MechTronics Controls
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SIEMENS

Data Sheet
Fire Safety & Security Products

Intelligent Detection Devices

Ionization Smoke Detectors

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

Model ILI Series: ILI-1, ILI-1A, ILI-1B, ILI-1H, ILI-1AH, ILI-1BH

ARCHITECT AND ENGINEER SPECIFICATIONS

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

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

Product Overview

Intelligent ionizaton smoke detectors (Model ILI-series) from Siemens Industry, Inc. – Fire Safety offer a highly advanced method of detection, programming and communications. Additionally, the Model ILI-series detectors provide an extremely high degree of resistance to RFI, EMI and humidity.

Each detector utilizes a state-of-the-art Motorola microprocessor with 'on-board' electrically erasable programmable read-only memory (EEPROM). The microprocessor provides the power to perform error checks; to operate the detector's sophisticated detection and to supervise algorithms.

Model ILI-series are compatible with SensorLINK field programmer / tester (Model FPI-32). Model FPI-32 is a compact, portable and menu-driven accessory which makes programming and testing detectors faster, easier and more reliable than other 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 ILI-series prior to installation.

Model ILI-series of intelligent ionization smoke detectors, which are ®UL listed, are compatible with FireFinder XLS and MXL systems.

Specifications

The Intelligent Ionization Smoke Detectors (Models ILI-series) are plug-in, two-wire ionization smoke detectors, compatible with FireFinder XLS and MXL systems.

Each Model ILI-series detector consists of self-compensating, dual ionization chambers, as well as highly stable, solid-state electronic circuitry.

SIEMENS Industry, Inc.
Building Technologies Division

Specifications — (continued)

The outer chamber of the detector's self-compensating, dual-ionization chambers detects the presence of products of combustion. The inner chamber serves as a reference to stabilize the detector's sensitivity to gradual changes in environmental conditions. Further, each detector's microcomputer-chip software compensates for ambient temperature changes. Hence, temperature and humidity changes have minimal effect for detector sensitivity within the detector's specified operating range.

The microcomputer chip in each of these detectors has the capacity of storing – in memory – identification information as well as important operating-status information such as: assigned alarm threshold and trouble threshold values.

Whether the Model ILI-series detectors are linked either to a FireFinder XLS or MXL FACP – or if the detector's operating status is in *Normal*, *Alarm* or *Trouble* – is contingent upon the difference between the alarm-threshold value stored in the detector's memory and the detector's analog value. The detector then communicates changes in its status to the FACP.

For instance, when an *Alarm* condition from a Model ILI-series ionization detector is confirmed by either a XLS or MLS FACP, the detector's LED blinks, and will continue emitting a flashing sequence until the system is reset at the FACP. Moreover, any user-defined system *Alarm* function and control-by-event functions are activated when the detector goes into *Alarm* mode.

Each Model ILI-series ionization detector is capable of operating one (1) Siemens Model 'I' -series remote alarm indicator or one (1) auxiliary relay / 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. Model FPI-32, in turn, 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 ILI-series detectors without altering the address, which allows technicians to determine if the detector is operating properly.

The Model ILI-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.

Model ILI-series detectors are also designed for use with Model AD-3I air-duct housings for air-duct applications. If a relay is needed for a certain configuration, then the Model DA-X3SR module can be used with Model AD-3I air-duct housings.

The Model ILI 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-60A 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-60A use screw-clamp terminals for all electrical connections, as well as 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 Model ILI -series Ionization Smoke detectors are approved for operation within the UL Listed-specified temperature range of 32° — 100°F (O° — 38°C).

Application Data

The ILI-Series ionization detectors are designed to meet a wide range of system design parameters. For instance, Model ILI is designed for use in areas which have minimal air velocities of up to 300 feet (91.4m) / min.

Meanwhile, Model ILI-1A is designed for open-area protection and plenum protection – such as floor areas in computer-server rooms – where the air velocity is 0 – 1200 feet (366m) / min. Model ILI-1A also has a specially designed internal-chamber cover that provides the detector with the stable operation needed for this type of application.

Model ILI-1B is specifically designed for use with Siemens – Fire Safety Model AD-3I air-duct detector housing. Model ILI-1B is similar to the module used for open-area, plenum protection, but contains a specially designed internal-chamber cover.

Application Data — (continued)

Model ILI-1B must be used with the Model AD-3I air-duct detector housing in air-duct applications with air velocities of 500 – 4000 feet (152.4m – 1219m) /min. If a relay is desired, a Model DA-X3SR module can be used with the Model AD-3I housing.

Note: Models ILI-1, ILI -1A and ILI -1B are also available for use in high-altitude applications (3000 – 8000 feet [914.4m – 2348m]) above sea level — designated as Models ILI-**1H**; ILI -1A **H**, and ILI-1B **H**.

Installation of the Model ILI-series of ionization smoke detectors requires a two-wire circuit of 18 AWG thermoplastic-fixture wire enclosed in conduit or of 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 'Class B' (Style 4) wiring.

