ADPRO®
PRO E-Series

PIR PIDS — Passive Infrared Perimeter Intrusion Detection Systems

Questions and Answers

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ADPRO® by xtralis

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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 icons conventions 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.
	Warning: 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 a danger of inhaling dangerous substances. This may lead to death or permanent injury.

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ADPRO
PRO
Passive Infrared
(PIR) Detector
Protecting large perimeter applications
with superior performance.
ADPRO
NEW
xtralis
INNOVATION
ADPRO Everywhere
A solution for all applications
And many
more applications

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1 ADPRO PRO E-Passive Infrared Perimeter Intrusion Detector

2 Questions and Answers

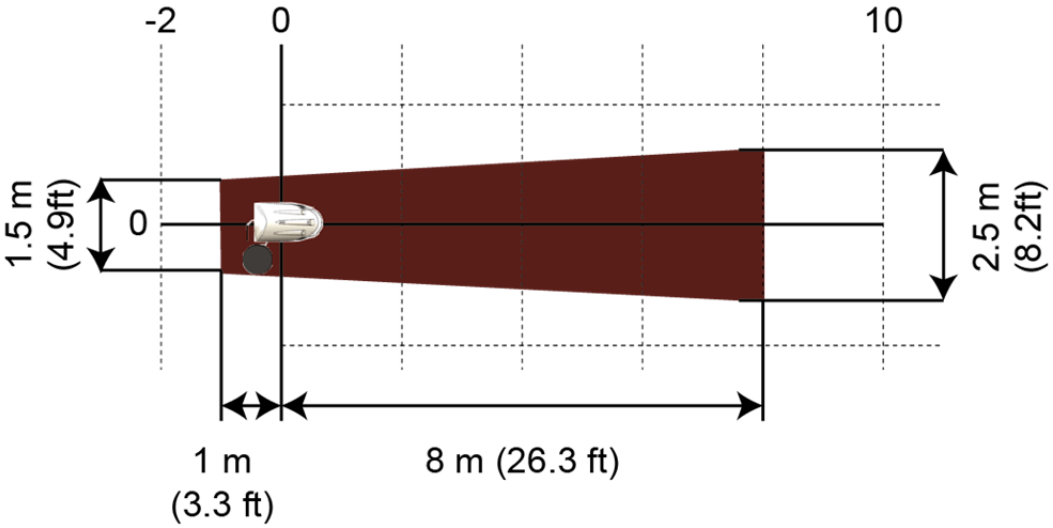
2.1 What is new compared to existing product range?

Besides a complete new housing concept, having a cable management integrated, the following features are new:

1. **360PROtect™** – Near Surrounding Area Surveillance, which does not only eliminate the creep zones up to 8 m in front, but also is monitoring the area up to -1m behind the detector, as well as 0.75 m to the left and right sides.
2. **Antimasking** for standard compliant detection of any manipulations, vandalism and tamper attacks.
3. **Integrated Cable Management** bracket for pole and wall mount without any adaptors.
4. All models are IP-65 rated.
5. Advanced 3D-tamper protection including a compass functionality and a removal from mounting surface detection for latest state-of-the-art tamper protection.
6. **iCommission** for a time and cost saving quick system setup enables an one-man-commissioning using iCommission-App on a smartphone or tablet PC.
7. **Wireless detectors** available with an integrated RF-module (Inovonics) for wireless operation and communication of events.
8. Wireless detectors with an **integrated smart power-management** to prolong battery-lifetime by using renewable energies e.g. solar panels. Energy is buffered for sunless or windless hours not to exhaust the four built-in batteries.
9. Easy on-site exchange of detector window (filter) – no factory overhaul necessary.

2.2 What does “360PROtect™ – Near Surrounding Area Surveillance” mean?

360PROtect™ does not only eliminate the creep zones up to 8 m in front, but also monitors the area up to -1m behind the detector, as well as 0.75 m to the left and right sides.



2.3 Do I need an additional pole and an additional detector to cover the creep zone of a detector in the corner of a perimeter?

