

SIEMENS

Installation Instructions

Models FP-11/FPT-11

These instructions are written in accordance with the installation guidelines of NFPA 72, National Fire Alarm Code, and CAN/ULC-S524, The Installation of Fire Alarm Systems.

CAUTION: Detector Device Storage

DO NOT install this detection device until all construction is completed.

DO NOT store this detection device where it can be contaminated by dirt, dust, or humidity.

NOTE:

When using this detector with a protective detector guard such as the DGH-11 from Siemens Industry, Inc., or the STI 8100IS, be sure to install per the instructions supplied with the guard and set the ASD setting to duct detector per the detector programming instructions located on pages 2-3 of this document.

DETECTOR PLACEMENT FOR FP-11

Although no specific spacings are set for the detectors used for a clean air application, use 30 foot center spacing (900 sq ft) from NFPA Standard 72 Chapter 5 and CAN/ULC-S524, if practical, as a guide or starting point for a detector installation layout. This spacing, however, is based on ideal conditions—smooth ceiling, no air movement, and no physical obstructions. In some applications, therefore, considerably less area is protected adequately by each smoke detector. This is why it is mandatory to closely follow the installation drawings. In all installations place the detector on the ceiling, a minimum of 6 inches from a side wall, or on a wall, 4 to 6 inches from the ceiling.

If you have any questions regarding detector placement, follow the drawings provided or approved by Siemens Industry, Inc., or by its authorized distributors. This is

extremely important! The detector placements shown on these drawings were chosen after a careful evaluation of the area that is protected. Such factors as air currents, temperature, humidity, pressure, and the nature of the load were carefully considered. Especially noted were the room or area configuration and the type of ceiling (sloped or flat, smooth or beamed). Siemens Industry, Inc.'s extensive experience in the design of the system assures the best detector placement by following these drawings. Sound engineering judgement by qualified personnel must be followed.

Fire Print detectors and nuisance alarms:

The neural network within each Model FP-11 FirePrint detector is optimized to reject the most common nuisance alarms for its selected FirePrint Application; e.g. Parking Garage or Health Care. If the detector is exposed to an excess level of smoke or aerosol for an extended period of time, the detector is programmed to make the "safe decision" and signal an alarm condition. Because the amplitude and duration of deceptive phenomena are unbounded, the rule of thumb is to keep detectors as far as practical from sources that can produce an unusually large quantity of smoke for about a minute. This effort during placement of detectors within a FirePrint Application enhances the ability of FirePrint's deceptive phenomena rejection. Avoid close proximity of detectors to smoke sources such as oil burners, electric heaters, kitchens, garages, and areas of **high relative humidity where condensation may occur.**

Air Currents

Before a detector can sense a fire, the products of combustion or smoke must travel from the fire to the detector. This travel is especially influenced by air currents; therefore, consider air movement when designing the system. While combustion products tend to rise, drafts from hallways, air diffusers, fans, etc., may help or hinder the travel of combustion products to the detector. When positioning a detector at a particular location, give

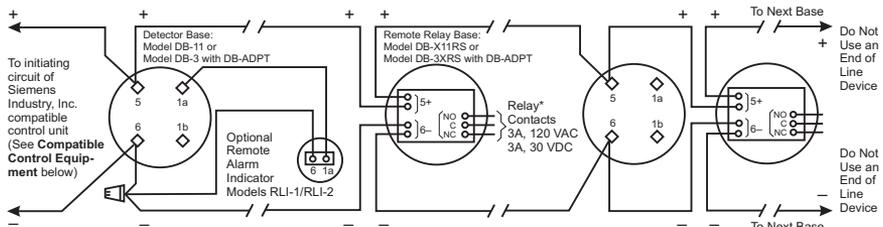


Figure 1
Installation and Wiring Diagram

consideration to windows and doors, both open and closed, to ventilating systems, both in and out of operation, and to other factors influencing air movement. Do not install a detector in the air stream of a room air supply diffuser. It is better to position a detector closer to an air return.

The distance that products of combustion or smoke travel from a fire to the detector is not usually the shortest linear route. Combustion products or smoke usually rise to the ceiling, then spread out. Average ceiling heights of 8 to 10 feet do not abnormally affect detector response. High ceilings, located in churches, warehouses, auditoriums, etc., do affect detector response and should be considered.

