

UL Listed

Features

Optical smoke detector

UL listed to Standard ANSI/UL 268

ULC listed to CAN/ULC-S529-M87

5" Base and 6" Adaptor Listed to Standard ANSI/UL 268

CAN/ULC-S530-M91

- Optional remote alarm indicating LED
- Low profile, discrete and unobtrusive
- Designed for EMI compatibility
- Superior performance and reliability
- Attractive new design
- Designed for fast and easy installation
- Unique 'park' position for commissioning and service procedures
- Interfaces seamlessly with a wide range of panels
- Compatible with Tyco 600 Series for easy upgrade
- Low operating current, up to 32 detectors per zone
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- Optional remote alarm indicating LED
- Low profile, discrete and unobtrusive
- Designed for EMI compatibility

Models available in two sensitivity settings:

- 601P-UL Standard Sensitivity, nominal 2.11 to 3.8%/ft obscuration
- 601P-UL-L Special Application Sensitivity, nominal 3.0 to 3.8%/ft obscuration

Functional chamber enclosure:

- Concentric baffle design enhances smoke capture by directing air flow to the smoke chamber

Description

The optical detector uses a unique measuring system. Unlike most other optical scatter detectors the optical does not use vertical chevrons to exclude ambient light, but uses concentric baffles. This approach gives a better signal to noise ratio.

This type of detector is very effective in detecting very low levels of visible smoke particulates (often at levels where they are not visible to the naked eye). Invisible smoke aerosol products, cannot however, be detected using current optical smoke detectors as these aerosols do not scatter or obscure light. This means that optical detectors favour the type of fire that we have described as slow burning.

Series 600 Smoke Detectors

Series 600 Optical Smoke Detector for Two-Wire Bases

Although this is true, some smouldering materials such as rubber will produce a predominantly black smoke, which has less scattering properties than white smoke and will be detected later than an equivalent density of white smoke.

Specifications

Voltage	10.5 to 33 VDC from Fire Alarm Control Panel IDC
Standby Current	62µA @ 10.5VDC 65µA @ 24VDC 70µA @ 33VDC
Alarm Current	Up to 68mA maximum, exact current is determined by alarm current limiting of connected IDC
Storage Temp. Range	-13°F to 176°F (-25°C to 80°C)
Operating Temp. Range	+32°F to +100°F (0°C to 37.8°C)
Humidity Range	Up to 95% non-condensing
Color	White 019
Dimensions	5" Dia. x 2-1/8" H, mounted in base (125.4mm x 55mm). 6" Dia x 2-3/5" H when mounted in base with base adapter (152mm x 65.8mm)



601P-UL optical Smoke Detector Mounted in 5B-UL Base and 6A-5B-UL Base Adapter

Series 600 Detector Features

The optical system consists of an infra-red emitter and receiver, so arranged, that their optical axes cross in the sampling volume. The emitter produces a narrow beam of light which is prevented from reaching the receiver by the baffles. When smoke is present in the sampling volume a proportion of the light is scattered, some of which reaches the receiver. For a given type of smoke, the light reaching the photodetector is proportional to the smoke density.

The emitter is a GaAlAs solid state type operating in the near infra-red at 880nm, while the sensor is a matched silicon photodiode. These devices are held in place by the labyrinth mouldings. The design of the labyrinth is such that the presence of small insects should not cause false alarms.

Application Reference

Detector Locations Refer to Table 1). Locations should be determined only after careful consideration of the physical layout and contents of the area to be protected. Refer to NFPA 72, the *National Fire Alarm Code*. On smooth ceilings, smoke detector spacing of 30ft (9.1m) may be used as a guide.

Sensitivity Selection. The 601P-UL standard sensitivity detector is recommended for most applications. When a special application for reduced sensitivity detector is required, the 601-P-UL-L should be considered. Consult your local Simplex product supplier for assistance in determining the proper selection.

