XPANDER®

Engineering Product Guide

- Apollo addressable range expansion
- Wireless
- Minimises disruption to building and occupants
- Enables rapid retrofit or temporary solution
- EN54-25 certified
- Dual batteries for enhanced integrity

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WORLD CLASS FIRE SOLUTIONS

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XPander™ is a range of addressable multistate detectors and associated products developed to enhance the capabilities of our addressable range. It is an entirely new range which is connected to an XP95 or Discovery system via an interface wired to the loop. The interface communicates with the field devices by means of radio signals.

XPander can be incorporated into fire detection systems in stately homes and architecturally sensitive buildings where the use of fire cables is either impracticable or undesirable. It may also be used in sites with discrete buildings which need to be connected to a central control panel but where wiring might present problems.

XPander is manufactured in Apollo's factory near Portsmouth, England.

XPander has been tested and approved to the following standards:

EN54–7: 2000 — optical smoke detector

EN54–7: 2000 & CEA 4021: 1999-06 — multisensor smoke detector

EN54–5: 2000 — heat detector

EN54-3: 2001 – Sounders

EN54-25: 2008 — components using radio links and system requirements

Detectors have been declared as being compliant with the essential requirements of the EMC Directive 98/336/EEC and the Construction Products Directive 89/106/EEC.

CE
0359

...wireless detectors from apollo

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Contact points for enquiries and help

Technical queries	techsales@apollo-fire.co.uk
Resources (literature, photos)	marketing@apollo-fire.co.uk
Sales enquiries	sales@apollo-fire.co.uk
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All information in this guide is given in good faith but Apollo Fire Detectors cannot be held responsible for any omissions or errors. The company reserves the right to change the specifications of products at any time and without prior notice.

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XPander Range & Features

Range of Products

Every XPander device is assigned an address and this address is recognised by the control panel in the same way as is the address of any device connected directly to the loop wiring.

The XPander range comprises of:

- Optical Smoke Detector
- Multisensor Smoke Detector
- A1R Heat Detector
- CS Heat Detector
- Wireless Base
- Manual Call Point
- Audible and visual devices
- Input/Output Unit

A survey tool is also available and this must be purchased in order to carry out a site survey before any system designs are finalised.

Features of XPander™

XPander incorporates entirely new designs with respect to the wireless communication system. A Radio Interface is connected to the loop. It communicates with the control panel using the Apollo addressable two-wire power and communications system. The interface communicates with the detection and alarm signalling devices by means of radio waves.

The detectors are multistate in that they report normal, pre-alarm, fire or fault states to the radio base which transmits the information to the interface. The detectors incorporate drift compensation and report any compensation limit occurring.

The radio bases and signalling devices are addressable and use a pre-set analogue value to report via the XP95 or Discovery protocol. Apart from normal and fire the bases can send pre-set analogue values to indicate low battery, detector contaminated, detector tamper and low signal strength fault conditions.

Other key features include:

- modern styling
- loop-powered interface operating on 868MHz
- wireless addresses seen by control panel as normal addresses
- radio base with wireless circuitry and battery compartment
- chamber designed to inhibit dirt penetration and thus reduce false alarms
- automatic drift compensation with DirtAlert™ warning
- algorithms for transient alarm rejection
- FasTest™ reduces time taken to test detectors
- remote test facility
- 3-5 years battery life

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The XPander Wireless Range

Wireless Systems

Analogue addressable fire alarm systems have been in use for many years and have proven their worth in countless installations. Apollo Fire Detectors' wired systems comprises not only detectors and manual call points but also interfaces, sounders, beacons and special detectors such as beam and flame detectors.

Wireless systems are often installed in buildings where wiring presents a challenge, most often because the fabric of the building or its design will be negatively affected by the use of cables. It is sometimes very difficult to introduce cable runs into buildings which were not designed for the modern age. It may also be that a collection of buildings, such as an open air museum, requires fire protection but is not suitable for normal wired systems.

It is for buildings of this kind that XPander has been developed. XPander is a wireless extension to a loop-wired XP95 or Discovery detection and alarm system.

XPander is a system in which individual detectors, call points and alarm devices communicate with the Apollo addressable loop by radio signals. An interface is connected to the loop in the same way as any other interface, such as an Input/ Output Unit.

Every XPander device is assigned an address and this address is recognised by the control panel in the same way as is the address of any device connected directly to the loop wiring.

