Gamewell WORLDWIDE

SMART START™

FLEXALARM 620

CONVENTIONAL

FIRE ALARM CONTROL PANEL

Installation & Operation Manual

The Gamewell Company
60 Pleasant Street
Ashland, MA 01721

P/N 71217
Revision 5
11-22-01

UL, FM, CSFM, MEA Listed

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PROPRIETARY MATERIAL

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GENERAL INFORMATION

The Gamewell Company thanks you for choosing the FLEXALARM 620 Conventional Control Panel to serve your monitor and control signaling needs. As with all our products we have taken great care to insure that we have provided a quality alarm control panel. To receive maximum benefit and many years of reliable service we would like to make the following recommendations:

1. Read this manual carefully and in it's entirety before proceeding with the installation of the Flex 620 Control Panel.

2. Never make any connections or perform any system programming with the power connected.

3. Gamewell spends many hours testing devices that are supplied by Gamewell to be used with it's control panels to verify compatibility. To maximize system performance, and minimize risk of damage to the equipment, we suggest using all Gamewell Components.

4. There is no substitute for proper maintenance and testing of this or any Life Safety product. Gamewell recommends testing and maintenance of your FLEX 620 system in accordance with the guidelines set forth by the National Fire Protection Association, be done on a regular basis, as a minimum.

5. This manual should be stored with the FLEX 620 Control Panel for future reference, and should not be removed.

Thank you again for choosing Gamewell. If you have any comments regarding your FLEX 620 Conventional Control Panel, or other Gamewell products, please feel free to write us at:

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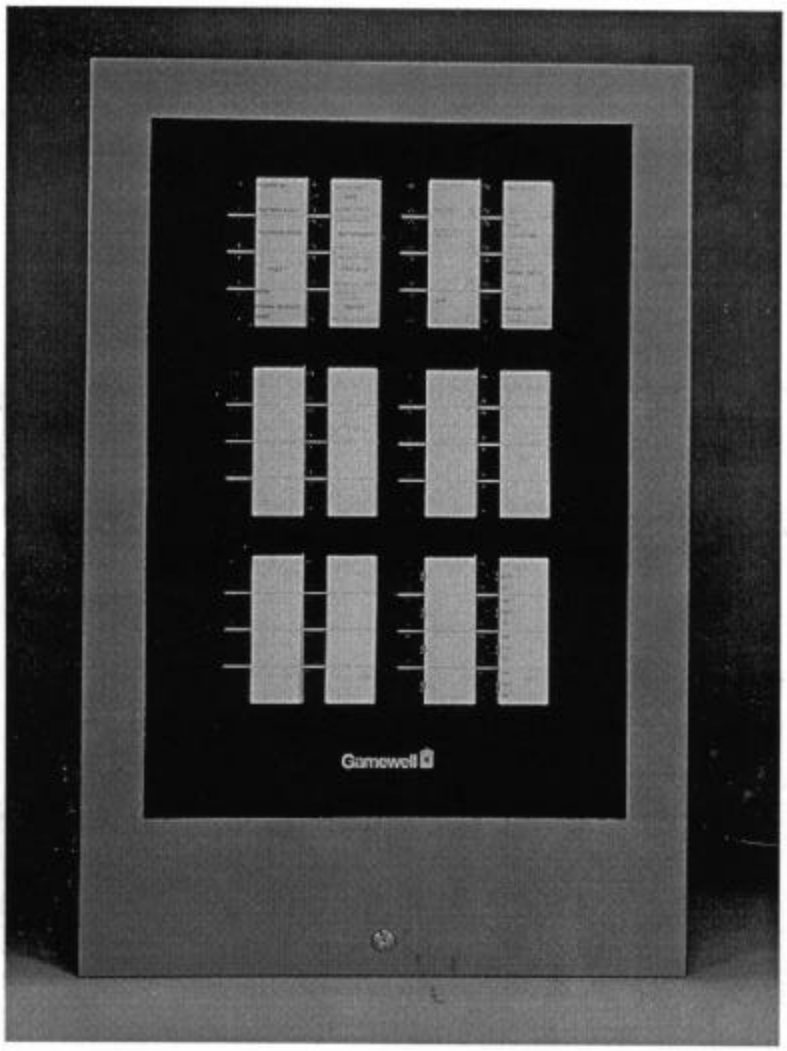

