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**Intertek Testing Services**

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**EXHIBIT 7**  
**INSTRUCTION MANUAL**

### 7.0 **Instruction Manual**

Attached is a preliminary copy of the Instruction Manual. The following information will be included in the next revision of the manual:

“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.”

“Changes or modifications not expressly approved by Sentrol, Inc. could void the user's authority to operate the equipment.”

This manual will be provided to the end-user with each unit sold/leased in the United States.

SENTROL

**Wireless****4300 Series  
Wireless Smoke Detector****GENERAL INFORMATION**

The Sentrol 4300 Series smoke detector is designed for use with the Sentrol 4000 Series Wireless System and compatible ZX Control sold separately. The 4300 Series provides the following features:

**Diagnostic mode** allows you to check the detector's sensitivity with the Alarm/Diagnostic LED

**Low current operation** allows the detector to run on two lithium batteries (included) for up to 5 years.

**CleanMe® Self-diagnostics** monitors its own sensitivity and operational status. If the detector drifts out of the UL listed sensitivity range or fails internal diagnostics, it extinguishes its LED and sends a trouble signal to the control panel as required by NFPA 72.

**Built-in drift compensation** automatically adjusts sensitivity up to 1.0%/ft. to compensate for dust and dirt buildup.

**Optional base tamper** sends a trouble signal to the control panel when the detector is removed from its mounting base.

**Optional 85dB temporal sounder** provides additional protection with a sounder that projects an ANSI temporal rhythm until smoke has cleared or the detector Test/Silence button is pressed.

**Optional integrated fixed 135°F temperature and rate of rise heat detector** offers double protection. Either the heat detector or smoke detector trips alarm transmitter and internal sounder.

**Optional isolated fixed temperature and rate of rise heat detector** provides an ideal smoke detector for kitchens and hotel/motel/dormitory rooms where smoking is allowed. The "smoke" detector only activates the internal sounder (local alarm) but does not transmit an alarm to the control. The independent "heat" detector activates the LED and alarm transmitter.

**Optional low temperature supervision** sends a low temperature supervision signal when the ambient temperature around the detector reaches approximately 43°F (6°C). Separate transmitter signal (second transmitter address ID) is assigned to a Critical Condition monitoring zone.

**TRANSMITTED SIGNAL OUTPUTS**

Depending on the model, the 4300 Series transmits the following signals to the control panel:

- Alarm (all models)
- Alarm restore (all models)
- Tamper (models with tamper)
- Low battery (all models)
- CleanMe® (all models)
- Maintenance alert (all models)
- Supervisory (all models)
- Low temperature supervision (models with low temperature supervision)

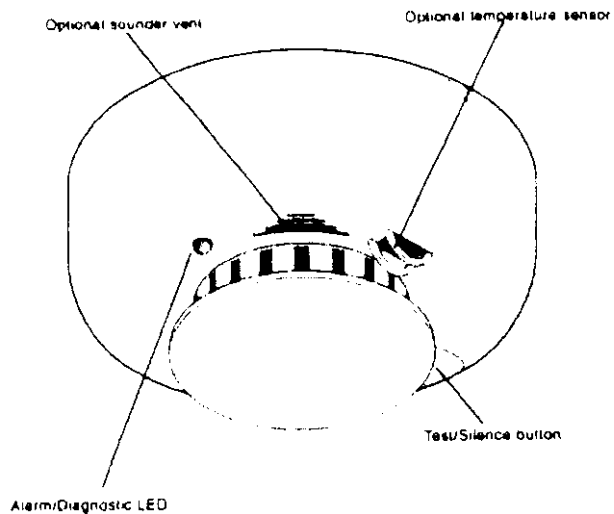


Figure 1

**SELECTING A LOCATION**

Selecting a suitable location is critical to the operation of smoke detectors. Consult the Local Authority Having Jurisdiction (AHJ) and NFPA 72 for specific installation information regarding smoke detector spacing, placement, and special applications.

