
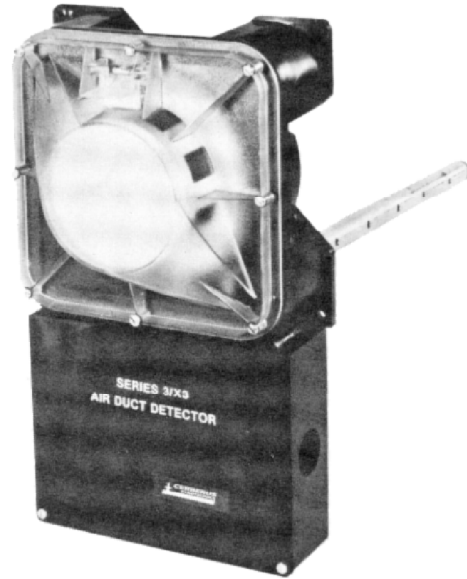


# Air Duct Housings

## ENGINEER AND ARCHITECT SPECIFICATIONS

- Series IL, and Series 3 Ionization or Photoelectric Detectors
- Optional Relays for Supplementary Equipment Operation
- Optional Control Module for Self-contained Operation (Series 3 Detectors Only)
- Alarm LED Visible from Front
- Clear Housing Cover for Quick Identification of Detector Type
-  Listed, ULC Listed, NYMEA, FM, CSFM and City of Chicago Approved



## Introduction

The Cerberus Pyrotronics air duct detector housings are designed to be used with Cerberus Pyrotronics Series IL, ID-60 and Series 3 ionization or photoelectric detectors. Designed for installation directly to heating, ventilating and air conditioning duct systems, they comply with National Fire Protection Association Standard No. 90A. When equipped with ionization or photoelectric detectors, these units will signal the presence of hazardous quantities of products of combustion or smoke being carried through the duct system. Air duct detectors are not intended to be substituted for open area detection.

Air duct housings can be equipped with optional relays. These relays are utilized to operate any supplementary equipment when smoke or particles of combustion are detected.

*Note:* Most control equipment including System 3 guarantees only one detector per zone is permitted when the detector operated relay function is critical. The connection of a remote lamp or a remote relay per detector is allowed, but not both.

The XL3 control panel assures operation of all detector operated relays, therefore up to 30 detectors per circuit having relays for critical functions may be used. For the MXL control panel, up to 60 detectors per circuit having relays may be used. The connection of a remote lamp or a remote relay is allowed for each detector but not both.

Air duct housings (see Ordering Information) are Underwriters Laboratories, Inc. listed.

## Description

The Cerberus Pyrotronics air duct housing is uniquely designed to use the highly sensitive yet stable Series IL, ID-60 and Series 3 detectors.

The sensitivity of Series 3 detectors can be checked in place under actual dynamic air flow conditions using a Cerberus Pyrotronics sensitivity test module. The sensitivity of Series IL detectors can be checked in place under actual dynamic conditions at the XL3 control panel, MXL control panel or IXL respectively or may be printed by command on the optional printer.

The detector unit employs a cross-sectional sampling principle of operation. Inlet sampling tubes are available in four lengths (see table on reverse side). Outlet sampling tubes are one common length. A continuous cross-sectional sample of air moving through the duct is taken. This averages the effects of laminar flow, stratification or skin effect phenomena occurring in the duct that could prevent combustion product or smoke (especially in large ducts) from reaching a spot type detector.

In addition, the unique design of the Cerberus Pyrotronics sampling chamber insures uniform sensitivity in air velocities, ranging from a low of 300 feet per minute to as high as 4000 feet per minute.

The inlet sampling tube length is determined by the width of the air duct being protected. The inlet tube nearest to but greater than the duct width should be used (see table). The inlet tube can then be trimmed at the job site to the exact width of the duct. The outlet sampling tube for all ducts, irrespective of width, has a fixed length of approximately 3 inches (7.5 cm) and is supplied with the duct housing.

When the use of a remote relay is required, a relay module DA-3SR for conventional systems or DA-X3SR for MXL or ICon-1 (IXL) systems is used to replace the existing terminal strip in the air duct housing wiring compartment. See installation diagram.