The Flexalarm 620

- ✓ **Full Featured Microprocessor Based Conventional Control Panel**
- ✓ **SmartStart Capable**
- ✓ **Supports up to 128 Conventional Circuits**
- ✓ **Supports CIM-4/8, USM-4/8, RM-4/8, BC-4/8, CTX-4, MPS/APS-8, all Staus and Control Modules (SAN, RAN, RPI) and All Gamewell Conventional Detector Lines.**
- ✓ **Available in 4 or 8 Bay Cabinets. Supports up to 16 Expansion Slots.**

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Section 1

FLEXALARM 620

System Description

System Overview

FLEX 620 Control Panel

The Gamewell FlexAlarm 620 Conventional Alarm Control Panel is a limited energy fire, supervisory, alarm system consisting of a cabinet, I/O circuits, power supplies, and front panel displays. The Flex 620 is expandable to monitor, control and display up to 128 input/output circuits. It is available in two cabinet sizes, four bay and eight bay. The four bay cabinet (F624) will accommodate 4 of the 620 series modules in addition to the common control, power supply and batteries. The eight bay cabinet (F628) will accommodate 8 of the 620 series modules in addition to the common control, power supply and batteries.

The design of the system utilizes a modular building block approach. Through selection of individual I/O modules (i.e. initiating, indicating and relay control modules, etc.) the user can customize the control panel for specific applications.

The Flex 620 control panel utilizes a unique initialization programming process, SmartStart™. This initialization process stores the project specific system configuration in memory. Then a control-by-event table is automatically created that allows any system input to activate the system outputs. Upon completion of the initialization process the system is completely operable in a general alarm situation with the control-by-event data tables protected in non-volatile memory.

Modular Construction

The Flex 620 modular control panel consists of the common control section, conventional input module(s), universal signal module(s), relay module(s), building control module(s), city tie module(s), and power supplies. Other devices that can be used in conjunction with the Flex 620 system include the remote annunciators, printer interfaces and alphanumeric displays. These devices operate by means of the serial communications port which is isolated via an optional communications isolator module.

The cabinet utilizes dead front construction in either a four or eight bay arrangement. The modules will conform to numerous system configurations that accommodate simple and complex systems.

Common Control Module

The common control module (CCM) or section consists of four modules; the common control display, the bus driver module, a relay expansion module, and the main CPU module.

Common Control Display

The Common Control Display (CCD) is divided into two sections, the left and right displays. It provides the user with visual indicators (LED's) for status indication and guided prompts. The sixteen tactile switches are used to operate the system as well as enter data during system programming. All alarm, fault, supervisory and security status changes are annunciated by means of LED indication and the user is prompted with the proper sequence of operation. The "Power On" LED indicator is green, alarms or activated signal and city tie circuits are indicated by red LED's and faults are indicated by yellow LED's.