It should be noted that not all installations can be extended by using XPander and it is essential that a site survey is conducted to check whether XPander can be installed or not.

Polling

XPander detectors and alarm devices are polled in the same way as devices connected directly to the loop. They respond in exactly the same way and provide the same categories of information.

Address Mechanism

XPander detectors are addressed by means of the XPERT card familiar to users of XP95 and Discovery. The XPander XPERT card is specifically designed for XPander products having profiled address PIPs for ease of installation.

Radio Communications

Fire detection systems are life-saving systems and must, therefore, be highly reliable in use. Radio communications have been developed to a point where high reliability can be guaranteed, provided that the rules for the design of radio systems and installation are carefully observed. Radio communication technology in the detection has matured to the point where a standard has been drawn up as part of the EN54 family of standards for components of a fire detection system. The standard is EN54 Part 25.

Frequency

The frequency used by XPander is 868MHz which is the harmonised European radio frequency.

Signal Integrity

It is of prime importance that the radio signal retain its integrity even if minor changes, such as the rearrangement of furniture, are made to the environment in which XPander is installed. Hence "extra strength" signals are used so that the signals are received clearly even if there is some attenuation. XPander Diversity has multiple aerials positioned at different angles within the loop interface. The interface is able to intelligently and dynamically select the radio communication path with the fewest destructive reflections, and with the best signal strength. This ensures greater signal integrity and improved range in complex indoor environments.

Interference

It is of equal importance that there be no interference to the device from signals emanating from other sources, such as police or ambulance radio systems.

To help eliminate interference the XPander signal is a narrow band signal with an additional coding. With the inclusion of the dual band signalling the danger of interference has been reduced to a point of being negligible.

Battery Monitoring

Devices in the XPander range are powered by batteries. There are two battery packs, with current being drawn alternatively from each. It is essential that the state of the batteries be known and the following three states have been defined:

State	Condition of batteries
Normal	Good working order
Fault	Batteries need to be changed
Missing	Battery voltage very low or battery pack incorrectly fitted

For the "Fault" state a warning is sent 30 days and for the state "Missing" a warning is sent 7 days before battery failure.
Note: when changing batteries both packs should be replaced

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Surveying a site prior to designing and installing a wireless system

All of the elements which make up a wireless fire detection system are connected by means of radio waves. It is essential that the waves are not blocked or attenuated between the different elements of the system.

In order to be sure of the integrity of a proposed wireless detection system a survey of the installation location must be carried out without fail before the final decision to use the wireless system is taken.

XPander Survey Unit

The XPander Survey Tool, part no XPA-TE-14075, has been developed in order to be able to conduct a full survey and be sure of the integrity of the system in operation.

Full instructions for use of the survey kit are contained in a booklet, reference number PP2323, issued with the kit.

It is important that the results of the survey be recorded and remain with the other design documentation. A sheet is included in the booklet supplied with the survey kit (reference number PP2322) and is also available from the Technical Support department.

Training in the technique of surveying a site and designing an XPander system is mandatory. Apollo offers this training at Head Office free of charge.

Choosing a detector

Optical smoke detectors

Optical detectors have long been recommended as good general purpose smoke detectors. Modern optical detectors incorporate sensors which detect both black and grey smoke and are thus useful over a wide range of fires.

Optical detectors should particularly be used in escape routes such as corridors where the smoke might have aged before it reaches the detector.

Multisensor smoke detectors

Multisensor smoke detectors have a heat sensing element which makes them more sensitive if an incipient fire develops heat as well as smoke. This speeds up the response of the detector in certain fires where heat is generated rapidly, for instance in test fire TF5, which is an open, flaming liquid fire in which n-heptane is burned.

Multisensor smoke detectors are recommended for open flaming fire risks.

If there is any doubt as to whether an optical detector or a multisensor smoke detector should be used it is wise to fit a multisensor smoke detector.

Heat detectors

Heat detectors might be considered if it is not possible to use smoke detectors. This will be the case where normal industrial processes produce substances which could be mistaken for smoke by a smoke detector, eg, flour mills, textile mills or loading bays with diesel-engined vehicles.

