

i³ Series Loop Test/Maintenance Module MOD2W

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*For use with 2-Wire i³ series smoke detectors 2W-B, 2WT-B, and (one) 2WTR-B

SPECIFICATIONS

Electrical Specifications

Power Supply Voltage:	Resettable power; Min. 8.5 Volts DC (Power limited); Max. 35 Volts DC (Power limited);
Device Power-up Time:	200 milliseconds
Max. Standby Current:	60mA
Max. Alarm Current:	185mA
Nom. Standby Current:	38mA@12V, 20mA@24V
Alarm Contact Rating:	100 mA @ 36 Volts DC, resistive, 25 ohms
Maintenance Contact Rating:	100 mA @ 36 Volts DC, resistive, 25 ohms
Max. IDC Loop Wiring Resistance:	50 Ohms
Min. Reset Time:	300 milliseconds
Initial Communication Cycle:	6 minutes
EZ Walk Test Availability:	6 minutes after power up or panel reset

Physical Specifications

Operating Temperature Range:	0 - 50° C (32 - 122° F)
Operating Humidity Range:	5 - 95% RH
Storage Temperature Range:	-20 - 70° C (-4 - 158° F)
Height:	6.04 inches
Width:	6.04 inches
Depth:	1.16 inches
Shipping Weight:	0.6 lbs
Wire Gauge Acceptance:	Min: 22 AWG; Max: 14 AWG

2-wire Compatibility Requirements

Min. Loop Voltage:	12.6 Volts DC
Max. Loop Voltage:	14.52 Volts DC
Max. Loop Resistance:	50 Ohms
Max. Loop Ripple:	240 mVpp
Max. Loading Capacitance:	0.01 mF
Max. Alarm Current:	43.5 mA
Max. Reset Voltage:	0.30 Volts DC
Alarm Delay:	n/a
Min. Alarm Reset Time:	0.3 seconds
Max. Normal Load Current:	1.2 mA
Zone Type:	Standard
EOL Device:	3.9k Ohms (+ -5%)
Loop Style:	B and D
Compatibility Zone Identifier:	A
Detector Zone Identifier:	A
Max. Detectors Per Zone:	(12) 2-wire i ³ series model #2W-B, 2WT-B, (one) 2WTR-B

BEFORE INSTALLATION

This information is included as a quick reference installation guide. Refer to the control panel installation manual for detailed system information. If the module will be installed in an existing operational system, inform the operator and local authority that the system will be temporarily out of service. Disconnect power to the control panel before installing the module.

Notice: This manual should be left with the owner/user of this equipment. This product is intended for use in ordinary indoor locations.

GENERAL DESCRIPTION

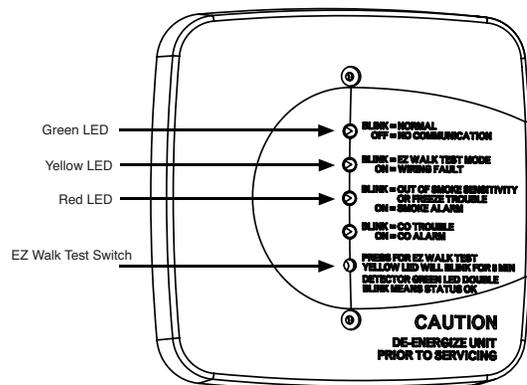
The MOD2W allows a control panel to receive a “need for maintenance” signal from two-wire i³ series smoke detectors, model numbers 2W-B, 2WT-B and one 2WTR-B. The module uses a form C zone relay to initiate “out of sensitivity” and “freeze trouble”, a form A zone alarm relay and a second form A zone relay to indicate loop fault. An EZ Walk Test puts all detectors on the loop into a Walk Test mode for easy verification of detector loop wiring. The module allows 2-wire smoke detectors to be used on any compatible 4-wire control panel and provides Style D wiring on the detector loop.

VISIBLE ANNUNCIATION

The MOD2W has three visible LED’s: The green LED is a supervisory LED; it blinks during power on, reset, and during normal operation. The yellow LED

is used to indicate a loop wiring fault and will blink when it is in EZ Walk test mode. The red LED signals smoke events; it blinks during smoke maintenance events and lights constantly during smoke alarm events.