No. With “360PROtect™ inside” a detector can be mounted directly in a corner of a perimeter (fence). Ideally two detectors are mounted on one pole to save time and cost.

With 360PROtect™ the whole area around the pole is monitored against manipulation/vandalism attacks.

2.4 Is PRO-CMB-W cable managed bracket the same as the integrated cable management of ADPRO PRO E-detectors?

No. The integrated cable management bracket of ADPRO PRO E-detectors is part of the new housing.

2.5 Do I need a pole mount adaptor?

No. The new designed integrated cable management bracket is pole and wall mounting without any adapters.

2.6 What is the recommended pole diameter?

Due to the soft and harmonic shaped design of the ADPRO PRO E-housing the wind load is very small.

The ADPRO PRO E-integrated cable management bracket is designed to fit on poles of a minimum diameter of 60 mm. But it is always recommended to use poles or masts with a much thicker body, so that swinging and swaying is not possible even when high wind speeds are occurring. As higher the wind load - caused by cameras, lighting equipment, detectors and other security products - as more stable the mast has to be, to avoid false alarms.

2.7 Do I need a mounting plate, when mounted e.g. on a rough plaster?

No. There is no need for a mounting plate, as the contact for removal from mounting surface can be adjusted and water ingress does not harm the functionality of the system. Using a mounting plate would lead to the loss of the “removal from mounting surface”-alarm, when the mounting plate with detector is removed completely.

2.8 Which batteries can be used for wireless operation?

It is recommended to use high quality batteries only for a reliable operation with a long-lasting life-time. The battery technology varies from alkaline to Lithium-Thionyl Chloride batteries. Li-batteries offer not only a much higher capacity and low current discharge properties, but also a much better temperature performance.

2.9 What is the required voltage range of external power sources for PRO E-RF detectors?

The DC voltage range required from external power sources (e.g. solar panels) is 8.5 – 28 VDC. Voltages below are ignored by the detector’s internal power management. Please note, that voltages above 28 VDC can cause permanent and irreversible damage.

2.10 For power substations and generation plants what impact does EMI and RFI has on the wireless units?

This question is twofold; how does it affect the detectors, and how does it affect the wireless signal transmission:

1. **Detector**: Like all our detectors, the RF detectors are designed to fulfil international directives (CE, FCC, C-Tick) and security standards (prEN50606) which guarantees defined EMI and RFI performance.
2. **RF signal transmission**: Xtralis ADPRO PRO E-RF-detectors are using Inovonics’ EchoStream®, which is well-known for unparalleled interference immunity due to the four channel spread spectrum frequency hopping network RF-technology. Please refer to Inovonics manuals, statements of reliability and conformity.

When an installation is planned at very special sites, it is **strictly recommended** to make a field-test installation before. Standards always require a minimum of quality – not the maximum possible and especially not all cases which could appear in the market are covered.

It is in RF-technology's nature that signals can be attenuated, jammed, manipulated, cloned, replayed or even replaced. Therefore appropriate measures have to be taken.

2.11 Does the sensor encrypt the wireless connection?

No. Inovonics' EchoStream® RF-technology does not encrypt messages.

2.12 What if someone tries to disrupt the wireless connection?

If the detector does not get a full signal through to the alarm panel at least every two minutes, the alarm panel will trigger an "Inactive" alarm for the respective detector. If the alarm panel recognises specific jamming signals in the vicinity it will trigger a general "jamming" alarm, which will not be specific to a detector.

2.13 What applications is this RF solution suitable for?

It is specifically useful for mobile and temporally limited applications, like exhibitions, building sites or anything where fast deployment is a key factor, like camp protection or e.g. open space areas of car dealers, where the surveillance situation changes per day. Also any application where proper cable digging and cabling would be too expensive or is not allowed.

2.14 What is the temperature rating for your detectors? Any problems using in environments with temperature @ -29 C (-20 F)?