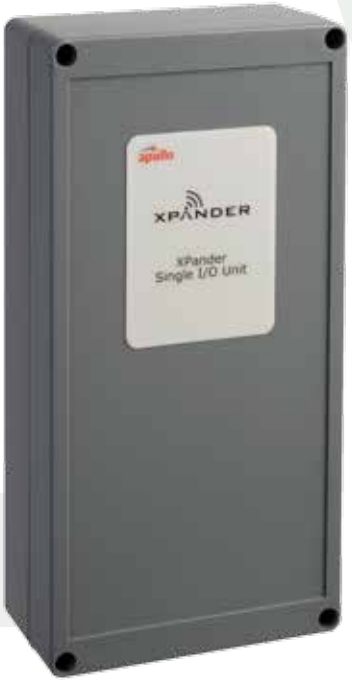
Radio Bases

Radio bases are available in 3 different styles:

Audible Visual radio base - for sounders and visual indicators only

Radio base - for all detector head types

Combined radio bases - that have built in Audible Visual capabilities and are compatible with all detector head types



XPA-IN-14011-APO
XPander Input/Output Unit

XPander Input/Output Unit

The XPander Input/Output unit is a Radio Base Interface and offers up to two monitored input circuits and two relay outputs. The units are powered by six 'AA' alkaline batteries.

The XPander Input/Output unit can be used in failsafe operation. This product is tested and approved to the EN54-18 standard.

TECHNICAL DATA

All data is supplied subject to change without notice. Specifications are given at 23°C and 50% relative humidity unless otherwise stated.

Supply Voltage:
3V DC +

Relay Rating:
2A at 30V DC

Material:
ABS grey plastic

Dimensions and Weight of Interface:
120mm width x 240mm
height x 60mm depth, 620 grams

Environmental Operating and Storage Temperature:
-10°C to +55°C

Humidity:
0% to 95% relative humidity
(no condensation)

Electromagnetic Compatibility:
The interface meets the requirements of BS EN 50 081-1 for emissions and BS EN 50 130-4 for susceptibility.

Architecturally sensitive

XPander can be incorporated into fire detection systems in buildings where the use of cables is either impractical or undesirable such as palaces, stately homes and listed buildings.

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XPA-IN-14050-APO
XPander Diversity Loop Interface

XPander Diversity Loop Interface

The XPander Diversity Interface is connected to the loop and provides communications from the control panel to the wireless devices and vice versa. Features of the XPander Diversity Loop Interface are:

- It is powered from the loop.
- A maximum of five interfaces can be connected to a loop.
- Up to 31 radio devices can be logged on to each interface.

The current drawn from the Interface should be taken into consideration when calculating the total load of a loop.

The XPander Diversity Interface has an integral LCD display which gives information on the state of the wireless detectors. The Diversity Interface transmits and receives signals via the integral Diversity Aerials which require no adjustment or maintenance.

An 8-segment DIL switch is provided for the address of the Interface to be set. When polled by the control panel, the XPander Interface returns a pre-set analogue value of 16 in normal condition.

The XPander Diversity Interface has an integral LCD display which gives information on the state of the wireless detectors. The Diversity Interface transmits and receives signals via the integral Diversity Aerials which require no adjustment or maintenance.

This product is tested and approved to the EN54-17, EN54-18 and EN54-25 standards.

TECHNICAL DATA

All data is supplied subject to change without notice. Specifications are given at 23°C and 50% relative humidity unless otherwise stated

Supply Voltage:
24V DC + voltage pulses

Current Consumption:
15mA

Mechanical Isolation:
Isolator included as standard. Product certified with EN54:17

Material:
ABS

Dimensions and Weight of Interface:
270mm width x 205mm height x 85mm depth, 950 grams

Environmental Operating and Storage Temperature:
-10°C to +55°C

Humidity:
0% to 95% relative humidity (no condensation)

Electromagnetic Compatibility:
The interface meets the requirements of BS EN 50 081-1 for emissions and BS EN 50 130-4 for susceptibility.

Note: the XPander interface aerial must be installed at least 400mm away from any metal object. The recommended minimum distance to any electrical equipment is 2 metres in all three dimensions.

XPander products can be found in the likes of Exeter Cathedral, UK.

XPA-CB-12034-APO
XPander Optical Smoke Detector with Radio Mounting Base

XPander Optical Smoke Detector

Where to use optical detectors

XPander optical detectors are recommended for use as general purpose smoke detectors for early warning of fire in most installations.

XPander optical detectors operate on the well established light scatter principle. The optical design of the XPander optical detector allows it to respond to a wide spectrum of fires.

The detector is calibrated so that XPander is highly reliable in detecting fires but has enhanced immunity to false alarms.

