

Adjustable Ionization Smoke Detector

ENGINEER AND ARCHITECT SPECIFICATIONS

MODEL DI-6

- Adjustable Sensitivity
- Two Response Settings
- Adjustable Smoke Inlet
- Twist Lock Base with Integral Alarm Lamp
- Usable in Air Currents Up to 1000 ft./min.
- Encapsulated Electronics
-  - 268 Listed, ULC Listed



Introduction

The Cerberus Pyrotronics DI-6 adjustable ionization smoke detector is uniquely designed and is the most advanced and most flexible UL 268 listed ionization smoke detector on the market today.

The DI-6's inherent adjustable characteristics allow for 8 different combinations of 3 adjustable settings, adjustable sensitivity, adjustable smoke entry ports, and two (2) response time settings.

The DI-6's design permits it to detect a full range of visible and invisible smoke particles therefore allowing it to detect fires before serious damage is caused.

This ability to detect the first traces of fire along with the detectors flexibility makes it suitable for use in a wide range of commercial, industrial and institutional fire detections and extinguishing applications.

Technical Description

The DI-6 detector is a plug-in dual chamber ionization detector, with field adjustable sensitivity, field adjustable smoke inlets, and two (2) response time settings.

The heart of the DI-6 is its sensor which is made up of two ionization chambers. The first chamber, the sampling chamber is open to the surrounding air and detects the presence of combustion products. The second chamber, the reference chamber, is virtually sealed and serves as a reference to stabilize the detectors sensitivity for changes in environmental temperature, humidity and pressure.

As products of combustion enter the sampling chamber, the chamber current is reduced. At the time the voltage change exceeds the predetermined threshold, an alarm is signalled to the control unit.

Once the alarm is signalled to the control unit, it is locked in until it is reset at the control panel.

The DI-6 has two levels of sensitivity, low and high, which are easily set by rotating a ring at the top of the detector with a pointed tool.

Set at the low position, the detector raises the alarm threshold, requiring more particles of combustion to initiate an alarm, therefore making the detector less sensitive. The opposite is true for the high sensitivity setting.

There are two time response settings for the DI-6. The normal setting is set by placing the blue marker inside the detector and the delay setting (typically 30 seconds) is set by placing the blue marker on the outside of the detector therefore making it clearly visible.

In order to adapt the detector to dusty environments and varying air currents up to 1000 feet per minute, the DI-6 has two (2) settings for the air shields protecting the smoke inlets.

This inlet is adjusted by moving the grill of the detector with the vent tool (part number #545-485624).

The Applications/Conditions table on page 3 depicts the suggested detector settings in relation to various applications and ambient conditions.

The DI-6 with Series 4 Base operates on 18-24 VDC provided by the Cerberus Pyrotronics control system and utilizes a 2 wire detector circuit using #18 AWG wire.

The detector can be either flush or surface mounted using model DB-4TS base for surface mounting and model DB-4TF for flush mounting. Both bases have an integral alarm lamp and a terminal connection for using a remote alarm lamp model RLI1-2, RL-30, RL-40 or a remote relay model RR-2. (The model RR-2 relay has one set of double pole, double throw contracts rated at 120 VAC, 2 amp resistive.) When the RR-2 is used and the relay control function is critical, no more than one (1) DI-6 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.

The detector can be locked into the DB-4TS base with the optional field installed locking mechanism model DB-LK.

The sensitivity of the detector can be checked in the field by the use of the MG-7/9 sensitivity tester.

Application Data

No more than thirty (30) detectors of the ionization or photoelectric type may be used on any one Cerberus Pyrotronics detector circuit. An unlimited number of thermal or manual stations may be used or added to one circuit. The number of flame detectors used in combination with ionization and photoelectric detectors would be limited to the power consumption of that particular model flame detector.

The DI-6 is applicable to the 30 foot center spacing (900 sq. ft.) as referred to in the National Fire Protection Association Standard 72. This spacing, 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 judgement be applied regarding detector location and spacing. Refer to the instructions supplied with each detector or contact your Cerberus Pyrotronics regional office for more detailed information.

Engineer and Architect Specifications

The fire detector shall be plug-in ionization type detector, Cerberus Pyrotronics model DI-6.

The detector shall be made up of two (2) ionization chambers, one sampling chamber to detect the presence of particles of combustion and one reference chamber to stabilize the detectors sensitivity for changes in environmental temperature, humidity and pressure.

The detector shall have adjustable sensitivity, (two positions high and low) which can be changed without the need of special tools.

The detector shall have two (2) response times normal and delayed (nominal 30 seconds).

The detector shall be able to be used in varying air currents up to 1000 feet per minute.

The detector shall have a two (2) position smoke inlet grill.

The base assembly into which the detector is installed shall be of the twist lock variety and shall be Cerberus Pyrotronics DB-4TF or DB-4TS. Pigtails or on-line connectors shall not be permitted. The base shall include a LED to indicate alarm of the detector.

