

# Manual Actuator Product Manual



P/N: 10-2225



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## **1.0 Introduction**

The Fike Manual Actuator (10-2225), patent #5718294, is a self-contained apparatus for firing Gas Cartridge Actuators (GCA) for releasing clean agent, such as HFC-227ea. The Manual Actuator fires up to 6 GCAs wired in series. External power to the Manual Actuator is used for GCA supervision only.

### **Parts List**

Following are the ordering numbers for the enclosure and parts.

02-4151	Enclosure, Safety Switch
10-2226	PCB Assembly
02-4135	Motor, DC
02-2213	Poly-Seal
02-2270	Pin, Spring Clip

## **2.0 System Overview**

The Manual Actuator satisfies NFPA 2001 (para. 2-3.3.5) requirements for a system manual release. It can be used in a stand alone mode or in conjunction with a releasing panel in the event of complete power failure or a wiring fault between the releasing panel and the GCAs. The Manual Actuator internally generates sufficient power to activate up to six GCAs without using external electrical power.

The external power to the Manual Actuator is for only supervising one set of bridge wires in the GCA. A typical power source is the auxiliary 24 VDC from a releasing panel.

The Manual Actuator supervises for an open in the GCA circuit, typically in the bridge wire of the GCA. In the event the bridge wire is no longer present (or no supervision power), the normally energized TROUBLE Relay in the Manual Actuator will de-energize. The GCAs are not supervised when the ARM/DISABLE switch is in the DISABLE position.

In the DISABLE position, the ARM/DISABLE switch isolates the firing circuit and shorts the GCAs' bridge wires. When the ARM/DISABLE switch is in the DISABLE position the Manual Actuator can also be tested (see chapter 5.0).

## **3.0 Installation**

The Manual Actuator is 10.25" tall X 6.25" wide X 3.25" deep excluding the operating handle. The Manual Actuator shall be installed in a suitable locations that is:

- Easily accessible and ready visible
- On a flat wall free from vibration
- In a clean and dry environment
- Not outdoors or in harsh environments

### 3.1 Application with Releasing Panels

In order to comply with Underwriters Laboratories' requirements, the Manual Actuator must be installed in the same room as the GCAs with total GCA circuit resistance (field wiring plus GCAs) not to be greater than 10 ohms. Typical installation with a releasing panel and a single 10-1832 Agent Releasing Module (ARM) is shown in figure 1. The YELLOW and GREEN wires on the GCA are not polarity sensitive.