The stability of the detector in terms of high reliability and low false alarm rate is further increased by the use of algorithms to decide when the detector should change to the alarm state. This removes the likelihood of a detector producing an alarm as a result of smoke from smoking materials or from another non-fire source.

Detector operating principles

Photo-electric detection of light scattered by smoke particles over a wide range of angles. The optical arrangement comprises an infra-red emitter with a prism and a photo-diode at 90° to the light beam with a wide field of view. The detector's microprocessor uses algorithms to process the sensor readings.

This product is tested and approved to the EN54–7 standard.

TECHNICAL DATA

All data is supplied subject to change without notice. Specifications are given at 23°C and 50% relative humidity unless otherwise stated.

Supply Voltage:
Regulated 3V from radio base

Sampling Frequency:
Once every 4 seconds

Alarm Indicator:
Integral indicator with 360° visibility

Material:
Detector and base moulded in white polycarbonate.

Dimensions and Weight of Detector:
100mm diameter x 30mm height, 100 grams

Dimensions and Weight of Detector in Base:
105mm diameter x 75mm height, 500 grams

Environmental Operating Temperature:
-10°C to +50°C

Humidity:
0% to 95% relative humidity (no condensation)

Wind Speed:
Unaffected by wind

Atmospheric Pressure:
Insensitive to pressure

IP rating to EN 60529: 1992:*
23D

Electromagnetic Compatibility:
The detector meets the requirements of BS EN 50 081-1 for emissions and BS EN 50 130-4 for susceptibility. CE marked.

*The IP rating is not a requirement of EN54 since smoke detectors have to be open in order to function. An IP rating is therefore not as significant as with other electrical products.

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XPA-CB-13032-APO
XPander Multisensor Smoke Detector with Radio Mounting Base

XPander Multisensor Smoke Detector

The XPander multisensor smoke detector is a thermally enhanced smoke detector and as such will not give an alarm from heat alone. It is a development of the XPander optical detector described in the previous chapter and goes further in its capabilities of fire detection.

Where to use multisensor smoke detectors

Multisensor detectors are recognised as good detectors for general use but are additionally more sensitive to fast burning, flaming fires–including liquid fires– than optical detectors.

They can be readily used instead of optical smoke detectors but should be used as the detector of choice for areas where the fire risk is likely to include heat at an early stage in the development of the fire.

As with XPander optical smoke detectors the increased reliability of detection is combined with high immunity to false alarms.

Although the XPander multisensor detector relies on both smoke and heat sensors it is not possible to switch from smoke detection to heat detection.

Detector operating principles

Photo-electric detection of light scattered by smoke particles over a wide range of angles. The optical arrangement comprises an infra-red emitter with a prism and a photo-diode at 90° to the light beam with a wide field of view and a heat sensitive thermistor. The detector's microprocessor uses algorithms to process the sensor readings.

This product is tested and approved to the EN54–7 standard.

TECHNICAL DATA

All data is supplied subject to change without notice. Specifications are given at 23°C and 50% relative humidity unless otherwise stated.

Supply Voltage:
Regulated 3V from radio base

Sampling Frequency:
Once every 4 seconds

Alarm Indicator:
Integral indicator with 360° visibility

Material:
Detector and base moulded in white polycarbonate.

Dimensions and Weight of Detector:
100mm diameter x 50mm height, 100 grams

Dimensions and Weight of Detector in Base:
105mm diameter x 80mm height, 500 grams

Environmental Operating Temperature:
-10°C to +50°C

Humidity:
0% to 95% relative humidity (no condensation)

Wind Speed:
Unaffected by wind

Atmospheric Pressure:
Insensitive to pressure

IP rating to EN 60529: 1992:*
23D

Electromagnetic Compatibility:
The detector meets the requirements of BS EN 50 081-1 for emissions and BS EN 50 130-4 for susceptibility.

*The IP rating is not a requirement of EN54 since smoke detectors have to be open in order to function. An IP rating is therefore not as significant as with other electrical products.

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A1R XPA-CB-11170-APO
CS XPA-CB-11171-APO
XPander Heat Detector with Radio Mounting Base

XPander Heat Detector

The XPander range incorporates two heat detectors to suit operating conditions in which smoke detectors are unsuitable.

The European standard EN54-5 classifies heat detectors according to the highest ambient temperature in which they can safely be used without risk of false alarm. The classes are identified by the letters A to G. (Class A is subdivided in A1 and A2.) In addition to the basic classification, detectors may be identified by a suffix to show that they are rate-of-rise (suffix R) or fixed temperature (suffix S) types.

