Model 6424 Projected Beam Smoke Detector

SYSTEM SENSOR®
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Models Available

6424 Projected Beam Smoke Detector, includes Transmitter and Receiver
6424A Projected Beam Smoke Detector, ULC Listed

Features

- 30′ to 330′ protection range
- Broad operating temperature range (–22°F to 131°F)
- 4-wire 24 VDC operation
- Receiver and transmitter may be powered separately or together
- One EOL power relay supervises both receiver and transmitter
- Calibrated test filter included
- Ceiling and wall mount brackets included
- Alignment LEDs
  –No special tools required
- Built-in automatic gain control compensates for signal deterioration from dust build-up
- Remote test station option
- 3-year warranty

System Sensor Model 6424 Projected Beam Smoke Detector is uniquely suited for protecting open areas with high ceilings where conventional spot type smoke detectors are difficult to install and maintain. Listed for operation at the broadest temperature range in the industry (–22°F to 131°F), the 6424 can be used in garage or warehouse applications to provide early warning in environments where temperature extremes exceed the capability of spot-type smoke detectors.

Specifications

Operational

Range:	30 feet to 330 feet (length)
Sensitivity:	30% ± 5% total obscuration, or 55% ± 5% total obscuration
Fault Condition: (Trouble)	95% or more obscuration, Automatic gain control limit, Improper initial alignment
Alignment Aid:	Integral signal strength indication (4 red LEDs)
Indicators:	
Alarm:	Local red LED
Trouble:	Local amber LED
Normal:	Local flashing green LED
Test/Reset Features:	Obscuration filter Local reset switch Remote test and reset switch capability (compatible with RTS451 test station)

Smoke Detector Spacing:
On smooth ceilings, 60 feet between projected beams and not more than one-half that spacing between a projected beam and a sidewall. Other spacing may be used depending on ceiling height, airflow characteristics, and response requirements. See NFPA 72 A-5-3.5.5.2.

Relays:	Alarm, trouble EOL relay is required to supervise power

Specifications (continued)

Environmental

Temperature:	–30°C to 55°C (–22°F to 131°F)
Humidity:	95% RH noncondensing

Electrical (Receiver)

Voltage:	20 to 32 VDC Maximum
Maximum Ripple Voltage:	30% of nominal (peak to peak)
Current (24 VDC):	
Standby:	10mA maximum
Alarm:	28.4mA maximum
Trouble:	27.1mA maximum
Start-up Surge:	19mA maximum
Relay Contacts:	.5A at 30VAC/DC
Reset Time:	.6 seconds maximum
Start-up Time (after 5 min. reset):	1 minute maximum
Power Loss:	Retain memory for 5 minute minimum

Electrical (Transmitter)

Voltage:	18.8 to 32 VDC
Maximum Ripple Voltage:	30% of nominal (peak to peak)
Current (24VDC):	10mA maximum

Mechanical

Dimensions:	
	2.5″H × 8.5″W × 7″D w/no bracket
	5.5″H × 8.5″W × 7″D w/ceiling mount bracket
	5.5″H × 8.5″W × 10″D w/wall mount bracket
Weight:	Receiver 1.5 lb (663 g)
	Transmitter 1.3 lb (598 g)
Mounting:	Separate ceiling and wall brackets
Wiring:	Plug with attached cable

