

# Sequence of Operation for the Utility Controller Safety System

## Operational Modes of the System

### 1. The Operational Mode: (occupied state of the facility)

The Operational Mode is dependent upon receipt of an enabling signal received from the facility's energy management control system "**EMS**" and lack of a fire alarm signal. In this mode, activation of the utilities at the student workstations is permitted. Placing the desired operating switch in the "ON" position and then engaging the service key or pressing the key button on the **Keyfob** achieves restrictive activation. Whereby, a 24-vac control signal activates the solenoid valves for the gas and/or water located in the **S-Series Enclosure**, as well as an electrical contactor for the 120-vac receptacles at the **E-Series Enclosure**. An illuminated **Monitoring Lamp** is indication that a utility is active. Selective deactivation is accomplished by placing the corresponding operating switch to "OFF" or by pressing the corresponding button on the **Keyfob**. Intent of operation is such that utilities remain "OFF" unless selectively activated or turned "ON".

The **exhaust fan** fitted as an auxiliary output module permits its restrictive operation. The fan circuit remains in a disabled mode until first engagement of the service key. Thereafter during the classroom day, the auxiliary switch permits convenient "ON" - "OFF" operation without the otherwise required engagement of the service key.

The **LA Series Panel** permits independent activation of the utilities at the Instructor's Demo Stand. A single switch simultaneously activates all utility outlets at this stand upon engagement of its service key. The panel's panic button acts as a remote panic button for the primary control unit.

### 2. The Non-Operational Mode: (unoccupied state of the facility)

Upon withdrawal of the enabling control signal from the facility's "**EMS**", the **Utility Controller** and all companioned devices are disabled and become non-operational. All utilities, including exhaust fans, are deactivated. An illuminated panel mounted lamp is indication that a utility output circuit was left active at withdrawal of the enabling control signal. Upon return to operational mode, output circuits require re-keying of the service key switch in order to again become active. Exhaust fans having their module configured for after-hours operation are permitted to operate if a panic mode is achieved during an unoccupied state.

### **3. Panic Mode:**

Panic is achieved by one of the following ways: Pressing the “EMERGENCY” button located on the Controller’s door panel; Striking any **Remote Panic Button** including the one located on the **LA Series** at the Instructor’s Demo Stand Control Panel; Pressing the panic button on the Hand-Held **Keyfob**; or Activating the “**emergency shower**”. Operation of this shower sends an activation signal to the **Remote Monitoring Station**. Either immediately or after a pre-determined time delay, a panic signal is emitted to the **Utility Controller**.

Upon “PANIC”, all utilities are deactivated. All panel mounted indicators illuminate to indicate “PANIC”. The **exhaust fan** circuit becomes instantly active, purging the classroom of toxic fumes. An emitted signal to the **Remote Monitoring Station** activates a time delay, and when complete activates the **Monitoring Beacon** located outside of the classroom in the adjoining corridor that will flash, thus providing notification that the classroom has a potential emergency within. After a separate time delay, the **Monitoring Horn** sounds. A Panic notification signal is also delivered to the building **alarm systems**.

Reset of the panic mode is accomplished only by re-keying of the service key switch or by reset of the internal “RESET” button or by pressing of the key button on the **Keyfob**. Thereafter, all utilities again become enabled. The Demo Stand **LA Series** panel when so configured resets independent of the primary Controller.

### **4. Alarm Mode:**

Upon receipt of a fire notification signal from the facility’s **alarm system** the **Utility Controller**, as well as all integrated utility systems including the **exhaust fan**, will become instantly disabled. Likewise, any auxiliary electrical circuits or other utilities receiving secondary control from the system will also become disabled. Reset from “Alarm” is accomplished solely by manual reset, thus preventing unauthorized reactivation until a positive “Clear from Alarm” can be confirmed.