CPU Module

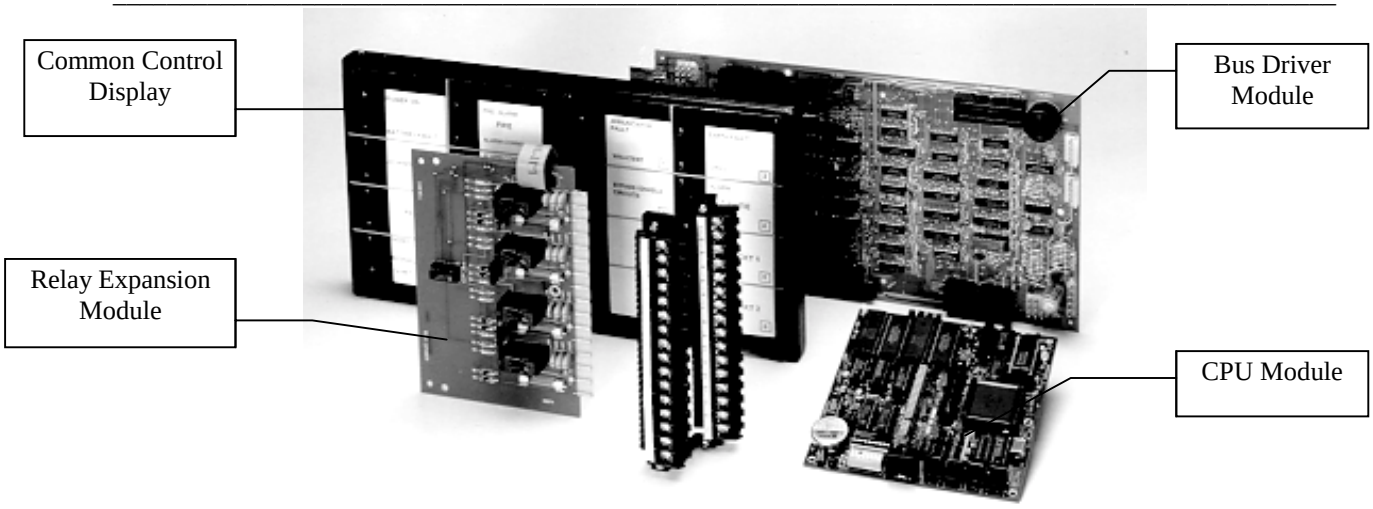
The CPU module (or micro processor module) contains the system operating firmware and non-volatile memory. It provides all the processing functions and system memory as well as providing the local/remote communications interface.

Relay Expansion Module

The Relay Expansion Module (REM) provides 4 common relay circuits. When connected to the bus driver module this module provides *Common Alarm, Common Trouble* and *Supervisory* Form C relay contacts. Each relay has a fused common rated at ten (10) amps. The expansion module mounts (via standoffs) to the right side of the bus driver module.

Bus Driver Module

The Bus Driver Module (BDM) contains the circuitry that interfaces with the CPU module and the system modules. The bus driver module is equipped with two Style Y or Z, limited energy signaling circuits, a ground fault detection circuit and a city tie circuit. It has three power limited outputs, 24 Vdc auxiliary power, 12 Vdc, and resetable 24 Vdc smoke detector power. Circuitry to monitor the status of the CPU and set the system in a default mode of operation is also incorporated in the bus driver module.



620 Common Control Module

Main Power Supply

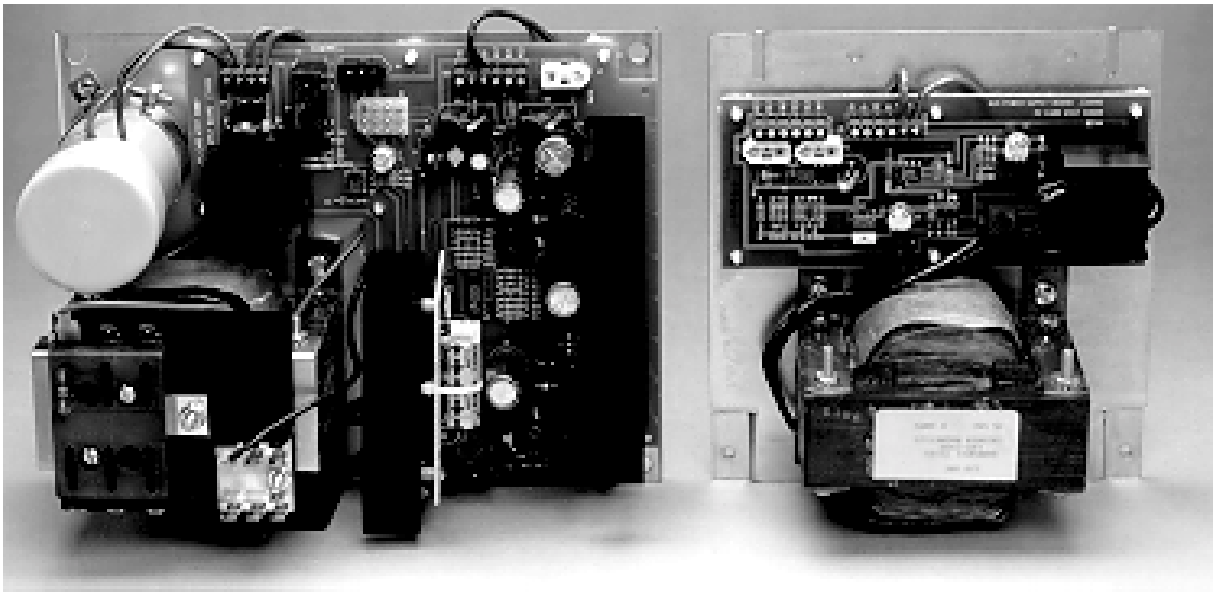
The main power supply (MPS-8) is an eight (8) amp DC supply. It provides 4 amps of regulated 5, 12, and 24 volt DC outputs and four amps of unregulated 24 volt DC power to the common control signal circuits. A battery charger and battery distribution block are incorporated into the Main Power Supply. A "Brown Out" protection circuit that will switch the main and any auxiliary power supplies to battery standby is also integrated into the supply. The main power supply mounts in the lower left hand corner of the cabinet and connects via interconnecting cables to the bus driver module.

