Gamewell
A 150-Year Tradition
by Honeywell

Series 60

Conventional Two-Wire Smoke Detectors

Description

The Gamewell Series 60 Conventional Smoke Detectors are comprised of ionization, photoelectric, combination photo/heat, and rate-of-rise/fixed-temperature thermal detectors (135°F, 160°F, 210°F [57.2°C, 71.1°C, 98.8°C]). These detectors are carefully designed and rigorously tested to ensure that they meet all standards, codes and the demands of today's environments.

The detectors are designed for two-wire operation. All the detectors in the Series 60 product line have the same external dimensions. The housing of the ionization and photoelectric detectors is identical. The external alarm indicator is a light-emitting (red) diode (LED) which is clearly visible. The ion detector is distinguished from the photoelectric detector by the color of the alarm indicating LED. The ion's LED is red while the photoelectric's LED is clear during normal operation. Thermal detectors are readily distinguished from smoke detectors by open webs that allow the free movement of air around the exposed thermistor.

Operation

The Gamewell 71034 ionization smoke detector operates on the ionization principle using twin compensating chambers with one single-sided ionizing radiation source. The ionization chamber system is a reference chamber contained inside an outer smoke chamber. The outer smoke chamber has smoke inlets, which are fitted with an insect resistant mesh. At the junction between the reference and smoke chambers is the sensing electrode which converts variations in the chamber currents to a voltage. This voltage produces a signal which latches the detector into alarm when a preset threshold level is reached.

The Gamewell 71033 photoelectric smoke detector operates on the forward light-scattering principle. It uses a horizontal optical bench which houses an infrared emitter and sensor arranged radially to detect forward scattered light. The sensing chamber is a black molding configured as a labyrinth, which prevents ambient light from penetrating the chamber. The labyrinth has a fine gauze cover to prevent insects from migrating into the chamber. The detector will change to the alarm state when reflected light is of sufficient amplitude to turn on the SCR that sends the alarm signal.



IONIZATION



THERMAL



PHOTOELECTRIC

Features

- Full range of detectors including:
  - Ionization.
  - Photoelectric.
  - Combination photo/heat.
  - Rate-of-rise/fixed temperature.
- Full range of bases, including:
  - Standard 4.0" (10.16 cm), 6.0" (15.24 cm), or 6.0" (15.24 cm) low-profile.
  - 6.0" (15.24 cm) base with flashing red or green LED.
  - 6.0" (15.24 cm) base with sounder.
  - 6.0: (15.24 cm) base with relay and flashing green LED.

An ISO 9001-2000 Company

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Operation (Continued)

The Gamwell Series 60 thermal detector operates as a combination rate or rise/ fixed temperature detector (71035 @ 135°F [57.2°C], 71035-160 @ 160°F [71.1°C], 71035-210 @ 210°F [98.8°C]). It contains a pair of matched temperature coefficient thermistors within a white polycarbonate housing. One thermistor is exposed, is in good thermal contact with the surrounding air, and responds quickly to changes in air temperature. The other thermistor is insulated from the surrounding air and responds more slowly. The detector responds as a rate-of-rise detector when a temperature difference develops rapidly, causing the ratio of the resistances of the thermistors to exceed the factory preset level. The detector responds as a fixed temperature detector when the sum of the resistances of the insulated thermistor and fixed resistor compared to the resistance of the exposed thermistor reaches a preset level.

The Gamewell 71041 combination photo/heat detector incorporates the principles of the 71033 photoelectric smoke detector with the fixed temperature characteristics found in the 71035 thermal detector.

The Series 60 conventional detector bases will accept any Series 60 detector heads. The bases have a wide interior diameter for ease of access to wire and terminals. The design of the base is such that the detector will fit in one way only and that a simple clockwise motion is required to plug in a detector.

The 71036 base (4.0" [10.16 cm) will mount directly to a 3.5" (8.89 cm) octagonal box (Raco 110 or equal) or a 4.0" (10.16 cm) octagonal box (Raco 125 or equal) with a round cover/plaster ring (Raco 727 or equal). The other Series 60 bases (6.0" [15.24cm]) will mount directly to a 3.5" (8.89 cm) octagonal box (Raco 110 or equal); to a 4.0" (10.16 cm) octagonal box (Raco 125 or equal); or to a 4.0" (10.16 cm) square backbox (Raco 190 or equal).