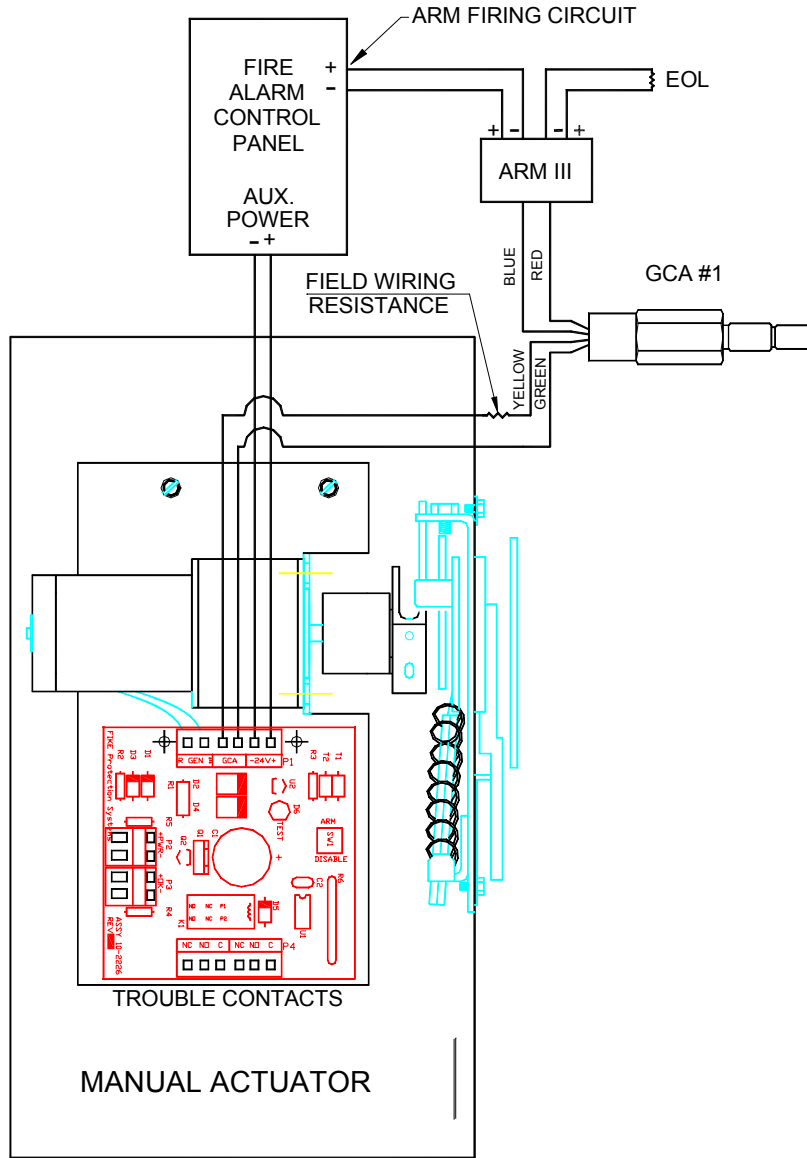


Figure 1  
Releasing Panel and Single ARM Application

Figure 2 shows a typical installation with a releasing panel and multiple ARMs. Total number of GCAs not to exceed 6. All GCAs are to be series wired.

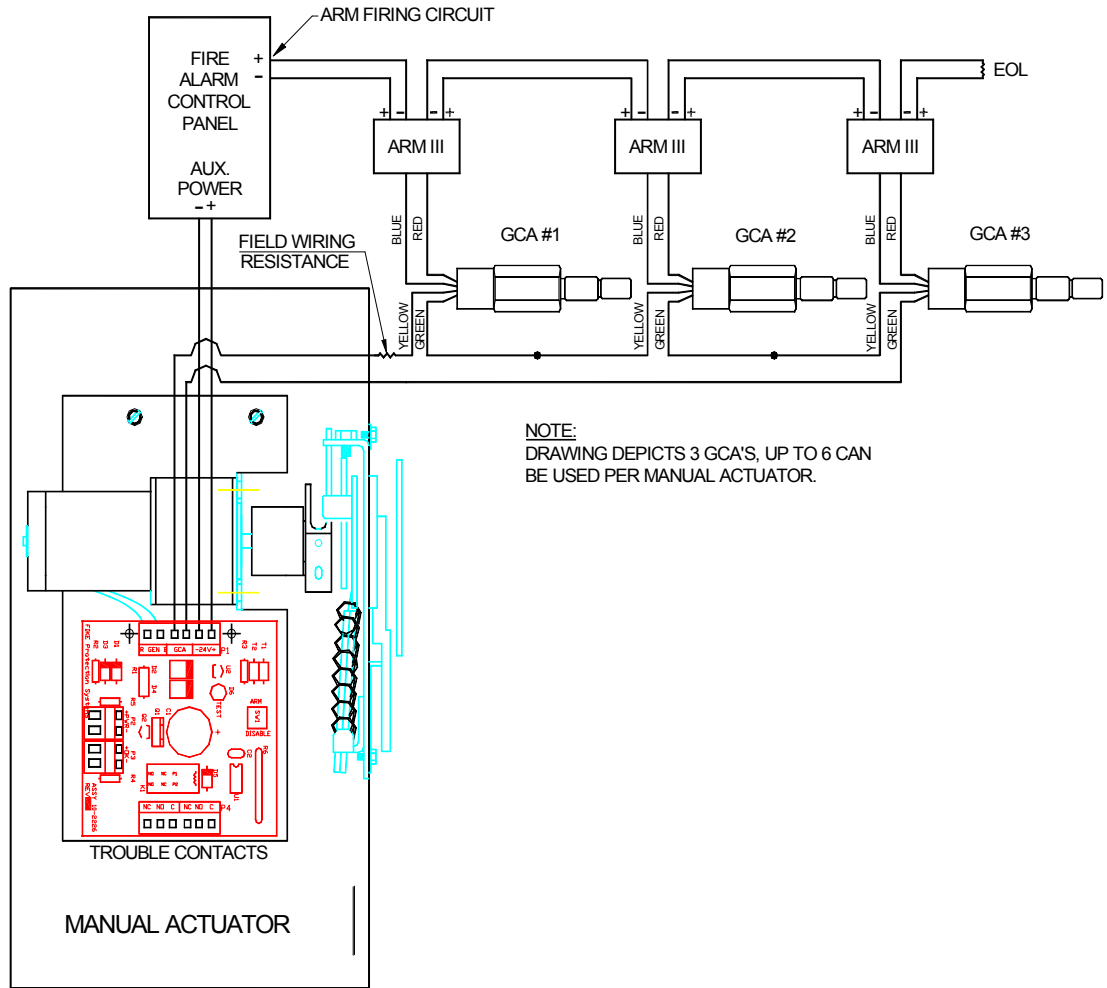


Figure 2  
Releasing Panel and Multiple ARM Application

### 3.2.1 Stand Alone Application

⇒ **NOTE: The Manual Actuator operated in a stand alone configuration is not Listed by UL.**

For stand alone application, the Manual Actuator connects to the GCA in the same method as with the releasing panel, shown in Figure 1, To prevent false activation, the RED and BLUE wires of the GCA are shunted together. In the stand alone configuration, if an external power supply is not used, there will be no GCA supervision. The SUPERVISION POWER light will not illuminate and the TROUBLE relay will stay in the de-energized state. See Figure 3.

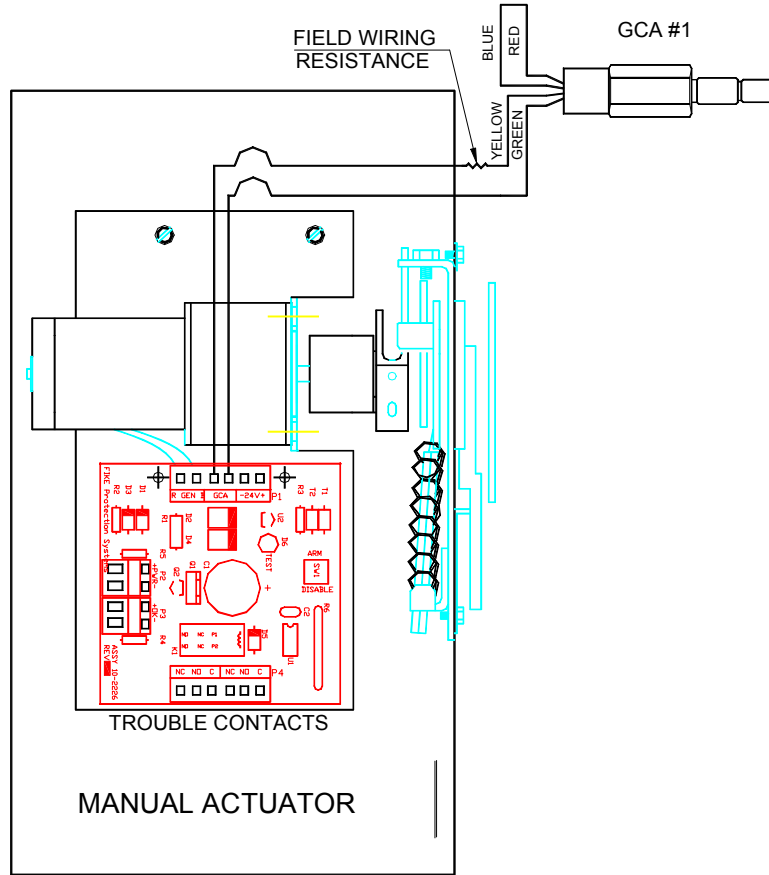


Figure 3  
Manual Actuator and Single ARM Application



## 4.0 Operations

### 4.1 Operating the Manual Actuator

Operating the Manual Actuator is a two step method. First step, pull the pin. Pulling the pin will break the poly-seal and enable the Manual Actuator. Second step, move red handle up in a brisk manner. When the handle is moved up, the Manual Actuator will activate all GCAs.

### 4.2 Connecting GCAs

Before connecting the GCAs to the Manual Actuator, always move the ARM/DISABLE switch inside the Manual Actuator to the DISABLE position. This is a safety precaution. Premature activation of the GCAs will be avoided.

### 4.3 Resetting the Manual Actuator

To reset the Manual Actuator, place the handle in the down position. Compress the pin and install it through the hole in the bracket and the handle. Loop a new poly-seal through the hole at the end of the pin, through a hole the bracket and under the handle. Thread the poly-seal through the locking hole at the end of the poly-seal. Pull the poly-seal secure.

