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XP95-DM

Analog Addressable Discovery Multi-Sensor

General

The Analog Addressable Discovery Multi-Sensor (XP95-DM) detector is designed to operate with the Gamewell-FCI 600 Series and ILI95-E3 Series analog addressable fire alarm control panels. The XP95-DM includes both photoelectric and thermal sensing elements integrated into a single device. The XP95-DM operates so that it digitally transmits its address to the fire alarm control panel (FACP). In addition, it transmits the analog value from both the photoelectric chamber and the thermal sensor for analysis. The high-level algorithms, designed to prevent false alarms, process the signals originating from the combined sensors. The detector is automatically programmed for pure heat detection, pure smoke detection, or a combination of both detections that are dependent on ambient conditions.

All XP95 detectors have identical external dimensions and can be installed in all base options. The dual Light-Emitting Diodes (LEDs) located on either side of the housing visibly transmit polling and external alarm status. The thermal element of the XP95-DM is designed for the free movement of air flowing around the exposed thermistor. The photoelectric detection element uses a patented smoke chamber and an infrared smoke sensing feature to obtain maximum sensitivity and selectivity.

XP95-DM

Operation

The XP95-DM Multi-Sensor has both a photoelectric detection chamber and a thermal sensing element. The infrared LED in the photoelectric detection chamber emits a burst of collimated light once per second or emits the light in response to direct interrogation by the FACP. In clean air, the photo diode receives no light from the emitter. When the smoke enters the chamber, it scatters light from the emitter onto the photo diode that is proportional to the smoke's characteristics and density. As the smoke content in the chamber increases, the signal from the photo diode increases.

The XP95-DM monitors the temperature using a single thermistor which provides a voltage output that is proportional to the external air temperature. The thermistor is calibrated to the normal analog value at a temperature of 25°C (77°F).

Depending on how you configured the detector programming, the on-board electronics process the values from each sensing element. The XP95-DM Discovery multi-sensor detector is automatically programmed for pure heat detection, pure smoke detection, or a combination of both.

FEATURES & BENEFITS

- Compatible with the following Gamewell-FCI analog addressable fire alarm control panels (FACPs):
  - 600 Series
  - ILI95-E3 Series
- Offers the following ultra low profile E-Z fit bases:
  - 4-inch (10.16 cm)
  - 6-inch (15.24 cm)
- Includes an audible alarm sounder base
- Stores the address in the sensor base
- Sets the address by the XPert addressing card
- Comprises thermal adjustable programming
- Has an optional remote LED
- Contains a two-color status LED
- Provides fixed point or rate-of-rise functions
- Offers a timed temperature increase that causes an alarm

Programming

If you assign an XP95-DM detector to a verification zone, the following occurs:

- local operation when the smoke is detected by the optical element located in the sensor head
- general alarm operation when heat is present

When the detector senses smoke, the local sounder, relay, or LED located in the detector base (or group of bases) will be activated, and a pre-alarm signal will transmit back to the panel. The Aux (4th) relay on the common control card will transfer. If heat is also present, the panel will go into a full General Alarm condition. If there is only smoke, when the smoke clears, the panel will automatically restore.

Alarm and trouble conditions are determined by the electronics in the detector sensor head, which also automatically performs drift compensation. Normal sensitivity is 2.4% per foot. When the sensor is in alarm, the LEDs in the sensor's housing will light continuously. The XP95-DM is connected to a two-wire signal line circuit (SLC) carrying both XP95 protocol data and a 17 to 28 VDC supply voltage. The XP95-DM is insensitive to loop polarity. A remote LED indicator may be connected.

Heat Detector Response Modes

Table 1 lists the heat detector mode and various temperatures assigned to each mode.

MODE	TYPICAL Application Temperature	MAXIMUM Application Temperature	MINIMUM Static Response Temperature	TYPICAL Static Response Temperature	MAXIMUM Static Response Temperature
1	77°F (25°C)	122°F(25°C)	129°F(53.89°C)	134°F(56.67°C)	149°F(65°C)
2	77°F (25°C)	122°F(25°C)	129°F(53.89°C)	141°F(60.56°C)	158°F(70°C)
3	77°F (25°C)	122°F(25°C)	129°F(53.89°C)	141°F(60.56°C)	158°F(70°C)
4	131°F (55°C)	176°F(55°C)	183°F(83.89°C)	194°F(90°C)	212°F(100°C)
5	131°F (55°C)	176°F(55°C)	183°F(83.89°C)	194°F(90°C)	212°F(100°C)
Note: For air temperatures in the range of 59° F to 131° F (15° C to 55° C), the analog value for a detector in Mode 1 will correspond approximately to the air temperature.					

Table 1: Heat Detector Response Modes Chart

Ordering Information

XP95-DM: Discovery Multi-Sensor, analog addressable, photoelectric and thermal (58000-750)

XP95-B6EZ: 6" (15.24 cm) ultra-low-profile EZ-Fit mounting base with X-Pert programming card (45681-250)

XP95-B4: 4" (10.16 cm) mounting base with X-Pert programming card (45681-210)

XP95-B6R4: 6" (15.24 cm) relay base (four-wire) with X-Pert programming card

XP95-B6SNDR: 6" (15.24 cm) mounting base with X-Pert programming card and audible alarm sounder

71112: Additional blank X-Pert programming cards

30203: Remote LED (24 V)

XP95-DM Technical Specifications

SYSTEM

Standby Current: 500 uA average, 750 uA peak
Alarm LED Current: 0.004 A
Remote Alarm Output: 0.004 A @ 5 VDC
Minimum Operating Temperature: –5°F (–20.55°C)
Maximum Operating Temperature: See table on page 2
Relative Humidity (non-condensing): 0% to 95%

ENGINEER'S SPECIFICATIONS

The contractor shall furnish and install, where indicated on the plans, a combination photo/heat multi-sensor detector (Gamewell-FCI model XP95-DM) with one of the several available addressable mounting base options. The combination sensor head and twist-lock mounting base shall be UL® Listed and UL-Listed as compatible with the Gamewell-FCI fire alarm control panels. The base shall permit free interchange of sensor heads without requiring any additional wiring or programming of the sensor head or base. The smoke sensor shall contain an integral LED that shall illuminate when the unit goes into alarm.

STANDARDS

The XP95-DM is designed to comply with the following standard:

UL STANDARDS

UL Standard 864 9th Edition

AGENCY LISTINGS AND APPROVALS

These listings and approvals apply to the modules specified in this document. In some cases, certain modules or applications may not be listed by certain approval agencies, or listing may be in process. Consult the factory for the latest listing status.

UL Listed
ISO 9001 Certification

For a complete listing of all compliance approvals and certifications, please visit: http://www.gamewell-fci.com/en-US/documentation/Pages/Listings.aspx

This document is not intended to be used for installation purposes. We try to keep our product information up-to-date and accurate. We cannot cover all specific applications or anticipate all requirements. All specifications are subject to change without notice.

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