

ILP Series

Intelligent Photoelectric Detectors for IXL, MXL, and XL3 Control Panels

ENGINEER AND ARCHITECT SPECIFICATIONS

ILP-1, ILPT-1

- On-Board Motorola Microprocessor Based Design
- Innovative Technology Provides High Speed, Fault Tolerant System/Detector Communications
- EEPROM Supervision; Protects Critical Detector Programming
- Highly Resistant to RFI, EMI and Humidity.
- Remote Sensitivity Adjustment and Measurement Capability
- Field Cleanable Photochamber
- Alarm Indicator LED
- Two-Wire Operation
- Optional 135 Degree F Thermal Model, ILPT-1
- Compatible with SENSORLINK, Model FPI-32 Field Programmer/Tester: Program /Verify Detector Addressing, Perform Diagnostic Testing of Detectors
- EnviroLINK: Software Based Automatic Environmental Compensation (available only when used with MXL systems).
- Optional, Fully Programmable Relay Base and Audible Base
-  Listed, ULC Listed, FM, CSFM, NYMEA, and City of Chicago Approved



Introduction

Cerberus Pyrotronics ILP-1 and ILPT-1 intelligent photoelectric smoke detectors offer the fire and life safety industry the most advanced method of detection, programming and communications available today. Additionally, the ILP series detectors provide an extremely high degree of resistance to RFI, EMI and humidity. The ILP Series photoelectric detector utilizes a state-of-the-art Motorola microprocessor with on-board EEPROM. The microprocessor provides the power to operate the detector's sophisticated detection, error checking and supervision algorithms.

The ILP Series intelligent photoelectric detectors are compatible with Cerberus Pyrotronics SensorLINK FPI-32 field programmer/tester. The FPI-32 is a compact, portable, menu-driven accessory which makes programming and testing detectors faster, easier and more reliable than other methods. The FPI-32 eliminates the need for cumbersome,

unreliable mechanical programming methods and reduces installation and service costs by electronically programming addresses and functionally testing the ILP's performance before the detector is installed.

The ILP Series photoelectric detectors are also compatible with Cerberus Pyrotronics IXL, MXL and XL3 control panels.

All ILP Series detectors are Underwriters Laboratories Listed.

Description

The ILP-1 and ILPT-1 are plug-in, two-wire photoelectric detectors, compatible with Cerberus Pyrotronics IXL, MXL or XL3 systems. Each ILP detector consists of a dust resistant, field cleanable photo chamber, microprocessor based electronic circuitry with plastic cover and base. Electronic component packaging uses surface mount type

technology. The entire electronic assembly is fully protected from noise transients by shielding and is coated to resist moisture and corrosion.

The ILP-1 and ILPT-1 photoelectric detector utilizes a light emitting diode (LED), and light sensing photodiode assembled in a fixed array so that under normal conditions, light transmitted by the LED is directed away from the photodiode and scattered throughout the smoke chamber in a controlled pattern. The smoke chamber is designed to manage light dissipation and extraneous reflections from dust particles or other non-smoke airborne contaminants in such a way as to maintain stable, consistent detector operation.

The ILP-1 and ILPT-1 detector's microprocessor uses an integral EEPROM to store the detector's address, and other critical operating parameters which include an assigned, programmable value for alarm and trouble thresholds.

The microprocessor's software employs sophisticated, proprietary algorithms to identify and disregard false alarms caused by radio frequency (RFI) and electromagnetic (EMI) interference and also validates all trouble conditions before annunciating or reporting to the control panel. Communications within the detector itself and also between the ILP-1 and ILPT-1 detectors and the control panel or the FPI-32 programming accessory are supervised and safeguarded against disruption by reliable, microprocessor based error checking routines. Additionally, the microprocessor supervises all EEPROM memory locations and provides a high degree of EEPROM failure fault tolerance.

In IXL or MXL applications, an ILP series detector determines its operating status to be normal, in alarm, or in trouble depending on the difference between the alarm threshold value stored in the detector's memory and the detector's latest analog measurement. The detector then communicates changes in its status to the MXL or IXL control panel. In addition, MXL panels will periodically sample the value of the detector's analog signal in order to determine if those values indicate excessive dust buildup in the photo-chamber; if so the MXL will indicate that the particular detector requires maintenance. For XL3 control panel applications, the detector's operating status is determined to be normal, in alarm or in trouble depending upon the difference between the alarm threshold values stored in memory at the XL3 panel and the analog value of signals transmitted by the detector and evaluated at the control panel.