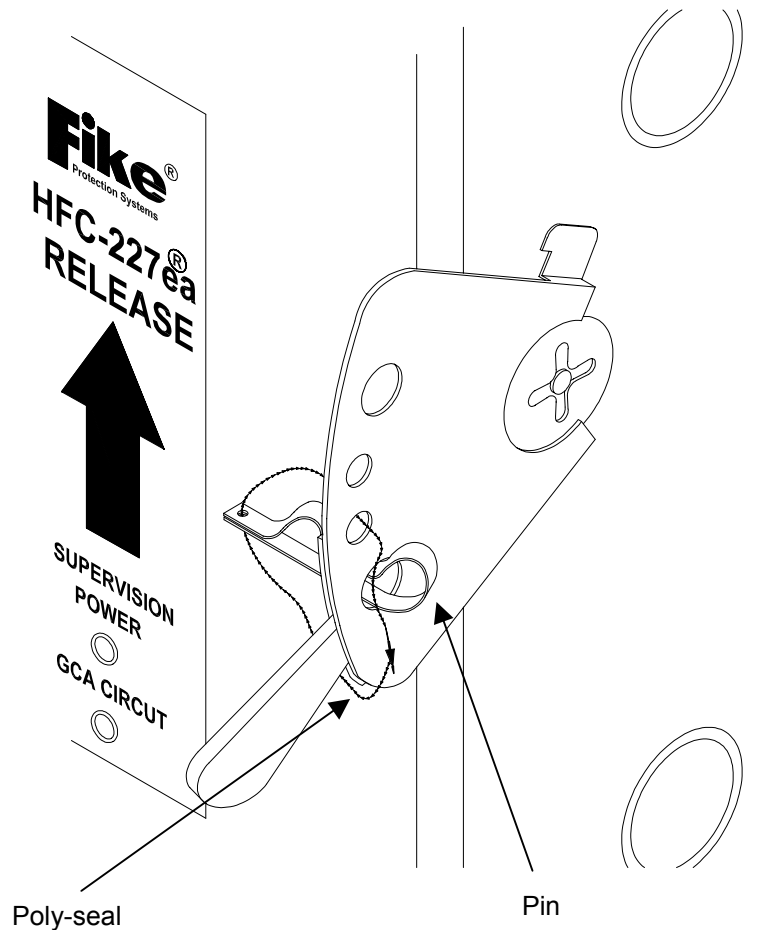


Figure 4

## 5.0 Testing

The Manual Actuator's firing circuit can be tested by putting the ARM/DISABLE switch in the DISABLE position. When the activation (red) handle is thrown, the Test LED (D6) will light for approximately 3 seconds signifying there is sufficient power generated. After testing, the ARM/DISABLE switch should be placed in the ARM position.

**WARNING: When the Manual Actuator and an ARM are connected to the same GCA, the ARM/DISABLE switch on the Manual Actuator only disables the Manual Actuator from firing the GCA. The ARM is still active and can fire the GCA.**

## 6.0 Servicing

No special servicing is required. Fike recommends testing the Manual Actuator annually (see chapter 5.0) and the spring linkage of the handle be lubricated if there are any signs of corrosion.

## 7.0 Specifications

Manual Actuator Ratings:

24 Volt Power (Supervision only)	18 - 31 volts DC, 50 ma. max.
GCA Circuit	10 ohms max (field wiring plus GCAs)

Trouble Relay Contact Ratings:

DC operation	2A, 30V
AC operation	0.5A, 110V

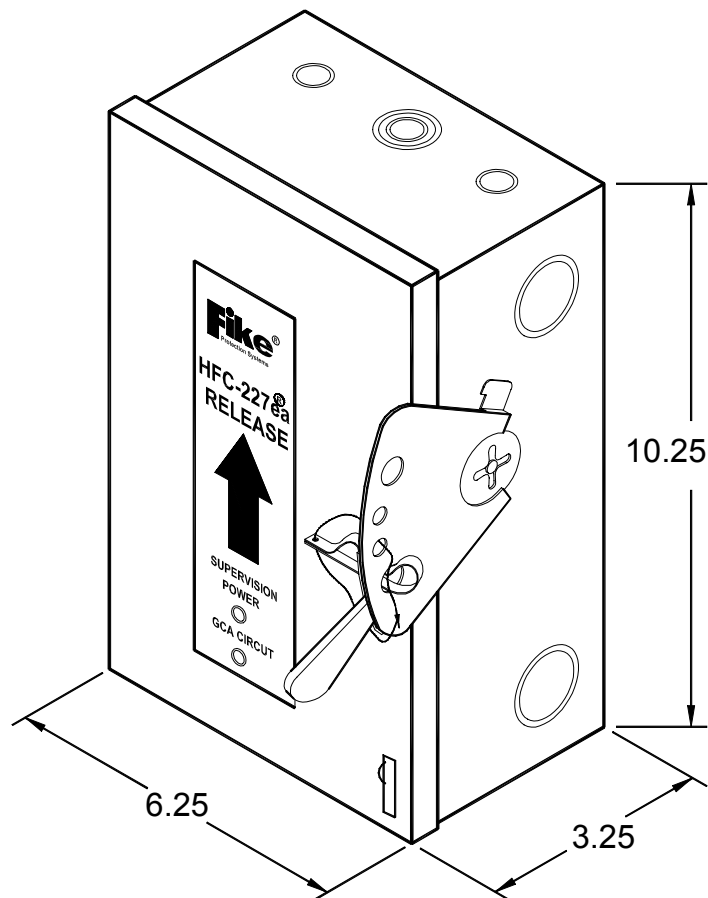


Figure 5





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