

# IP Fire Series™ XP Photoelectric Detector

- **XP-P**

**Description**

The AsBuilt intelligent analog addressable photoelectric detector (XP-P) operates seamlessly with the AsBuilt IP Fire Series™ network fire control. The XP-P communicates to and is managed and controlled by the IPF Series™ analog loop module (ALM).

The XP-P is physically distinguished from the XP ionization detector (XP-I) by the clear colored LED. The LED lights steady when in an alarm condition and flashes briefly when polled by the ALM.

**Operation**

The XP-P constantly monitors its sensing chamber and its internal electronics utilizing a patented smoke chamber and infrared smoke sensing design.

An infrared light emitting diode with its collimator is arranged at an obtuse angle to the photo-diode. The photo-diode has an integral daylight blocking filter. The IR LED emits a burst of collimated light every second. In clear air the photo-diode receives no light directly from the IR LED because of the angular arrangement and the chamber baffles. When smoke enters the chamber it scatters light from the emitter IR LED onto the photo-diode in an amount related to the smoke characteristics and density. The photo-diode signal is processed to provide an analog value for transmission when the detector is interrogated by the ALM.

When interrogated, the XP-P will transmit its data to the ALM. The ALM will evaluate the data received and determine if an Alarm, Pre-Alarm, or Supervisory event is present. If any off-normal condition exists the ALM will put the changed state of the XP device on the IP network for pre-programmed event outputs.

The XP-P's drift compensation is managed by the ALM. The ALM monitors the average ambient analog count being returned from each XP smoke detector connected to the system. Due to the accumulation of dirt and dust over time, the average ambient analog count for each detector will climb. The ALM will adjust the specific detector's alarm threshold proportionately to compensate for the rise in the average ambient count. This keeps the detectors sensing window open to the factory set tolerances established when new.

When the detector can no longer be compensated the ALM will put a 'dirty detector' signal on the fire control network to alert maintenance personnel to replace or clean the affected detector before a false alarm condition can be generated.




**Features**

- Sleek, non-fading white polycarbonate enclosure
- Zero insertion force base
- Drift compensation to keep sensing window open and nuisance alarms eliminated
- Patented XPert programming card eliminates addressing errors during system installation and maintenance
- Alarm flag sends signal to system even when device is not being interrogated
- Wide variety of addressable input/output devices
- Relay and synchronized temporal sounder bases
- Line isolators and isolator bases also available
- Green/RoHS Compliant

**Listings**

UL File: S5022  
CSFM: 7272-1394:104  
MEA: 294-95-E-4

Product	Data Sheet Number	Rev/Revision Date	
IPF Series™ Detectors XP-P	2101	1.4/ 10/1/2009	

## Engineer Specification

The contractor shall furnish and install, where indicated on the plans, intelligent photoelectric smoke detectors with one of the several addressable mounting base options available. The detector base will contain the patented XPERT programming card which will permit the free interchange of sensor heads without requiring additional programming of the detector head or attached base. The intelligent detector shall be capable of generating an alarm flag and report its address when the pre-set UL thresholds are exceeded. The detector shall flash its LED intermittently when polled and shall latch when the unit goes into Alarm. The detector shall be capable of reporting its average ambient analog count to the fire control network in order to facilitate drift compensation adjustments necessitated by the accumulation of dirt over time in order to keep the detector sensing evaluation window at factory set tolerances in accordance with UL allowances. The combination of the detector head and twist lock mounting base shall be UL listed and UL listed as compatible with the AsBuilt IP Fire Series network fire controls. The detector base shall be installed without regard to wire polarity. The photoelectric detector shall be the AsBuilt model XP-P.

## Technical Data

**Operating Voltage:** 17-28VDC

**Clean-air Analog Value:** 25 +4/-0

**Standby Current:** 340uA avg. / 600uA peak

**Alarm Level Analog Value:** 55

**Alarm LED Current:** 4mA

**Wire Supply:** Two-wire supply, polarity insensitive

**Remote Alarm Output:** 4mA max

**Recommended Spacing:**

**Temperature range:** -4°F to 140°F (-20°C to 60°C)

Meets the 30 ft. (9.1m) spacing guidelines in NFPA 72 Chapter 2, however, this spacing is based on ideal conditions and should be used as a layout guide only.

**Relative Humidity (non-condensing):**0%-95%

## Ordering Information

Part Number	Data Sheet	Description
XP-P	2101	Intelligent XP Photoelectric Detector (model 55000-650)
DXP-6	2310	6" Low Profile Base w/Expert Card (model 45681-250)
DXP-4	2310	4" Low Profile Base w/Expert Card (model 45681-210)
DXP-RLY	2310	6" Low Profile 4-wire Relay Base (model MB-RLYT-AA)
DXP-SND/T	2310	6" Low Profile 4-wire Sounder Base (model MB-SDRT-AA)
DXP65	2310	Sync Module for Temporal Sounder Bases (model MB-SDRT-SM/G/R)
DXI	2300	Line Isolator (55000-750)
DXP-LIB	2300	Isolating Base for DXI only (45681-211)
DXP-IB	2300	Line Isolating Base for Use with XP/DISC Detectors (45681-321)
DXP-XPC		Additional XPERT programming card
DXP-XPC#A		Order "A" for Addresses 1-42, "B" for 43-84, "C" for 85-126, # for Loop #
DXP-126		126 Pre-Programmed XPERT cards
DXP-REM		Remote LED (24V)



## Related Data Sheets

**XP Detectors:** XP-I, 2102; XP-T, 2103; XP-M, 2104

**Discovery Detectors:** DISC-P, 2106; DISC-I, 2107; DISC-T, 2108; DISC-M, 2109

**Addressable Devices:** DXP-PIM/MPIM, DXP-PID/MPID, 2810; DXP-IOM, 2812; DXP-SDR, 2814, DXP-2PID, 2816; DXP-OCR, 2818

**Addressable Base Options:** All Bases, 2310

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IPF Series™ Detectors XP-P	2101	1.4/ 10/1/2009	
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