Product Selection

Smoke Detectors

Model	Description	Nominal Sensitivity	Compatibility
601P-UL	Optical Smoke Detector	2.11 to 3.8%/ft	Compatible with 5B-UL 5" base
601P-UL-L		3.0 to 3.8%/ft	

Compatible Bases

Model	Description	Details
5B-UL	2-Wire Base with connections for Remote Alarm LED Indicator	IDC and LED connections are screw terminals for input/output wiring. 18 to 14 AWG (1mm ² to 1.5mm ²)

Detector Accessories

Model	Description	Details
6A-5B-UL	6" Base Adaptor	Increases the 5B surface area
CW-5B	Detector Protective Cage	Robust protective cage for Series 600 detectors using the 5B base
SA600	Line shorting adaptor	Commissioning tool, shorts out base contacts to enable cable resistance checks to be carried out

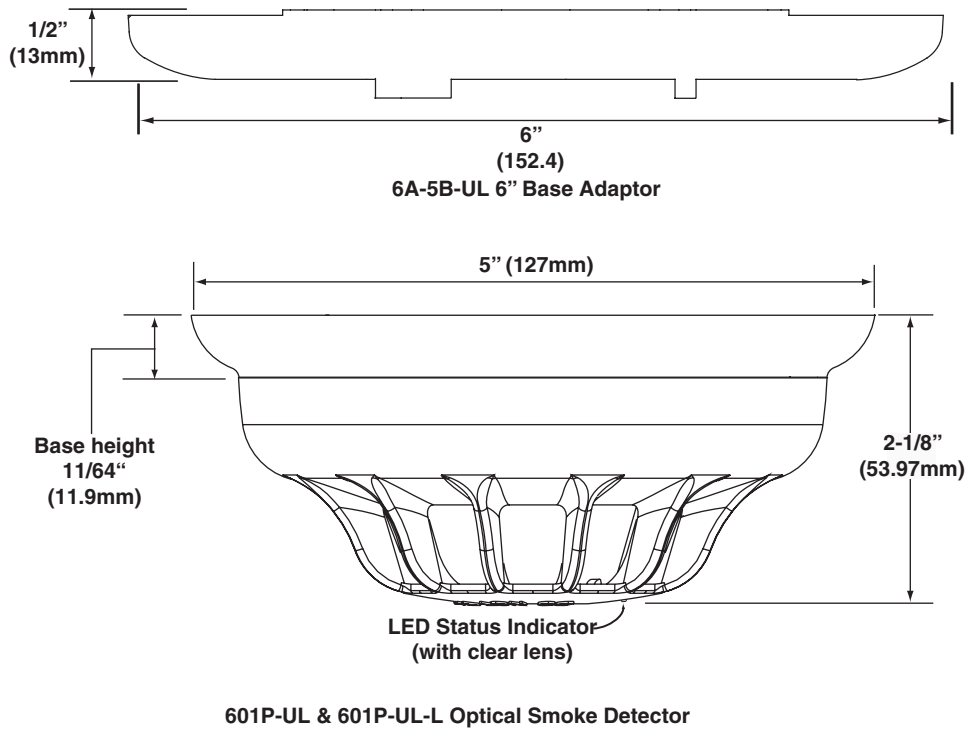
Detector Status LED Indications

LED Indication	Status
Pulses approximately every 10 seconds	Normal
Steady On	Alarm



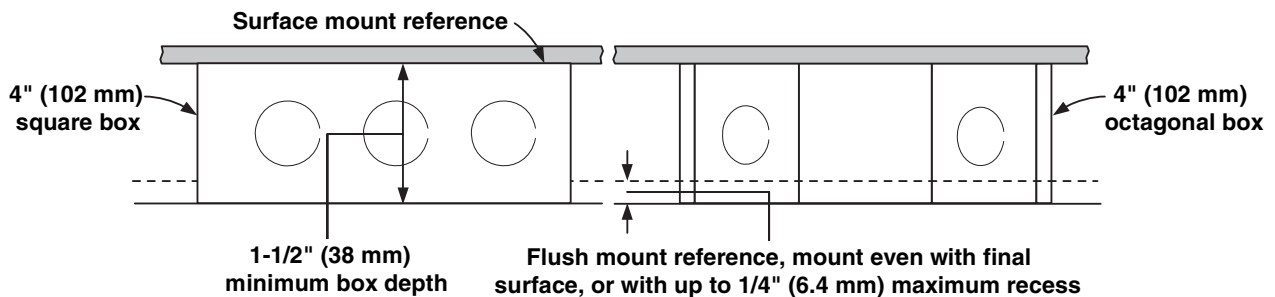
CW-5B Detector Cage

Dimensions and Reference Information



Mounting Information

Electrical Box Requirements:
 4" octagonal or 4" square, 1-1/2" deep
 Single gang, 2" deep



