

IP Fire Series™ XP Ionization Detector

• XP-I

Description

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

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

Operation

The XP-I ionization chamber consists of a reference chamber inside a smoke chamber. The outer smoke chamber has inlet apertures fitted with insect resistant mesh.

The radioactive source holder and the smoke chamber form positive and negative electrodes respectively. An Americium 241 radioactive source mounted within the reference chamber irradiates the air in both chambers, producing positive and negative ions. A voltage across the electrodes produces an electric field causing current to flow between the electrodes. The sensing electrode converts variations into chamber current and voltage changes.

This effect is greater in the smoke chamber than it in the reference chamber, and the imbalance causes the sensing electrode to become more positive. The analog voltage at the sensor electrode is converted to a digital format which is processed to form an analog value for transmission to the ALM.

When interrogated, the XP-I 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-I'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: 7271-1394:103
MEA: 294-95-E-4

Product	Data Sheet Number	Rev/Revision Date	
IPF Series™ Detectors XP-I	2102	1.4/ 10/1/2009	

Engineer Specification

The contractor shall furnish and install, where indicated on the plans, intelligent ionization 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 ionization detector shall be the AsBuilt model XP-I.

Technical Data

Operating Voltage: 17-28VDC

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

Standby Current: 280uA avg. / 500uA peak

Alarm Level Analog Value: 55

Alarm LED Current: 2mA

Wire Supply: Two-wire supply, polarity insensitive

Remote Alarm Output: 4mA max

Recommended Spacing:

Temperature range: -4°F to 158°F (-20°C to 70°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-I	2102	Intelligent XP Ion Detector (model 55000-550)
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-P, 2101; 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

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