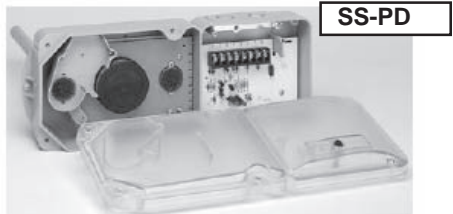


# SS-PD and SS-PDR

## Intelligent Low-Flow Photoelectric Duct Smoke Detectors



### Description

The Gamewell SS-PD and SS-PDR Intelligent Low-Flow Photoelectric Smoke Duct Detectors provide low-flow technology that enables duct smoke detection throughout a broad range of airflow environments in HVAC applications. The low-flow technology can detect smoke at air speed velocities of 100 feet per minute (0.5 m/sec.) or greater, while continuing the same reliable performance to 4,000 feet per minute (20.32 m/sec.). The intelligent low-flow duct detectors sample air currents passing through a duct and gives dependable performance for shutdown

of fans, blowers, and air conditioning systems, preventing the spread of toxic smoke and fire gases through the protected area.

The SS-PD and SS-PDR provide a **remote alarm output** for use with auxiliary devices such as the RA400 remote LED annunciator, as well as **remote test capability** with the RTS451 or RTS451KEY Remote Test Stations.

The SS-PD is a photoelectric duct detector with SmartScan™ protocol. The SS-PDR additionally incorporates a relay.

### Applications

Duct smoke detectors have specific limitations, they are:

- **NOT** a substitute for open area smoke detectors.
- **NOT** a substitute for early warning detection.
- **NOT** a replacement for a building's regular fire detection system.

Please call Gamewell for a copy of System Sensor's application guide, *Proper Use of Smoke Detectors in Duct Applications*, (A05-1004-00).

### Installation

**Wiring:** For signal wiring (the wiring between detectors or from detectors to auxiliary devices), it is recommended that single conductor wire be no smaller than 18 AWG (0.75 mm<sup>2</sup>). The duct smoke detector terminals accommodate wire sizes up to 12 AWG (3.25 mm<sup>2</sup>). Flexible conduit is recommended for the last foot (30.48 cm) of conduit; solid conduit connections may be used if desired.

Smoke detectors and alarm system control panels have specifications for Signaling Line Circuit (SLC) wiring. Consult the control panel specifications for wiring requirements before wiring the detector loop. The SS-PD and SS-PDR detectors are designed for ease of wiring; their housing provides a terminal strip with clamping plates.

**LED Features:** If programmed with the system control panel, two LEDs on each duct smoke detector light to provide local visible indication.

### Features

- Air velocity rating from 100 to 4,000 feet per minute (0.5 to 20.32 m/sec.).
- Patented telescopic sampling tube.
- Easily accessible code wheels for addressing detector.
- Outside mounting tabs.
- Mounts to round or rectangular ducts from 1' to 12' (0.3 to 3.7 meters) wide.
- Transparent cover for convenient visual inspection.

### Listings

Listings and approvals below apply to the SS-PD and SS-PDR Intelligent Low-Flow Photoelectric Duct Smoke Detectors. In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- UL Listed: file S1115.
- CSFM approved: file 3240-1288:167.
- MEA approved: file 384-02-E Vol. III.

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## Programming specifications requirements for intelligent system control panels:

The number of devices that can have their LEDs programmed to illuminate is limited by the features of the panel and the individual devices. The actual number of devices is determined by the control panel and its ability to supply LED current. Refer to the control panel installation manual for details.

SS-PD: Current Requirements (using no accessories)				
Power Supply Voltage	30-30VDC	24VAC, 50/60 Hz	120VAC, 50/60 Hz	220/240 VAC, 50/60 Hz
Max. Standby Current	26 mA	65 mA RMS	44 mA RMS	25 mA RMS
Max Alarm Current	87 mA	182 mA RMS	52 mA RMS	30 mA RMS
Alarm Response Time	3 to 17 Sec.	3 to 17 Sec.	3 to 17 Sec.	3 to 17 Sec.
Power Up Time	2 Sec.	2 Sec.	2 Sec.	2 Sec.

SS-PDR: Relay Contact Ratings	
Alarm Auxiliary Contacts * (DPDT)	10 Amp @ 30 VDC
	10 Amp @ 277 VAC (0.75 Power Factor)
	240 VAC @ 249 VAC (0.4 Power Factor)
	1/8 HP @ 120 VAC
	1/4 HP @ 240 VAC
Supervisory Contact (SPST)	2.0 Amp @ 30 VDC (resistive)
Minimum switching current of 100 mA @ 5 VDC.	

## Product Line Information

Model	Description
SS-PD	Duct detector housing with SmartScan™ photoelectric smoke detector.
SS-PDR	Duct detector housing with SmartScan™ photoelectric smoke detector, DPDT relay.
A5053GM	Replacement photoelectric sensor board.
A5067	Replacement power board (without relay).
A5060	Replacement power board (with relay).
ST-1.5	Metal sampling tube, duct widths 1' to 2' (see table at left for metric lengths).
ST-3	Metal sampling tube, duct widths 2' to 4'.
ST-5	Metal sampling tube, duct widths 4' to 8'.
ST-10	Metal sampling tube, duct widths 8' to 12'.
RA400Z	Remote annunciator alarm LED.
RTS451	Remote test station. Mounts in single-gang box. Includes red alarm LED and magnet test switch.
RTS451KEY	Key-activated remote test station.
F36-09-11	Replacement filters.
M02-04-00	Replacement test magnet.
S08-39-01	Replacement photo insect screen.