FIGURE 1: MODULE FRONT VIEW



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TABLE 1: OPERATION MODES

OPERATION MODE	GREEN LED	YELLOW LED	RED LED
Normal (standby)	Blink 5 Sec.	OFF	OFF
No power/Non-operational	OFF	OFF	OFF
Loop wiring fault	Blink 5 Sec.	ON	OFF
EZ Walk Test Mode	Blink 5 Sec.	Blink 5 Sec.	OFF
Alarm Smoke	Blink 5 Sec.	OFF	ON
Maintenance	Blink 5 Sec.	OFF	Blink 5 Sec.
Freeze Trouble	Blink 5 Sec.	OFF	Blink 10 Sec.

NORMAL (STANDBY)

The module is powered and detectors on the loop are operating normally.

NO POWER/NON-OPERATIONAL

Power is not applied to the module or communication between the module and the detectors on the loop is unsuccessful.

LOOP WIRING FAULT

If an open circuit occurs on the loop, the module will indicate the condition by illuminating the yellow LED. 2-wire units will then power the style-D terminals. When the wiring issue on the loop has been resolved, the module will turn the yellow LED off.

EZ WALK TEST MODE

This indicates the module and detectors are in EZ Walk Test Mode. See “EZ Walk Test” section for instructions on how to initiate and perform the EZ Walk test.

ALARM SMOKE

A smoke alarm will be indicated by the red LED.

A smoke alarm is not self-restoring. Once a smoke alarm has been signaled, the red LED will illuminate until the module is reset by removal of power.

MAINTENANCE

This condition means one or more detectors on the loop have a smoke maintenance issue. See “Smoke Maintenance Inquiry” section for further details.

FREEZE TROUBLE

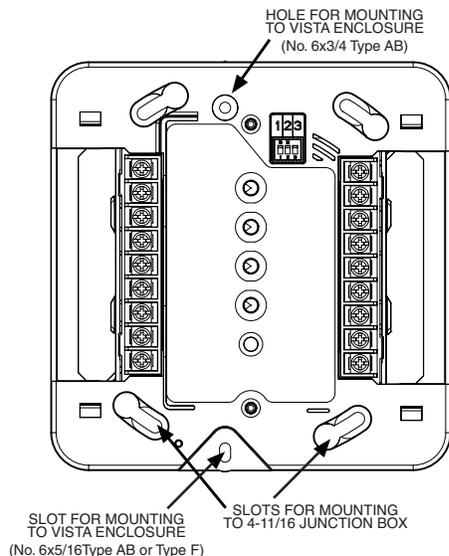
This condition means one or more detectors on the loop are measuring the ambient temperature is near the freezing point. See “Freeze Trouble Inquiry” section for further details.

INSTALLATION

MOUNTING

The module can be mounted to a 4-11/16 inch back box or inside a listed, dedicated enclosure. When mounting inside an enclosure with pre-stamped holes, it may be easier to align the bottom screw hole first. It is not necessary to use the module cover when mounting inside an enclosure.

FIGURE 2: MOUNTING



WIRING GUIDELINES

All wiring must be installed in compliance with the NFPA 70 standards, National Electrical Code, applicable state and local codes, and any special requirements at the local Authority Having Jurisdiction (AHJ).

The screw terminals in the mounting base will accept 14-22 gauge wire. Wire connections are made by stripping approximately 1/4” of insulation from the end of the feed wire, inserting it into the proper base terminal, and tightening the screw to secure the wire in place. Do not put wires more than 2 gauge apart under the same clamping plate.



Remove power from alarm control unit or initiating device circuits before installing detectors.

WIRING DIAGRAMS

Install module wiring in accordance with appropriate wiring diagrams. (Figure 3)

The module relays have a maximum ON resistance of 25 ohms. This resistance plus the wiring resistance to the panel must be less than the maximum zone wiring resistance stated in the panel manual.

NOTE: If 2-wire i³ detectors are used in conjunction with a style D initiating circuit, the MOD2W must be used to provide that capability. Ground fault on a module’s 2-wire loop can be indicated at a control panel if the control panel is capable of ground fault detection on the power supply to the module and meets NFPA 72 ground fault indication requirements for initiating device circuits. The installer must verify that capability.