Engineering Specifications

General Specification:
The contractor shall furnish and install where indicated on the plans, (insert TYPE/MODEL NUMBER below). The combination detector head and twist lock base shall be UL Listed as compatible with the alarm panel. The base shall permit interchange with Gamewell's other Series 60 detectors to facilitate modifications to the installation. The detector shall contain an integral LED that latches when the unit goes into alarm. RF transient techniques shall be employed to minimize false alarms.

TYPE/MODEL NUMBER:

•Ionization	(Dual chamber) smoke detectors Gamewell 71034.
•Photoelectric	Smoke detectors Gamewell 71033 Photoelectric smoke detectors Gamewell 71033 using a horizontal optical bench housing the infrared emitter and sensor arranged radially to detect forward scattering light.
•Combination photoelectric/ heat	Detector Gamewell 71443 using a horizontal optical bench along with fixed temperature (135°F [57.2°C]) capabilities.
•Fixed temperature/ rate-of-rise	Electronic thermal detector Gamewell 71035 (135°F [57.2°C]) or 71035-160 (160°F [71.1°C]) or 71035-210 (210°F[98.8°C]).

The contractor shall furnish and install where indicated on plans, bases which are compatible with all available Series 60 detectors.

Standard 4.0" (10.16 cm), 6.0"(15.24 cm), and 6.0"(15.24 cm) low-profile bases (Gamewell 71036, 71086, and 71086-LOW, respectively) shall use standard screw/crimp style terminals and shall provide terminals for remote LEDs.

Where indicated on the plans, the contractor shall furnish bases with a power-indicating flashing LED in the base (Gamewell 71086-RED or 71086-GREEN) which shall use standard screw/crimp style terminals and shall provide terminals for remote LEDs. When required, the contractor shall furnish Gamewell 71393 bases with a power indicating flashing green LED in the base plus a relay with two sets of voltage-free change over contacts (Form-C), may be used as a two-or four-wire base, shall use standard screw/ crimp style terminals and shall provide terminals for remote LEDs.

Where indicated on the plans, the contractor shall furnish bases Gamewell 71086-SNDR with a separately powered (24 volt) internal sounder rated at 85 dB @ 10 feet (3.048 m). The bases shall use standard screw/crimp style terminals and shall provide terminals for remote LEDs.

Specifications:

Standby Current:	Photoelectric, combination photo/heat, or ionization: 30 to 45 μA @ 24 volts.
Alarm Voltage:	6 to 28 volts.
Normal Alarm Output:	52 mA @ 24 volts.
Remote Alarm Output:	20 mA maximum, diode gated.
Temperature Range:	
Photo/Comb/Ion/ Thermal	32°F to 140°F (0°C to 60°C)
Thermal:	-5° F to 195° F (-20.5°C to 90.5°C)
Humidity:	0% to 95% relative humidity (no condensation)
Recommended Spacing:	Per NFPA codes.
Alarm Current:	6.0 (15.24 cm) detector base with relay: 72 mA @ 24 volts.

Ordering Information:

71033	Conventional photoelectric smoke detector head.
71034	Conventional ionization smoke detector head.
71443	Conventional combination photo/heat smoke detector head.
71035	Conventional thermal heat detector head (135°F [57.2°C]).
71035-160	Conventional thermal heat detector head (160°F [71.1°C]).
71035-210	Conventional thermal heat detector head (210°F [98.8°C]).
71036	Conventional 4.0" (10.16 cm) detector base.
71086	Conventional 6.0" (15.24 cm) detector base.
71086-RED	Conventional 6.0" (15.24 cm) detector base with flashing power-indicating red LED.
71086-GREEN	Conventional 6.0" (125.24 cm) detector base with flashing power-indicating green LED.
71086-SNDR	Conventional 6.0" (15.24 cm) detector base with sounder.
71393	Conventional 4.0" (10.16 cm) detector base with relay and flashing power-indicating green LED.
71086-LOW	Conventional 6.0" (15.24 cm) low-profile detector base.

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