



*Kingfisher Company, inc.*

## Conventional Smoke Detectors KFAPO

### Features:

- Wide operating voltage, 9-33 VDC
- Advanced electronic technology
- Flashing LED
- Magnetic test switch
- Proven detection performance
- Designed to meet approvals worldwide
- Range of bases available



### Description:

KFAPO Series Smoke Detectors incorporate well-proven sensing technologies, together with advances in materials and electronics technology.

The KFAPO Series Smoke Detectors were developed for the safe detection of a wide range of smoke aerosols.

The dual chamber principle with measurement and reference chamber ensures the automatic compensation of environmental impact.

### KFAPO-PE Photo Electric Smoke Detector:

Optical smoke detectors incorporate a pulsing LED located in a chamber within the housing of the detector. The chamber is designed to exclude light from any external source. At an angle to the LED is a photo-diode which normally does not register the column of light emitted by the LED. In the event of smoke from a fire entering the chamber, the light pulse from the LED will be scattered and hence registered by the photo-diode. If the photo-diode "sees" smoke on the two following pulses, the detector changes into the alarm state and the indicator LED lights up. The detector housing is identical to that of the ionization detector but has an indicator LED which is clear in quiescent state but produces red light in alarm.



### **Standard Detector Bases:**

The bases are 4" in diameter and have five terminals marked according to their function: Line 1 in, line 1 out, line 2 in and out, remote indicator negative, earth. Detectors are polarity insensitive, so that identification of positive and negative lines is only required if a remote LED is fitted. An earth connection is not required for either safety or correct operation of detectors. The earth terminal is provided for tidy termination of earthed conductors or cable screens and to maintain earth continuity where necessary.

Bases have a wide interior diameter for ease of access to cables and terminals and there are two slots for fixing screws at a spacing of 2" to 2.75". Detectors fit into bases one way only and require clockwise rotation without push force to be plugged in. They can be locked into the base by a grub screw using a 1.5mm hexagonal driver.

### **Relay Bases**

#### **Application**

Series APO relay bases are primarily intended for use with control units using 4-wire detector supply and alarm initiating circuits. Where local codes allow, they may also be used in 2- and 4-wire circuits to provide volt-free control signals to an auxiliary system such as an automatic door closer. *They are not suitable for use in systems where it is specified or required that operation of the auxiliary system shall be fail-safe and must not be used with any other type of detector.*



The **Standard relay base**, provides one set of volt-free, changeover (form C) contacts that change state when the detector signals an alarm.

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**The Auxiliary relay base**, provides two sets of volt-free changeover contacts to facilitate the switching of a remote LED or other auxiliary device.

**The EOL (end-of-line) relay bases** are intended for use with 4-wire circuits and feature two sets of changeover contacts and a power supervision relay.



**The Series APO Sounder Base** is a high-efficiency conventional alarm sounder. The product offers 32 tones. The sounder base can be secured to a conduit box, a sounder ceiling plate or surface mounted. Sounder Bases should be located to ensure correct operation of the detector in accordance with the detector manufacturer's recommendations and local regulations or codes of practice. Note: The sounder is suitable for indoor use only. The sounder base is designed so that separate detector and sounder circuits can be connected. The sounder circuit is connected using the PCB mounted 4-way terminal block. The detector circuit is connected using the terminals marked L1IN, L1OUT and L2 around the rim of the base in the same way as a standard detector base. Two separate earth terminals are provided to allow the screen termination of earth conductors to maintain continuity between cables that contain an earth conductor. As this product is designed for use on conventional systems with separate detector and sounder circuits, the earths should not be connected together.

## Specifications:

### KFAPO Photo Smoke Detectors

### Flashing LED and Magnetic Test Switch

Supply voltage	9 to 33V
Average quiescent current at 24V	45 $\mu$ A
Average quiescent current at 9V	21 $\mu$ A
Alarm current at 24V	52mA
Alarm current at 9V	17mA
Alarm indication	Red LED
Normal operating temperature -	20 to +60°C (no condensation or icing)
Max wind continuous	10m/s
Remote output (R-) characteristics	Current sink to -ve line, limited to 17mA. <i>Note: when using a remote indicator a current-limiting series resistor may be required.</i>

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## Specifications continued:

### Series APO Relay Bases

Relay base type	Standard	Auxiliary	EOL
Supply voltage	9 to 33V	9 to 33V	16 to 33V
Normal operating temperature	-20 to +70°C (no condensation or icing)	-20 to +70°C	20 to +70°C
<b>Relay ratings:</b>			
Maximum switching power	30W, 50VA	30W, 50VA	30W, 50VA
Maximum switching current	1A (resistive load)	1A (resistive load)	1A (resistive load)
Maximum switching voltage	50V AC	50V AC	50V AC
Minimum capability	10µA, 10mV DC	10µA, 10mV DC	10µA, 10mV DC
Dropout voltage	<6V	<6V	<6V

### Series APO Sounder Base

Operating voltage:	17 to 30VDC
<b>Alarm Currents:</b>	
External Supply:	17mA @ 24VDC
Associated Detector:	8mA @ 24VDC
Standby Currents:	0.15µA @ 24VDC
<b>Audible Intensity:</b>	
High Volume Selection:	85dB @ 10 feet
Low Volume Selection:	75dB @ 10 feet
Wiring Solid or Stranded:	#12 to #22 AWG Terminals
Environmental:	32°F to 100°F (0°C to 38°C) • 0% to 85% RH; Non-Condensing / Non-Freezing
Material:	Makrolon 6455 or 6555; 94V-0
Dimensions:	6" L x 6"W x 1.6" D (152mm x 152mm x 41mm)

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## ORDERING INFORMATION

KFCI #	Model #	Description
84112	KF225-APO	Smoke Detector Head (Ionization)
84113	KF325-APO	Smoke Detector Head (Photoelectric)
84114	KF251-APO	Detector Base—2 Wire, 6 1/4"
84115	KF456-APO	Detector Base—(4-Wire w/ Relay)
84186	KFMB-SDRT-CV	Detector Base—(4-Wire w/ Sounder Base)
84121	KF258-APO	Detector Base ( 4" w/ EOL)
81089	KFMSRA	Remote LED, (Single Gang)
84112-DTS		Specification Data Sheet

King-Fisher Company, inc., products must be used within their published specifications and must be PROPERLY specified, applied, installed, operated, maintained and operationally tested in accordance with their installation instructions at the time of installation and at least twice a year or more often and in accordance with local, state and federal codes, regulations and laws. Specification, application, installation, operation, maintenance and testing must be performed by qualified personnel for proper operation in accordance with all of the latest National Fire Protection Association (NFPA), Underwriters' Laboratories (UL), National Electrical Code (NEC), Occupational Safety and Health Administration (OSHA), local, state, county, province, district, federal and other applicable building and fire standards, guidelines, regulations, laws and codes including, but not limited to, all appendices and amendments and the requirements of the local authority having jurisdiction (AHJ).

NOTE: Due to continuous development of our products, specifications and offerings are subject to change without notice in accordance with King-Fisher Company, inc., standard terms and conditions

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