Lead Acid Battery Charger

The lead acid battery charger module is provided with the main power supply. The battery charger module is capable of charging and maintaining up to 60 AH batteries.

Auxiliary Power Supply

The auxiliary power supply (APS-8) provides eight (8) amps of unregulated 24 VDC power. Two (2), four (4) amp circuits are available from its connectors for signaling power expansion. The auxiliary power supply has provisions for receiving a signal from the main supply to switch to battery standby due to low (Brown out) or no primary input.



Main Power Supply (Left)Auxiliary Power Supply (Right)

System I/O Components (600 Series)

Initiating Module

Conventional Input Module

The 600 series *Conventional Input Module*s (CIM-4 & CIM-8) are available in either 4 or 8 initiating circuits for monitoring of conventional detectors and contact type devices. Its corresponding display provides status indication and Bypass/ programming capabilities. Each zone can be programmed to meet the requirements of NFPA Styles B (Class B). An optional Class A adapter may be used to meet the requirements of NFPA Style D if required.

CIM Display

The display module provides LED annunciation of *Alarm and Trouble* conditions and has one switch per zone for programming and bypass functions. The display has provisions for user defined custom labels per circuit. LED annunciation is indicated by - red - Alarm (active) and - yellow - Trouble.

Indicating Module

Universal Signal Module

The Flex 600 series *universal signal modules* (USM-4 & USM-8) are a multi-function output modules available in either 4 or 8 circuit increments. These modules can be programmed to function as either notification appliance circuits, releasing circuits, speaker circuits or fireman's telephone circuits. When used as notification appliance circuits, these modules can be programmed for steady, 60PPM, 120PPM, temporal, zone coded or California UFC signaling outputs. These circuits are designed to meet the requirements of NFPA 72, Style Y notification appliance circuits. An optional Class A adapter is available to meet the requirements of NFPA 72, Style Z notification appliance circuits.

USM Display

The display module provides LED annunciation of *Alarm and Trouble* conditions and has one switch per zone for programming and bypass functions. The display has provisions for user defined custom labels per circuit. The module displays are supplied with user tactile switches per circuit. LED annunciation indication is - red - Alarm (active) and - yellow - Trouble.

600 Series Modules

Relay Modules

The 600 series relay modules (RM-4 and RM-8) have been designed to supply 4 or 8 Form C relays for control of auxiliary functions. The relays are controlled by the main CPU and are fully field programmable. A feedback point for positive confirmation of activation has been supplied with each set of contacts. The relays are rated at 10 amps with a fused common to protect the internal circuitry.

