



Product

Intelligent Reflected Beam Smoke Detector with Integral Sensitivity Test Feature

Architect and Engineering Specifications

Intelligent reflected beam smoke detector with integral sensitivity test feature shall be a System Sensor model number BEAM200S. Smoke detector shall be an addressable intelligent single-ended reflected beam smoke detector and shall connect with two wires to the fire alarm control panel signaling line circuit (SLC). The detectors shall consist of a transmitter/receiver unit and a reflector and shall, on command from the control panel, send data to the panel representing the analog level of smoke density.

When the obscuration reaches alarm thresholds (chosen at the transmitter/receiver unit or fire alarm control panel), the detector shall generate an alarm signal. Complete blockage of the beam shall cause a trouble signal. Slow changes in obscuration due to a build up of dirt or dust on the lens of the detector shall be compensated for by a microcontroller that continuously monitors the signal strength and periodically updates the alarm and trouble thresholds. When the self-compensation circuit reaches its limit, the detector shall generate a trouble signal, indicating the need for service.

The detectors shall provide address-setting means on the detector using rotary switches. Because of the possibility of installation error, systems that use binary jumpers or DIP switches to set the detector address are not acceptable. The detectors shall also store an internal identifying code that the control panel shall use to identify the type of detector. Systems that require a special programmer to set the detector address (including temporary connection at the panel) are labor intensive and not acceptable. Each detector occupies any one of at least 99 possible addresses on the SLC loop. It responds to regular polls from the system and reports its type and status.

Each detector can have its sensitivity tested (required per NFPA 72 2007 Edition, Chapter 10 on *Inspection, Testing and Maintenance*) when installed/connected to a compatible addressable fire alarm control panel.

The detectors shall provide a test means whereby they will simulate an alarm condition and report that condition to the control panel. Such a test may be initiated at the detector itself (by activating a switch) or initiated remotely on command from the control panel. There are three test methods: calibrated test filter, test switch or panel.

The BEAM200S model shall be equipped with an added feature, an integral sensitivity test feature that uses a test filter attached to a Servo motor adjacent to the detector optics. Using the remote test station RTS451/ RTS151 or the fire alarm control panel, the motor is activated and moves the filter in the pathway of the light beam, thereby testing detector sensitivity.

The detectors shall provide three LEDs. A red LED shall be for alarm, a yellow LED shall indicate trouble and a blinking green LED shall be for standby operation. The panel shall control the status of the red and green LEDs. The local reset button is accessible by removing the outer paintable trim ring. The yellow LED shall blink in specific patterns to provide a diagnostic aid when diagnosing the cause of a trouble signal. It shall also blink the amount of drift compensation that has been used at the conclusion of the test. Trouble signals automatically reset upon removing the cause of trouble. Red and yellow LEDs can be remotely connected to the remote Alarm and Trouble outputs. These outputs mimic the functions of the detector's red and yellow LEDs. In addition to these indicators, there shall be a dual digital display that reads 00 to 99. This display shall indicate the signal strength of the beam in alignment mode and shall indicate the sensitivity setting of the detector in percent obscuration when setting the sensitivity of the detector. No additional equipment is needed for alignment of the beam.



Meets Agency Standards

- ANSI/UL 268 -Smoke Detectors for Fire Alarm Signaling Systems
- CAN/ULC-S529- Smoke Detectors for Fire Alarm Systems
- FM 3230-3250- Smoke Actuated Detectors for Automatic Fire Alarm Signaling