Heat detectors in the XPander range are tested as rate-of-rise detectors or static. The A1R detector is a rate-of-rise detector and the CS is classified as static.

Where to use XPander heat detectors

Heat detectors are used in applications where smoke detectors are unsuitable. Smoke detectors are used wherever possible since smoke detection provides earlier warning of fire than heat detection. There are, however, limits to the application of smoke detectors.

Heat detectors should be considered as part of a risk assessment if there is a danger of nuisance alarms from smoke detectors.

Choosing the correct class of heat detector

The choice of the right type for a particular application is important. Use A1R in areas with normal ambient temperature of less than 50°C and in which sudden increases of heat do not occur in normal circumstances. Otherwise use CS.

How do XPander heat detectors work?

Heat detectors have an open-web casing which allows air to flow freely across a thermistor which measures the air temperature every 2 seconds. A microprocessor stores the temperatures and compares them with pre-set values to determine whether a fixed upper limit–the alarm level–has been reached.

In the case of rate-of-rise detectors the microprocessor uses algorithms to determine how fast the temperature is increasing.

Static heat detectors respond only when a fixed temperature has been reached. Rate-of-rise detectors have a fixed upper limit but they also measure the rate of increase in temperature. A fire might thus be detected at an earlier stage than with a static detector so that a rate-of-rise detector is to be preferred to a static heat detector unless sharp increases in temperature are part of the normal environment in the area protected by the heat detector.

Detector operating principles

Measurement of heat by means of a thermistor.

This product is tested and approved to the EN54-5 standard.

TECHNICAL DATA

All data is supplied subject to change without notice. Specifications are given at 23°C and 50% relative humidity unless otherwise stated.

Supply Voltage:
Regulated 3V from radio base

Sampling Frequency:
Once every 2 seconds

Alarm Indicator:
Integral indicator with 360° visibility

Material:
Detector and base moulded in white polycarbonate.

Dimensions and Weight of Detector:
100mm diameter x 30mm height, 80 grams

Dimensions and Weight of Detector in Base:
105mm diameter x 80mm height, 400 grams

Environmental Operating Temperature:
-10°C to +50°C

Humidity:
0% to 95% relative humidity (no condensation)

Wind Speed:
Unaffected by wind

Atmospheric Pressure:
Insensitive to pressure

IP rating to EN 60529: 1992:*
23D

Electromagnetic Compatibility:
The detector meets the requirements of BS EN 50 081-1 for emissions and BS EN 50 130-4 for susceptibility.

*The IP rating is not a requirement of EN54 since smoke detectors have to be open in order to function. An IP rating is therefore not as significant as with other electrical products.

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XPA-CB-14019-APO
XPander Combined Sounder and Multisensor Detector

XPA-CB-14025-APO
XPander Combined Sounder Visual Indicator (Clear) and Heat Detector (Class A1R)

XPA-CB-14021-APO
Combined Sounder Visual Indicator (Red) and Heat Smoke Detector

XPander Audible Visual Alarm Indicators

The combined device range is designed to provide one point of notification and detection.

Combined Sounders and Combined Sounder Visual Indicators

XPander sounders are ceiling mounted and use a bi-directional monitored radio platform to communicate. They feature 4 tone pairs, including the Apollo tone, and a self test which causes a fault signal to be sent if the sounders fail to operate.

The address of a sounder or a combined sounder/visual indicator is set at the commissioning stage by means of a DIL switch. The sounder address is plus one of the address set. The sounders and combined sounder/visual indicators are powered by two packs of batteries, one with three "AA" and one with three "C" size alkaline batteries which provide a working life of typically 3-5 years. The five-year life includes weekly tests and a half-hour sounding in a fire condition.

The Combined Sounders and Sounder Visual Indicators incorporate audible and visual alarm indicators within one unit.

Sound output: 74dB (low)
87dB (high)

Individual parts may be ordered separately.

