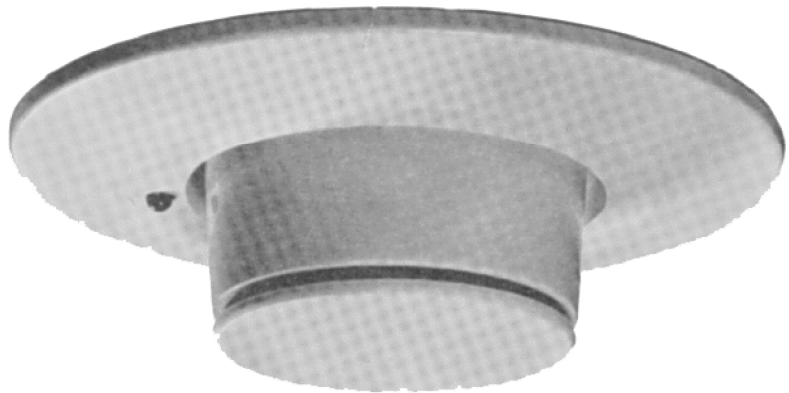


DI-4A

Ionization Smoke Detector

ENGINEER AND ARCHITECT SPECIFICATIONS

- Flush or Surface Mounting
- Compact
- Adjustable Sensitivity
- Screw-type Terminals
- Versatile
- New "Free Flow" POC Path
- Rugged
- Alarm Light
- Simple Twist/Lock Assembly
- Solid State Circuitry
- Superior Air Velocity Characteristics
-  Listed, ULC Listed, FM, CSFM, NYMEA and City of Chicago Approved



Introduction

The Cerberus Pyrotronics Model DI-4A smoke detector with adjustable sensitivity operates on the ionization principle. It is designed to respond to the first traces of fire in the form of visible smoke or invisible products of combustion. Heat or flame is not required to activate the detector. The Model DI-4A detector has been developed for protection of a wide range of commercial, industrial, institutional, and residential occupancies.

Technical Description

The DI-4A detector is a plug-in, dual chamber ionization detector with adjustable sensitivity and contains two ionization chambers together with a highly sensitive semiconductor amplifier-switching circuit. One chamber detects the presence of combustion products. The second chamber serves as a reference, to stabilize the detector's sensitivity for changes in environmental temperature, humidity, and pressure. The detector assembly locks in upon alarm; therefore it must be reset at the control panel.

The DI-4A can be manually adjusted to two different sensitivity settings; Low and High. This is easily done by moving the sensitivity indicator, located on the underside of the detector housing, with a small pointed instrument such as a ball point pen.

The detector operates from a 20 VDC source, provided by the Cerberus Pyrotronics control panel. The detector requires a very small standby current (less than 110 μ A), which permits the use of a 2-wire detector circuit of #18 AWG wire, reducing system installation costs. In alarm, the detector will draw approximately 175mA (with remote). The DI-4A detector is Underwriters Laboratories Inc. listed for ordinary indoor applications.

Base assemblies for either flush or surface mounting, all with screw type terminals, are available for use with the DI-4A detector as follows:

- | | |
|---------------|---|
| DB-4TS | Surface Base with Integral Alarm Lamp and Terminal Connection for Remote Relay or Remote Alarm Lamp |
| DB-4TF | Flush Base with Integral Alarm Lamp and Terminal Connection for Remote Alarm Lamp |

A remote indicator lamp, Model RL-30 or RL-40 may be connected when the detector is concealed from view or a remote relay, Model RR-2, may be connected to the DI-4A where a detector-controlled function is required at or near the detector. The Model RR-2 relay has one set of double-pole, double throw contacts rated at 120 VAC, 2 Amp. resistive.

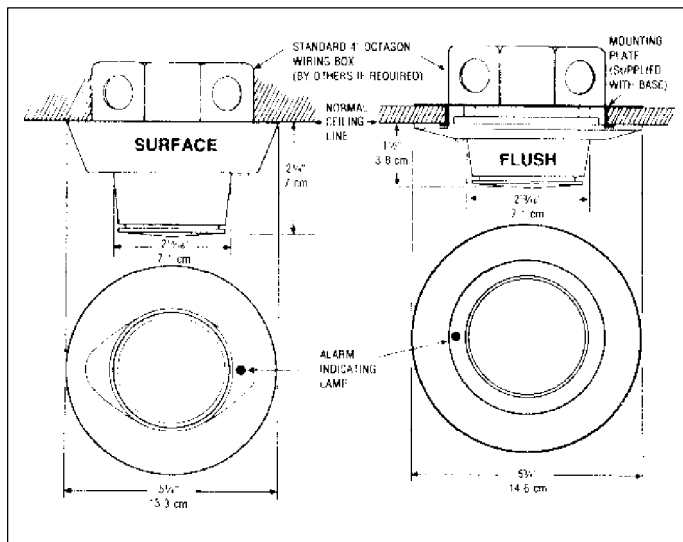
When the RR-2 is used and the control function is critical, no more than one DI-4A should be installed in a particular circuit or zone, and no other initiating devices should be installed in that same circuit or zone. An exception to this rule would be an application where a number of RR-2 relays were used, each of which was connected to the same critical control function.

