

## INSTALLATION AND MAINTENANCE INSTRUCTIONS FOR MODEL CP300 AND CP300A ADDRESSABLE IONIZATION SMOKE DETECTOR

This detector must be installed in compliance with the system installation manual. The installation must meet the requirements of the local Authority Having Jurisdiction (AHJ). Detectors will offer maximum protection if the installation meets the requirements of the National Fire Protection Association (NFPA); see NFPA 72. The *Guide For Proper Use of System Smoke Detectors*, is available from Fire-Lite, and provides detailed information on detector spacing, placement, zoning and special applications.

### **GENERAL DESCRIPTION**

The CP300 and CP300A combine a dual-chamber ionization type smoke detector with addressable communications. The detectors utilize a unipolar sensing chamber and transmits information through a communication line to a control panel. Two rotary dial decade switches allow setting of the detector's address.

An LED on the detector provides an indication of the detector's status. Coded signals, transmitted from the panel, control the LED to "FLASH", latch "ON" or latch "OFF". In normal operation, the detector LED will "FLASH" in standby, and latch "ON" in alarm.

A recessed "push to test" switch allows testing of the detector's alarm capability with a small rod or screwdriver. The detector provides a test module socket for testing the detector's sensitivity with the MOD400R test module (sold separately).

The CP300 and CP300A include a plug-in screw terminal block and a mounting bracket. The terminal block allows the detector to be disconnected from the system without loss of power to the remaining loop. The mounting bracket provides a tamper proof feature that, when activated, will require the use of a tool to remove the detector (Figure 4).

### **COMPATIBILITY REQUIREMENTS**

The CP300 and CP300A require compatible addressable communications to function properly. **Connect this detector to compatible addressable Fire-Lite control panels only.**

### **MOUNTING**

Model CP300 and CP300A detectors are supplied with a mounting bracket (Figure 4) that permits mounting the detector to:

1. A single gang box,
2. Directly to a 3-1/2 inch or 4 inch octagonal box, or
3. To a 4 inch square electrical box by using a plaster ring.

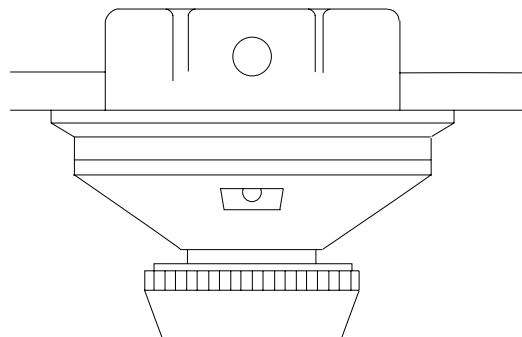


Figure 1. Mounted CP300

A78-1554-02

### **SPECIFICATIONS & WIRING DIAGRAM**

Voltage Range: 15 – 28 Volts DC Peak  
 Standby Current: 150  $\mu$ A @ 24 VDC  
 LED Current: 7 mA @ 24VDC (latched "ON")  
 Loop Resistance: 40  $\Omega$  Maximum  
 Air Velocity: 1500 Ft/Minute (7.6 m/S) Maximum

Diameter: 5.0 inches (12.7 cm)  
 Height: 3.0 inches (7.6 cm)  
 Temperature: 0° to 49°C (32° to 120°F)  
 Relative Humidity: 10% – 93% Non-condensing

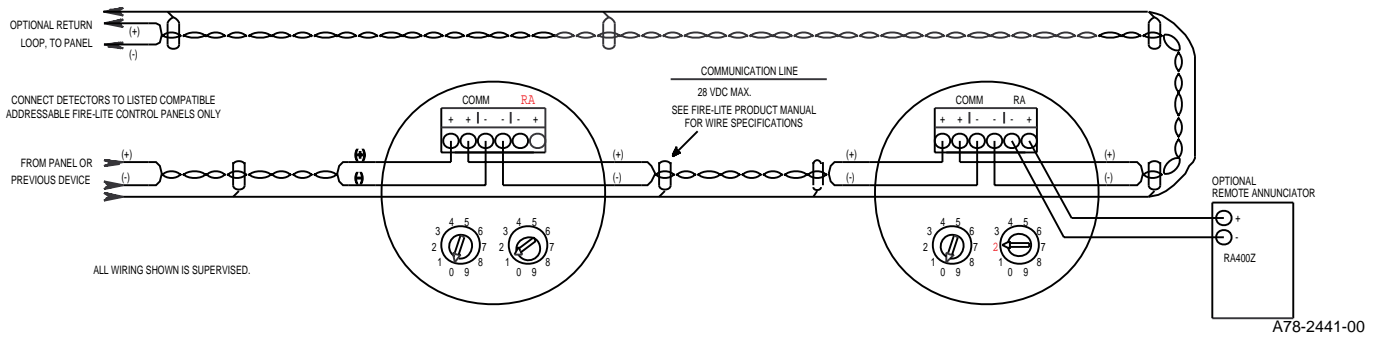


Figure 2. Wiring Diagram

## WIRING INSTALLATION GUIDELINES

**CAUTION:** Remove power from the communication line before installing detectors.

All wiring must conform to applicable local codes, ordinances, and regulations.

