SIEMENS

Data Sheet
Fire Safety & Security Products

Intelligent Detection Devices

Photoelectric Detectors

[For use with FireFinder® XLS and MXL Control Panels]

Model ILP Series

ARCHITECT AND ENGINEER SPECIFICATIONS

- **Electrically Erasable Programmable Read-0nly Memory (EEPROM) supervision**
  - Protects critical detector programming
- **On-board Motorola microprocessor-based design**
- **Innovative technology providing high-speed, fault-tolerant system / detector communications**
- **Highly resistant to radio-frequency interference (RFI), electromagnetic interference (EMI) and humidity**
- **Field-cleanable photo chamber**
- ***Alarm* indicator light-emitting diode (LED)**
- **Two-wire operation**
- **Remote sensitivity adjustment and measurement capability**
- **Optional, fully programmable relay base, audible base**
- **UL Listed;**
  FM, CSFM and NYC Fire Dept. Approved

- **Compatible with SensorLINK, Field Programmer / Tester (Model FPI-32): Program / Verify detector**
- **EnviroLINK: Software-based automatic environmental compensation**

Product Overview

Intelligent photoelectric smoke detectors (Models ILP-1 and ILPT-1) from Siemens — Fire Safety offer a highly advanced method of detection, programming and communications. Additionally, the Model ILP series detectors provide an extremely high degree of resistance to RFI, EMI and humidity.

The Model 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 Model ILP-series intelligent photoelectric detectors are compatible with SensorLINK field programmer / tester (Model FPI-32). Model FPI-32 is a compact, portable and menu-driven accessory that makes programming and testing detectors faster, easier and more reliable than other prior methods.

Model FPI-32 eliminates the need for cumbersome, unreliable mechanical programming methods. Model FPI-32 also reduces installation and service costs by electronically programming addresses and testing the functionality of the Model ILP series prior to installation.

Model ILP-series of intelligent photoelectric detectors, which are UL listed, are compatible with FireFinder XLS and MXL systems.

Specifications

Models ILP-1 and ILPT-1 are plug-in, two-wire photoelectric detectors, compatible with FireFinder XLS and MXL systems. Each Model ILP-series detector consists of a dust-resistant, field-serviceable photo chamber; as well as a microprocessor-based electronic circuitry with plastic cover and base.

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Building Technologies Division

Specifications — (continued)

Electronic component packaging uses surface-mount-type technology. The entire electronic assembly is fully shielded to protect from noise transients, and is coated to resist moisture and corrosion.

Models ILP-1 and ILPT-1 utilizes a 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 a method that maintains stable, consistent detector operation.

The microprocessor for Models ILP-1 and ILPT-1 uses an integral EEPROM arrangement 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 RFI and EMI, and also validates all *trouble* conditions before annunciating or reporting to the fire-alarm control panel.

Communications within the detector, as well as between Models ILP-1 and ILPT-1 and the FACP, or Model FPI-32 are supervised and safeguarded against disruption by reliable, microprocessor-based error-checking routines. Additionally, the microprocessor supervises all EEPROM memory locations, and provides a suitable tolerance to EEPROM failures / faults.

A Model ILP-series detector determines its operating status to be *Normal*, in *Alarm*, or in *Trouble* — each 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 FACP. In addition, FACPs 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 such is the case, the FACP will indicate which detector requires maintenance.

When an *Alarm* condition from a Model ILP-series detector is confirmed by the FACP, the detector's LED flashes and will continues flashing until the system is reset at the FACP. Also, any user-defined system *alarm* function or control-by-event functions are activated. Each Model ILP-series detector is capable of operating one (1) 'I'-series remote-alarm indicator; one (1) auxiliary relay, or one (1) audible base.

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

The **SensorLINK** Programmer / Tester (Model FPI-32) is used to program and verify the detector's address. The technician selects the accessory's program mode to enter the desired address. In turn, Model FPI-32 will then automatically set and verify the address and test the detector. Model FPI-32 operates on AC power or rechargeable batteries, providing the flexibility and convenience to program and test detectors remotely.

