

Description

The Harding Series 22 intelligent photoelectric detector (DET2104) operates seamlessly with Harding network fire controls. The DET2104 is managed and controlled by the addressable loop module (ALM3-IP).

The DET2104 is physically distinguished from the Series 22 ionization detector (DET2102) by the clear colored dual LED's. The LED's light steady when in an alarm condition and flash briefly when polled by the ALM3-IP. The dual LED's provide for 360 degree visibility.

Operation

The DET2104 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 ALM3-IP.

Upon crossing the alarm threshold, the detector will make the determination that an alarm condition exists and send a signal to the ALM3-IP that interrupts the normal polling process to signal the alarm condition. The ALM3-IP puts the changed state on the IP network and all outputs associated with the specific detector are activated.

The DET2104 manages its own automatic drift compensation thereby accelerating overall system performance by offloading the management of the device compensation values from the ALM3-IP to the DET2104.

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 Series 22 devices, the DET2104 has five pre-programmed user settings that may be accessed and changed from the Harding network control. Further, the pre-programmed settings are utilized in establishing the automatic sensitivity values in place with the Day/Night sensitivity programming.



Features

- Improved detection capabilities with smoldering, smoky fires
- Series 22 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
- RoHS Compliant

Listing

UL File: (S36048)

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 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 Harding network fire controls. The detector base shall be installed without regard to wire polarity. The photoelectric detector shall be the Harding part number DET2104.

Technical Data

Operating Voltage: 17-28VDC

Standby Current: 440uA avg. / 650uA peak

Alarm LED Current: 3.44mA

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	Description
DET2204	S22 Photoelectric Smoke Detector

Related Bases

Part Number	Data Sheet	Description
BAS2004	DS-DET2310	S20 6" E-Z Fit Base
BAS2001	DS-DET2310	4" Low Profile Base w/Expert Card
BAS2005	DS-DET2300	Line Isolating Base Series 21/22 Detectors

Related Data Sheets

Series 22 Detectors: PHOTO (DET2204), DS-DET2204; HEAT (DET2201),DS-DET2201; MULTI (DET2205), DS-DET2205;
Series 21 I/O Devices: Switch Monitors (IOM2101,IOM2104, IOM2105, IOM2108, IOM2109), DS-IOM2810; Input/Output (IOM 2102, IOM2106, IOM2110), DS-IOM2812; Sounder Control (IOM2107), DS-IOM2814, Dual Priority Switch Monitor (IOM2103), DS-IOM2816; Relay Output Module (IOM2111), DS-IOM2818; Addressable Base Options: All Bases, DS-DET2310;

Document # DS-DET2204-1.0 • Copyright © 2019 Harding Instrument Co. Ltd. • All Specifications subject to change without notice • Printed in Canada



9564 Yellowhead Trail NW Tel 780.462.7100
Edmonton, AB T5G OW4 Fax 780.450.8396
sales@harding-tech.com www.harding-tech.com



Represented by: