SYSTEM SENSOR®

MOD400R Test Module

General Description

The MOD400R Test Module is a tool testing the relative sensitivity of 100, 200, 300, 400, and 500 Series smoke detectors only. It CANNOT be used on 800 Series detectors. It consists of a test module and interface cord for connecting the module to the detector being tested.

This battery powered module is equipped with two color-coded banana jacks for the connection of any analog or digital DC voltmeter having a sensitivity of 10 kΩ/V or greater. As an added convenience, two adhesive-backed Velcro® strips are also supplied for attaching the module to the meter being used during testing.

Test module function is under the control of a 3-position and a 2-position slide switch on the side of the unit. Various combinations of positions of these two switches enable the module to test conventional and analog ionization and photoelectronic smoke detectors as well as checking the battery. In addition, the 3-position switch, SW1, has a center-OFF position for turning off the module. Therefore, conserve battery life by always setting this switch to OFF when the module is not in use.

MOD400R Setup

1. Connect a voltmeter having a sensitivty of 10 kΩ/V or greater to the banana jacks on the side of the MOD400R. Be sure to connect the positive test lead to the red jack and the negative lead to the black.
2. Connect the interface cord to the RJ-11 telephone jack on the bottom edge of the module.
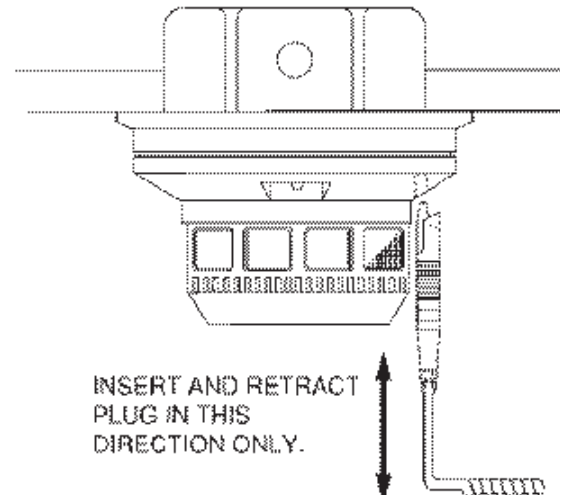3. Test the MOD400R battery as described in **BATTERY TESTING**.

Smoke Detector Testing

Conventional Ion

1. Prepare the MOD400R for testing by performing the procedure in **MOD400R SETUP**.
2. Set the voltmeter to measure at least 3 VDC.
3. Make sure that power is applied to the detector to be tested.
4. Set SW1 to its A position and the 2-position switch, SW2, to CONV.
5. See Figure 1. Insert the test plug into the test module socket on the detector.
   The voltmeter should display a voltage that falls in the **MOD400(R) RANGE** printed on the label on the back of

Figure 1:

INSERT AND RETRACT PLUG IN THIS DIRECTION ONLY.

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⚠️**CAUTION**

Failure to insert and retract this plug in the direction shown may result in damage to the pins. Handle with care. Inspect pins regularly for damage to ensure proper operation.

the detector. This corresponds to the **NOMINAL SENS.** (sensitivity) on the label.
   If the voltmeter displays a voltage outside the **MOD400(R) RANGE**, it indicates that the detector requires cleaning or repair.
6. Disconnect the MOD400R from the detector and set SW1 to OFF.

Conventional Photoelectronic Detectors

1. Prepare the MOD400R for testing by performing the procedure in **MOD400R SETUP**.
2. Set the voltmeter to measure at least 3 VDC.
3. Make sure that power is applied to the detector to be tested.
4. Set SW1 to its B position and the 2-position switch, SW2, to CONV.
5. See Figure 1. Insert the test plug into the test module socket on the detector.
   The voltmeter should display a voltage that falls in the **MOD400(R) RANGE** printed on the label on the back of

the detector. This corresponds to the **NOMINAL SENS.** (sensitivity) on the label.

If the voltmeter displays a voltage outside the **MOD400(R) RANGE**, it indicates that the detector requires cleaning or repair.

6. Disconnect the MOD400R from the detector and set SW1 to OFF.

Intelligent Sensors

NOTE: The MOD400R can be used to test the sensitivity of only those sensors connected to control panels that do NOT use drift compensation.

1. Prepare the MOD400R for testing by performing the procedure in **MOD400R SETUP**.
2. Set the voltmeter to measure at least 3 VDC.
3. Make sure that power is applied to the sensor to be tested.
4. Set SW1 to its B position and the 2-position switch, SW2 to INT.
5. See Figure 1. Insert the test plug into the test module socket on the detector.

The voltmeter should display a voltage that falls in the **MOD400(R) RANGE** printed on the label on the back of the sensor. This corresponds to the **NOMINAL SENS.** (sensitivity) on the label.

If the voltmeter displays a voltage outside the **MOD400(R) RANGE**, it indicates that the sensor requires cleaning or repair.

6. Disconnect the MOD400R from the detector and set SW1 to OFF.

Battery Testing

The MOD400R operates from a single 9 volt alkaline battery whose life expectancy is approximately one year. However, it should be tested before each use of the MOD400R to ensure accurate sensitivity measurements.

To test the battery:

1. Make sure that the MOD400R is NOT connected to any detector or sensor.
2. Set a voltmeter having a sensitivity of at least 10 kΩ/V to measure 9 VDC.
3. Connect the meter to the banana jacks on the side of the MOD400R. Be sure to connect the positive lead to the red jack and the negative lead to the black.
4. Set SW1 to its A position and read the meter. It should indicate at least 5.5 VDC. If it does not, replace the 9 volt alkaline battery.

⚠WARNING

The Limitations of the MOD400R

The MOD400R is designed to "... assure that each smoke detector is within its listed and marked sensitivity range ..." per NFPA 72. The MOD400R CANNOT, however, initiate a detector/sensor alarm. Therefore, the MOD400R meets only part of NFPA 72 testing standards.

Slight fluctuations in readings may be experienced on any device at any given time and do not indicate a defect or sensitivity shift, provided the reading is within the specified range. These fluctuations are to be expected. The MOD400R and its associated smoke detectors/sensors contain electronic parts and, though they are designed to last over 10 years, any of these components can fail at any time. Therefore, it is recommended to test your smoke detectors/sensors per NFPA 72 at least semiannually. Regular cleaning and testing of your fire detection system will measurably reduce your product liability risks and minimize nuisance alarms.