BEAM1224(A) and BEAM1224S(A)

Conventional Beam Smoke Detectors

NOTIFIER® by Honeywell

Conventional Initiating Devices

General

The System Sensor **BEAM1224** and **BEAM1224S** are four-wire conventional reflected beam smoke detectors. They are uniquely suited for protecting open areas with high ceilings where spot-type smoke detectors are difficult to install and maintain. BEAM1224 and BEAM1224S are to be used with UL Listed compatible fire alarm control panels only. Installation of the single-ended reflective design is much quicker than a dual-ended projected beam detector. Alignment is easily accomplished with an optical sight and a two-digit signal strength meter incorporated into the beam detector. Listed for operation from –22°F to 131°F, the BEAM1224 and BEAM1224S can be used in open-area applications to provide early warning in environments where temperature extremes exceed the design limits for other types of smoke detection.

The BEAM1224 and BEAM1224S are a transmitter/receiver unit and a reflector. When smoke enters the area between the unit and the reflector, it causes a reduction in the signal strength. When the smoke level (signal strength) reaches the predetermined threshold, an alarm is activated. The detectors have four standard sensitivity selections as well as two Acclimate® settings. When either Acclimate® setting is selected, the detector will automatically adjust its sensitivity using advanced software algorithms to select the optimum sensitivity for the specific environment.

The BEAM1224S has an integral sensitivity test feature of a filter attached to a servomotor inside the detector optics. Activation of the RTS151 or RTS151KEY remote test station moves the filter into the pathway of the light beam, testing the detector's sensitivity. This sensitivity test feature allows the user to quickly and easily meet the annual maintenance and test requirements of NFPA 72, without physical access to the detector.

NOTE: *Unless otherwise specified, the term BEAM1224 is used in this data sheet to refer to both the BEAM1224 and the BEAM1224A (ULC-listed version). Likewise, BEAM1224S includes BEAM1224SA.*

Features

- Transmitter/receiver built into same unit.
- Six user-selectable sensitivity levels.
- 16' to 328' (use BEAMLRK beyond 230') protection range.
- Removable plug-in terminal blocks.
- Digital display for easy alignment.
- Built-in automatic gain control compensates for signal deterioration from dust buildup.
- Paintable cover.
- Optional remote test station.
- Optional long-range kit (BEAMLRK) for applications in excess of 230' (70 m).
- Optional multi-mount kit (BEAMMMK) providing ceiling or wall mount capability with increased angular adjustment.
- Optional heater kits (BEAMHK and BEAMHKR) for prevention of condensation (not intended to increase or reduce the specified operating temperature).
- Optional heavy-duty mounting bracket (6500-MMK)



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BEAM1224(A) with Reflective Plate

BEAM1224(A) with BEAMMMK (sold separately)



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Specifications

OPERATIONAL SPECIFICATIONS

Protection range: 16 to 230 feet (5 to 70 m), 230 to 328 feet (70 to 100 m) using optional BEAMLRK kit.

Adjustment angle: ±10° horizontal and vertical. Note that the optics move independently of the unit.

Sensitivity (6 levels):

- Level 1 — 25%.
- Level 2 — 30%.
- Level 3 — 40%.
- Level 4 — 50%.
- Acclimate® Level 5 — 30% to 50%.
- Acclimate® Level 6 — 40% to 50%.

Fault condition (trouble):

- 96% or more obscuration blockage.
- In alignment mode.
- Improper initial alignment.
- Self-compensation limit reached.

Alignment aid:

- Optical gunsight.
- Integral signal strength indication.
- Two-digit display.

Indicators:

- Alarm — local red LED and remote alarm.
- Trouble — local yellow LED and remote trouble.
- Normal — local flashing green LED.

Test/reset features:

Integral sensitivity test filter (BEAM1224S only, requires external power supply).

- Sensitivity filter (incremental scale on reflector).

- Local alarm test switch.
- Local alarm reset switch.
- Remote test and reset switch (compatible with RTS151 and RTS151KEY test stations).

Smoke detector spacing: On smooth ceilings, 30 – 60 feet (9.1 to 18.3 m) between projected beams and not more than one-half that spacing between a projected beam and a side-wall. Other spacing may be used depending on ceiling height, airflow characteristics, and response requirements. See NFPA 72.

ENVIRONMENTAL SPECIFICATIONS

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

Humidity: 10 – 93% RH noncondensing.

ELECTRICAL SPECIFICATIONS

Voltage: 10.2 to 32 VDC (BEAM1224); 15 to 32 VDC (BEAM1224S).

Standby current (24 VDC): 17 mA maximum.

Alarm current (24 VDC): 38.5 mA maximum.

Alignment mode current (24 VDC): 28 mA maximum.

Test mode current (BEAM1224S only): 500 mA maximum @ peak test.

Relay contacts: 0.5 A @ 30 VDC.

Reset time: 0.3 seconds maximum.

Start-up time (after 2 min. reset): 60 seconds maximum.

Alarm verification time: 5 seconds maximum.

Remote output (alarm or trouble): Voltage: 15 to 32 VDC. NOTE: Output voltage is the same as device input voltage. Current: 15 mA maximum, 6 mA minimum. NOTE: Output current is limited by 2.2K ohm resistor.

Heater kit BEAMHK: Voltage: 15 to 32 V. Current: 92 mA maximum @ 32 V (heater only). Power consumption: nominal 1.6 W @ 24 V; maximum 3.0 W @ 32 V.

Heater kit BEAMHKR: Voltage: 15 to 32 V. Current: 450 mA maximum @ 32 V (per reflector). Power consumption (per reflector): nominal 7.7 W @ 24 V; maximum 15.0 W @ 32 V.

MECHANICAL SPECIFICATIONS

Shipping weight: 3.9 lbs (1.77 kg).

Wiring: Plug-in terminal blocks, 12 to 22 AWG (3.1 to 0.33 mm^2).

Detector dimensions: 10.0" H x 7.5" W x 3.3" D (254 mm H x 191 mm W x 84 mm D).

Reflector dimensions for 16' to 230' (5 to 70 m) applications: 7.9" x 9.1" (200 x 230 mm).

Reflector dimensions for applications beyond 230'/70 m: 15.7" x 18.1" (400 x 460 mm).

Agency Listings and Approvals

These listings and approvals apply to the modules specified in this document. In some cases, certain modules or applications may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **UL Listed:** S911
- **ULC Listed:** S911
- **MEA Listed:** 54-04-E
- **Maryland State Fire Marshal:** Permit # 2165
- **CSFM:** 7260-1653:168
- **FM Approved**

Product Line Information

NOTE: *"A" suffix indicates ULC-listed model.*

BEAM1224(A): Conventional beam smoke detector.

BEAM1224S(A): Conventional beam smoke detector with integral sensitivity test.

BEAMLRK: Long range accessory kit (required for applications in excess of 230 ft/70 m).

BEAMMMK: Multi-mount kit (provides ceiling or wall mount capability with increased angular adjustment).

BEAMSMK: Surface-mount kit.

6500-MMK: Heavy duty multi-mount kit for installations prone to vibration, or where there is difficulty maintaining the set angle. When installed with the transmitter/receiver unit, 65500-SMK is also required.

6500-SMK: Surface-mount kit for use with 6500-MMK.

RTS151(A): Remote test station. *Replaces RTS451.*

RTS151KEY(A): Remote test station with key lock. *Replaces RTS451KEY.*

BEAMHK: Heating kit for use with the transmitter/receiver unit of BEAM1224(S). For prevention of condensation.

BEAMHKR: Heating kit for use with the reflector of BEAM1224(S). For prevention of condensation.

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