## Sampling Tube Selection Table

| Duct Width                          | Sampling Tube Model No. |
|-------------------------------------|-------------------------|
| 9" to 1'9" (21 cm to 51 cm)         | STA-2                   |
| 1'9" to 3'3" (51 cm to 97.5 cm)     | STA-3                   |
| 3'3" to 6'3" (97.5 cm to 187.5 cm)  | STA-6                   |
| 6'3" to 9'9" (187.5 cm to 292.5 cm) | STA-10                  |
| Greater than 9'9" (292.5 cm)        | Consult Pyrotronics     |

Maintenance of the detector is easily accomplished by the removal of the Series 3/X3 duct housing sampling chamber cover. The detector, which plugs into the housing, is easily removed for cleaning by a trained technician.

All that is necessary for the installation of the air duct detector is the cutting of three small holes for the sampling tube installation (template included) and the drilling of four holes for mounting the air duct housing. The unit is then easily mounted in place and connection made to the existing wires or terminals if optional accessories are utilized.

## Engineer and Architect Specifications

The air duct housing for the fire detection system shall be a Cerberus Pyrotronics Series 3/X3 air duct housing.

The air duct housing shall incorporate the use of one of the following detectors.

|  |                |
|--|----------------|
| Series IL Photoelectric                                  | Model ILP-1    |
| Series IL Ionization                                     | Model ILI-1B   |
| Series IL Ionization<br>(High Altitude 3000-8000 ft.)    | Model ILI-1BH  |
| Series 3 Ionization                                      | Model DI-B3    |
| Series 3 Ionization<br>(High Altitude 3000-8000 ft.)     | Model DI-B3H   |
| Series 3 Photoelectric                                   | Model PE-3     |
| Series ID-60 Ionization                                  | Model ID-60IB  |
| Series ID-60 Ionization<br>(High Altitude 3000-8000 ft.) | Model ID-60IBH |
| Series ID-60 Photoelectric                               | Model ID-60P   |

The air duct housing unit shall be designed for detection of combustion products and/or smoke in air conditioning and ventilation system ducts in compliance with NFPA Standard 90A. The assembly shall consist of a housing to accommodate sampling tubes which extend into and across the duct of the ventilation system.

While the fans are operating, a continuous cross-sectional sampling of air from the duct shall flow through the selected ionization or photoelectric detector, after which the sampled air shall be returned to the duct.

Air handling equipment shall be shut down by a signal from the fire detection system control equipment. When the air duct housing incorporates the optional relay, the shut down of air handling devices may be accomplished by a signal directly from the detector.

The air duct housing shall be available with a self-contained power supply so that it can function as a stand-alone unit if desired. The self-contained stand-alone unit will power and supervise two satellite units.

The air duct housing shall utilize a plug-in detector head located in the air sampling chamber. The detector shall be either ionization or photoelectric. There shall be provisions to check the detector sensitivity in place under actual air flow conditions.

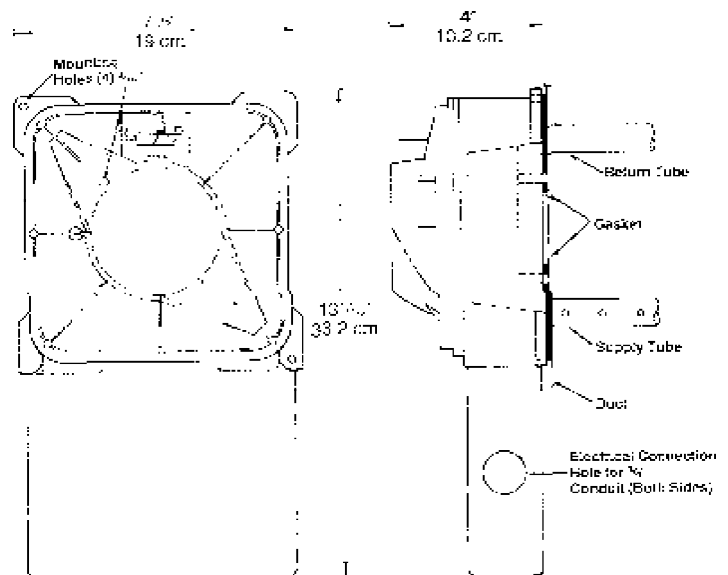
The air duct housing shall be mounted directly outside of the air duct by means of four bolts (supplied). A template shall be provided for making necessary cut-outs and holes. Complete instructions shall be supplied with the unit.

