Model 6424 Projected Beam Smoke Detector

SYSTEM SENSOR®

Models Available

6424 Projected Beam Smoke Detector, includes Transmitter and Receiver

6424A Projected Beam Smoke Detector, ULC listed

Product Overview

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.

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.

UL ULC LISTING SERVICE FM APPROVED MEA approved

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 the 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.

Operational Specifications

Range
30' to 330' (length)
9.1m to 100.9m

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)

Alarm Indicator
Local red LED

Trouble Indicator
Local amber LED

Normal Indicator
Local flashing green LED

Test/Reset Features
Obscuration filter
Local reset switch
Remote test and reset switch capability (compatible with

RTS451 and RTS451KEY 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

Relays
Alarm, trouble

EOL relay is required to supervise power

Environmental Specifications

Temperature
–22°F to 131°F (–30°C to 55°C)

Humidity
10-93% RH noncondensing

Electrical (Receiver) Specifications

Voltage
20 to 32 VDC Maximum

Maximum Ripple Voltage
6.0v (peak to peak)

Standby Current (24 VDC)
10mA maximum

Alarm Current (24 VDC)
28.4mA maximum

Trouble Current (24 VDC)
27.1mA maximum

Start-up Surge Current (24 VDC)
19mA maximum

Relay Contacts Current (24 VDC)
.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 minutes minimum

Electrical (Transmitter) Specifications

Voltage
18.8 to 32 VDC

Maximum Ripple Voltage:
5.6v (peak to peak)

Current (24VDC)
10mA maximum

Mechanical Specifications

Dimensions w/no bracket
2.5"H x 8.5"W x 7"D

Dimensions w/ceiling mount bracket
5.5"H x 8.5"W x 7"D

Dimensions w/wall mount bracket
5.5"H x 8.5"W x 10"D

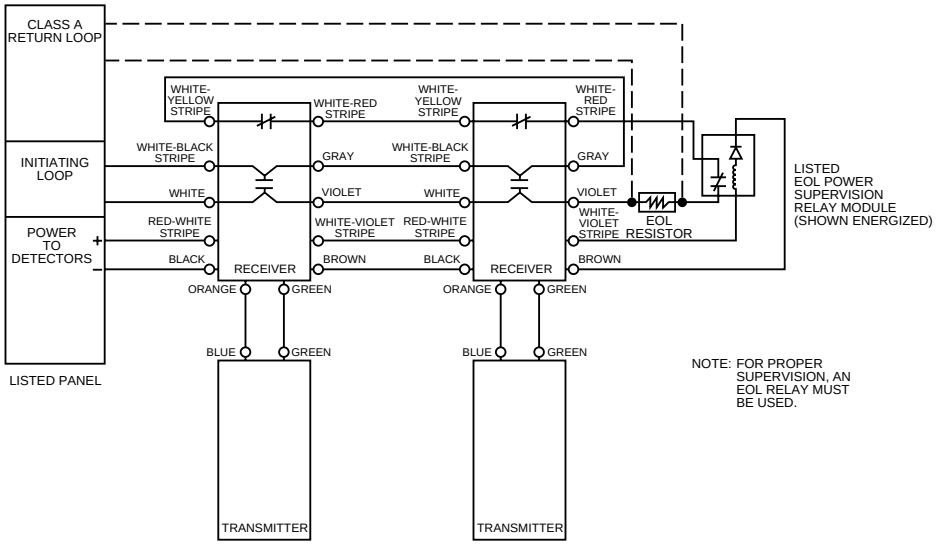
Weight
Receiver 1.5 lb (663 g)
Transmitter 1.3 lb (598 g)