The RA400Z



The RTS451



The RTS451KEY

## Specifications

### SS-PD

#### Operating voltage range

15 to 32 VDC.

#### Standby current

300 µA @ 24 VDC (one communication every 5 seconds with LED blink enabled).

#### Operating temperature range

32° to 131°F (0° to 55°C).

#### Relative Humidity range

10% to 93% (non-condensing).

#### Duct air velocity

100 to 4,000 feet/min (0.5 to 20.32 m/s).

#### Dimensions

14.750" (37 cm) length x 5.500" (14 cm) width x 2.750" (7 cm) deep.

#### Options

1. RTS-451, RTS-451KEY, RA400Z.
2. PA400 (Review installation instructions on power requirements).

### SS-PDR

#### Operating voltage range

20 to 30 VDC, 24 VAC/VDC, 120/240 VAC auxiliary power (requires a separate auxiliary source).

#### Standby current

300 µA @ 24 VDC (one communication every 5 seconds with LED blink enabled).

#### Operating temperature range

32° to 131°F (0° to 55°C).

#### Relative Humidity range

10% to 93% (non-condensing).

#### Duct air velocity

100 to 4,000 feet/min (0.5 to 20.32 m/s).

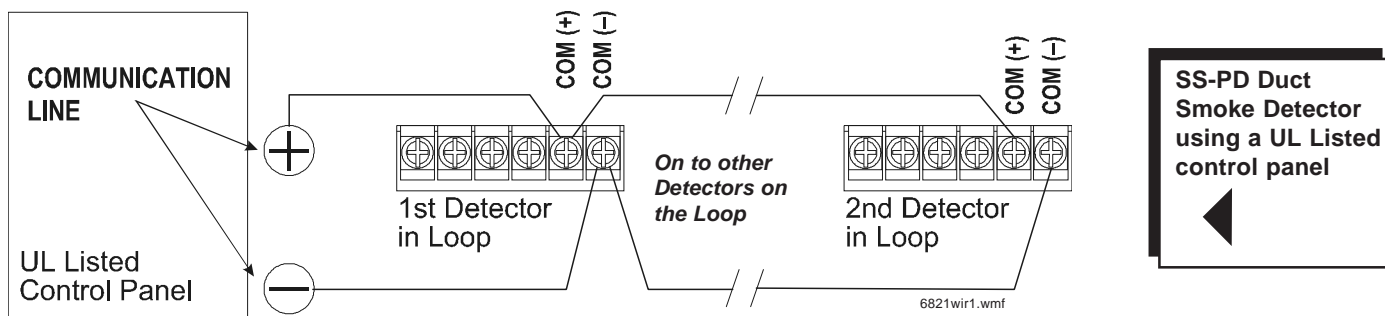
#### Dimensions

14.750" (37 cm) length x 5.500" (14 cm) width x 2.750" (7 cm) deep.

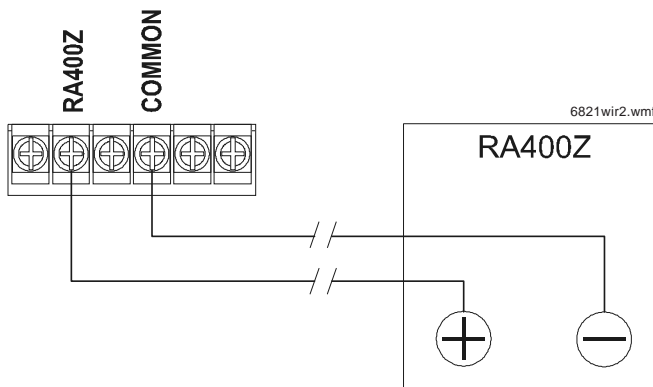
#### Options

1. RTS-451, RTS-451KEY, RA400Z.
2. PA400 (Review installation instructions on power requirements).

# Sample Wiring Diagrams



## SS-PD Detector Terminals

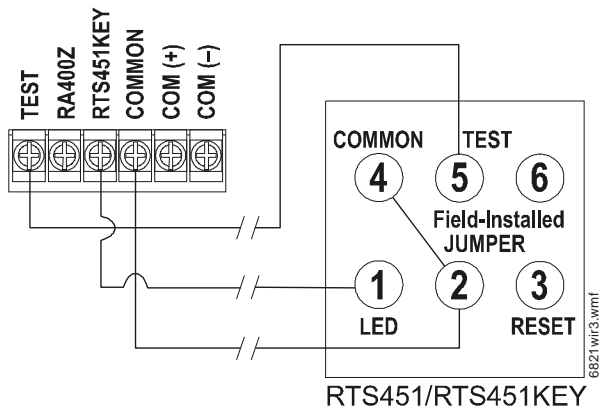


## SS-PD Detector Terminals

### SS-PD Duct Smoke Detector with RTS451/RTS451KEY

**NOTE:** For *RTS451*, Terminal 3 is not used. *RTS451* does not have a Terminal 6.

For *RTS451KEY*, Terminals 3 and 6 are not used.



**SS-PD**  
Please refer to manual  
I56-1978-002R for  
installation instructions.

**SS-PDR**  
Please refer to manual  
I56-1979-003R for  
installation instructions.

Outside Duct Width	Inlet Tube*
Up to 2 feet (0.6096 m)	ST-1.5
2 to 4 feet (0.6096 to 1.2192 m)	ST-3
4 to 8 feet (1.2192 to 2.4384 m)	ST-5
8 to 12 feet (2.4384 to 3.6576 m)	ST-10

\*NOTE: Inlet tube is required and must be purchased separately. Order one inlet tube for each duct smoke detector ordered.



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