When an ILP series detector's alarm condition is confirmed by the control panel, the detector's LED flashes and continues flashing until the system is reset at the control panel. Also, any user defined system alarm function or control by event functions are activated. Each ILP series detector is capable of operating one I series remote alarm indicator, or one auxiliary relay, or one audible base.

Detector sensitivity, calibration and identification are dynamically supervised by the control panel. Detector sensitivity can be changed from the control panel.

The **SensorLINK** FPI-32 Program/Test accessory is used to program and verify the detector's address. The technician selects the accessory's program mode to enter the desired address. The FPI-32 will then automatically set and verify the address and test the detector. The FPI-32 operates on AC power or rechargeable batteries, providing the flexibility and convenience to program and test detectors anywhere. When in the test mode, the FPI-32 will perform a series of diagnostic tests on the ILP detectors without altering the address, allowing technicians to determine if the detector is operating properly or not.

The ILP series detectors may be installed on the same MXL or XL3 circuit with ID-60 series detectors, MSI series manual boxes, TRI series interfaces, ICP output control devices or the CZM series conventional zone modules. The ILP series detectors may also be installed on the same XL3 circuit with X series detectors, manual boxes or interface modules. ILP series detectors may be installed on the same IXL (ICON) circuit with other I series detectors, manual boxes or TRI interfaces.

All ILP series detectors can be cleaned in the field as required by simply removing first the detector cover, then the photo chamber cover and cleaning the interior surfaces of the photo chamber with a clean, soft cloth or brush.

The ILPT-1 is a photoelectric detector with a restorable thermal sensor. An alarm will be initiated when the temperature around the detector's thermal sensor reaches 135 degrees Fahrenheit (57°C) or when sufficient smoke enters the photoelectric chamber.

ILP series detectors are also designed for use with Cerberus Pyrotronics AD-3ILP air duct housings for air duct applications. If a relay is desired, use a DA-X3SR module with the AD-3ILP housing.

The ILP series detectors use the Cerberus Pyrotronics low profile surface mounting detector bases. Detector base model DB-3S mounts to a 4-inch octagonal, square or single gang electrical box. Relay base model DB-X3RS mounts to a 4-inch square deep electrical box. Audible base model ADBI-60 mounts to a 4-inch square deep electrical box. When a 4-inch square or 4-inch square deep electrical box is used, an optional trim ring is available; model RA-ADB. The DB-3S, DB-X3RS and ADBI-60 bases use screw clamp terminals for all electrical connections and self-wiping contacts for increased reliability. These bases contain a provision for an optional, concealed locking mechanism, model DB-LK, to prevent unauthorized removal of the detector head.

All ILP series photoelectric detectors are approved for operation within the U.L. specified temperature range of 0°C and 38°C.

Applications Data

Installation of the ILP series of photoelectric detectors requires 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 build-

ing codes. Field wiring should conform to local and National Electric Codes, and to the control panel wiring specifications.

T-tapping is permitted only for Style 4 (Class B) wiring.

ILP series photoelectric detectors can be applied within the maximum 30 foot center spacing (900 sq.ft. areas) as referenced in NFPA 72. This applications guideline is based on ideal conditions, specifically; smooth ceiling surfaces, minimal air movement, and no physical obstructions between potential fire sources and the detector. Do not mount detectors in close proximity to ventilation or heating and air conditioning outlets. Exposed joists or beamed ceilings may also affect safe spacing limitations for detectors. Should questions arise regarding detector placement, observe NFPA 72 guidelines.

Engineer and Architect Specifications

The detector shall be a Cerberus Pyrotronics ILP-1 Series addressable, photoelectric detector which shall be compatible with either a Cerberus Pyrotronics MXL, IXL or XL3 control panel. The detector shall have a plug-in head unit which mounts to a twist-lock base. The detector head will incorporate micro-processor based circuitry which shall perform all detection and communications functions. No electronic circuitry or address identification mechanisms shall be contained in the detector's base. The detector shall operate on a two-wire circuit and shall include an LED indicator which will flash to signal an alarm condition. The detector shall be listed with Underwriter's Laboratories, Inc.