The 4300 series can be mounted on ceilings or walls. Use the following guidelines to select a suitable location for the smoke detector:

- Locate ceiling-mounted smoke detectors in the center of a room or hallway at least 4 inches from any walls or partitions.
- Locate wall-mounted smoke detectors so the top of the detector is 6 to 12 inches below the ceiling.
- Locate in a suitable environment as follows:
  - Temperature between 40°F and 100°F
  - Humidity between 0 and 95% non-condensing
- Locate away from air conditioners, heating registers and any other ventilation source that may interfere with smoke entering the detector.
- Mount smoke detectors on a firm permanent surface.

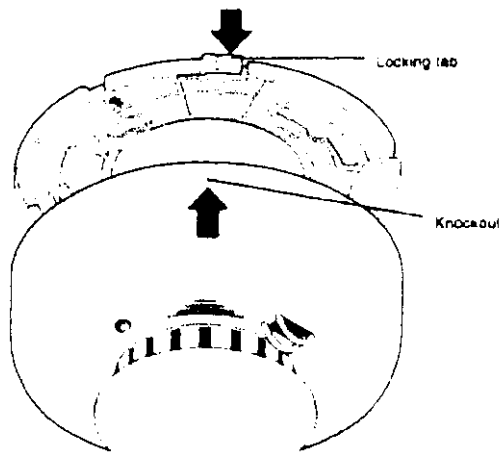


Figure 2

## INSTALLING THE DETECTOR

1. Observing proper polarity, insert the two Lithium batteries provided into the detector battery compartment.
2. Record the seven digit ID address from the label on the backside of the detector.
3. If you are using the Base Tamper, break off the locking tab on the mounting base and remove the knockout on the detector as shown in Figure 2.
4. Using the two screws and anchors provided, mount the base. The base may be mounted directly to standard single-gang, 3-inch round, or 4-inch octagonal electrical boxes. Base may also be mounted without electrical boxes if approved by the AHJ or if codes allow.
5. Attach the detector to the mounting base as follows:
  - Line up the raised tab on the lip of the detector with the slot on the lip of the mounting base. See Figure 3.
  - Insert the smoke detector into the base and turn clockwise approximately 15 degrees. It should snap firmly into place.
6. Program the seven digit ID address into the RF gateway receiver and the control panel. See the control panel installation and programming manual for more information.
7. Remove the red plastic dust cover from the detector. The detector is shipped with a dust cover for protection when installed on construction sites with dusty environments.

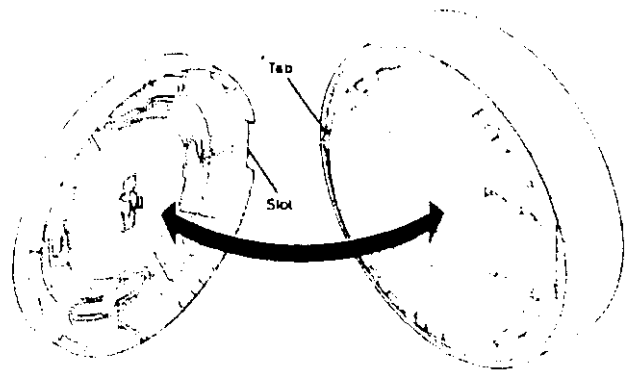


Figure 3

8. Disconnect the alarm notification appliances, service release devices and extinguishing systems and test the communication between the control panel and each smoke detector as follows:

-One at a time, press the Test/Silence button on each smoke detector for two seconds. The detector sends an alarm to the control panel.

-At the control panel, verify that the detector alarm was received.

9. Test each smoke detector. See *Smoke Testing the Detector*.
10. Reconnect all alarm notification appliances, service release devices and extinguishing systems.

**Important:** The control panel alarm and all auxiliary functions should be verified for a complete test of the system.

## SMOKE TESTING THE DETECTOR

Smoke detectors should be tested in place annually using smoke or canned aerosol simulated smoke. Follow the instructions on the canned smoke or use the following steps to test the detector with smoke:

1. Hold a smoldering punk or cotton wick close to the smoke entry openings.
2. Gently direct the smoke into the detector for 20 seconds or until an alarm is indicated.

**BE SURE TO PROPERLY EXTINGUISH THE SMOKE SOURCE AFTER TESTING!** The detector LED should remain lit while the built-in transmitter sends an alarm signal to the control panel. If the detector contains a built-in sounder, it will sound a temporal rhythm until the Test/Silence button is pressed. The detector automatically resets when smoke is no longer present.

## TESTING THE DETECTOR SENSITIVITY

The 4300 Series provides a sensitivity level test mode that allows you to check the detector sensitivity using the Test/Silence button and the LED indicator on the detector as follows:

1. Press the Test/Silence button on the detector for 2 seconds. Once the test starts, the alarm LED flashes one to nine times.
2. Count the number of times the LED flashes and use the following table to determine the status of the detector sensitivity and what action to take, if any.

Flashes	Indication/Action
1	Unserviceable hardware fault. Reset unit and rerun sensitivity test. If the error persists, replace the unit.
2-3	Detector is not sensitive enough. Clean the unit. Reset unit and rerun sensitivity test. If the error persists, replace the unit.
4-7	Detector is within normal sensitivity range.
8-9	Detector is too sensitive. Verify that the smoke chamber is snapped down securely. Clean unit.

After the sequence of flashes, if the sensitivity is found to be within limits and all other tests pass, the detector goes into alarm and resets after 5 seconds.

If the sensitivity is not within limits, or an unserviceable hardware fault has been detected, the alarm LED extinguishes until the detector is serviced and the built-in transmitter sends a CleanMe® or maintenance alert signal to the control panel.

## UNDERSTANDING THE TEST/SILENCE BUTTON

The Test/Silence button on 4300 Series performs three functions as follows:

**Testing** = Press for 2 seconds when there is no alarm and the transmitter sends a test signal to control panel. If the model includes a sounder, after a slight delay, a test of the sounder is performed. The sounder remains on as long as the button is depressed. The delay allows the confirmation beep at the control panel to be audible.

**Silence alarm** = If model includes a sounder, press to silence the sounder during an alarm. After a few minutes, the sounder resumes if smoke is still present.

**Silence trouble chirp** = If the model includes a sounder, press to silence a trouble chirp. The trouble chirp resumes after 24 hours if the trouble condition is not corrected.

## UNDERSTANDING THE LED

The LED on the 4300 Series indicates the status of the detector as follows:

**FLASHING** = Flashes every 9 seconds to indicate normal operation.

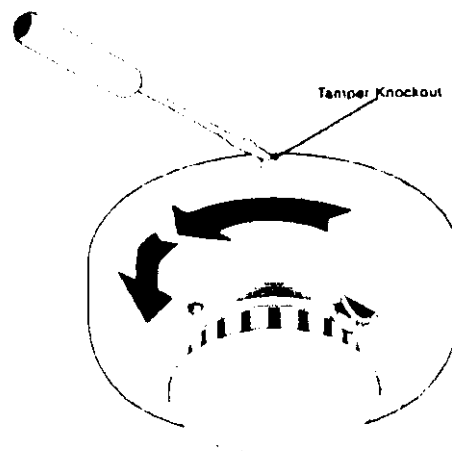


Figure 4

**ON** = Detects smoke, sending an alarm.

**OFF** = Trouble or maintenance is required. Check the control panel to determine what action to take.

## ATTACHING AND REMOVING THE DETECTOR

To remove the detector from the mounting base, grasp and turn it counterclockwise approximately 15 degrees. The detector should snap out of the mounting base.

To remove the detector from the mounting base when the base tamper is used, insert a small screwdriver into the locking tab slot on the side of the base and press in while simultaneously turning the detector counterclockwise 15 degrees. See Figure 4.

Attach the smoke detector to its mounting base as follows:

- Line up the raised tab on the lip of the smoke detector with slot on the lip of the mounting base. See Figure 3.
- Insert the smoke detector into the base and turn clockwise approximately 15 degrees. It should snap firmly into place.

## BATTERY REPLACEMENT

The 4300 Series is powered by two 3V Duracell® Lithium batteries (provided). Battery life varies depending on how often the detector is tested. If a low battery condition is detected, the detector sends a low battery signal to the control panel and extinguishes its LED. The signal is sent for a minimum of 7 days. After 10 days, if the detector has an optional sounder, it will chirp every 30 seconds while the low battery signal continues to be sent. The sounder can be silenced for 24-hours by pushing the Test/Silence button.

## MAINTAINING THE DETECTOR

The 4300 Series smoke detectors are designed for easy field service and maintenance. When installed and used properly, they require minimal maintenance.

The smoke detector sensitivity should be checked one year after installation and every alternate year thereafter in commercial installations or every three years in residential applications. See *Testing the Detector Sensitivity*. Smoke detectors should also be tested in place annually using smoke or canned aerosol simulated smoke. See *Smoke Testing the Detector*.

When the detector requires maintenance, it extinguishes its LED and sends a signal to the control panel as described in the following table.

Signal	Maintenance required
CleanMe	Smoke detector sensitivity is out of range and needs cleaning. See <i>Clearing the Detector</i> .
Maintenance alert	Detector failed power up self test. Perform a sensitivity test. See <i>Testing the Detector Sensitivity</i> . If the problem persists, replace the detector.
Low battery	Batteries in the detector are low. Replace the batteries.

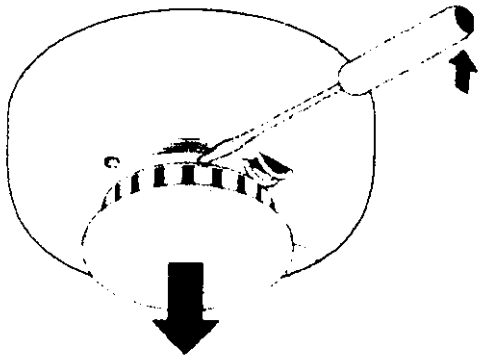


Figure 5

## CLEANING THE DETECTOR

You will need a replacement smoke chamber to clean the smoke detector.

Use the following steps to clean your smoke detector:

1. Remove the detector from its mounting base. See *Attaching and Removing the Detector*.
2. Slide a flat-blade screwdriver in the slot on the detector cap and gently push the handle down to pry the cap up and off. See Figure 5.
3. Press in on the sides of the smoke chamber and pull it up and away from the detector and discard. See Figure 6.

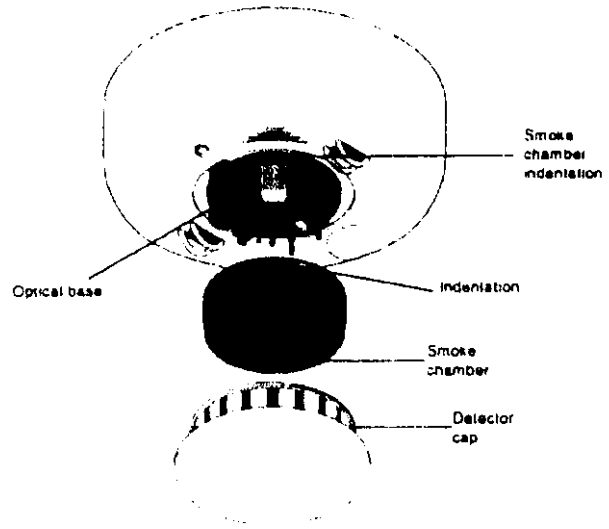


Figure 6

4. Blow out or use a soft-bristled brush to remove dust and dirt from the smoke chamber base.
5. Line the new smoke chamber up with the smoke chamber base and snap down into place.
6. Replace the detector cap as follows:
  - Line the cap up with the smoke detector.
  - Insert the cap into the smoke detector and turn clockwise approximately 15 degrees. It should snap firmly into place.
7. Reattach the detector to its mounting base. See *Attaching and Removing the Detector*.
8. Test the detector sensitivity. See *Testing the Detector Sensitivity*.