Product variants

Part Number	Product Name
XPA-CB-14020-APO	XPander Combined Sounder Visual Indicator (Red) and Optical Smoke Detector
XPA-CB-14021-APO	XPander Combined Sounder Visual Indicator (Red) and Heat Detector (Class A1R)
XPA-CB-14022-APO	XPander Combined Sounder Visual Indicator (Red) and Heat Detector (Class CS)
XPA-CB-14023-APO	XPander Combined Sounder Visual Indicator (Red) and Multisensor Detector
XPA-CB-14024-APO	XPander Combined Sounder Visual Indicator (Clear) and Optical Smoke Detector
XPA-CB-14025-APO	XPander Combined Sounder Visual Indicator (Clear) and Heat Detector (Class A1R)
XPA-CB-14026-APO	XPander Combined Sounder Visual Indicator (Clear) and Heat Detector (Class CS)
XPA-CB-14027-APO	XPander Combined Sounder Visual Indicator (Clear) and Multisensor Detector
XPA-CB-14016-APO	XPander Combined Sounder and Optical Smoke Detector
XPA-CB-14017-APO	XPander Combined Sounder and Heat Detector (Class A1R)
XPA-CB-14018-APO	XPander Combined Sounder and Heat Detector (Class CS)
XPA-CB-14019-APO	XPander Combined Sounder and Multisensor Detector

These products are tested and approved to the following standards:

XPander Combined Sounder and Multisensor Detector – EN54-3, EN54-7 and EN54-25

XPander Combined Sounder Visual Indicator (Clear) and Heat Detector (Class A1R) – EN54-3, EN54-5 and EN54-25

Combined Sounder Visual Indicator (Red) and Optical Smoke Detector – EN54-3, EN54-7 and EN54-25

XPA-CB-14001-APO
XPander Sounder and Sounder Base

XPA-CB-14003-APO
XPander Sounder Visual Indicator and Sounder Base

XPander includes a range of Sounders and Sounder Visual Indicators.

Sounders and Sounder Visual Indicators

XPander sounders can be wall or ceiling mounted and use a bi-directional monitored radio platform to communicate. They feature 32 selectable tones, including the Apollo tone, and a self test which causes a fault signal to be sent if the sounders fail to operate. The self-test feature is activated by a DIL Switch.

The address of a sound or a sounder/visual indicator is set at the commissioning stage by means of an XPERT card.

The sounders and sounder/visual indicators are powered by two packs of batteries, one with three "AA" and one with three "C" size alkaline batteries which provide a working life of typically 3-5 years. The three-year life includes weekly tests and a half-hour sounding in a fire condition.

The Sounder Visual Indicators incorporate audio and visual signalling within one unit.

Sound output: 100dB(A)

Individual parts may be ordered separately.

These products are tested and approved to the following standards:

XPander Sounder and Sounder Base – EN54-3 and EN54-25

XPander Sounder Visual Indicator and Sounder Base – EN54-3 and EN54-25

Product variants

Part Number	Product Name
XPA-CB-14001-APO	Red Sounder with red base
XPA-CB-14002-APO	White Sounder with white base
XPA-CB-14003-APO	Red Sounder Visual Indicator with red base
XPA-CB-14004-APO	Amber Sounder Visual Indicator with white base
XPA-CB-14005-APO	Clear Sounder Visual Indicator with white base
XPA-SB-10023-APO	Red Base
XPA-SB-10024-APO	White Base
XPA-SO-14001-APO	Red Sounder
XPA-SO-14002-APO	White Sounder
XPA-SN-14003-APO	Red Visual Indicator
XPA-SN-14004-APO	Amber Visual Indicator
XPA-SN-14005-APO	Clear Visual Indicator

Annexes

A collection of buildings may also require fire protection but are not suitable for normal wired systems.

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XPA-MC-14006-APO
XPander Manual Call Point

XPander Manual Call Point

The Apollo XPander EN54-11 certified manual call point (MCP) is supplied with 2 packs of 3 'AA' alkaline batteries which provide a working life of typically 3-5 years.

The address of each call point is set at the commissioning stage by means of an XPERT card.

An alarm LED is provided on the call point. This LED is controlled, independently of the call point, by the control panel. The red LED is lit when the call point has been activated.

Call points can be remotely tested from the panel by transmission of a single bit in the communications protocol. Call points respond by providing a value of 64 which corresponds to the alarm value.

XPander Manual Call Points are supplied with a resettable operating element as standard.

The call point uses the "priority interrupt" feature to give a fast response on operation.

This product is tested and approved to the EN54-11 standard.

TECHNICAL DATA

All data is supplied subject to change without notice. Specifications are given at 23°C and 50% relative humidity unless otherwise stated.