1. Mount adapter bracket to junction box as shown in Figure 4. Activate tamper-proof feature if necessary.
2. Wire the plug-in screw terminal block per the wiring diagram (Figure 2) and the wiring guide (Figure 3). Do not over-tighten screws in terminal block.
3. Set the desired address on the detector's address switches. Record address and loop on adapter bracket if desired.
4. Plug the screw terminal block into the detector as shown in Figure 3. The terminal block can only be inserted one way.
5. Attach the detector to the mounting bracket. Alignment marks on the detector should be aligned with the arrows on the mounting bracket. Push detector against adapter bracket and rotate clockwise to secure in place (Figure 4). A mounted detector is shown in Figure 1.
6. After all detectors have been installed, apply power to the control unit and activate the communication line.
7. Test the detector(s) as described in the *TESTING* section of this manual.

All wiring must be installed in compliance with the National Electrical Code, applicable local codes, and any special requirements of the local Authority Having Jurisdiction. Proper wire gauges should be used. The conductors used to connect smoke detectors to control panels and accessory devices should be color-coded to prevent wiring mistakes. Improper connections can prevent a system from responding properly in the event of a fire.

The plug-in terminal block will accept 14 – 22 gauge wire. Stranded wire is preferred where 14 or 16 gauge wire is used. For best system performance, all wiring should be installed in separate grounded conduit; do not mix fire system wiring in the same conduit as any other electrical wiring.

Wire connections are made by stripping approximately 1/4 inch of insulation from the end of the feed wire, inserting the wire into the appropriate terminal, and tightening the terminal screw. Do not overtighten terminal block screws.

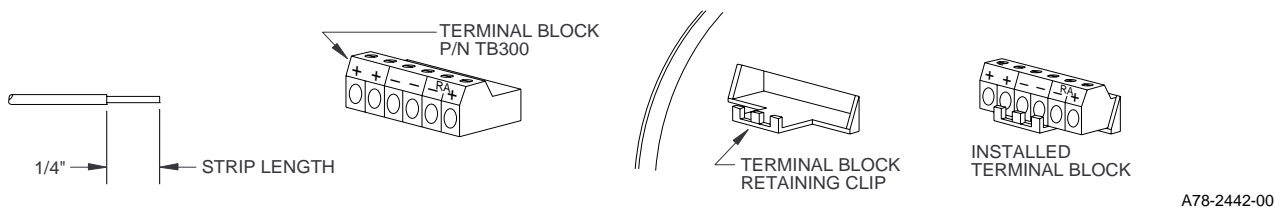


Figure 3. Terminal Block Wiring Guide

**CAUTION**  
**THE CP300 IS SHIPPED WITH A DUST COVER THAT PROVIDES LIMITED PROTECTION AGAINST AIRBORNE DUST PARTICLES. SMOKE DETECTORS MUST BE REMOVED PRIOR TO CONSTRUCTION OR HEAVY REMODELING. DUST COVERS ARE NOT A SUBSTITUTE FOR REMOVING DETECTORS. THE DUST COVER MUST BE REMOVED FROM THE DETECTOR IN ORDER TO SENSE SMOKE.**

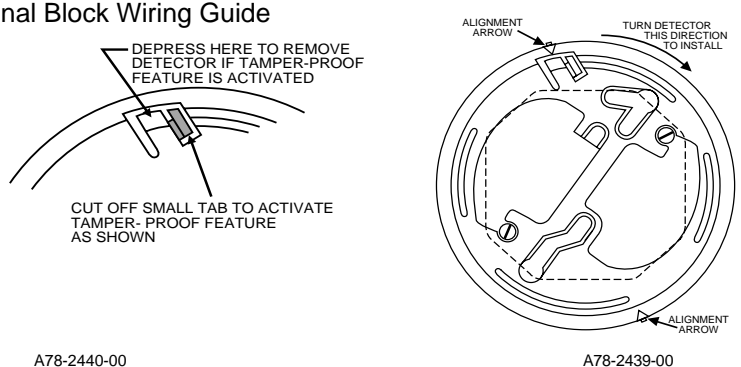


Figure 4. Mounting Bracket Detail

## **TAMPER-PROOF FEATURE**

The adaptor bracket (Figure 4) includes a tamper-proof feature that prevents removal of the detector without the use of a tool. To activate this feature, cut the smaller tab off of the tamper proof tab located on the detector mounting bracket (see Figure 4). To remove the detector after the tamper-proof feature has been activated, depress the tamper-proof tab where shown in Figure 4 and turn the detector counterclockwise.

## **TESTING**

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

All detectors must be tested after installation and periodically thereafter. Testing methods must satisfy the Authority Having Jurisdiction (AHJ). For maximum protection, test and maintain all detectors in compliance with the requirements of the National Fire Protection Association (NFPA). The detector can be tested in the following ways:

### **A. Test Switch**

1. Depress test switch with a long, thin tool. An allen key or small screwdriver works well.
2. The LED should latch on within 10 seconds, indicating an alarm and annunciating the panel.

