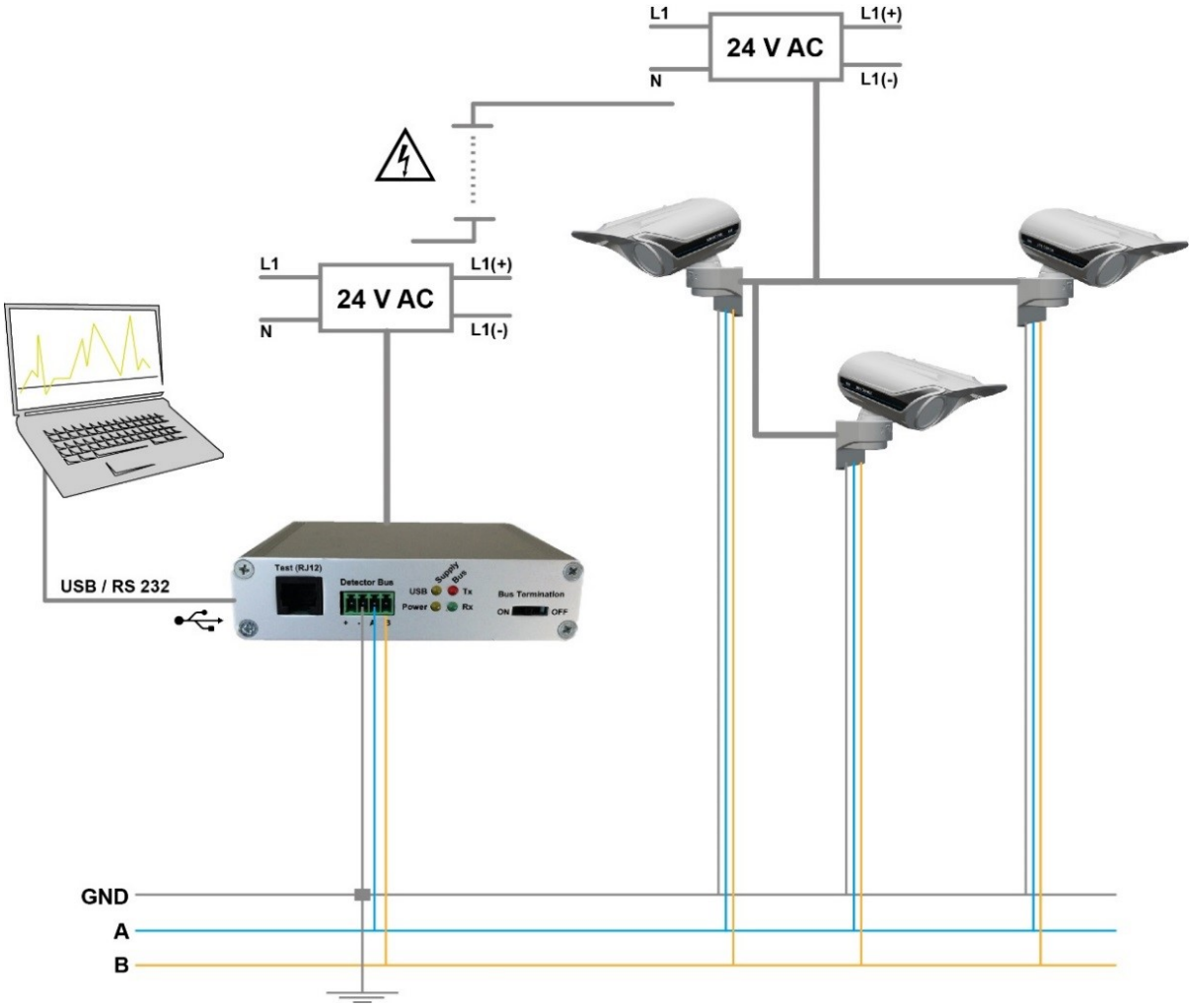
- If more than one detector is connected to interface module IFM-485-ST, every detector must have a unique address.
- To avoid malfunctioning or permanent damage to devices that may occur due to potential differences, ensure that the GND connections in all detectors and the interface module IFM-485-ST are interconnected.



WARNING:

If the IFM-485-ST as well as all PIR detectors are supplied AC voltage, it is absolutely necessary to ensure that all detectors and the IFM are connected identically and L1 (+) and N (-) are nowhere interchanged.
Otherwise, there could be substantial damage to detectors other than the detector with reversed polarity due to overheating as soon as the RS-485 bus and its ground (earth) are connected. This would be due to the formation of a potential difference of 24VAC between the grounds (earth) of two PIR detectors. See following diagram:

Note: To eliminate confusion and make your work easier, we recommend the use of colored or coded cables – especially if AC voltage is used.


L1
24 V AC
L1(+)
N
L1(-)
L1
24 V AC
L1(+)
N
L1(-)
USB / RS 232
Test (RJ12)
Detector Bus
Supply Bus
USB
Tx
Power
Rx
Bus Termination
ON
OFF
GND
A
B

6 Technical data

Please note that fundamentally, there are 2 different versions:

- Standard version
- High performance – version (H version)

The H version is distinguished by the following enhanced features:

- The housing front pane is not made up of IR-transmissive sheeting, but a silicon-wafer pane which was developed specifically for this application and is distinguished by its high transmissivity to IR radiation.
- Camera-like look & feel
- Because of its precision optics, its nominal ranges are greater than those of the standard versions
- H-versions include an in-built heating mechanism
- Because of this heating, they can also be used in harsh climatic conditions. The detectors can be used despite temperature fluctuations because any air condensation that occurs, that could in turn damp signals due to the very small water droplet formation in the front pane or on the mirror, is counteracted.
- Additionally, there are two freely programmable zero potential relay outputs

The specifications below apply to all ADPRO PRO PIR detectors.