The air duct housing shall be a Cerberus Pyrotronics Model \_\_\_\_\_ (See listing on back page) and shall be Underwriters Laboratories, Inc. Listed, specifically for use in air handling systems.

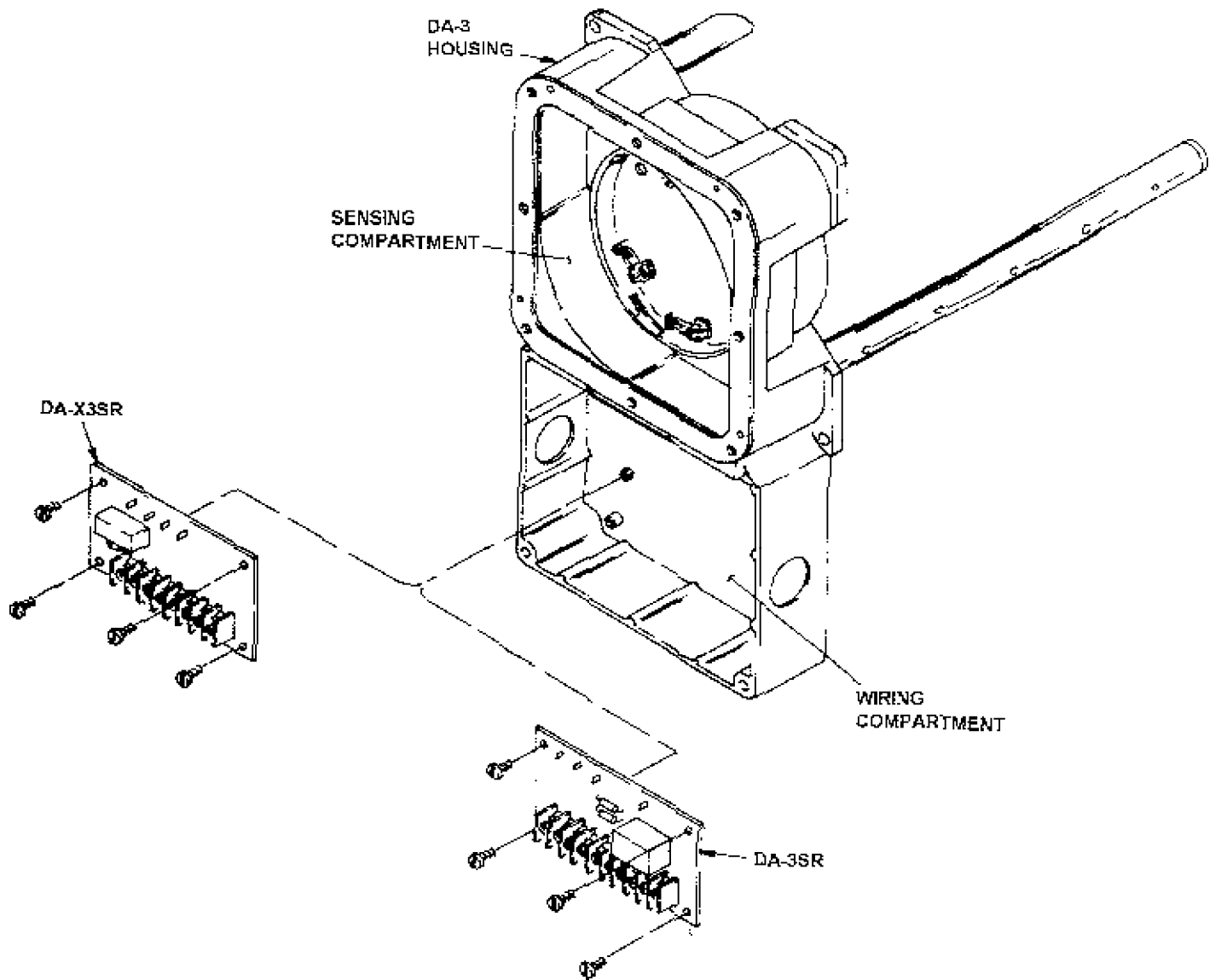
**Note to Architect:** When building codes regulate the location of detectors within ventilating systems, make sure that the number and locations of detectors is in accordance with the code regulations.

