

### Description

The Harding Series 22 intelligent multisensor detector (DET2205) operates seamlessly with Harding network fire controls. The DET2205 communicates to and is managed and controlled by the addressable loop module (ALM3-IP).

### Operation

The DET2205 multisensor detector contains a photoelectric smoke detector and thermistor temperature sensor whose outputs are combined give the final analog value to the ALM3-IP.

The way in which the two signals from the two sensors are combined depends on the response mode selected. The five modes of operation provide response behaviors which incorporate pure heat detection, pure smoke detection and a combination of both. The DET2205 is therefore the most useful detector over the widest range of applications.

The DET2205 construction is similar to that of the DET2204 photoelectric smoke detector but uses a different lid and optical moldings to accommodate the thermistor temperature sensor.

The signals from the optical smoke sensing element and the temperature sensor are independent, and represent the smoke level and the air temperature in the vicinity of the detector. The detectors microcontroller processes the two signals according to the mode selected.

When the detector is operating as a multisensor (Modes 1, 3 and 4) the temperature signal processing extracts only rate-of-rise information for combination with the optical signal. The processing algorithms in modes 1-4 incorporate automatic drift compensation.

DET2205 modes are:

**Mode 1:** Very high smoke sensitivity and very high thermal sensitivity. Highest sensitivity to both smoldering and flaming fires.

**Mode 2:** Photo only/No Thermal detector. Identical characteristics to DISC-P photoelectric detector

**Mode 3:** Same as Mode 1 with moderate sensitivity.

**Mode 4:** Low smoke sensitivity/high thermal sensitivity. Ideal for environments where a certain amount of smoke or fumes are considered normal.

**Mode 5:** Thermal heat detector only. Low fixed temperature threshold.



### Features

- Five pre-programmed smoke/heat settings
- Series 22 detectors distribute intelligence across the installed system
- Patented infrared smoke sensing design
- Sleek, non-fading white polycarbonate enclosure
- Zero insertion force base
- Powerful transient rejection algorithms
- Conventional device mode
- Patented 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 ionization 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 multisensor detector shall be the Harding part number DET2205.

## **Technical Data**

**Operating Voltage:** 17-28VDC

**Standby Current:** 470uA avg. / 650uA peak

**Alarm LED Current:** 3.47mA

**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.

Mode 1	Multi: Smoke (1.7%/ft.) Temp (High) 20s response
Mode 2	Photo Only-No Thermal: (2.3%/ft.) 30s response
Mode 3	Multi: Smoke (2.7%/ft.) Temp (Std) 20s response
Mode 4	Multi: Smoke (3.3%/ft.) Temp (High) 20s response
Mode 5	Thermal Only: Temp (135) 30s response

## **Ordering Information**

Part Number	Description
DET2205	S22 Multisensor Detector

## **Related Bases**

Part Number	Data Sheet	Description
BAS2004	DS-DET2310	S20 6" E-Z Fit Base (CSFM/MEA model 45681-250)
BAS2001	DS-DET2310	4" Low Profile Base w/Expert Card
BAS2001	DS-DET2300	Line Isolating Base Series 21/22 Detectors
38531-771		Additional XPERT programming card
45682-127		126 Pre-Programmed XPERT cards

## **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;

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