Gamewell FCI FIRE CONTROL INSTRUMENTS

by Honeywell

Three-Fold Fire Alarm Boxes and Transmitters

Description

Gamewell-FCI coded fire alarm boxes and industrial transmitters provide large industries, institutions and communities with the surest and safest means of prompt, effective fire alarm reporting. They are positive and bring help directly to the exact location from which the alarm was sent. They minimize human error in fire reporting. There is no confusion on the part of either sender or receiver; no hazardous, time-consuming confusion between streets, roads and avenues with the same or similar names.

The three-fold fire alarm boxes and transmitters are designed for coded alarm reporting into a normally closed series metallic signaling circuit having a normal DC flow of 0.100 amp. They transmit signals over this circuit in accordance with their respective code numbers.

These three-fold assemblies are available in numerous variations which can be classified into three major categories as follows:

Three-Fold Manual Fire Alarm Box

Strictly manually operated by moving the pull guard forward which exposes the operating lever. Downward pressure on this lever actuates the code signal mechanism.

Three-Fold Master Fire Alarm Box

Master fire alarm boxes have provisions for electrical actuation in addition to the manual operation. They are designed to provide the connecting link between a principal municipal or industrial fire alarm system and auxiliary type fire alarm systems installed for protection of public buildings, schools, industrial plants etc. With such provisions, any alarm originating from heat detectors, smoke detectors, sprinkler heads, etc. are automatically transmitted through the Three-Fold Master Fire Alarm Box to the central headquarters.

Three-Fold Fire Alarm Boxes and Transmitters



Three-Fold Fire Alarm Box

Features

- Manual activation.
- Remote electrical activation.
- Manual or remote activation.
- Positive non-interfering movement.
- Automatic grounding.
- Red or blue.
- Local energy transmission.
- Surface or semi-flush mount.

An ISO 9000-2000 Company

SIGNALING UL LISTED

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Industrial Three-Fold Master Transmitter

Master transmitters have provisions for electrical actuation but do not have any means for manual operation. They would be used when manual operation is not required such as an un-manned warehouse.

Three-Fold Features

All fire alarm boxes and transmitters incorporate the unequaled Gamewell-FCI Three-Fold spring-driven movement. This movement operates on positive non-interfering, quick succession and also features the unique three-fold automatic grounding capability.

The movement is designed so that should two (2) boxes on a normal line be operated simultaneously, one will be automatically selected to transmit a correct signal for four complete rounds. If a box is operated while another box is in operation, it will not interfere in any way with the transmission of the signal of the first box. The second box will take control of the circuit and transmit its complete four (4) rounds of signal upon the beginning of its next round following the completion of the signal of the first box. This operation, without loss of alarm or interference between simultaneously actuated movements, is possible because of the positive non-interference and quick succession features.

The self-grounding mode of operation is accomplished automatically whenever a three-fold movement is actuated on a circuit which has developed an open. In this mode of operation, signals may be received from transmitters and boxes by properly conditioned receiving circuits at headquarters.

The Gamewell-FCI Three-Fold Boxes and Transmitters are capable of making approximately 26 attempts to command a circuit. If, at the end of that time an actuated unit is still unable to get a clear line, it will automatically “take over” (bulldog) the circuit to transmit four (4) rounds of its signal before it is wound down. The mechanism is capable of transmitting signals at varying rates of speed ranging from electrical impulses at 3.25 second intervals to .25 second intervals and has provisions for adjusting speeds within this range.

When the main spring is run-down so there is insufficient capacity left for transmission of four (4) complete rounds of the signal, the mechanism is locked to prevent further operation until the spring is rewound, to prevent transmission of a fragment of a signal or stopping of the mechanism in a position which might hold the circuit open.

If the main spring is run-down, the circuit will be grounded. Thus, by the testing means provided at headquarters, the location of the faulty box may be determined.

Operation
Manual Pull

The manual Three-Fold Boxes and Three-Fold Master Boxes are provided with means for manual actuation. These boxes are of the quick action type and require only the opening of the quick action pull down guard and the depressing of the lever to trip the mechanism. Once tripped, no further manipulation of the lever has any effect on the mechanism. When the box is operated in a normal metallic circuit, four (4) rounds of the box number will be transmitted to headquarters. If another box has control of the line, the box operated will wait until the line is clear and then transmit its signal to headquarters.

Test Features

In addition to transmitting emergency signals for fire alarm purposes, the fire box is equipped with a telegraph key so that authorized persons may transmit manually formulated code signals and receive audible indication, via tap bell, of the transmission of all code signals on the circuit.

The test block is provided so that all functions of the box can be tested without the transmission of any signal over the circuit and without impairing the transmission over the circuit of signals from other sources. Means for cutting the box out of service or grounding either side of the circuit as required are also provided.

Frequently, the many advantages of the Three-Fold operation are desired without all of the other features of a standard Gamewell-FCI Fire Alarm Box. Accordingly, we offer the MODIFIED version of the standard units. It is basically the same as the popular Three-Fold Box which has had an excellent service record for decades. The difference is that the MODIFIED Three-Fold Boxes do not have the inner case, tap bell, telegraph key and test block.

Construction
Signaling Mechanism

The signaling mechanism is carefully assembled with all parts precision-manufactured. All parts are plated or treated to resist rust and corrosion, and the mechanism is completely enclosed in a dust tight transparent plastic

cover, fastened to the mechanism mounting panel of heavy duty molded plastic.

Three-Fold Fire Alarm Boxes

All of the working parts are mounted in an *inner case which is installed in the familiar “Signal Red” weatherproof cottage shell. Both the inner and outer cases are constructed of aluminum, suitably treated and finished, the outer case is painted red and the inner case is white. A white guard panel is installed on the outer door to protect and highlight the starting lever. Both narrow sides of the box have a Scotchlite™ reflective “FIRE” sign that appears in red letters with a white background. The outer case is provided with a threaded 1/2”, (typical 2 places) conduit connection at the top and a clearance hole for 1/2”, (typical 2 places) conduit at the bottom.

*The inner case is not included with Modified Boxes.
Scotchlite™ is a trademark of 3M™.

Industrial Master Transmitter

This transmitter utilizes the standard Three-Fold Mechanism and auxiliary tripping attachment mounted in a sheet metal enclosure with a locked, hinged door. The box code number plate is mounted on the outside of the door. The transmitter dimensions are: 12” high x 12” wide x 6” deep (30.48 H x 30.48 W x 15.2 D cm). This unit is designed for surface mounting.

Installation Information

Although the Gamewell-FCI Master Fire Alarm Box is designed for connection to auxiliary systems inside the buildings, the National Fire Protection Association recommends that the Master Box be placed outside of, but convenient to, the building protected. Installation on a pole or wall nearby, preferable using a mounting bracket, reduces the fire hazard to the circuit wires of the main fire alarm system. It is recommended that the lead-in wires from the main circuit to the Master Box be placed underground, but if aerial wire construction is used, adequate lightning protection should be provided at the Master Box. A Gamewell-FCI, GW 44551-01 lightning arrester is suitable for this purpose. Three (3) conductors, of #14 or #16 AWG wire, are recommended for connection between the Master Box and the Reset Supervisory Panel. This panel may be installed inside the building, preferably in some location where it will be visible a major portion of the time to certain of the building personnel. This applies to the shunt trip type Master Box. Where the local energy type is used, requiring local power source for auxiliary operation, the supervisory panel may not be necessary as interior system control panels are arranged to perform this function if specifically designed to operate the local energy type Master Box.

1. All wires shall be installed in accordance with the National Electrical Code.
2. Auxiliary circuit wires must be installed in rigid conduit.

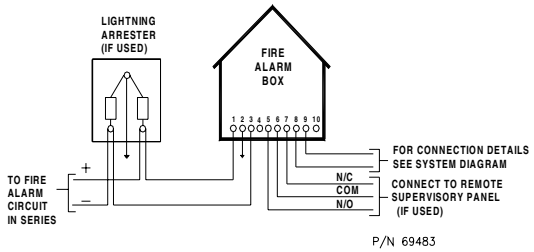


Figure 1 Typical Wiring Connections - Gamewell-FCI Master Fire Alarm Box

For Shunt Type Master Box

1. Connect initiating devices in series with auxiliary circuit. Devices must be normally closed and must open on alarm.
2. Auxiliary circuit loop resistance must not exceed 30 ohms.
3. Supply voltage of the circuit in which the Master Box is connected should not be less than 30 volts.

For Local Energy Type Master Box

1. Auxiliary circuit normal operating (alarm) current should be.250 amperes DC or .380 ampere 60 Hz AC.
2. Auxiliary circuit supervisory current should be not more than .050 ampere DC or .070 ampere 60 Hz AC.
3. Nominal volts across coil = 3.65 VDC or 50 VAC 60 Hz. Use series resistor for higher voltages.
4. Maximum safe current in trip coil 125% of nominal values given.
5. Coil, wiring, and terminals insulated for 125 VAC (1250 VAC breakdown test).

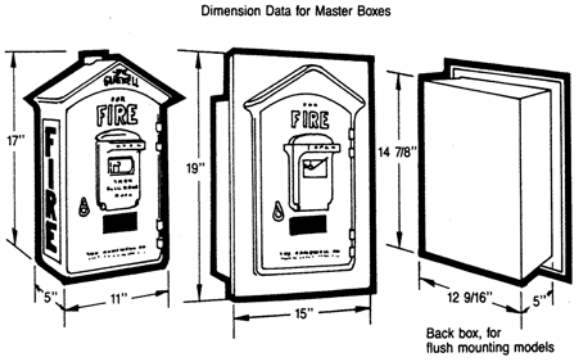


Figure 2 Dimension Data for Master Boxes

Ordering Information

Three-Fold Manual Boxes (For interior or exterior use)

Part Number	Description
M34-52	Surface mounting, cottage shell

Master Box - Shunt Type

M34-53	Shunt Trip, surface mounting, cottage shell
M34-104	Same as M34-53 with plain door painted red
M34-71	Shunt Trip, sheet metal housing, plain door (less test block, tap key and bell)

Local Energy Type

M34-56	Local Energy Trip, surface mount, cottage shell
M34-110	Same as M34-56 with plain door painted blue
M34-111	Same as M34-56 with plain door painted red
M34-92	Local energy trip, flush mounting, gasket cast frame for interior or exterior use.
M34-113	Same as M34-92 with plain door painted blue
M34-114	Same as M34-92 with plain door painted red
M34-75	Local Energy Trip, surface mount cottage shell (less inner case test block, tap key and bell)
M34-72	Local Energy Trip Transmitter, sheet metal housing (less test block, tap key & bell) plain door.

Ordering Information (Continued)

Accessories

Part Number	Description
47375G	Indicating light, plain red globe for pedestal mounting, 120 VAC. Order 40067 1/2" nipple separately.
40067	1/2" nipple for use with 47375G Light
47374	Plain red globe, pole or wall mounting, 120 VAC
28295	EZYMOUNT cross brackets
28268	EZYMOUNT loose parts
28296	EZYMOUNT side brackets (2 required)
28297	Flexmount horizontal bracket
27853	Flexmount loose parts
28298	Flexmount vertical bracket