Obviously this question refers to "operational temperature". Like the PRO-series the temperature range of the ADPRO PRO E-detectors goes from -40°C (-40 °F) for "H" versions or -20° C (-4 °F) for non-"H" versions and up to +60 °C (140 °F) for all versions.

But also interesting is the installation or rather start-up temperature. At several installations in Siberia at -50 °C (-58 °F) we experienced that the "H"-detectors could be installed and also powered-up with absolutely no problems. More than ever operational temperature is not a problem at all these temperatures.

2.15 How do the detectors perform in adverse/challenging weather conditions?

Having more than hundred thousand of detectors installed worldwide in the market Xtralis has a very broad base of experience regarding the use of ADPRO PRO- and PRO E-detectors - due to nature always under changing environmental conditions. In some regions like Australian outback, African desert or in Siberia where temperatures of +40 °C (68 °F) in summertime and -50 °C (-58 °F) in winter can be found, PRO-detectors work without any problems.

2.16 What about in heavy rain conditions; does it cause any problem?

No. It also causes no problems. But…

Depending on the size of rain drops (several millimetres) and the physical nature of the PIR-technology there will be a reduction of IR-radiation being sensed by the pyro. But the space between the drops is big enough, that IR-radiation is going through easily. Such very heavy rains are normally for some seconds or minutes.

Compared to Active-Infrared-Barriers (AIR) no beam is interrupted, which causes alarms.

It is recommended to have PRO-detectors networked over RS-485 and communicating to a Management station. If such a system is also getting weather forecasts e.g. the sensitivity of PRO-detectors could be adapted remotely (low cost) for a while.

2.17 Will falling snow reduce detection capabilities?

As described before in **Error! Reference source not found.** this is the same for snow fall. The advantage is here, that normally the temperature difference between object and background is higher (better) than in summertime.

2.18 What is the influence of fog to the sensitivity of PIR-PIDs?

Fog can have some more influence to the detection rate, but will not cause any false alarms. As the average diameter of fog water-drops is between 20-40 µm the space between drops can be very close and would absorb IR-radiation more than rain drops or snow.

Note!

More detailed information can be found in the following manuals:

- General Introduction to PIR-Technology
- System Design and Planning
- Installation
- System Setup

on Xtralis Webpages:

Xtralis Homepage

www.xtralis.com

Xtralis Security Solutions Support Site

www.xtralissecurity.com

Landing-Page ADPRO PRO E Passive Infrared Detectors

www.xtralis.com/adpro_pro_e_detectors

Xtralis Product Videos

www.xtralis.com/video.cfm

2.19 Is it possible to use iCommission for the existing ADPRO PRO-Series?

No. It is not possible to use iCommission for the existing product portfolio.

2.20 Can I use ADPRO PRO E-Tool software for the existing product range of ADPRO PRO-series?

Yes. The new tool software is backward compatible.

2.21 Does the new ADPRO PRO E-detector monitor tamper attacks by panning the housing?

Yes. The 3D-accelerator sensor detects any movements by tilt, pan or move. In addition an integrated (switchable) compass can also be activated to detect slow movements.

2.22 Are there any changes in the monitored ranges?

No. The nominal detection ranges are exactly the same as with the today´s product portfolio of ADPRO PRO-series.

2.23 Can the range/distance be adjusted?

Yes. The detection range of ADPRO PRO/PRO-E-detectors can be adjusted by using the ADPRO PRO E-Tool software.

Single channel detectors (any PRO E-18, 30, 40, 45) can be reduced in range by aligning them down, the end of nominal range will be at the point where the detection zone is approx. 1.5 to 1.8 m high. The resulting higher sensitivity in the remaining zone has to be tested and possibly reduced in the SW settings to compensate for the now smaller monitored area. Also test and evaluate how this change in alignment affects the 360PROtect coverage and performance.

Multi sensor detectors (any PRO E-100, 400) should always be left aligned at full nominal range (recommended), but can be reduced in range using the range item in the software settings.