**(The "X" Series and the PEC-3 detectors are obsolete as of 1/1/92. The IL Series are direct replacement for the ID-60 and "X" Series and the PE-3 for the PEC-3.)**

## Dimensions

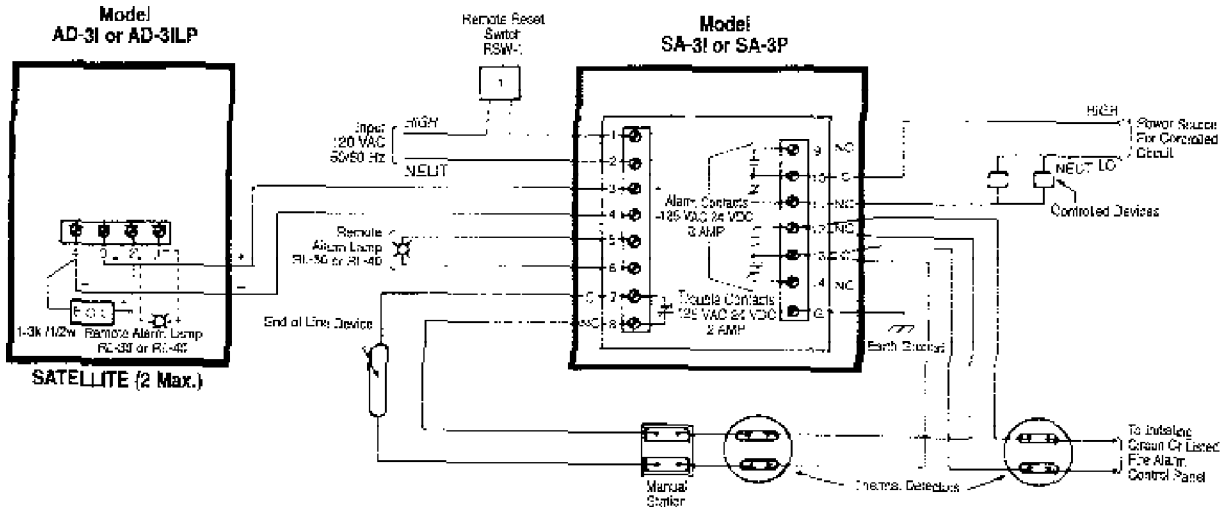