Supply Voltage:
Regulated 3V from radio circuiting

Call Point Principle:
Operation of a switch

Alarm Indicator:
Red Light Emitting Diode (LED)

Alarm State Value:
64

Electro-magnetic Compatibility:
The call point meets the requirements of BS EN 50 081-1 for emissions and BS EN50 130-4 for susceptibility.

Environmental Operating Temperature:
-10°C to +50°C

Humidity:
0% to 95% relative humidity (no condensation)

Compliance Standard:
EN54–11:2001

Materials:
Red ABS

Dimensions:
89mm x 93mm x 26.5mm

Weight:
151g

Temporary structures

XPander may also be used in sites with discrete buildings which need to be connected to a central control panel but where wiring might present problems.

Installation of an XPander system

By its nature the XPander wireless system requires a different installation regime from detectors which are designed to be connected to cables, whether they are analogue addressable or conventional detectors.

The installation must conform to a Code of Practice for the Installation of Fire Detection Systems, such as BS 5839:1.

The steps to be taken when installing XPander are:

1. First carry out a site survey and ensure that a wireless system may be satisfactorily installed.
2. Install the interface in a suitable location consistent with the site survey and connect it to the Apollo loop. Installations guides are provided and should be read carefully before starting work.
3 Select radio operating channels
4. Add devices, ie, detectors, call points or alarm devices, to the interface.
5. Install mounting plates in accordance with the site survey and fit detector heads to bases. Manual call points have mounting plates which are screwed to the wall.

Warning: Fit XPander detectors to XPander bases only. They will be damaged if fitted to any other type of base and will become inoperable.

Installing the interface

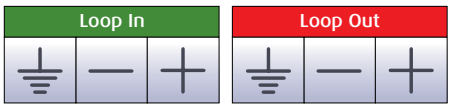
The Interface is connected to the Apollo addressable loop in the same way as any other interface would be.

Note that the XPander Interface is suitable for indoor use only.

The address of the unit must be set by means of the DIL switch. It is recommended that the loop address number is allocated prior to the unit being installed.

The Interface should be sited in accordance with the survey and design details. The recommended minimum distance between metal objects or equipment from the aerial is 400mm. Also the recommended minimum distance to any electrical equipment is 2 metres in all three dimensions.

The Interface has six connections:



The connections are accessed by removing the front plate of the Interface. 20mm knockouts are provided for cable entry.

Full installation instructions are given in the installation guide 39214-926.

Selecting radio operating channels

The XPander interface uses two 868MHz channels to communicate with the wireless detectors and other devices.

Please refer to the Commissioning Guide for instructions on how to select channels

Adding devices to the XPander interface

Up to 31 wireless detectors or alarm signalling devices may be assigned to a single interface.

Prior to adding devices to the Interface batteries must be enabled, the power jumper positioned correctly and the mounting plates (detectors only) fitted.

During the device log-on routine the interface will request confirmation of the device serial number. This is to be found on the side of the radio module.

The XPERT address card must be programmed and fitted prior to assigning a device to the interface.

In the case of sounders or sounder visual indicators the tone must be selected using the 5-segment DIL switch on the base of the sounder or sounder visual indicators.

A detailed commissioning manual, PP2286, is supplied with the interface.

MAINTENANCE AND SERVICING

Detectors should be checked regularly at the intervals indicated by the locally applicable code of practice. Apollo recommends that the detectors be checked at least once a year.

If detectors appear not to be functioning correctly they should be returned to Apollo for testing.

If detectors are externally dirty they can be cleaned carefully with a damp cloth using a small amount of industrial alcohol.

Signal strengths and battery levels

These should be checked during service visits to ensure continued correct operation until the next service visit. This information can be viewed on the LCD screen of the interface.

DirtAlert®

XPander smoke detectors have drift compensation to compensate for changes caused by the environment. The most usual change is contamination.

If the detector is dirty to the point where it can no longer compensate a 'detector dirty' fault will be reported to the control panel.

Dirty detectors can be returned to Apollo for cleaning and recalibration.

Battery replacement

If any device transmits a battery warning message all the batteries should be changed without delay. Apollo guarantees battery life only if Duracell Pro-Cell AA alkaline batteries are used.

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XPANDER®

The XPander Wireless Range

- Wireless
- Eliminates cable problems
- Minimises disruption
- Enables rapid retrofit
- modern styling
- loop-powered interface (868MHz)
- wireless addressesing
- radio base with wireless circuitry and battery compartment
- automatic drift compensation with DirtAlert™ warning
- FasTest™ reduces time taken to test detectors

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