TABLE 2: DIP SWITCH CONFIGURATIONS

	DIP SWITCH # 1	DIP SWITCH # 2	DIP SWITCH # 3
ON (DEFAULT)	Unused	Smoke Maint on Smoke Trouble and Form-B Maint Relay	Unused
OFF	Unused	Smoke Maint on Form-B Smoke maintenance Relay only	Unused

POWER UP AND COMMUNICATIONS

COMMUNICATIONS CHECK

Upon power up, the module will send a request for communication check. All compatible detectors on the loop that understand the communication protocol will respond. If all detectors respond correctly, the green LED will blink once every 5 seconds. If the module does not get a response, it will turn off the green LED and continue to try every 2 minutes until a response is received.

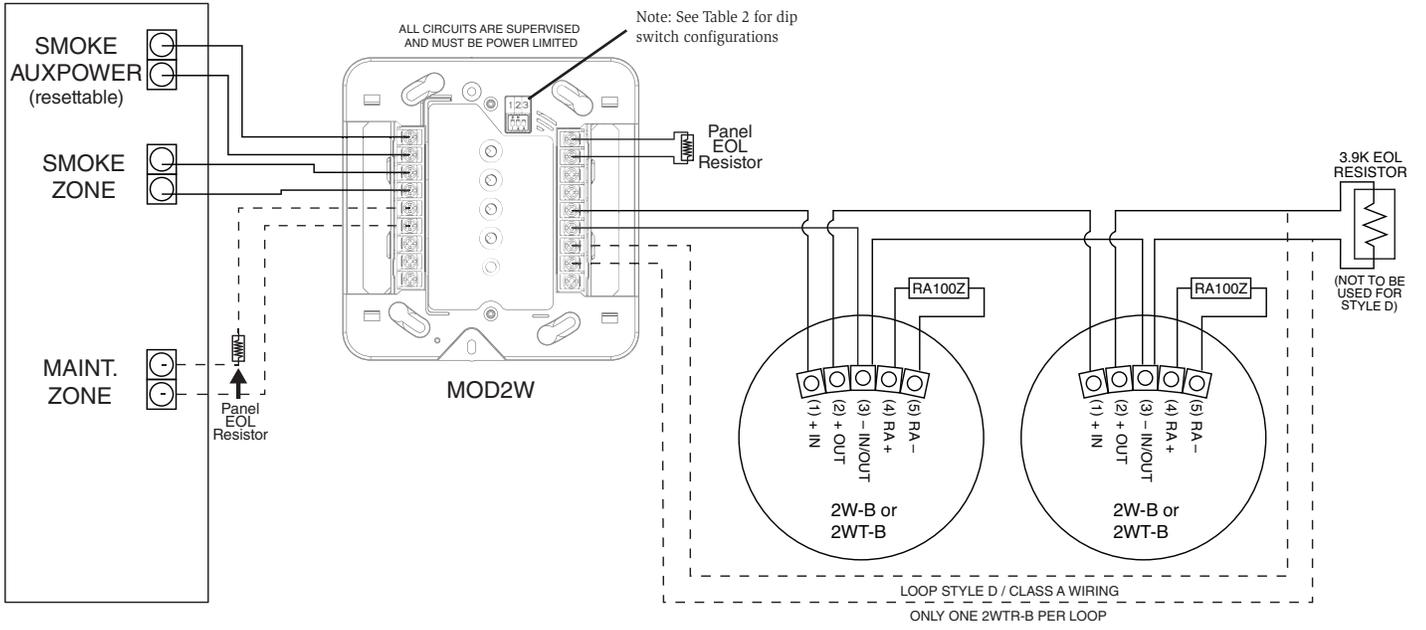
SMOKE MAINTENANCE INQUIRY

The module sends a smoke maintenance inquiry to the detectors every 24 hours. If a response indicating a maintenance problem is received, the red LED on the module will blink once every 5 seconds and a smoke maintenance condition will be indicated to the panel. It is likely that the detector needs to be cleaned or replaced, refer to the detector instruction manual for maintenance instructions.