Mounting
Separate ceiling and wall brackets

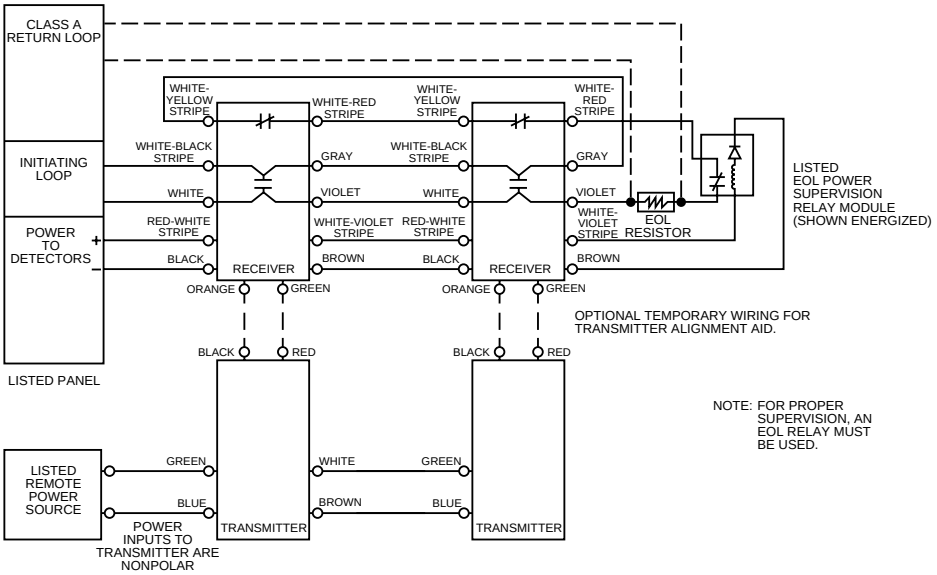
Wiring
Plug with attached cable

Beam Smoke Detector Wiring Diagram

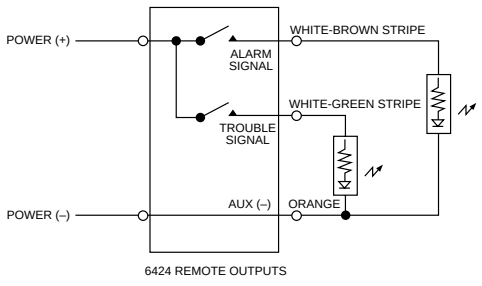
Transmitter and Receiver Powered Together



Transmitter and Receiver Powered Separately

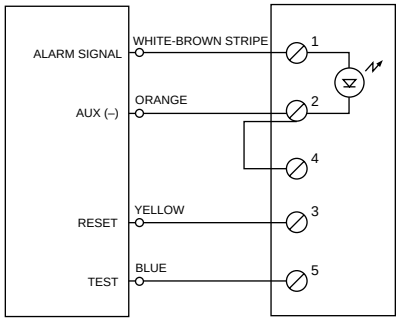


6424 Remote Outputs



6424 REMOTE OUTPUTS

Remote Test Station Connection

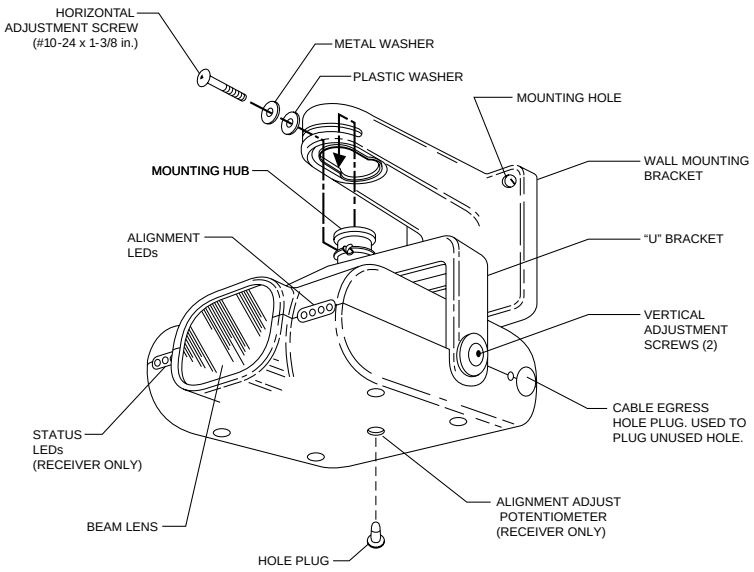


6424

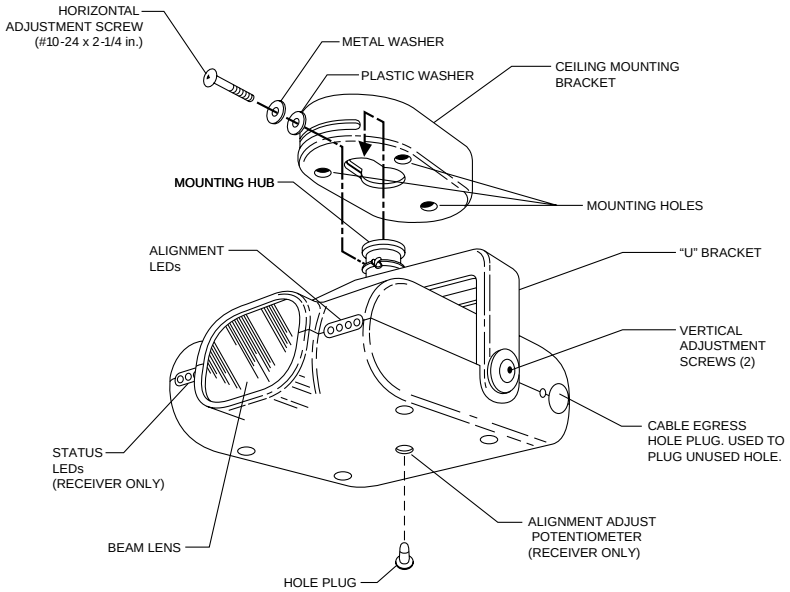
RTS451
REMOTE TEST STATION

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
RTS451KEY	Remote test station with key lock
RA400Z	Remote annunciator
A77-716B	End of line relay, 24 VDC
BMB	Conduit kit for ULC model