Special Ceiling Construction Factors

Ceiling obstructions can change the natural movement of air and combustion products. Depending on the direction of smoke travel, joists and beams can slow the movement of heated air and smoke, while pockets between them can contain a reduced level of smoke. Take obstructions created by girders, joists, beams, air conditioning ducts, or architectural design into consideration when determining area protection. Refer to the Initiating Devices chapter of NFPA Standard 72 for Location and Spacing requirements for specific types of construction; e.g. beam, suspended, level, sloped and peaked ceilings.

DETECTOR PLACEMENT FOR FPT-11

Locate the FPT-11 on the ceiling, at least 4 inches from the side walls. For an ideal, smooth ceiling condition, place the detectors at a maximum center spacing of 50 feet (2500 square feet), 25 feet from side walls or room partitions. For FM Approved installations this device is rate compensated and has an RTI rating of QUICK. Use a maximum center spacing of 20 feet (400 square feet), 10 feet from sidewalls or room partitions.

Actual job conditions and sound engineering judgment must determine detector spacing. Consider environmental factors including ambient temperature fluctuation, and the nature of the fire hazard. Room or area configuration and ceiling type (sloped or flat, smooth or beamed) also dictates placement.

Should questions arise regarding detector placement, follow the drawings provided and/or approved by Siemens Industry, Inc., or by its authorized distributors. This is extremely important! The detector placements shown on these drawings were chosen after a careful evaluation of the area being protected. Siemens Industry, Inc.'s extensive experience in design of the system assures the best detector placement by following these drawings.

TEMPERATURE – HUMIDITY – PRESSURE – AIR VELOCITY

The operating temperature range for the FP-11 and FPT-11 detectors is from 32°F (0°C) to 100°F (38°C). The thermal alarm temperature is rate compensated at 135°F (57°C). Use these detectors in environments where the humidity does not exceed 93% (non-condensing). Normal changes of atmospheric pressure do not affect detector sensitivity. For FP-11 open area 0-1200 ft/min

applications, use the appropriate application from the FirePrint ASD application list. Use the ASD duct application for 300-4000 ft/min applications a) in above-ceiling and under-floor plenums, b) inside an air duct, and c) in an air duct housing using sampling tubes. Follow detector spacing and location requirements in NFPA 72 Chapter 5 for *High Air Movement Areas* and *Control of Smoke Spread*.

When installing Model FP-11 in existing installations with an existing duct detector housing, order an AD-11UK Air Duct Upgrade Kit DA-304, P/N 500-695967 and use it in that installation. This kit includes the required housing cover, P/N 305-095676. Do not use Model FP-11 with any other air duct cover.

NOTE

For air duct and open area applications, the FP-11 smoke sensitivity range is indicated on its nameplate. For application/sensitivity settings, refer to the **MXL/MXLV OPERATION, INSTALLATION, AND MAINTENANCE MANUAL, P/N 315-092036**, the **MXL-IQ OPERATION, INSTALLATION, AND MAINTENANCE MANUAL, P/N 315-093624**, or the **FireFinder-XLS INSTALLATION, OPERATION AND MAINTENANCE MANUAL, P/N 315-033744**, as applicable.

DETECTOR MOUNTING

To ensure proper installation of the detector head into the base, be sure the wires are properly dressed at installations:

1. Position all wires flat against the base.
2. Take up all slack in the outlet box
3. Route wires away from connector terminals.

INSTALLATION / REMOVAL OF DETECTOR HEAD

To Install:

- Align LED in detector with LED symbol on base and insert detector into base.
- Rotate detector **counterclockwise** while gently pressing on it until the detector drops fully into base.
- Then rotate the detector clockwise until it stops and locks in place. Insert optional locking screw (Order Model LK-11).

To Remove:

- Loosen locking screw, if installed. Then rotate the detector counter clockwise until stop is reached.
- Pull detector out of base.

PROGRAMMING

Each detector on a loop must be programmed to respond to a unique system address.

1. To program the detector address, use: a) Model FPI-32 Programmer/Tester firmware version 3.0 or greater (refer to the **FPI-32 OPERATIONS MANUAL, P/N 315-090077**), or b) Model DPU Device Programming Unit (refer to the DPU Manual, P/N 315-033260).

- Record the loop and device number (system address) for the detector on the detector label and on the base to prevent installing the detector in the wrong base.

Detector Guard Programming Instructions

DETECTOR MODEL	PROGRAM IN FPI-32/DPU AS	REQUIRED ASD OR SENSITIVITY SETTING IN CSG-M
FP-11	FP-11	DUCT (ASD)
FP-11	ILP-2	DUCT (ASD)
FP-11	ILP-1, ILPT-1	HIGH3 (sensitivity)
FP-11	ID-60P, ID-60PT	HIGH3 (sensitivity)

Note:

For each detector programmed in the FPI-32/DPU as ILP-1, ILPT-1, ID-60P or ID-60PT, perform the following procedure.

In the CSG-M, under Options\Other System Flags, set "Sensitivity Adjustment Allow" to "Yes".

- For each detector, set Alarm Verification to "No".
- Create a CSM-M function having the following parameters:

Function Type:	Sensitivity Adjustment
Sensitivity:	HIGH3
Trigger Input:	System Flag: PNL RSET
Enable Input:	System Flag: TRUE
Device Output List:	Enter detector address. Multiple detectors having consecutive addresses may be grouped by inserting the range of addresses.

DETECTOR/SYSTEM CONFIGURATION

The FP-11/FPT-11 can be programmed to optimize environmental response using Application Specific Detection (ASD). All parameters, such as Sensitivity, Pre-Alarm and Advanced Environmental Algorithms are downloaded to the detector from the MXL control panel. For air duct applications, the proper ASD application (DUCT) **must** be selected. Refer to the **MXL/MXLV OPERATION, INSTALLATION, AND MAINTENANCE MANUAL**, P/N 315-092036, the **MXL-IQ OPERATION, INSTALLATION, AND MAINTENANCE MANUAL**, P/N 315-093624, or the **PMI OPERATION MANUAL**, Section 3 Maintenance Mode, P/N 315-033874, as applicable.

TESTING AND SENSITIVITY MEASUREMENT

Only qualified service personnel should test. The minimum test schedule may be found in the current edition of NFPA 72, Chapter 7 for installations in the U.S., and CAN/ULC-S537, The Verification of Fire Alarm Systems, for installations in Canada.

Refer to the **MXL/MXLV OPERATION, INSTALLATION, AND MAINTENANCE MANUAL**, P/N 315-092036 or the **MXL-IQ OPERATION, INSTALLATION, AND MAINTENANCE MANUAL**, P/N 315-093624, as applicable, for instructions on applying the **TEST** and **LIST** modes.

STEP 1 - Place the MXL Control Panel into the **TEST ASD DEVICES** mode.

STEP 2 - Using the **LIST TEMP(erature)** feature of the MXL Control Panel, confirm that the temperature sensor is reporting the ambient temperature in the vicinity of the FP-11 detector.

STEP 3 - Using the **LIST PERCENT/FT SENSITIVITY** of the MXL Control Panel, confirm that the detector smoke sensitivity is within the range on its nameplate label. If not, clean the detector referring to **DETECTOR CLEANING** below, and retest.

STEP 4 - Perform a detector functional test by alarming the detector using Test Gas, P/N 315-282747, following the instructions on the label.

Refer to the **PMI OPERATION MANUAL**, P/N 315-033874, for instructions on applying the **REPORT** mode (Section 2) and **MAINTENANCE** mode (Section 3).

IMPORTANT

If the MXL/MXLV/MXL-IQ/XLS is connected to a Fire Department, etc., or activates an external system (fire extinguishing, etc.), disarm the appropriate outputs before servicing to prevent activation. (Refer to the appropriate manual for the procedure.) Be sure to reset and re-arm the system at completion of servicing. Notify facility personnel that the system is being serviced so that any alarm soundings can be ignored during the period of service.

The FP-11/FPT-11 detectors can also be tested using: a) FPI-32 Programmer/Tester, firmware version 3.0 or greater (refer to the **OPERATIONS MANUAL**, P/N 315-090077), or b) Model DPU Device Programming Unit (refer to the DPU Manual, P/N 315-033260).