When in the test mode, Model FPI-32 will perform a series of diagnostic tests on the Model ILP-series detectors without altering the address, which allows technicians to determine if the detector is operating properly.

The Model ILP-series detectors may be installed on the same circuit with Model ID-series detectors; Model MSI-series manual boxes; Model TRI-series interfaces; Model ICP-series output control devices, or Model CZM-series conventional zone modules.

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

Model ILPT-1 is a photoelectric detector with a restorable thermal sensor. An *alarm* condition will trigger when the temperature around the detector's thermal sensor reaches 135°Fahrenheit (57°C), or when sufficient smoke enters the photoelectric chamber.

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

The Model ILP series detectors use the 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. Models DB-3S, DB-X3RS and ADBI-60 use screw-clamp terminals for all electrical connections, as well as self-wiping contacts for increased reliability.

Specifications — (continued)

These bases contain a provision for an optional, concealed locking mechanism, Model DB-LK, to prevent unauthorized removal of the detector head.

All Model ILP-series photoelectric detectors are approved for operation within the ℕUL Listed-specified temperature range of 32° — 120°F (O° — 49°C).

Applications Data

Installation of the Model 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 building codes. Field wiring should conform to local and national electric codes, and to the FACP wiring specifications.

'T-tapping' is permitted only for Style 4 (Class B) wiring.

Model ILP-series photoelectric detectors can be applied within the maximum 30-feet (91.4m) center spacing (900 square-feet [83.6 square-meters] 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.

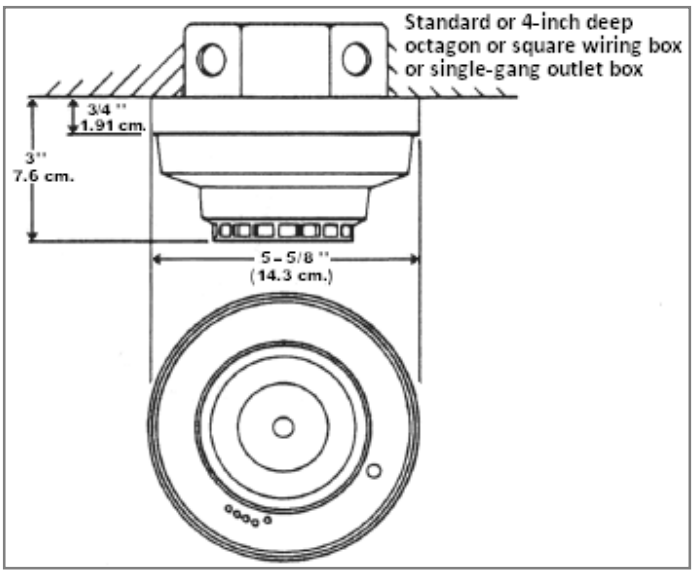
Technical Data

Current Requirements:	***Normal* Condition:** 1.2mA, typical ***Alarm* Condition:** 1.5mA, typical
Voltage Range:	16VDC – 30VDC [Peak-pulsed voltage]
Operating Temperature:	32° — 120°F (O° — 49°C)
Humidity:	0-93% relative humidity, non-condensing

Details for Ordering

Model Number	Part Number	Description
ILP-1	500-092650	Intelligent Photo Detector
DB-3S	595-381804	Universal Base
DB-X3RS	500-083248	Model DB-X3RS Package
RLI-1	500-390673	(1) LED Round-Plate Lamp
RLI-2	500-390674	(1) LED Rectangular-Plate Lamp
DB-LK	545-080117	Series 3 or 4 Detector Lock
RA-ADB	500-689948	Flush trim ring for bases
DA-X3SR	500-095022	Intelligent Duct-Relay Module

Mounting Data



Notice: This marketing data sheet is not intended to be used for system design or installation purposes. For the most up-to-date information, refer to each product's installation instructions.

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