



# SM-501 SERIES DUCT SMOKE DETECTORS

## **PRODUCT APPLICATION**

The SM-501 series Duct Smoke Detector provides early detection of smoke and products of combustion present in air moving through HVAC ducts in Commercial, Industrial and Residential applications. The SM-501 is designed to prevent the re-circulation of smoke by the air handling systems, fans, and blowers. Complete systems may be shut down in the event of smoke detection.

The SM-501 model will operate on any one of four input voltages (230VAC, 115VAC, 24VAC or 24VDC). The SM-501 allows up to 30 detectors to be interconnected for many common functions.

## **PRODUCT DESCRIPTION**

Continuing our history of building innovative and reliable products, the SM-501 is housed in our popular compact housing. The model provides two sets of 10 Amp form "C" alarm contacts, along with one set of 10 Amp form "C" trouble contacts for monitoring head removal and supply voltage failure.

The green pilot and red alarm visual indicators provided on the front of the SM-501 duct unit signal the operating status of the device. The green pilot LED will be extinguished when the detector head is removed. A manual test/reset switch is located next to the visual indicators.

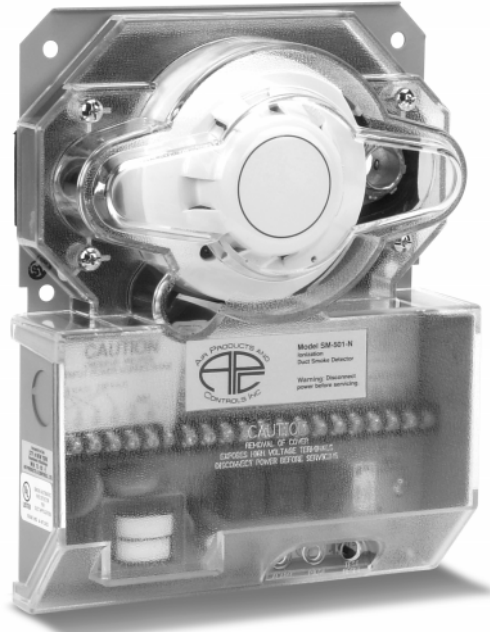
The SM-501 has been specially designed to allow common detector functions to be linked between up to 30 detectors. Specifically, 30 units may be wired to use a common test/reset function, and to alarm when a single unit alarms. Also, up to 15 units with signaling devices may be interconnected to operate with a single alarm.

The SM-501 is designed and built to meet all local requirements, as well as the NFPA regulations regarding duct smoke detectors. Output terminals are provided for remote accessories such as horns, strobes, remote status indicators and test/reset key switches or push buttons.

The ionization and photoelectric detector heads are interchangeable. Air sampling is accomplished via two tubes which protrude into the duct. An exhaust tube of one standard length (7.0") is supplied in the installation kit with the duct smoke unit. Once the duct width had been determined, the air intake sampling tubes must be ordered. Sampling tubes are supplied in three standard lengths (2.5ft, 5.0ft and 10.0ft), and are cut to size to fit the duct. Mounting the duct smoke detector is accomplished by the use of a template and four sheet metal screws, as provided. Mounting can be achieved without the removal of the clear cover, which is secured by four captive screws.

## **FEATURES**

- ❖ Operating voltages 230VAC, 115VAC, 24VAC, 24VDC
- ❖ Interconnect up to 30 units for common functions
- ❖ UL, CSFM and MEA Listed
- ❖ Compact Size
- ❖ 2 Sets of alarm contacts
- ❖ 1 set of trouble contacts
- ❖ Rugged steel back box with clear cover
- ❖ Compatible with the WP-1 weatherproof enclosure
- ❖ Clear cover fitted with 4 captive screws
- ❖ Large terminal connection screws
- ❖ Interchangeable "Plug-In" photoelectric or ionization heads
- ❖ Easy Installation without cover removal (Mechanical)
- ❖ Dust filtering in detector head
- ❖ No additional screens or filters to clean