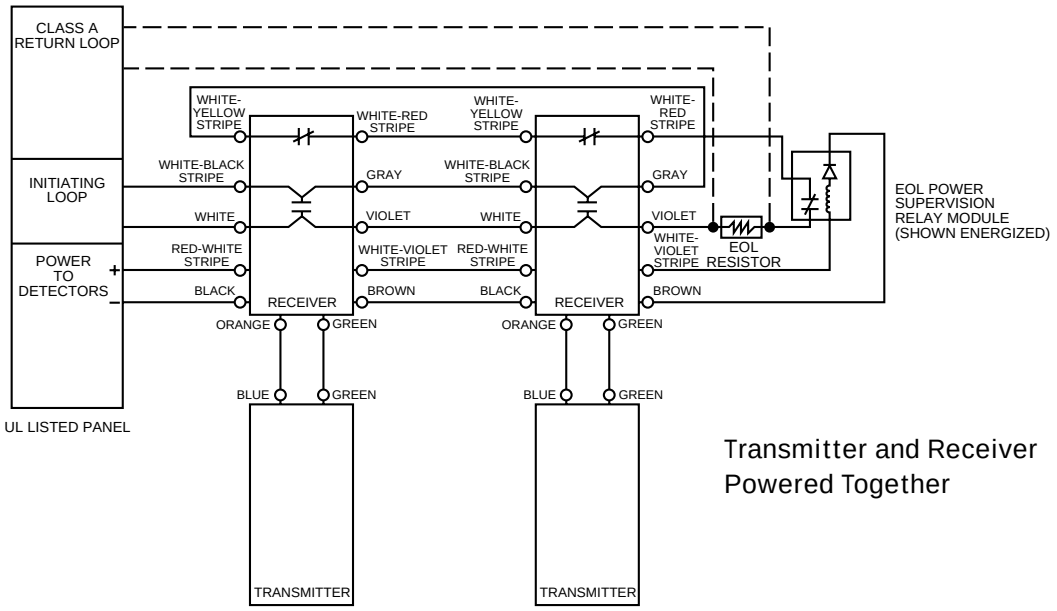
Description

The 6424 consists of a transmitter and receiver with separate alarm and trouble signals which distinguish between a percentage of signal blockage and a total beam block. Four alignment LEDs on the front of each unit indicate signal strength to ease alignment. The Remote Test Station with alarm LED indicator, Model RTS451, is an accessory that mounts to a standard single gang box and can test and reset the Beam Detector from a remote location.

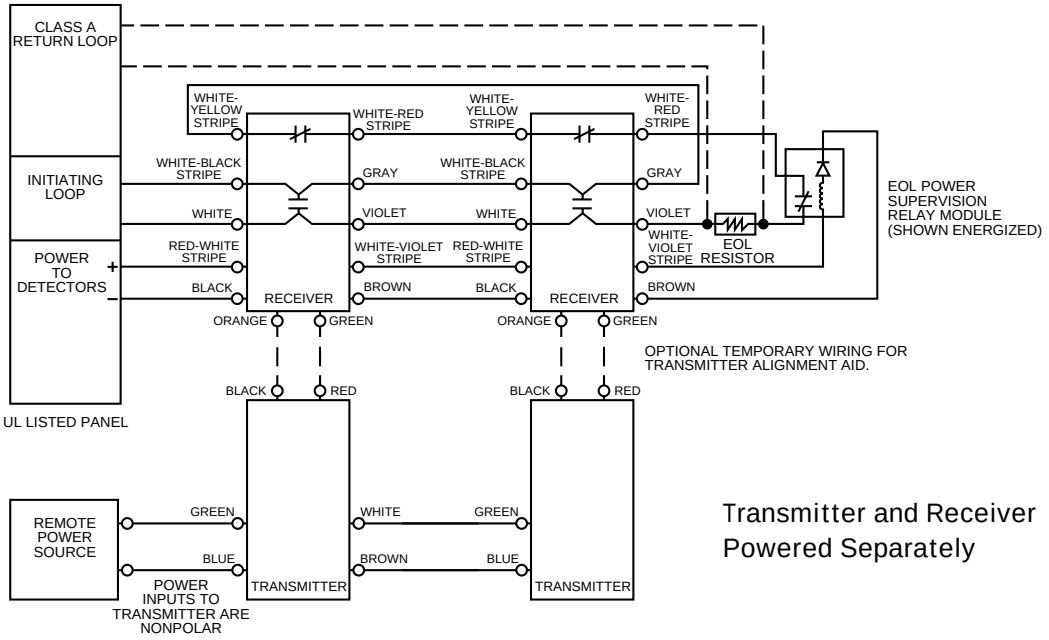
Engineering Specifications

The projected beam type smoke detector shall be a 4-wire 24 VDC device to be used with U.L. listed separately supplied 4-wire control panels only. Unit shall be listed to U.L. 268 and shall consist of a separate transmitter and receiver capable of being powered separately or together. The detector shall operate in either a short range (30–100 ft.) or long range (100–330 ft.) mode. The temperature range of the beam shall be –22°F to 131°F. The detector shall feature a bank of four alignment LEDs on both the receiver and transmitter that are used to ensure proper alignment of unit without special tools. The beam detector shall feature automatic gain control which will compensate for gradual signal deterioration from dirt accumulation on lenses. The unit shall include both ceiling and wall mounting brackets. Testing shall be carried out using calibrated test filters or a magnet activated remote test station.