Relay Display

The relay module display is provided with green (inactive) and red (active) LED's. The tactile switches (per relay point) can be used to program, bypass or test the relay circuits.

Building Control Module

The 600 series *building control modules*, (BC-4 & BC-8) along with their On/Off/Auto switch display, are designed to provide an interface between the control panel and HVAC systems. The building control module is available in 4 or 8 circuit modules that are monitored and controlled by the MPU bus. Their relays are rated at 10 Amps with supervised feedback points for positive confirmation of the programmed action. Each Form A/B relay pair is programmable independently and fused on the relay common to protect the internal circuitry.

BCM Display

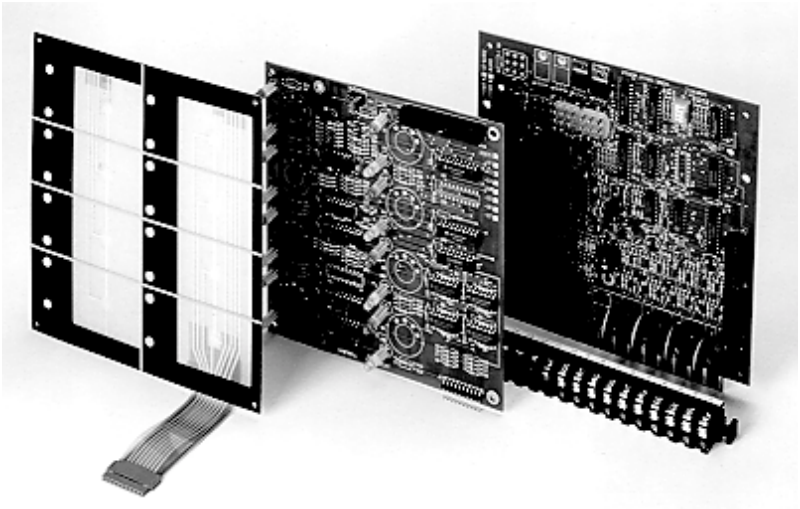
The building control module display provides LED annunciation (green - inactive, and red - active) indicating relay state or feedback. The display comes with tactile switches per circuit and a three position On/Off/Auto switch for manual override.

City Tie Module

The 600 series City Tie Module and its associated display provide 4 additional, limited energy, polarity reversal/city tie circuits to a system. Each circuit has independently programmable operation.

Module Displays

The *city tie module displays* are supplied with red Alarm (active) and yellow Trouble LED's with user tactile switches for programming, bypass and test per circuit.



Representative Inner Cabinet Module Assembly (USM, CIM, RM)

Section 2

FLEXALARM 620

System Operation

Common Control Display - Functional Description

CONTROLS

Acknowledge Switch

The Acknowledge tactile switch (ACK), silences the internal buzzer of the panel. Any signal circuit, building control or relay programmed to return to the normal condition, when the "ACK" switch is depressed, will return to normal. Should a second alarm occur, the circuits which had returned to normal will re-activate.

Δ WARNING !

Do not RESET the system until the Authority having Jurisdiction has authorized reset.

Reset Switch

The Reset tactile switch (RESET) removes power from the initiating circuits for a period of four (4) seconds. Power is temporarily removed from the S+ S- terminals, any devices latched into alarm should return to the normal condition (provided the cause of alarm has been eliminated). The signal circuits, city tie, alarm relay and/or supervisory relay will restore and the panel will return to the normal quiescent condition.

Signal Silence

The Signal Silence tactile switch (SIGNAL SILENCE) will silence (i.e. return to normal), any signal circuit, building control point or relay that is programmed to restore on signal silence. The signal silence switch is alternating action switch. Pressing the signal silence switch will return the silenced circuits to an active state.

Drill

The Drill tactile switch (DRILL) will activate all circuits that have been programmed to sound when the Drill switch is pressed. The Drill switch is alternate acting, pressing the Drill switch again will deactivate the test.

Δ WARNING !

All circuits selected for WALKTEST become disable and will not Alarm the system should a real emergency occur.