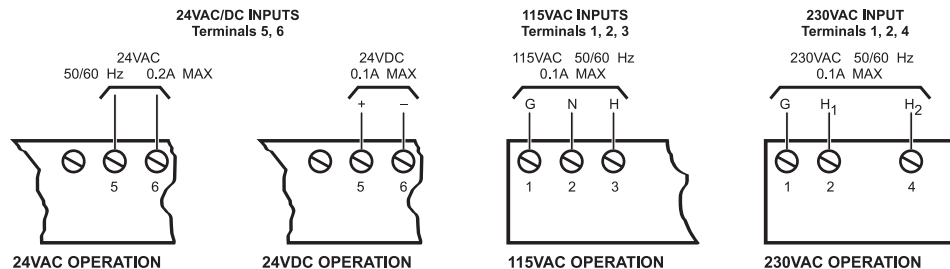
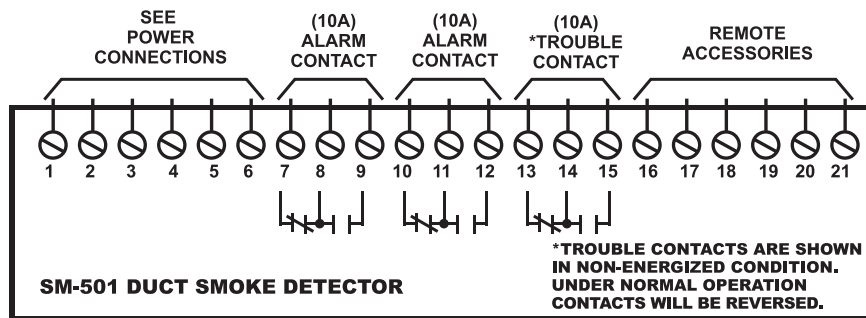
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**A**  
**HALMA**  
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**COMPANY**



## WIRING



## PRODUCT SPECIFICATIONS

MODEL NUMBER:	<b>SM-501-N</b>	Ionization: 230VAC, 115VAC, 24VAC, 24VAC/DC
	<b>SM-501-P</b>	Photoelectric: 230VAC, 115VAC, 24VAC, 24VAC/DC
DETECTOR MODEL NUMBER:	S60 Ionization Detector Head 55000-250APO S60 Photoelectric Detector Head 55000-350APO	
SAMPLING TUBES:	<b>STS-2.5</b>	Sampling tube for 6" to 2.5' duct width
	<b>STS-5.0</b>	Sampling tube for 2.5' to 5.0' duct width
	<b>STS-10.0</b>	Sampling tube for 5.0' to 10.0' duct width
POWER REQUIREMENTS: Quiescent (Without accessories)	230VAC	12.0 mA
	115VAC	25.0 mA
	24VAC	35.0 mA
	24VDC	15.0 mA
Head in Alarm:	230VAC	16.0 mA
	115VAC	32.0 mA
	24VAC	74.0 mA
	24VDC	56.0 mA
RELAY CONTACT RATING:		
Alarm Contacts:	2 sets form "C" rated at 10 Amps @ 115VAC Resistive	
Trouble Contacts:	1 set form "C" rated at 10 Amps @ 115VAC Resistive	
AIR VELOCITY:	500 to 4,000 ft./min.	
AMBIENT TEMPERATURE:	<b>Model SM-501-N</b>	32°F to 155°F (0°C to 68°C)
	<b>Model SM-501-P</b>	32°F to 100°F (0°C to 38°C)
HUMIDITY:	10% to 85% R.H. No Condensation	
APPROVAL:	Underwriters Laboratories Listed (UL268A) CSFM Listed (3240-1004:108) MEA Listed (73-92-E)	
MATERIAL:	18 Ga. Steel backbox, clear plastic cover	
FINISH:	Grey Paint	
DIMENSIONS:	L-9 1/8" X W-7 1/4" X H-2 1/4"	
MAX. NET WT.:	3 1/2 lbs.	
RADIOACTIVE ELEMENT:	For <b>SM-501-N</b> (Ionization) Americium 241; 0.9 Micro-Curie Do Not Expose to Corrosive Atmospheres	

## ENGINEERS & ARCHITECTS SPECIFICATIONS

- Air duct smoke detectors shall be Air Products and Controls Inc. SM-501 Series. For Ionization detectors the model number is **SM-501-N**. For photoelectric detectors the model number is **SM-501-P**. The detectors shall be listed by Underwriters Laboratories per UL 268A. The detectors shall operate at air velocities from 500 feet per minute to 4,000 feet per minute.
- The duct detector housings shall be of metal construction and complete mechanical installation may be performed without removal of detector cover.
- Visual indication of alarm and power must be provided on the detector front.
- A manual reset switch shall be located on front of the device.
- Detector head shall not require additional filters or screens which must be maintained.
- The housing shall contain a detector base which will accept photoelectric or ionization detector heads.
- Terminal connections shall be of the screw type and be a minimum of #6 screw. Terminals shall be provided for remote pilot, remote alarm indications, strobe/horn and remote reset switch. All wiring must comply with local codes and regulations.