I56-1808-008

LZR-1M
Intelligent Laser Smoke Sensor

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SPECIFICATIONS

Operating Voltage Range:	15 to 32 VDC Peak
Max. Standby Current:	230µA @ 24 VDC (no communication)
Max. Average Standby Current:	330µA (one communication every 5 seconds with LED blink enabled)
Max. Alarm Current (LED on):	6.5mA @ 24 VDC
Operating Humidity Range:	10% to 93% Relative Humidity, noncondensing
Operating Temperature Range:	–10°C to 50°C (14°F to 122°F)
Height:	1.7 inches (43mm) installed in B210LP base
Diameter:	6.1 inches (155mm) installed in B210LP base
	4.1 inches (104mm) installed in B501 base
Weight:	5.6 oz. (159 g)

GENERAL DESCRIPTION

Model LZR-1M is a plug-in smoke sensor that combines a laser photoelectronic sensing chamber with addressable analog communications. The use of a laser diode provides substantial improvements in signal-to-noise ratio compared to a traditional LED light source. The sensor transmits an analog representation of smoke density over a communication line to a control panel. Rotary decade switches are provided for setting the sensor address (see figure 2). The sensor has two LED's controlled by the panel to indicate sensor status. Flashing red indicates normal operation and steady red indicates alarm, pre alarm, or trouble. An output is provided for connection to an optional remote LED annunciator (Model RA400Z/RA100Z).

Before installing this sensor, please thoroughly read System Sensor's *System Smoke Detector Application Guide*, which provides detailed information on detector spacing, placement, zoning, wiring, and special applications. Copies of this manual are available from System Sensor. This sensor must be installed in compliance with the control panel manufacturer's installation manual.

NOTICE: This manual should be left with the owner/user of this equipment.
IMPORTANT: This sensor should be cleaned at least once a year.

SPACING

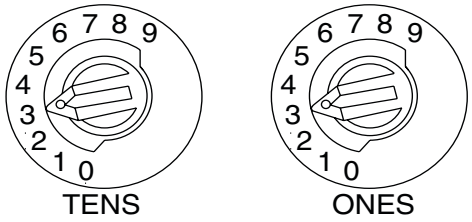
In low air flow applications with smooth ceilings, space sensors 30 feet apart. For specific information regarding sensor spacing, placement, and special applications, refer to System Sensor's *System Smoke Detector Application Guide.*

WIRING INSTRUCTIONS

All wiring must be installed in compliance with the National Electric Code (NEC), applicable local codes, and any special requirements of the Authority Having Jurisdiction (AHJ). Proper wire gauges should be used. The installation wires should be color-coded to limit wiring mistakes and ease system troubleshooting. Improper connections will prevent a system from responding properly in the event of a fire.

Remove power from the communication line before installing sensors. All wiring must conform to applicable local codes, ordinances, and regulations.

FIGURE 2. ROTARY DECADE ADDRESS SWITCH:



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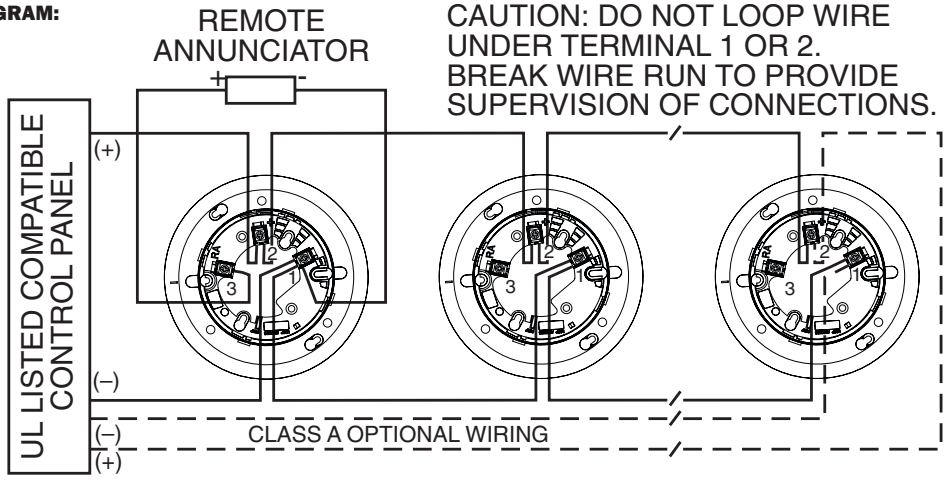
1. Wire the sensor base (supplied separately) per the wiring diagram (see figure 1).
2. Set the desired address on the sensor address switches (see figure 2).
3. Install the sensor in the sensor base. Push the sensor into the base while turning it clockwise to secure it in place.
4. After all sensors have been installed, apply power to the control unit and activate the communication line.
5. Test the sensor(s) as described in the TESTING section of this manual.