The photoelectric detector shall utilize a light emitting diode (LED) and light sensing photodiode assembled in a fixed array so that under normal conditions, light transmitted by the LED is directed away from the photodiode and scattered throughout the smoke chamber in a controlled pattern. The smoke chamber design should effectively manage light dissipation and extraneous reflections from dust particles or other airborne contaminants in such a way as to maintain stable, consistent detector operation.

Detector addressing shall be accomplished electronically, using a portable field programming/test accessory. Mechanical means such as programming pins, dip-switches, etc. shall not be used. The field programming device shall be a Cerberus Pyrotronics **SensorLINK** model FPI-32. The portable programming device shall be menu driven and operate using rechargeable batteries or 120VAC power. Once the desired address has been entered at the FPI-32 programming device, the device will download the data to the detector's memory and verify that the detector address is correctly programmed. Communications between the detector and the programming accessory shall be supervised by error checking algorithms. The field programming accessory shall also be capable of performing diagnostic tests to determine if a detector is operating properly.

When required, the smoke detector shall contain a 135°F (57°C) fixed temperature, self-restoring heat sensor. Actuation shall cause the detector to initiate an alarm. The detector shall remain in alarm until reset by the control panel.

The detector shall be capable of bidirectional communications with the control panel and shall be dynamically supervised and uniquely identifiable by the control panel. The control panel shall be capable of analyzing the signal for the detector's analog value for calibration, sensitivity and address identification. These values shall be displayed upon command from the control panel. The detector's sensitivity shall be individually adjustable from the control panel. Should the detector sensitivity voltage shift beyond an acceptable level and remain there for a predetermined duration, a discrete detector trouble signal shall be annunciated at the XL3 or MXL control panel.

The detector shall be compatible, when installed on the same XL3 signaling circuit, with other Cerberus Pyrotronics ID-60 Series or X series addressable photoelectric, ionization or thermal detectors, MSI or MSX series addressable manual pull boxes and TRI or TRX series addressable interface modules. The detector shall be compatible on the same MXL signaling circuit with all ID-60 series photoelectric, ionization and thermal addressable detectors, MSI series addressable, manual pull boxes, TRI series addressable interface devices, ICP output control devices or CZM series or other intelligent modules. The detector shall be compatible on the same IXL's ICON signaling circuit with other ID-60 series photoelectric, ionization and thermal addressable detectors, MSI series addressable manual pull boxes, or TRI series addressable interface devices.

The detector shall be capable of operating one remote alarm indicator or auxiliary relay or audible base. The relay or remote alarm indicator, or audible base is normally activated by the associated detector, however, the XL3 or MXL system shall be capable of being programmed to operate the relay or remote alarm indicator, or audible base independently of the associated detector. All detectors, remote alarm indicators, audible bases and or relays connected to the initiating circuit can be in alarm or activated simultaneously.

The addressable photoelectric detectors shall be compatible with the standard Model DB-3S base, the ADBI-60 audible base, the DB-X3RS relay base and the AD3ILP air duct housing. The base assembly in which the detector is installed shall be of twist-lock design with screw clamp terminals. The base shall use self-wiping contacts and shall accept other compatible Cerberus Pyrotronics plug-in detectors. A locking mechanism shall be installed in those areas where tamper resistant installation is required.

Technical Specifications

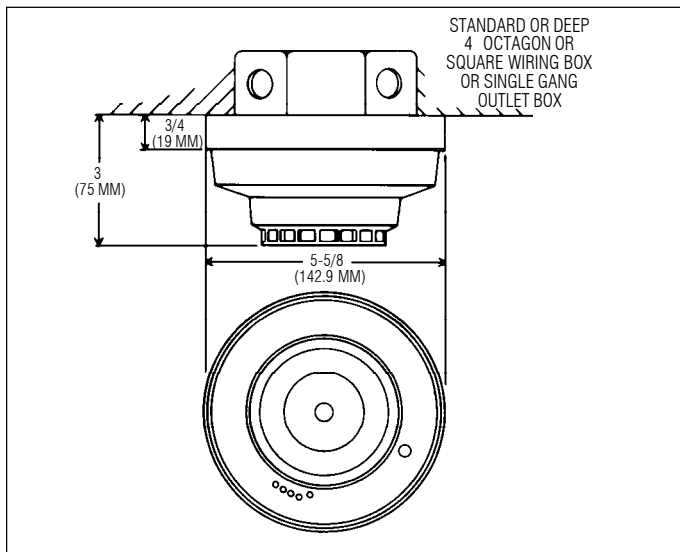
Current requirements: Normal- 1.2 mA typical
Alarm- 1.5 mA typical