## FCC COMPLIANCE (USA)

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.

FCC ID: A794300

## INDUSTRY CANADA COMPLIANCE (CANADA)

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

**DETECTOR SPECIFICATIONS**

Voltage .....3VDC  
 Typical average standby current ..... 25mA  
 Typical test current..... 2mA  
 Typical alarm current ..... 15mA ±10%  
 Battery type ..... 2 Duracell® 3V Lithium, DL123A  
 Low battery threshold ..... 2.7V causes low battery signal  
 Sounder ..... 85dB at 10", temporal pattern  
 Low battery beep rate ..... 30 ±2/sec.  
 Sensitivity ..... 3.1% +0.50-1.00%  
 Operating temperature ..... 32°F-100°F (0°C to 49°C)  
 Operating humidity range ..... 0-95% non-condensing  
 RFI Immunity ..... 20V/m minimum; 0-1000MHz  
 Color ..... White  
 Detector dimensions ..... 5.5" x 2.3" (14 cm x 5.6 cm)  
 Base dimensions ..... 5.25" x 0.4" (13 cm x 0.4 cm)

Drift compensation adjustment ..... 1.0%/ft. max.  
 Heat detector specifications (T, H Models):  
 Rate of rise... 15°F/min > 105°F (8.3°C/min > 40.6°C)  
 Fixed ..... 135°F ± 5°F (57.2°C ± 2.8°C)  
 Listings ..... UL 217, UL 268  
 Transmitter frequency ..... 418MHz  
 Free air range ..... 1000ft unobstructed  
 Indoor range ..... 200 ft typical  
 Transmitter ID ..... Pre-programmed, 1 Million codes  
 Modulation type ..... FM  
 Signal format ..... FSK, Manchester Encoded  
 Signal types:  
 Primary address... alarm, restore, trouble(maint./tamper)  
                           CleanMe, low battery, 1 hour supervisory  
 Secondary address(L Models)..... alarm, restore

**PRODUCT ORDERING**

4310S	Sentrol wireless smoke detector, two 3V Lithium batteries included, 85dB sounder, UL 217
4310ST	Sentrol wireless smoke detector, two 3 V Lithium batteries included, 85dB sounder, 135 degree fixed/rate of rise heat detector, UL 217
4310SH	Sentrol wireless smoke detector, two Lithium batteries included, 85dB sounder, isolated 135 degree fixed/rate of rise heat detector, UL 217
4310SLT	Sentrol wireless smoke detector, two Lithium batteries included, 85dB sounder, 135 degree fixed/rate of rise heat detector, low temperature option, UL 217
4330	Sentrol wireless smoke detector, two 3V Lithium batteries included, base tamper, UL 268
4330S	Sentrol wireless smoke detector, two 3V Lithium batteries included, 85dB sounder, base tamper, UL 268
4330ST	Sentrol wireless smoke detector, two 3V Lithium batteries included, 85dB sounder, base tamper, 135 degree fixed/rate of rise heat detector, UL 268
4330SLT	Sentrol wireless smoke detector, two Lithium batteries included, 85dB sounder, base tamper, 135 degree fixed/rate of rise heat detector, low temperature option, UL 268
4330SLTM	Sentrol wireless smoke detector, two Lithium batteries included, 85dB sounder, mercury tilt tamper, 135 degree fixed/rate of rise heat detector, low temperature option, UL 268
SM-200	Smoke! in a Can (canned smoke) for functional testing of smoke detectors
211	Replacement smoke chambers (set of 10)

**SENTROL**

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