2.24 Is RS-485 and ADPRO PRO-communication protocol still available and backward compatible?

Yes. All ADPRO PRO E-detectors have a RS-485 communication port available as standard. The protocol is backward compatible (new functions are integrated into existing alarms and are not identifiable separately) and can be used for implementation into higher (remote) management stations.

2.25 What about PIR configuration in HeiTel software?

A seamless integration of ADPRO PRO E-detectors into HeiTel's product portfolio including CamDisc HNVR, CamDisc VG und CamServer VG is available.

PIR configuration works with the PRO E SW-Tool, independent whether the connection works via a direct RS-485 connection, IP protocol or through the HI-connect interface.

2.26 Is the ADPRO PRO-250H still available?

Yes. The PRO-250H is still available. A phase-out is not planned, yet.

2.27 Are the ADPRO PRO-series "intelligent" detectors still available?

Yes. All ADPRO PRO-series intelligent detectors are still available. A phase-out is planned for 2015.

2.28 Are the ADPRO PRO-series "intrinsically safe" detectors still available?

Yes. All ADPRO PRO-series intrinsically safe detectors are still available. A phase-out is not planned.

2.29 Will all other ADPRO PRO-series detectors be out-phased?

Yes. The phase-out is planned. But detectors will still be available within 2015.

2.30 Are there any published standards for external perimeter security systems?

No. For the time being there are no European or international standards available.

In 2014 the European technical committee CLC-TC79 has started to work on prEN50606-1 External Perimeter Security Systems - System Requirements.

This standard, when published, will be converted to an IEC standard. Targeted date: 2016

2.31 Will Xtralis assist with PIR layout design questions / issues?

Yes. Please contact us through Xtralis homepage or your sales support:

www.xtralis.com ➔ “Training & Support”.

2.32 I have a sceptical customer, would Xtralis consider a try & buy scenario?

This is not a technical question, but again it is recommended to contact us through Xtralis homepage or your sales support:

www.xtralis.com ➔ “Our Locations”.

3 Product Overview

Detection Principle	Model	Code	Nominal Range		Angle
			Length	Width	
Volumetric, medium-range	PRO E-18	CH10055001	24 m (80 ft)	21 m (70 ft)	50°
	PRO E-18H	CH10055101	30 m (100 ft)	27 m (90 ft)	
Volumetric, wide-range	PRO E-18W PRO E-18WRFe PRO E-18WRFn	CH10053001 CH10054301 CH10054401	21 m (70 ft)	24 m (80 ft)	90°
	PRO E-18WH	CH10053101	27 m (90 ft)	30 m (100 ft)	
Volumetric, medium-range	PRO E-30	CH10063001	30 m (100 ft)	20 m (65 ft)	50°
Volumetric, medium-range	PRO E-40	CH10073001	40 m (130 ft)	10 m (33 ft)	15°
Curtain, medium-range	PRO E-45 PRO E-45RFe PRO E-45RFn	CH10023001 CH10024301 CH10024401	50 m (165 ft)	3.3 m (11 ft)	3.8°
	PRO E-45H	CH10023101	60 m (200 ft)	3.9 m (13 ft)	3.4°
Curtain, directional, medium-range	PRO E-45D	CH10023201	50 m (165 ft)	3.6 m (12 ft)	4°
	PRO E-45DH	CH10023301	60 m (200 ft)	4.2 m (14 ft)	
Curtain, long-range	PRO E-100 PRO E-100RFe PRO E-100RFn	CH10033001 CH10034301 CH10034401	120 m (400 ft)	2.9 m (9 ft)	1.3°
	PRO E-100H	CH10033101	150 m (500 ft)	3.3 m (11 ft)	1.4°

Accessories			
iCommission		CH12003001	Remote PRO E-series vertical alignment tool
Interface Module, RS-485 Bus	IFM-485-ST	CH19000301	
PRO-Telescope	ZA P 03	242600	Alignment Telescope
Walk Tester, wireless	CT PRO 2	202483	

Notes:

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