Technical Specifications	**All ADPRO PRO E-detectors**	
Spectral response	8-14 µm, double filter	
Detection speed	0.2 - 5.0 m/s	
Sensitivity or range (with ADPRO PRO-Tool-software)	20-140% (model specific)	
Filter (window)	Standard version:	HDPE filter, IR-transmissive
	High performance H versions:	Silicon wafer (silica glass)
Vandalism detection, housing	Misalignment and aperture monitoring (NC contact 30 V / 100 mA)	
Alarm display	Internal LED	
Alarm outputs	5 outputs per 75 mA max. at 60 V_{DC}	
Communication	RS-485, 9.6 kBit/sec	
Temperature compensation	Full compensation across the entire nominal operating temperature range	
Power supply	10.5 - 30V_{DC}, 24V_{AC} ±15% (without heating)	
Current consumption	18 mA @ 12V_{DC}, 14 mA @ 24V_{DC}	
Power consumption, heating	0.5 W / ~41 mA @ 12 V_{DC} and -40°C (only H versions)	
Operating temperature, nominal	Standard versions:	-20ºC to +60°C
	High performance H versions:	-40°C to +60°C
Cabling (terminal screws)	2 x 4-7 mm (0.16” - 0.27”)	
Cable bushing	Cable exterior: Ø: 9 – 14 mm	(M16)
Dimensions (L x W x H) in mm	247 x 100 x 104	
Installation	• Pole installation • Wall installation	
IP protection rating	IP65	

Technical Specifications	All ADPRO PRO E-detectors	
Norms and guidelines	Designed to meet the following norms and guidelines: UK: BS8418_Form 172*) Basic Guide for Installers (CCTV with PIR trigger) *) subject to condition that all detectors are permanently monitored over an RS-485 data line via intrusion detection/access control /video monitoring systems, or via a risk management system through a 24x7 alarm receiving system (n) (ARS) in accordance with DIN EN 50518-1.	
CE	ADPRO PRO E-PIR detectors were third party tested and fully meet the following norms:	
	2004/108/EC	Directive of the European Community on Electromagnetic Compatibility
	EN 55022 class B	Electromagnetic Emission Compatibility (EMC) - Emission
	EN 50130-4 +A1+A2:2003	Electromagnetic Compatibility - Resistance to Jamming
Environmental regulations	All ADPRO PRO E-detectors meet the following EU directives:	
	RoHS	EC Directive 2002/95/EC on the restriction on the use of certain hazardous materials in electrical appliances and electronics devices
	REACH	Ordinance (EC) No in 1907/2006 of the European Parliament and the Council dated the 18th of December, 2006 on the registration, assessment, licensing and restriction of chemical substances
	WEEE	Directive 2002/96/EC of the European Parliament and the Council dated the 27th of January, 2003 on Electric and Electronic Used Equipment
HTS code	For the US: 8531.9090 For the rest of the world: 8531.90.8590	
UN/SPSC code	46171632 (PIR detectors)	
Country of origin	China	
Development	Designed in Switzerland “Swiss Premium Quality”	

6.1 Maintenance and Cleaning

The following guidelines must compulsorily be followed in the maintenance of the detector, and in particular its cleaning:

WARNING:

The housing of intrinsically safe XtralisADPRO PRO E-detectors is made of non-metallic material.
During installation, ensure that these are not mounted in dust-laden surroundings, in particular if it is a high speed version!
To prevent electrostatic charge, clean only with a damp cotton cloth!
Failure to comply will lead to cancellation of the license!

7 Unwanted alarms

Possible cause	Possible solution
Animals in the detection range.	Check whether there are any animals. Fence in the detection range if necessary.
Vegetation moved by wind or animals.	Check, whether vegetation (such as branches and leaves) moves. Remove or cut the interfering vegetation.
The sensitivity of the device is too high.	Adjust sensitivity settings if need be.
Heat sources.	Check if there any heat sources within the range of the device (e.g. kitchen exhaust or waste heat from an air-conditioning system). Adjust the alignment of the device if necessary, or shield it from heat sources.

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8 Dismantling and disposal

At the end of its useful life, the device must be dismantled and disposed of in an eco-friendly manner.

8.1 Work safety

Personnel

Work on the electrical system must be performed only by qualified electricians.

8.2 Measures before dismantling

Perform the following steps before you begin dismantling:

1. Switch off the power supply.
2. Protect the main switch with a padlock, so that it cannot be switched on.

8.3 Disposal

Damage to environment

ATTENTION:

Risk to environment through improper use!

Improper use of substances that are hazardous to the environment, and in particular their improper disposal, can cause substantial environmental damage.

Hence:

- Always follow the instructions in this guide
- Initiate appropriate measures immediately if environmentally hazardous substances are released into the surroundings. Inform the responsible local authority of the damage in case of doubt.

Dismantled components must be recycled as follows:

- as scrap metal
- as plastic parts for recycling
- other components to be disposed off by sorting by material

You can obtain information about eco-friendly disposal at the competent local authority or at specialized waste disposal companies.

Notes

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