The Model ILI-series 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° — 100°F (0° — 38°C) [per UL 268, 268A]
Humidity:	0-93% relative humidity; non-condensing

Details for Ordering

Model Number	Part Number	Description	Shipping Weight	
			Lbs.	Kg.
ILI-1	500-092725	**Intelligent Ionization Detector** [Air-flow velocities of up to 300 feet (91.4m) / min.]	1	0.45
ILI-1A	500-093023	**Intelligent Ionization Detector** [Air-flow velocities of up to 1200 feet (366m) / min.]	1	0.45
ILI-1AH	500-093031	**Intelligent Ionization Detector** [Air-flow velocities of up to 1200 feet (366m) / min.; high altitude of up to 3000 – 8000 feet [914.4m – 2348m]	1	0.45
ILI-1B	500-093026	**Intelligent Ionization Detector** [for use with only Model AD-3I]	1	0.45
ILI-1BH	500-093033	**Intelligent Ionization Detector** [for use with only Model AD-3I; high altitude of up to 3000 – 8000 feet [914.4m – 2348m]	1	0.45
ILI-1H	500-093029	**Intelligent Ionization Detector** [Air-flow velocities of up to 300 feet (91.4m) / min.; high altitude of up to 3000 – 8000 feet [914.4m – 2348m]	1	0.45
ADBI-60A	500-099357	Audible Base	1	0.45
AD3I	500-086495	Air-Duct Housing	6	2.7
DB-3S	595-381804	Universal Base	1	0.45
DB-X3RS	500-083248	Model DB-X3RS Package	1	0.45
RLI-1	500-390673	(1) LED Round-Plate Lamp [for 4" octagon box mounting]	1	0.45
RLI-2	500-390674	(1) LED Rectangular-Plate Lamp [for switch box mounting]	1	0.45
DB-LK	545-080117	Series 3 or 4 Detector Lock Kit	0.5	0.22
RA-ADB	500-689948	Optional flush trim ring for bases	0.2	0.1
DA-X3SR	500-095022	Intelligent Duct-Relay Module	1	0.45

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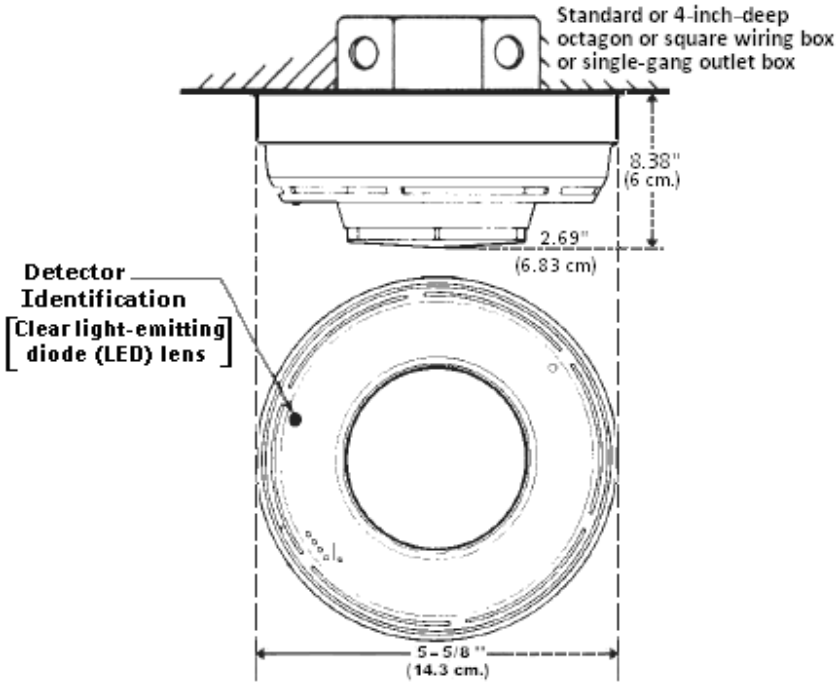
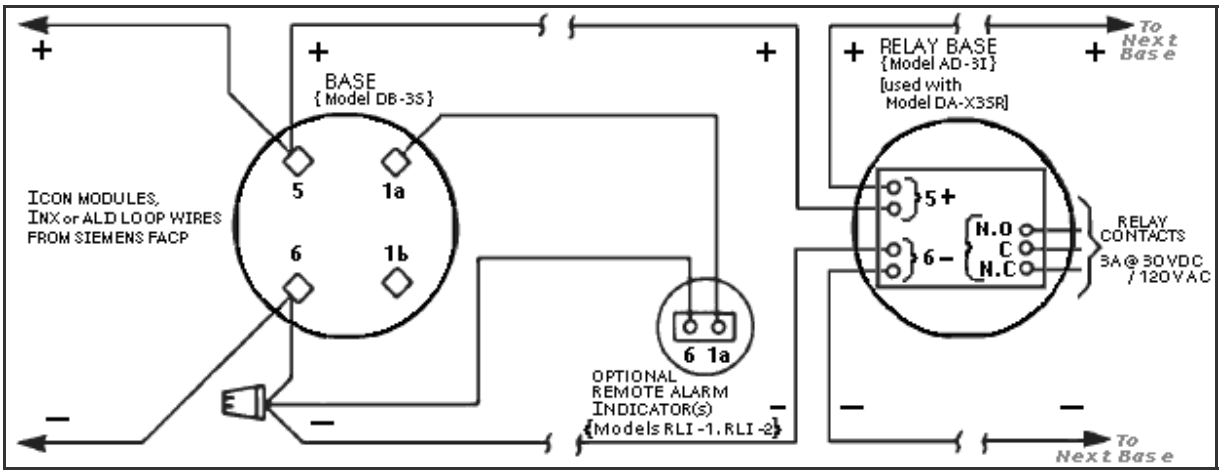
Mounting Data



Wiring Diagram



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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