

### Description

The Series 22 range of intelligent fire detectors from Harding Instruments are advanced in design and have unique features that benefit the installer and end user.

The range includes photoelectric (DET2204) smoke detector, heat detectors (DET2201) and a multisensor (DET2205). All have an unobtrusive profile, a zero insertion force base, user friendly addressing and extended data and alarm functions.

### Smoke and Heat Detector Features- Response Settings

Each detector in the Series 22 range can operate in one of five response modes, any of which can be selected from the control panel. Each mode corresponds to a unique response behavior, broadly related to sensitivity to fire. Whatever the type of detector, mode 1 will give a higher sensitivity to fire than mode 5. The selection of the most suitable mode depends on the application.

For photoelectric and ionization smoke detectors, the modes relate to different combinations of smoke response threshold and response time. For the heat detector, the mode relates to the fixed temperature setting and the sensitivity to rate of rise temperature. For the multisensor, the mode relates to the level of smoke and heat sensitivity and to the way in which the responses of the two sensors are combined.

The response characteristics of the detectors have been carefully set so that detectors will comply with the requirements of UL 864/10<sup>th</sup> edition in all response modes.

The internal signal processing of the detectors is designed so that the analog value reported is always close to 25 for a normal condition. The alarm threshold is 55, irrespective of the response mode selected. Similarly, the alarm flag in the protocol is always set when the analog value reaches 55, irrespective of the mode. This performance relieves the fire control system from the burden of handling the additional signal processing that would be required to handle multiple response settings.

Series 22 intelligent detectors truly distribute processing power across the breadth of the installed system thus allowing the Harding fire control system maximum control and minimum response time in the event of alarm activation.



### Features

- Sleek, non-fading white polycarbonate enclosure
- Zero insertion force base
- 5 user selectable modes on each Series 22 device accessed from the Harding fire control system
- Self-compensating detectors distribute processing power across entire network of installed devices
- 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 complimenting addressable input/output devices for use in conjunction with detectors
- Wide variety of detector base options including relay and synchronized temporal sounder bases
- Line isolators and isolator bases also available
- Green/RoHS Compliant

### Listing

UL File: S36048

### **Smoke and Heat Detector Features- Conventional Alarm Facility**

In the event of any type of processor failure, the internal operation of a Series 22 device will be unaffected as long as the DC supply is maintained. If the polling method is interrupted and the Series 22 device does not receive a signal the device will automatically switch to its conventional alarm mode. In this mode it will operate as if it were a conventional detector and will impose an alarm signal on the loop if an alarm condition is detected.

### **Smoke and Heat Detector Features- Flashing LED**

Series 22 detectors have two integral LED's for 360-degree visibility. Series 22 LED's both illuminate in an alarm condition and the IP system will automatically flash the LED's each time the device is polled. The Series 22 detector does not draw any additional power while flashing LED's as the LED current is part of the normal current pulse reply from the device. The flashing LED feature can be turned off from the Harding control panel.

### **Smoke and Heat Detector Features- Remote Test Feature**

This feature is available in all Series 22 device types and can be accessed from the Harding fire control programming menu. The analog loop module (ALM3-IP) changes the state of a communication command bit which forces the device by electrical means into an alarm state showing that the detector is functioning properly.

### **Smoke and Heat Detector Features- Rejection of Transient Signals**

All Series 22 detector algorithms are designed to give low sensitivity to very rapid changes in the sensor output to prevent false alarms during transient events. This is achieved by digital low-pass filtering of the sensor values which optimizes the rejection of false alarm sources while maintaining the response to fire. The filtering depends on the mode selected and in some modes the filtering is minimal. The advanced filtering method has no significant effect on the response to fires but does affect the way in which detectors respond to transients and to step changes of smoke or heat.

### **Smoke and Heat Detector Features- Drift Compensation**

All Series 22 smoke detectors include compensation for sensor drift as part of the internal signal-processing algorithm. The algorithm will compensate for changes in sensor output due to the infiltration of dirt or dust over time and will hold the sensitivity at a constant even with severe chamber contamination. Series 22 detectors are not drift compensated by the panel as are Series 21 detectors. However, Series 22 detectors and Series 21 detectors may be combined on the same analog circuit dependent the on detection needs for a given area. The type of detector is distinguished by the Harding fire control network and the Series 22 detectors will not be drift compensated by the control while the compensation for individual Series 21 devices will be managed by the ALM3-IP

