

IP Fire Series™ Discovery Photoelectric Detector

- **DISC-P**

Description

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

The Disc-P is physically distinguished from the Discovery ionization detector (DISC-I) by the clear colored dual LED's. The LED's light steady when in an alarm condition and flash briefly when polled by the ALM. The dual LED's provide for 360 degree visibility.

Operation

The DISC-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.

Upon crossing the alarm threshold the detector will make the determination that an alarm condition exists and send a signal to the ALM that interrupts the normal polling process to signal the alarm condition. The ALM puts the changed state on the IP network and all outputs associated with the specific detector are activated.

The DISC-P manages its own automatic drift compensation thereby accelerating overall system performance by offloading the management of the device compensation values from the ALM to the DISC-P.

Compensation is made to adjust the detector for the infiltration and accumulation of dirt and dust over time. By compensating the detector alarm thresholds the sensing window is adjusted to remain at original factory specifications.

Like all Discovery devices, the DISC-P has five pre-programmed user settings that may be accessed and changed from the IPF Series network control. Further, the pre-programmed settings are utilized in establishing the automatic sensitivity values in place with the IPF Day/Night sensitivity programming.




Features

- Improved detection capabilities with smoldering, smoky fires
- Discovery detectors distribute intelligence across the installed system
- Patented infrared smoke sensing design
- Sleek, non-fading white polycarbonate enclosure
- Zero insertion force base
- 5 user selectable modes
- Powerful transient rejection algorithms
- Conventional device mode
- 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
- Green/RoHS Compliant

Listings

UL File: S5022
CSFM: 7272-1394:118
MEA: 294-95-E-4

Product	Data Sheet Number	Rev/Revision Date	
IPF Series™ Detectors DISC-P	2106	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 self compensating, self reporting and contain dual integral LED's which will flash intermittently when polled and shall latch when the unit goes into Alarm. The detector head shall have 5 programmable settings that can be accessed automatically or by manual setting from the fire control which will allow the detector sensitivity settings of the individual detector to be modified as required. 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 DISC-P.

Technical Data

Operating Voltage: 17-28VDC
Standby Current: 400uA avg. / 650uA peak
Alarm LED Current: 3.4mA
Remote Alarm Output: 5mA max
Temperature range: 32°F to 140°F(0°C-60°C)
Relative Humidity (non-condensing):0%-95%
Clean-air Analog Value: 23 +4/-0
Alarm Level Analog Value: 55
Wire Supply: Two-wire supply, polarity insensitive
Recommended Spacing:
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.

Five Pre-Programmed User Sensitivity Settings

- Mode 1 1.7%/ft. Obscuration 5 Seconds to Alarm
- Mode 2 1.7%/ft. Obscuration 30 Seconds to Alarm
- Mode 3 2.3%/ft. Obscuration 5 Seconds to Alarm
- Mode 4 2.3%/ft. Obscuration 30 Seconds to Alarm
- Mode 5 2.9%/ft. Obscuration 5 Seconds to Alarm

Ordering Information

Part Number	Data Sheet	Description
DISC-P	2106	Intelligent Analog Addressable Photo Detector (model 58000-650)
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

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

XP Detectors: XP-P, 2101; XP-I, 2102; XP-T, 2103; XP-M, 2104

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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