It is possible to connect either a remote lamp, model RL-30 or 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 model DB-LK shall be installed in those areas where tamper resistant installation is required.

The detector shall be capable of having its sensitivity checked in the field using the MG-7/9 sensitivity tester.

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 codes.

Electrical Characteristics

Operating Voltage*	16-25.7 VDC
Standby Current*	100 microamps
Alarm Current*	150 milliamps
Operating Temperature (per UL 268)	+32°F (0°C) to +100°F (38°C)
Humidity (per UL 268)	0-93% (non condensating)
Air Velocity (per UL 268)	0-1000 ft./min.

Physical characteristics	
Diameter	2.9" Top, 2.56" Bottom
Depth	2.1"
Altitude	0-4000 ft.

*When used with Series 4 Base.

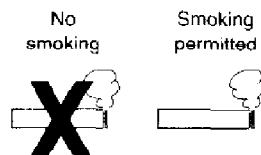
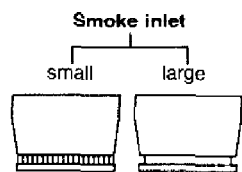
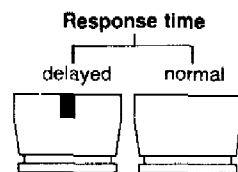
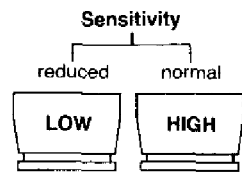
Ordering Information

Model	Description	Shipping Weight
DI-6	Detector, ionization, with adjustable sensitivity, air vents, response time.	1 lb. (.45 kg)
DB-4TS	Base assembly with alarm lamp and terminal for remote relay or lamp, surface mounting (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 mounting (includes adapter for 4" octagonal box).	1 lb. (.45 kg)
DB-LK	Base Lock for DB-4TS	1 lb. (.45 kg)
RR-2	Remote Relay	1 lb. (.45 kg)
RL-30/RL-40	Remote Alarm Lamp	1 lb. (.45 kg)
MG 7/9	Sensitivity Tester	

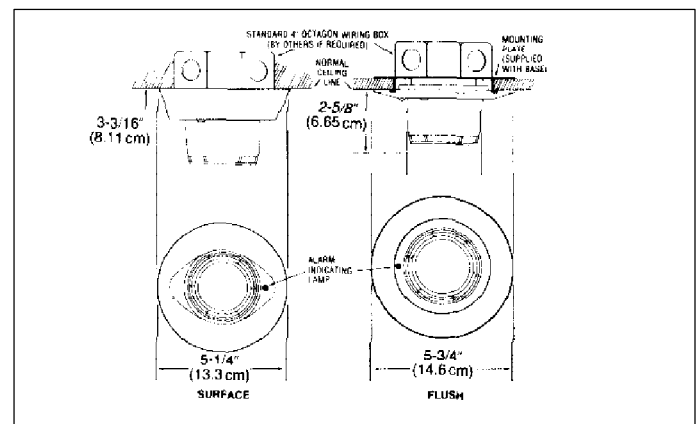
Application Setting Table

Application/Conditions		Recommended Setting for Height of Room		
		10 Feet	10 to 20 Feet	20 Feet +
- High concentration of valuables - Electrical smouldering fires - Air exchange >15 x /hour (when air velocity across detector does not exceed 1000 fpm) examples: Telephone exchange, computer room, museum				
Normal clean rooms examples: offices factory areas hospital wards hotel rooms				
Rooms subjected to dust, smoke or fumes examples: workshops				
Intermittently high concentrations of smoke examples: ovens, heating rooms, garages				

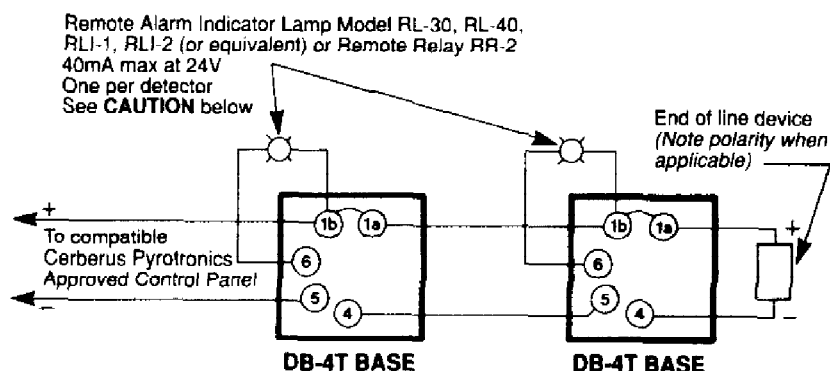
Legend



Mounting Data



Typical Wiring



CAUTION: Only one critical function remote should be used on each circuit, since only one alarm per circuit is guaranteed.



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