Mounting Data

The DI-4A detector utilizes either a flush or surface mounting base assembly. Each base may be attached to a standard 4" octagonal electrical box with an adapter (included) when conduit is used, or may be used without box when local building codes permit. The DB-4TS base contains provision for an optional field installed locking mechanism to prevent unauthorized removal of the detector head. A flush locking base, Model DB-4TFL, is also available.

The detector shell and base are fabricated of rugged polycarbonate material eliminating any corrosion problems. They are off-white in color and attractively styled to be unobtrusive and to match most interiors.

By using the Cerberus Pyrotronics sensitivity tester, Model MG-7/9 the detector can be easily checked for proper operation.



Application Data

No more than thirty (30) detectors of any type or combination (other than thermals or manual stations) may be used on any one Cerberus Pyrotronics detector circuit.

This detector is applicable to the 30-foot center spacing (900 sq. ft.) as referred to in the National Fire Protection Association Standard 72. This, however, is based on ideal conditions, namely, smooth ceiling, no air movement, and no physical obstructions between the fire source and the detector. This spacing should be used as a guide or starting point in detector installation layout. Do not mount detectors in areas close to ventilating or air conditioning outlets. Exposed joists or beamed ceilings may also affect safe spacing limitations for detectors. It is mandatory that engineering judgment be applied regarding detector location and spacing.

Engineer and Architect Specifications

The fire detector shall be a Cerberus Pyrotronics Model DI-4A with adjustable sensitivity. It shall operate on the ionization principle, activated by the presence of combustion products, and shall be listed by Underwriters Laboratories Inc. The detector shall be a plug-in, twist/lock unit which may be installed in or removed from its base with one hand.

The detector shall contain two ionization chambers, amplifier-switching circuit and solid state indicator lamp. One chamber shall be for fire detection and the second chamber shall function as a reference, to stabilize the detector for changes in environmental temperature, humidity, and pressure. The unit shall contain no operating moving parts.

The amplifier-switching circuit in the detector shall be entirely solid state, and shall operate with a detector line voltage of 20 VDC.

The unit shall be capable of being manually adjusted for low or high sensitivity. The resulting sensitivity setting shall be visible through an indicator slot located on the detector housing. No special tools shall be required to change the sensitivity setting.

The base assembly into which the detector is installed shall be of the twist/lock type with screw type terminals, and shall be a Cerberus Pyrotronics Model DB-4 (Insert TS or TF). Pigtailed or in-line connectors shall not be permitted. The base shall include a lamp to indicate alarm of the detector.

It is possible to connect either a remote lamp, Model RL-30, RL-40 or a remote relay, Model RR-2, to the base assembly. The relay shall contain a set of DPDT contacts, rated at 120V, 60Hz, 2 amp. resistive, for the control of external devices.

A security base lock shall be installed in those areas where tamper resistant installation is required.

If maintenance is required, the unplugged detector shall be capable of normal handling without causing damage to components, such as field effect transistors.

The detector, or group of detectors, shall require a two-wire circuit of #18 AWG thermoplastic fixture wire enclosed in conduit, or #18 AWG limited energy shielded cable without conduit, if permitted by local building codes.

Ordering Information

Model	Description	Shipping Wt.
DI-4A	Detector, Ionization, with Adjustable Sensitivity	1 lb. (.45 kg.)
DB-4TS	Base Assembly with Alarm Lamp and Terminal for Remote Relay or Lamp, Surface Mtg. (Includes adapter for 4" octagonal box)	1 lb. (.45 kg.)
DB-4TF	Base Assembly with Alarm Lamp and Terminal for Remote Relay or Lamp, Flush Mtg. (Includes adapter for 4" octagonal box)	1 lb. (.45 kg.)
545-080117	Base Locking Kit for DB-4TS	.5 lb. (.22 kg.)
DB-4CVR	Dust Covers for DB-4TS	
DB-4TFL	Flush Base with Lock	1 lb. (.45 kg.)
RR-2	Remote Relay	1 lb. (.45 kg.)
RL-30/RL-40	Remote Alarm Lamps	1 lb. (.45 kg.)
465-514391	Cable, Limited Energy, Shielded (for use where building codes permit detector wiring without conduit), 2-wire (1000' roll)	50 lb. (22.5 kg.)

Typical Wiring