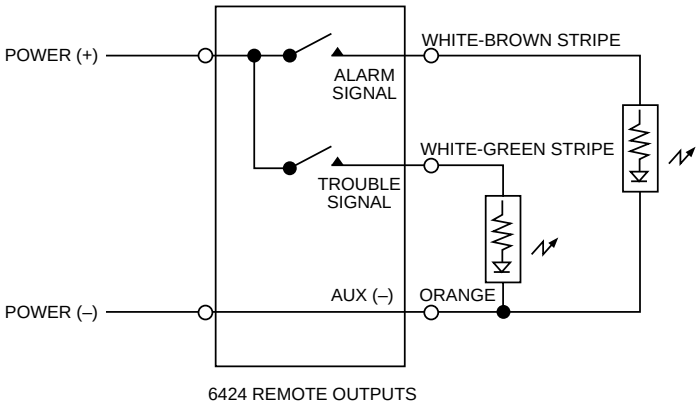
6424 Beam Smoke Detector Wiring Guide



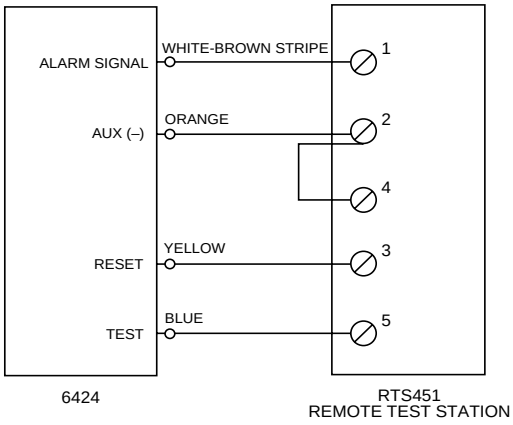
Transmitter and Receiver Powered Together



Transmitter and Receiver Powered Separately

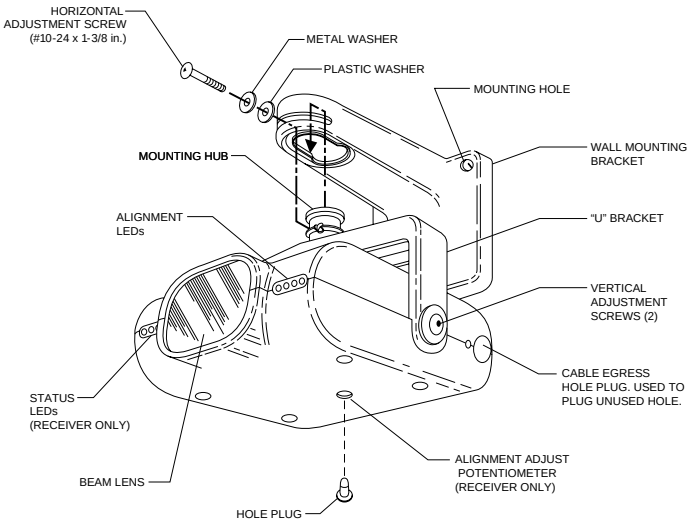


6424 Remote Outputs

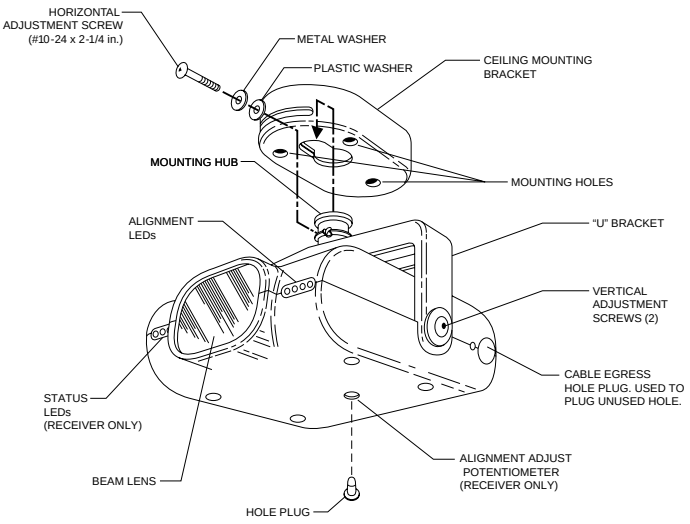


Remote Test Station Connection

Beam Smoke Detector Mounting Diagrams



Wall Mounting



Ceiling Mounting

Ordering Information

Part No.	Description
6424	4-Wire, 24 VDC projected beam smoke detector (transmitter, receiver, ceiling and wall mounting brackets)
6424A	Same as above, Canadian model
F37-01-00	Replacement test filter
RTS451	Remote test station
RA400Z	Remote annunciator
A77-716B	End of line relay, 24 VDC
BMB	Conduit kit for ULC model

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