# Installation Diagram

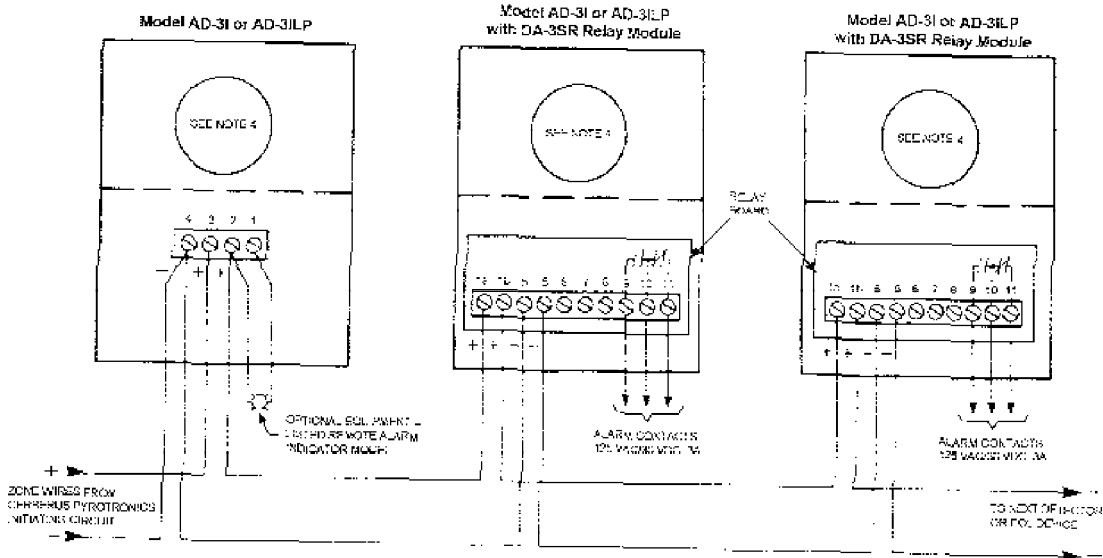


# Typical Wiring

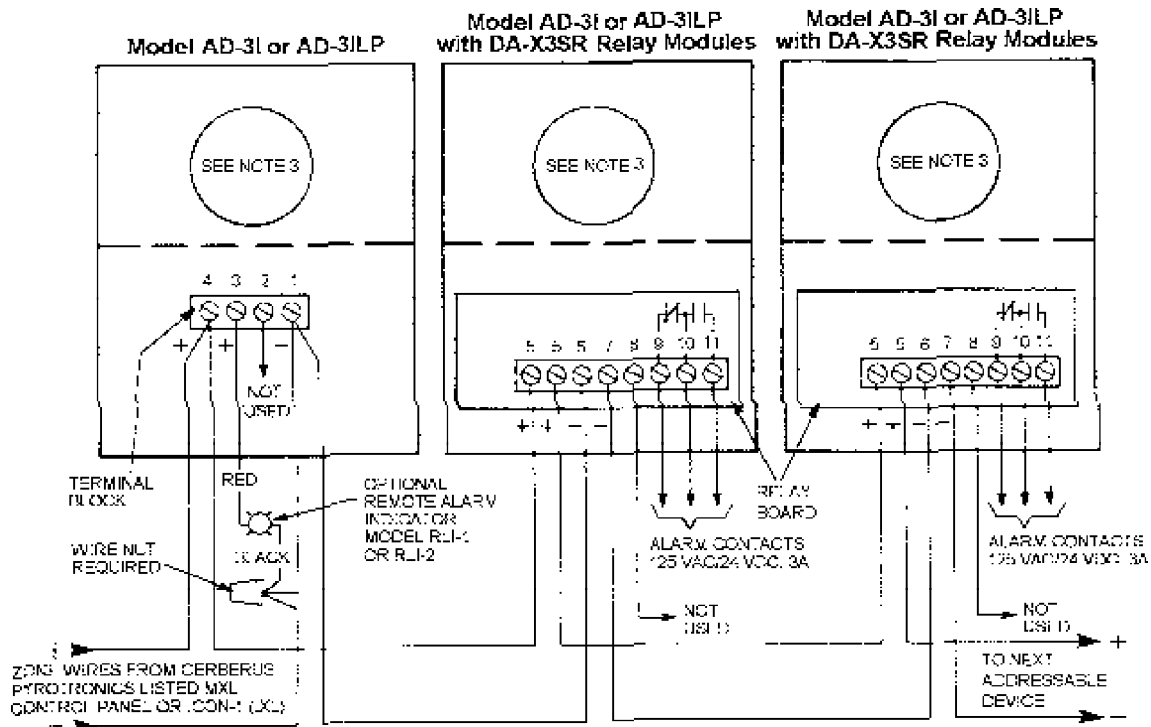
## Typical Wiring for Self-Contained Unit and Satellite



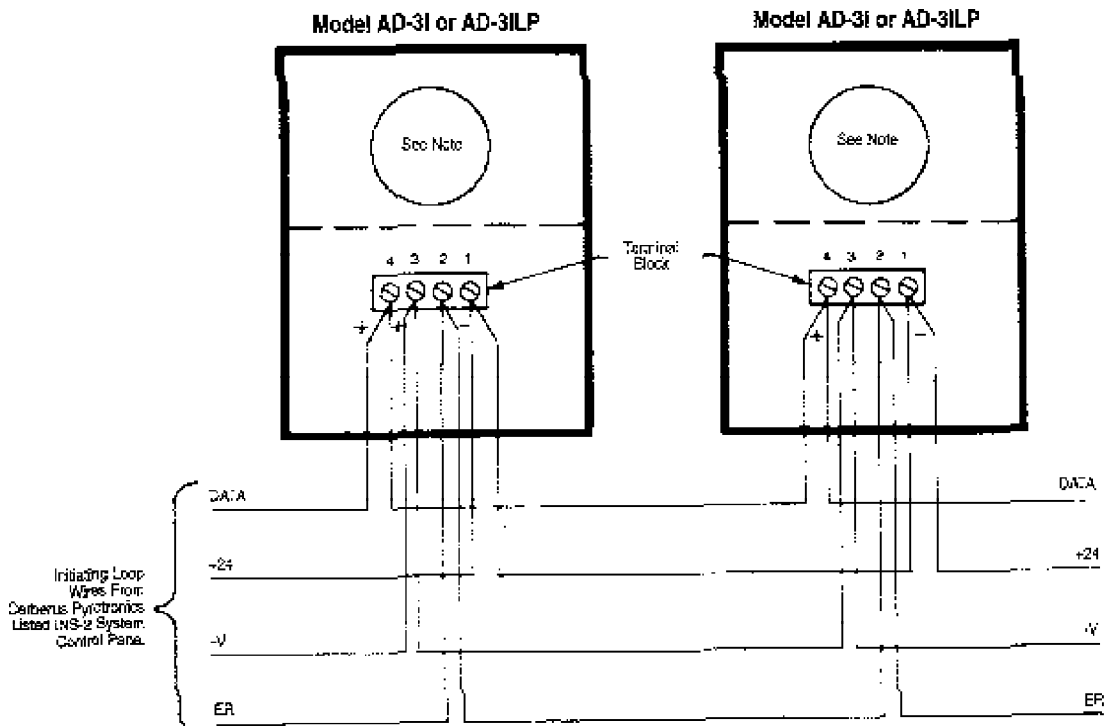
## Typical Wiring for System 3, SXL, PXL