Voltage range: 16 VDC-30 VDC
Peak pulsed voltage

Operating temperature: +32°F (0°C) to 100°F (38°C)
Per UL 268/268A

Humidity: 0-93% Relative Humidity,
Non-Condensing

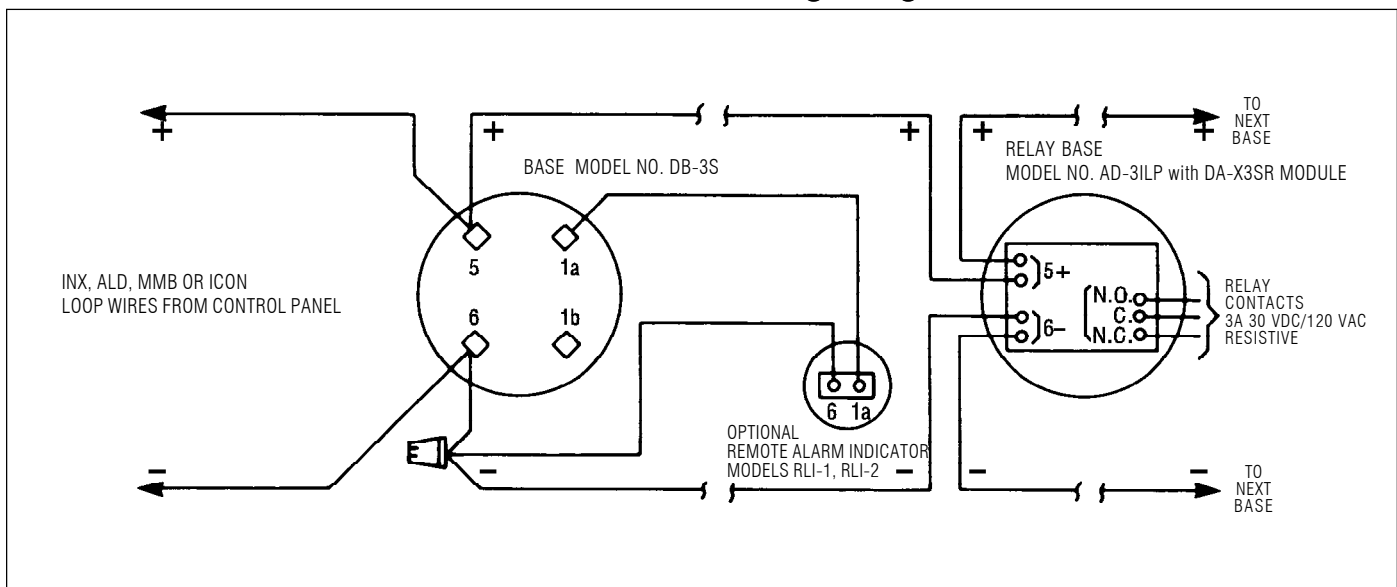
Mounting Data



Ordering Information

Model	Description	Shipping Wt.	
		Lb.	Kg.
ILP-1	Addressable photoelectric smoke detector	1	0.45
ILPT-1	Addressable photoelectric smoke detector with 135° fixed thermal	1	0.45
DB-3S	Low profile surface mount base	1	0.45
ADBI-60	I Series audible base	1	0.45
DB-X3RS	Mounting base with relay	1	0.45
RLI-1	Remote alarm indicator (for 4" octagon box mounting)	1	0.45
RLI-2	Remote alarm indicator (for switch box mounting)	1	0.45
DB-LK	Locking kit for DB-3S, DB-X3RS & ADB-X3	0.5	0.22
RA-ADB	Optional finish ring for boxes	0.2	0.1
AD-3ILP	Air duct housing	5	2.25
DA-X3SR	Duct Relay Module	0.5	0.22

Wiring Diagram



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 void all warranties either expressed or implied with regards to loss, damage, liabilities and/or service problems.



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