FIGURE 1. WIRING DIAGRAM:



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⚠CAUTION

Dust covers provide limited protection against airborne dust particles during shipment. Dust covers must be removed before the sensors can sense smoke. Remove sensors prior to remodeling or construction.

TESTING

Before testing, notify the proper authorities that the system is undergoing maintenance and will be temporarily out of service. Also, disable the system to prevent unwanted alarms. All sensors must be tested after installation and periodically thereafter. Testing methods must satisfy the Authority Having Jurisdiction (AHJ). The sensor can be tested in the following ways:

A. FUNCTIONAL MAGNET TEST (MODEL M02-04-01 OR M02-09-00)

This sensor can be functionally tested using a test magnet. The test magnet electronically simulates smoke in the sensing chamber, testing the sensor electronics and connections to the control panel.

1. Hold the test magnet in the magnet test area as shown (see figure 3).
2. The sensor should alarm the panel.

Two LEDs on the sensor are controlled by the panel to indicate sensor status. Coded signals transmitted from the panel, can cause the LEDs to "FLASH", latch "ON", or latch "OFF". Refer to the control panel manufacturer's technical documentation for sensor LED status operation.

B. SMOKE ENTRY: AEROSOL GENERATOR

Aerosol generators for smoke entry testing are available from a number of third party manufacturers (e.g., Gemini Scientific). Following the manufacturer's instructions, apply aerosol until the panel alarms.

A sensor that fails any of these tests should be cleaned as described under CLEANING, and retested. If the sensor fails after cleaning, it must be replaced and returned for repair.

When testing is complete, restore the system to normal operation and notify the proper authorities that the system is back in operation.

⚠WARNING

Power must be removed before the unit is disassembled.

CLEANING

Before cleaning, notify the proper authorities that the system is undergoing maintenance, and will be temporarily out of service. Disable the system to prevent unwanted alarms.

1. Remove the sensor to be cleaned from the system.
2. Remove the sensor cover using a small standard screwdriver to release each of the four cover removal tabs that hold the cover in place (see figure 4).
3. Vacuum the outside of the screen carefully without removing it.
4. Remove the screen assembly by pulling it straight away from the sensing chamber base.
5. Use a vacuum or clean compressed air to remove dust and debris from the sensing chamber.
6. Reinstall or replace the screen assembly. Align the arrow on the screen assembly with the arrow on the sensor that points toward the sensing chamber. Push the screen down carefully until it snaps into place.
7. Reinstall the sensor cover using the LED's and test module socket to align the cover with the sensor. Carefully snap the cover into place.
8. When all the sensors have been cleaned, restore system operation for testing purposes and test the sensors as described in the TESTING section of this manual.

LASER SAFETY INFORMATION

This smoke detector does not produce any hazardous laser radiation and is certified as a Class 1 laser product under the U.S. Department of Health and Human Services (DHHS) Radiation Performance Standard according to the Radiation Control for Health and Safety Act of 1968.

Any radiation emitted inside the smoke detector is completely within the protective housings and external covers. The laser beam cannot escape from the detector during any phase of operation.

The Center of Devices and Radiological Health (CDRH) of the U.S. Food and Drug Administration implemented regulations for laser products on August 2, 1976. These regulations apply to laser products manufactured after August 1,

1976. Compliance is mandatory for products marketed in the United States.

⚠CAUTION

Use of controls, adjustments, or performance of procedures other than those specified in this manual may result in hazardous radiation exposure.

SPECIAL NOTE REGARDING SMOKE DETECTOR GUARDS

Smoke detectors are not to be used with detector guards unless the combination has been evaluated and found suitable for that purpose.