6A-5B-UL Adapter Plate, required for mounting to surface mounted boxes and to 4" square flush mount boxes



ENVIRONMENT	A		B		C		D		E	
	VERY CLEAN AND DRY	BENIGN MODERATELY CLEAN REGULATED TEMPERATURE	DIRTY - SMOKY	DUSTY AND/OR HUMID	UNREGULATED TEMPERATURE					
FOR EXAMPLE	CLEAN ROOM DATA PROCESSING SUITE	OFFICES, LIGHT INDUSTRIAL, HOSPITALS, RESIDENTIAL, PASSENGER ACCOMMODATION	LOADING BAY/ WAREHOUSE WITH DIESEL FORK-LIFTS etc. HEAVY INDUSTRIAL FERRY (CAR DECK)	LIVESTOCK PEN MILL, LAUNDRY, CHANGING ROOM	BOILER ROOM FOUNDRY KILN					
FIRE LOADING	PROBABLE RISK									
1	ELECTRONIC EQUIPMENT ELECTRICAL SWITCHGEAR ELECTRIC MOTORS CABLE CONDUIT	CABLE PYROLYSIS (TOXIC FUMES) ELECTRICAL ARCS (IGNITION SOURCE) ASSOCIATED ELECTRICAL DANGERS	601P-UL 601PH-UL 601I-UL	601P-UL 601PH-UL 601I-UL	601P-UL					
2	FABRICS, CLOTHES SOFT FURNISHINGS PAPER, CARDBOARD PLASTIC FOAMS ANIMAL BEDDING WOOD SHAVINGS etc.	SMOULDERING (DIFFICULT TO LOCATE - TOXIC FUMES) LIKELIHOOD OF FLASHOVER (BACK-DRAUGHT)		601PH-UL 601P-UL	601P-UL		601P-UL			
3	FLAMMABLE LIQUIDS PAINTS, SOLVENTS FLAMMABLE GASSES UNSTABLE CHEMICALS	FLAMING FIRE (RAPID BUILD-UP OF DENSE SMOKE) HIGH TEMPERATURE FUMES ASSOCIATED EXPLOSION DANGERS	601I-UL 601PH-UL 601P-UL	601I-UL 601PH-UL 601P-UL	601H-RF-UL 601I-UL		601H-RF-UL			
4	FOODSTUFFS GENERAL ORGANIC WASTE ANIMAL FODDER WOODEN STRUCTURES SOLID FUELS	SMOKE AND FLAME INITIALLY FAIRLY SLOW BUT HIGH TEMPERATURES ONCE ESTABLISHED		601PH-UL 601P-UL 601I-UL	601PH-UL 601P-UL 601I-UL	601PH-UL 601H-RF-UL	601P-UL 601H-RF-UL		601H-F-UL 631H-F-UL	
5	PLASTIC, CHEMICALS MACHINERY BUILDING MATERIALS UNKNOWN CONTENTS	TYPE OF FIRE RISK MAY VARY AS CAN THE TYPE OF FIRE (MAY REQUIRE A MIX OF DETECTION TYPES)	601PH-UL 601P-UL 601I-UL	601PH-UL 601I-UL 601H-RF-UL	601P-UL 601I-UL 601H-RF-UL		601P-UL		601H-F-UL 631H-F-UL	

Table. 1 Application of Series 600 Sensors

The table is for guidelines only, specific situations are likely to require variations on the suggested detector types. Real situations may require detector combinations to cover all likely risks.