FREEZE TROUBLE INQUIRY

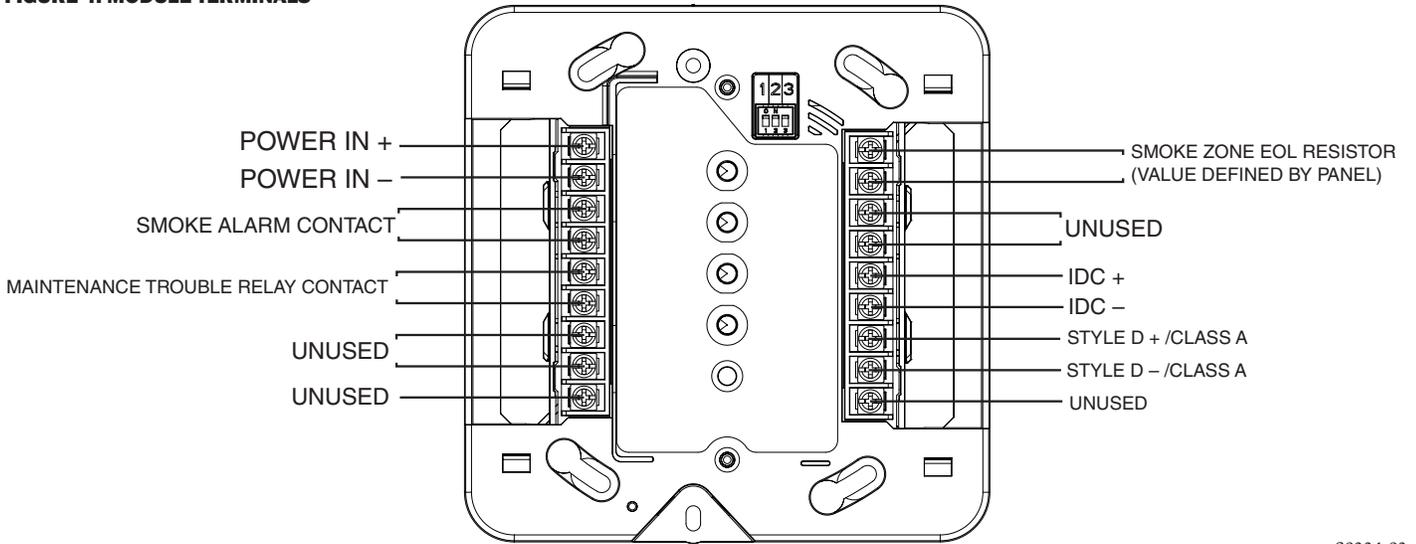
The module sends a freeze trouble inquiry to the detectors every four hours. If a response indicating a freeze problem is received, the red LED on the module will blink once every 10 seconds and a smoke maintenance condition will be indicated to the panel.

FIGURE 3: MOD2W WIRING DIAGRAM



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FIGURE 4: MODULE TERMINALS



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TESTING

Modules must be tested after installation and following periodic maintenance. Testing should be performed at least once per year.

NOTE: Before testing, notify the proper authorities that the system will be temporarily out of service. Disable the zone or system to prevent any unwanted alarms.

EZ WALK TEST

The communication loop between the module and detectors can be manually tested by putting the module and detectors into EZ Walk test mode.

The EZ Walk loop test verifies the initiating loop wiring and provides visual status indication at each detector:

1. Ensure proper wiring and power is applied. Wait approximately 5 minutes from power-up before performing the EZ Walk test. The green LED on the module must be blinking indicating the module is in ready/standby mode to start the EZ Walk mode.
2. Locate the EZ Walk recessed test switch located behind the module cover (See Figure 1). Depress the test switch with a small screwdriver. The yellow LED will blink showing that the module and detectors are in EZ Walk mode for 5 minutes.
3. Observe the LEDs at each detector to make sure the green LED is double blinking every 5 seconds as listed in Table 3.
4. At the end of the five minute period, the module will terminate EZ Walk and the yellow LED will stop blinking. The EZ Walk test period can be extended by pressing the test switch multiple times. Each press will add 5 minutes of additional time.

If a module or detector fails the test, its wiring should be checked. If the module still fails, it should be replaced. Notify the proper authorities when all testing has been completed.

NOTE: The EZ Walk loop test should not be used in lieu of functional testing (alarm, trouble and other functional tests) of the system.

TABLE 3: EZ WALK TEST DETECTOR MODES

	DETECTOR GREEN LED	DETECTOR RED LED
PROPER OPERATION	Double Blink 5 Seconds	OFF
OUT OF SENSITIVITY	OFF	Double Blink 5 Seconds
FREEZE CONDITION	OFF	Double Blink 10 Seconds

FCC STATEMENT

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

THREE-YEAR LIMITED WARRANTY

System Sensor warrants its enclosed product 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 the enclosed product. 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 replacement of any part of the product 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 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.