

## DESCRIPTION

Duct mounted, multi-voltage, photoelectric smoke detectors.

**SM-501**

## APPLICATION

The duct smoke detectors provide early detection of smoke and products of combustion in air moving through HVAC ducts. Two simultaneous alarm contacts enable fan shutdown, fire alarm, BAS alarm and other control interface functions. Trouble contact reports detector head removal and failure of input supply voltage. A switch allows manual alarm reset and test of detector. The accessories outputs provide connection capability of external horn, strobe, remote status indicators and reset of alarm. The smoke detectors are compatible with HVAC temperature control, fire alarm and building automation systems.



CSFM Approved  
Listing No.  
3240-1004:108

MEA Approved  
No. 73-92-E

## FEATURES

- *Multi-voltage*
- *115 VAC, 230 VAC, 24 VAC, 24 VDC*
- *Photoelectric heads*
- *Interconnect up to 30 units*
- *Output for remote accessories*
- *(2) alarm & (1) trouble contacts*
- *Listed: UL, CSFM, MEA*

## SPECIFICATIONS

### Electrical

Power requirement (w/o remote accessories) 115 VAC at 25 mA standby, 32 mA alarm;  
230 VAC at 12 mA standby, 16 mA alarm;  
24 VAC at 35 mA standby, 74 mA alarm;  
24 VDC at 15 mA standby, 56 mA alarm

### Sensor

Sensor type Photoelectric  
plug-in head, interchangeable, detects smoke and products of combustion in air  
Type of Operation Alarm control w/manual reset, (2) sets of simultaneous contacts. Trouble report for detector head removal, and failure of supply voltage.

### Contact

- alarm initiation (2) SPDT, 10 A resistive @ 115 VAC  
- trouble (1) SPDT, 10 A resistive @ 115 VAC

Output remote accessories Connection for pilot, horn, strobe, remote status indicators and reset key switches or push buttons

Alarm trip setting Fixed

Alarm reset/test Manual switch w/visual indicator

### Status LED displays

Green = Power on

Red = Smoke detected (relays energized)

### Duct air sampling

Via two (2) duct immersion tubes, a 7.5 in. (191 mm) exhaust tube supplied, intake sampling tube must be ordered separately

### Environmental

#### Permissible

- air velocity range 500 to 4,000 feet per minute (2.5 to 20 meters per second)
- detector head protection Dust filter installed
- temperature range 32°F to 100°F (0°C to 38°C)
- humidity range 10% to 85% relative humidity, non-condensing

### Physical

#### Enclosure, standard

- wire Maximum 14 AWG (2.5 mm<sup>2</sup>), solid or stranded wire
- cable entry (3) knockouts for 1/2 in. conduit
- connection Terminal blocks, screw type for wire leads
- material Steel-back box, 18 G.A., w/clear plastic cover
- color Gray paint
- protection NEMA 1
- installation Duct mounted, mounting template and (4) metal screws supplied

## SPECIFICATIONS

### Physical (cont..)

- width	7.25 in. (148 mm)
- height	9.13 in. (232 mm)
- depth	2.25 in. (57 mm)
Weight	3.5 lb. (1.6 kg)

**Approvals/Listings** UL Listed, CSFM, MEA

## ORDERING INFORMATION

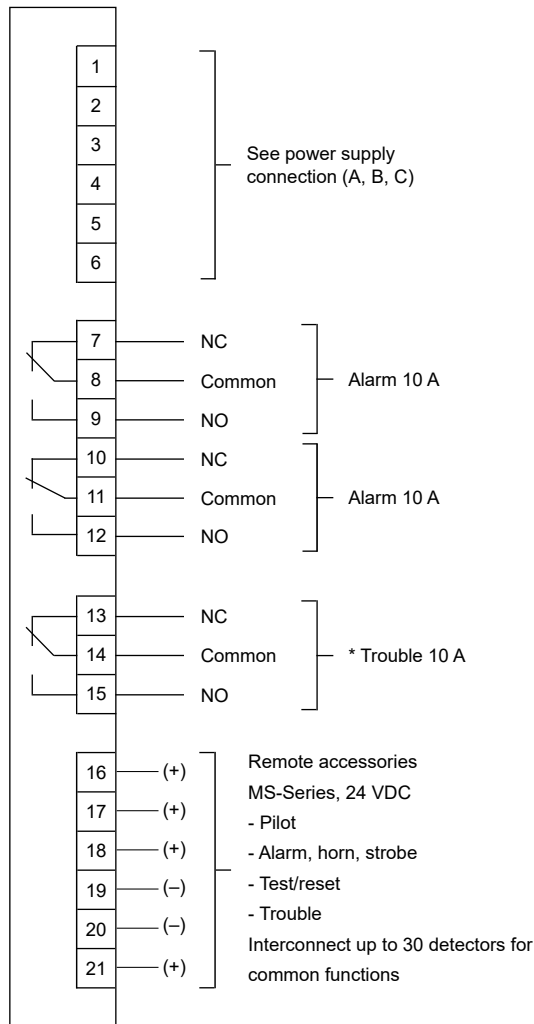
### Part Numbers

Duct smoke detectors

- photoelectric **SM-501-P**

## WIRING CONFIGURATION

### SM-501



## OPTIONS

### Intake sampling tubes

- for 6" to 2.5' duct width
- for 2.5' to 5.0' duct width
- for 5' to 10.5' duct width

**STS-2.5**

**STS-5.0**

**STS-10.0**

### Outdoor enclosure

- NEMA 3R

**WP-1**

### Remote displays/stations

- Labeled duct smoke detector & alarm LED
- Alarm LED
- Alarm & pilot LEDs
- Alarm LED & test/reset button
- Alarm & pilot LEDs, & test/reset button
- Alarm horn
- Pilot & alarm LEDs, & horn
- Alarm & pilot LEDs, horn, & key test/reset switch
- Alarm, trouble & pilot LEDs, horn & key test/reset switch

**MS-RD**

**MS-RA**

**MS-RA/P**

**MS-RA/R**

**MS-RA/P/R**

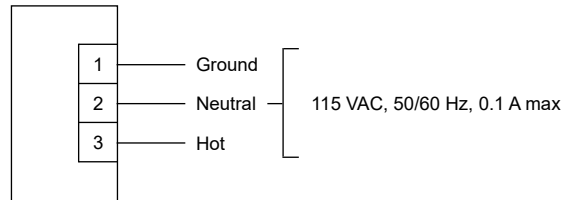
**MS-RH**

**MS-RH/P/A**

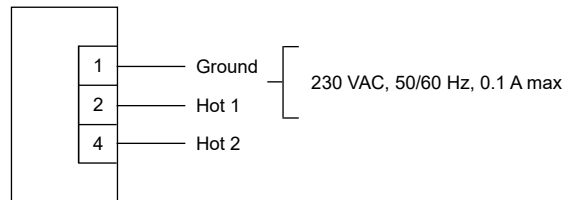
**MS-RH/KA/P/R**

**MS-RH/KA/P/A/T**

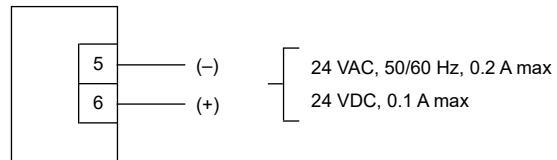
### A. 115 VAC power supply



### B. 230 VAC power supply



### C. 24 VAC or VDC power supply



\* Trouble contacts are shown in non-energized condition.  
Normal operation contacts will be reversed.

Note: • All wiring must comply with local codes and regulations.