### **B. Test Module (Model No. MOD400R)**

The MOD400R is used with a digital or analog voltmeter to check the detector sensitivity. An acceptable voltage range is stamped on the back of the detector. Test the detector as described in the test modules manual.

### **C. Aerosol Generator (Gemini 501) per NFPA 72**

The GEMINI model 501 aerosol generator can be used for smoke entry testing. Set the generator to represent 4%/ft to 5%/ft obscuration as described in the GEMINI 501 manual. Using the bowl shaped applicator, apply aerosol until unit alarms.

A detector that fails any of these tests should be cleaned as described under *CLEANING*, and retested. If the detector 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.**

## **CLEANING**

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

1. Remove detector to be cleaned from the system by depressing the tamper lock, if activated, and rotating the detector counterclockwise.
2. Push terminal block retaining clip away from the terminal block and pull the terminal block straight out of the detector.
3. Remove the detector cover and screen assembly by simultaneously depressing the three locking prongs on top of the cover, rotating the cover counterclockwise, and pulling the cover assembly away from the detector. Usage of the CRT400 cover removal tool is helpful.
4. Pull screen assembly (P/N RS14) out of cover.
5. Carefully vacuum the screen, cover, and the sensing chamber.
6. Re-assemble the detector by snapping the screen into the cover, pushing the cover assembly onto the detector, and rotating clockwise until the cover locks in place.
7. When all detectors have been cleaned, restore system operation and test the detector(s) as described in the *TESTING* section of this manual.

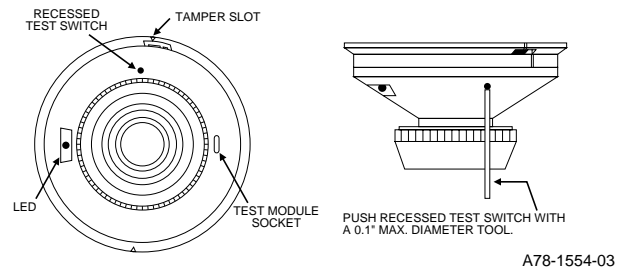


Figure 5.

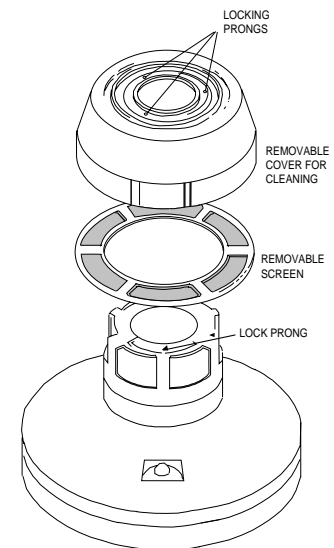


Figure 6.

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**WARNING**  
**LIMITATIONS OF SMOKE DETECTORS:**

This smoke detector is designed to activate and initiate emergency action, but will do so only when used in conjunction with other equipment. This detector is designed for installation in accordance with NFPA standard 72.

**Smoke detectors will not work without power.** AC or DC powered smoke detectors will not work if the power supply is cut off for any reason.

**Smoke detectors will not sense fire which starts where smoke does not reach the detectors.** Smoke from fires in chimneys, in walls, on roofs or on the other side of closed doors may not reach the smoke detector and alarm it.

**A detector may not detect a fire developing on another level of a building.** For this reason, detectors should be located on every level of a building.

**Smoke detectors have sensing limitations, too.** Ionization detectors offer a broad range fire-sensing capability, but they are better at detecting fast, flaming fires than slow, smoldering fires. Photoelectronic detectors sense smoldering fires better than flaming fires. Because fires develop in different ways, and are often unpredictable in their growth, neither type of detector is always best, and a given detector may not always provide warning of a fire. In general, detectors cannot be expected to provide warnings for fires resulting from inadequate fire protection practices, violent explosions, escaping gas, improper storage of flammable liquids like cleaning solvents, other safety hazards, or arson. Smoke detectors used in high air velocity conditions may fail to alarm due to dilution of smoke densities created by such frequent and rapid air exchanges. Additionally, high air velocity environments may create increased dust contamination, demanding more frequent maintenance.

**Smoke detectors cannot last forever.** Smoke detectors contain electronic parts. Even though detectors are made to last over 10 years, any of these parts could fail at any time. Therefore, test your smoke detector system per NFPA 72E at least semiannually. Clean and take care of your smoke detectors regularly.

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**THREE YEAR LIMITED WARRANTY**

Fire-Lite Alarms 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. Fire-Lite Alarms 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. Warranty requests should be directed to:

Fire-Lite Alarms, Inc.  
12 Clintonville Rd.  
Northford, CT 06472-1653

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. The duration of any implied Warranty, including that of merchantability or fitness for any particular purpose, shall be limited to the period of three years commencing with 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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