FIGURE 3. TEST MAGNET POSITION:

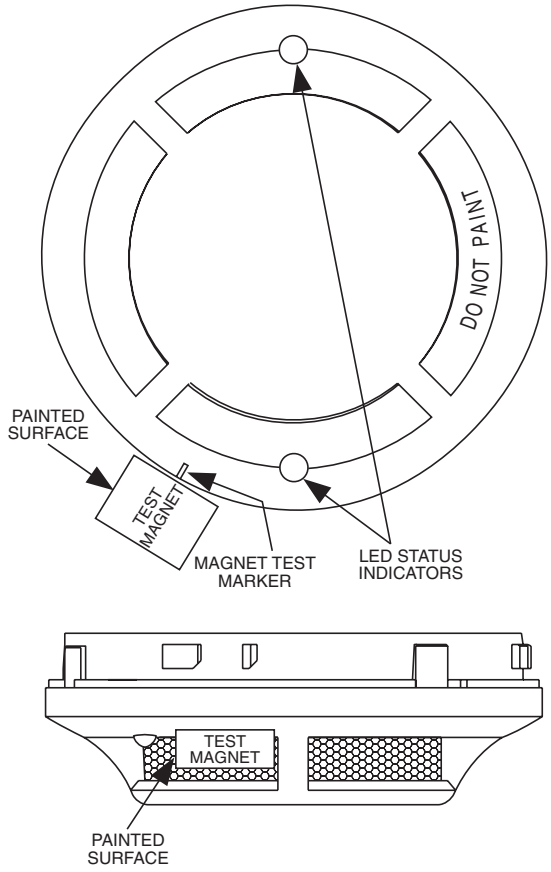

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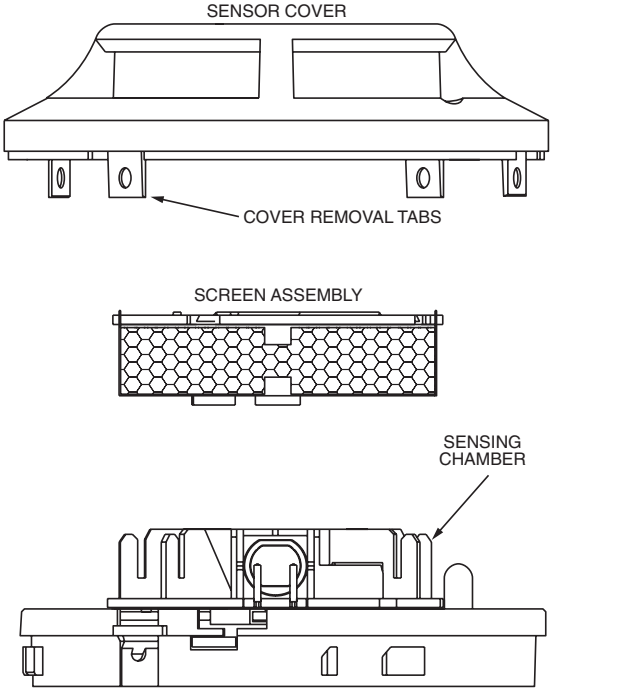
FIGURE 4. SCREEN ASSEMBLY AND SENSING CHAMBER:



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⚠WARNING

This is a Class A product. In a domestic environment, this product may cause radio interferencein which case the user may be required to take adequate measures.

Please refer to insert for the Limitations of Fire Alarm Systems

THREE-YEAR LIMITED WARRANTY

System Sensor warrants its enclosed smoke detector to be free from defects in materials and workmanship under normal use and service for a period of three years from date of manufacture. System Sensor makes no other express warranty for this smoke detector. No agent, representative, dealer, or employee of the Company has the authority to increase or alter the obligations or limitations of this Warranty. The Company's obligation of this Warranty shall be limited to the repair or replacement of any part of the smoke detector which is found to be defective in materials or workmanship under normal use and service during the three year period commencing with the date of manufacture. After phoning System Sensor's toll free number 800-SENSOR2 (736-7672) for a Return Authorization number, send defective units postage prepaid to: Honeywell, 12220 Rojas Drive, Suite 700, El Paso TX 79936 USA. Please include a note describing the malfunction and suspected cause of failure. The Company shall not be obligated to repair or replace units which are found to be defective because of damage, unreasonable use, modifications, or alterations occurring after the date of manufacture. In no case shall the Company be liable for any consequential or incidental damages for breach of this or any other Warranty, expressed or implied whatsoever, even if the loss or damage is caused by the Company's negligence or fault. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This Warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

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