## Typical Wiring for MXL and ICon-1 (IXL)



## Typical Connections for INS-2/IXL Use



## Ordering Information

| Model No. | Description   | Shipping Weight |      |
|-----------|---|-----------------|------|
|           |   | Lb.             | Kg.  |
| AD-3I     | Series 3 air duct housing with cover for the Series 3, ILI Series and Series ID-60I ionization detectors                          | 5               | 2.25 |
| AD-3ILP   | Series 3/3X air duct housing with cover for the ILP-1 and PE3 photoelectric detectors   | 5               | 2.25 |
| DA-3SR    | Remote relay board for use with AD-3I or AD-3ILP with DI-3 or PE-3 series detectors   | 0.5             | 0.22 |
| DA-X3SR   | Remote relay board for use with AD-3I or AD-3ILP with IL or ID60 series detectors   | 6               | 2.7  |
| SA-3I     | Series 3 air duct housing with power supply for self-contained unit operation and with cover for Series 3 ionization detectors    | 7               | 3.15 |
| SA-3P     | Series 3 air duct housing with power supply for self-contained unit operation and with cover for Series 3 photoelectric detectors | 7               | 3.15 |
| STA-2     | Sampling Tube, for ducts 9" to 1'9"   | 1               | .45  |
| STA-3     | Sampling Tube, for ducts 1'9" to 3'3"   | 2               | .9   |
| STA-6     | Sampling Tube, for ducts 3'3" to 6'3"   | 4               | 1.8  |
| STA-10    | Sampling Tube, for ducts 6'3" to 9'9". Sampling Tubes greater than 9'9", consult Cerberus Pyrotronics                             | 6               | 3.7  |
| RSW-1     | Reset Switch  | 1               | .45  |
| DI-B3     | Series 3 ionization detector  | 1               | .45  |
| DI-B3H    | Series 3 ionization detector (for altitudes of 3000-8000 ft.)   | 1               | .45  |
| PE-3      | Series 3 photoelectric detector   | 1               | .45  |
| ILI-IB    | Series ILI ionization detector  | 1               | .45  |
| ILI-IBH   | Series ILI ionization detector (for altitudes of 3000-8000 ft.)   | 1               | .45  |
| ILP-1     | Series ILP photoelectric detector   | 1               | .45  |
| TM-I3     | Sensitivity test module for Series 3 ionization detector  | 1               | .45  |
| TM-PE3    | Sensitivity test module for Series 3 photoelectric detector   | 1               | .45  |
| TMP-3000  | Sensitivity test module for PEZ-3   | 1               | .45  |
| TMC       | Sensitivity test module cable assembly  | 1               | .45  |

*Note:* Minimum hardware required is one Air Duct Housing Assembly, one Sampling Tube and one Detector.

NOTICE: The use of other than Cerberus Pyrotronics detectors and bases with Cerberus Pyrotronics equipment will be considered a misapplication of Cerberus Pyrotronics equipment and as such voids all warranties either expressed or implied in regard to loss, damage, liabilities and/or service problems.



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