DETECTOR CLEANING

Systems MXL and XLS automatically indicate the trouble message **INPUT DEVICE REQUIRES SERVICE** for any detector whose smoke sensitivity increases to the level where normally low levels of smoke generate an alarm. (Refer to the manual for further explanation.) In such circumstances, the detector may require cleaning as a result of dust accumulation; follow the **CLEANING PROCEDURE** steps described below.

MAINTENANCE

The recommended requirement for detector maintenance consists of the annual cleaning of dust and debris from the detector head. Cleaning program intervals should be geared to the individual detector environment.

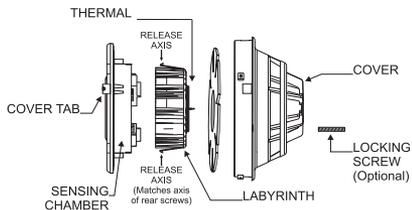


Figure 2 Disassembling of Photochamber

CLEANING PROCEDURE*

(See Figure 2)

1. Notify the proper personnel that the fire alarm system is being serviced.
2. Remove the detector to be cleaned from its base. (See removal section.)
3. Using a small blade screwdriver, remove the cover from the rest of the detector by releasing the 2 cover tabs located on the outside of the cover. Separate the foam screen from the cover.
4. **FP-11:** Remove the labyrinth from the sensing chamber by squeezing the labyrinth sides along the release axis and pulling out. Carefully remove the labyrinth/thermal holder assembly being sure not to damage or disconnect the thermal wires.
5. Clean dust from the detector cover, foam screen, sensing chamber and labyrinth using a brush, or by blowing with compressed air.

CAUTION: Do not use a compressed air supply that may contain an oil residue.

WARNING: Do not remove or loosen the two screws on the rear of the detector, or calibration will be lost.

NOTE: The insect screen and labyrinth may be replaced with new parts, rather than be cleaned. Contact Siemens Industry, Inc. Product Service to order Detector Maintenance Kit, Model DMK-11.

NOTE: Do not disconnect the thermal wires from the detector.

6. Reassemble the detector by reversing the steps used for disassembly, and reinstall in its base.
7. Test the detector. (See Detector Testing section of this instruction.) Reset the control panel zone after each alarm.
8. When all service has been completed, notify personnel (See Step 1) that system service has been completed.

CAUTION
NO FIELD REPAIR OF THE DETECTORS SHOULD BE ATTEMPTED. THE DETECTORS ARE FACTORY REPAIRABLE ONLY.

COMPATIBLE CONTROL EQUIPMENT

Refer to the **MXL/MXLV OPERATION, INSTALLATION, AND MAINTENANCE MANUAL**, P/N 315-092036, the **MXL-IQ OPERATION, INSTALLATION, AND MAINTENANCE MANUAL**, P/N 315-093624, or the **XLS INSTALLATION, OPERATION, AND MAINTENANCE MANUAL**, P/N 315-033744.

System/Detector Compatibility

The FP-11 and FPT-11 can be programmed to replace older model detectors in older version MXL Systems. The FP Series cannot be used to replace detectors on XL-3 or IXL Systems. This programming is done using the *Change Dev. ID* mode in: a) FPI-32 firmware version 3.0 or greater (see the FPI-32 Operations Manual, P/N 315-090077), or b) DPU Device Programming Unit (refer to the DPU Manual, P/N 315-033260).

The following table shows the compatibility configurations:

PRODUCTION DEVICE	REPLACEMENT DEVICE	MIN. MXL REVISION		MIN. MXL-IQ REVISION	
		MMB	ALD	SMB	ALD
FP-11	FP-11	10	12	6	12
FP-11	ILP-2*	8	12	4	12
FP-11	ILP-1, ILPT-1	7	7	3	7
FP-11	ID-60P*, ID-60PT	2	7	1	7
FPT-11	FPT-11	10	14	6	14
FPT-11	ILT-1	2	7	1	7
FPT-11	ID-60T-135	2	7	1	7

*When FP-11 is used in any of these modes, be sure to turn off alarm verification in CSG-M.