WalkTest

The Walktest tactile switch (WALKTEST) will provide a means for one man to test the devices in the system both silently and audibly. Walktest can only be completed in the **security access level 3 mode**. The access of the Walktest function is activated by depressing the Walktest switch and depressing the "Enter" key. Any circuits may be selected for WalkTest. When the user has completed selecting the circuits (Initiation or Indicating i.e. signal), depress the "Enter" key. If indicating signals were selected, these circuits will annunciate the alarm and troubles created on the initiation circuits. Should the circuit be placed in *alarm*, the signals will sound 2 short signals. Should the circuit be placed in *trouble*, the signals will sound 1 short signal. Should no signals be selected, the test will be silent. When an actual *alarm* occurs on a circuit not selected for WalkTest circuits, the system will go into full alarm sequence.

Bypass	The Bypass tactile switch is used to disconnect a circuit that is damaged and cannot be cleared. Bypassing a circuit should only be a temporary solution to a problem and not a long term solution. Your service company should be advised immediately so full system operation may continue as soon as possible. When the Bypass switch is depressed it will illuminate the bypassed circuits LED's. The bypass switch is an alternating action switch. Depressing the switch again will enable the bypassed circuit. Press "Enter" at the completion of the Bypass actions.
Enter	The "Enter" tactile key is used to request password access or system programming and enter data while in the programming mode. It also provides the means to access system functions during WalkTest and bypass operations.

INDICATORS

POWER ON	The green "Power On" LED indicates AC line operation. When pulsing, this indicates a problem with the incoming AC line voltage, main or backup power supplies.
BATTERY FAULT	The yellow "Battery Fault" LED indicates a problem with the battery, or battery connections.
COMMON ALARM	The common "Alarm" LED (red) indicates a common fire alarm has been activated in the system.
PRE-ALARM	The common "PreAlarm" LED (red) indicates the system in a first stage alarm process.
ANNUNCIATOR FAULT	The yellow "Annunciator" LED indicates a problem with a remote annunciator.
WALKTEST	The yellow "WalkTest" LED indicates that part of the system is in the WalkTest mode. All zones that flash at the same rate as the WalkTest LED are in the WalkTest mode.
EARTH FAULT	The yellow "Earth Fault" LED indicates that the system's wiring is not adequately isolated from earth ground.
DRILL	The Drill LED (yellow) indicates the Drill feature has been activated.
ACKNOWLEDGE	The Acknowledge LED's (yellow) illuminate to indicate the next action is to press the "ACK" switch.
SUPERVISORY ALARM	The common Supervisory LED (yellow) indicates a supervisory zone has activated (alarmed).
BYPASS / ENABLE	The yellow "Bypass/Enable" LED indicates that part of the system is bypassed. All points that flash at the same rate as the bypass/enable LED are bypassed.

(Indicators - continued)

CITY TIE	The City Tie LED's are red for alarm, flashing yellow for trouble and steady yellow to indicate transmission of trouble conditions.
SIGNAL CIRCUIT 1	The "Signal CIR 1" LED's are red for alarmed, yellow for trouble.
SIGNAL CIRCUIT 2	The "Signal CIR 2" LED's are red for alarmed, yellow for trouble.
RESET	The "Reset" LED (yellow) flashes when the reset switch is available for use.
TROUBLE	The "Trouble" LED (yellow) indicates the system is not in the normal condition, or a fault is detected.
TROUBLE/SIL	The yellow "Trouble/Sil" LED indicates that the system trouble has been acknowledged.
SIGNAL SILENCE	The yellow "Signal Silence" LED indicates the audible signals connected to the system are not sounding.
SIGNAL SILENCE SOUNDING	The yellow "Signal Silence" LED indicates the audible signals connected to the system are sounding.
PASSWORD REQUIRED	The yellow "Password Required" LED indicates that the user must enter a password for further action.
PASSWORD ACCEPTED	The yellow "Password Accepted" indicates the password was accepted.

Standard Operating Display - (Legend Key Designators)

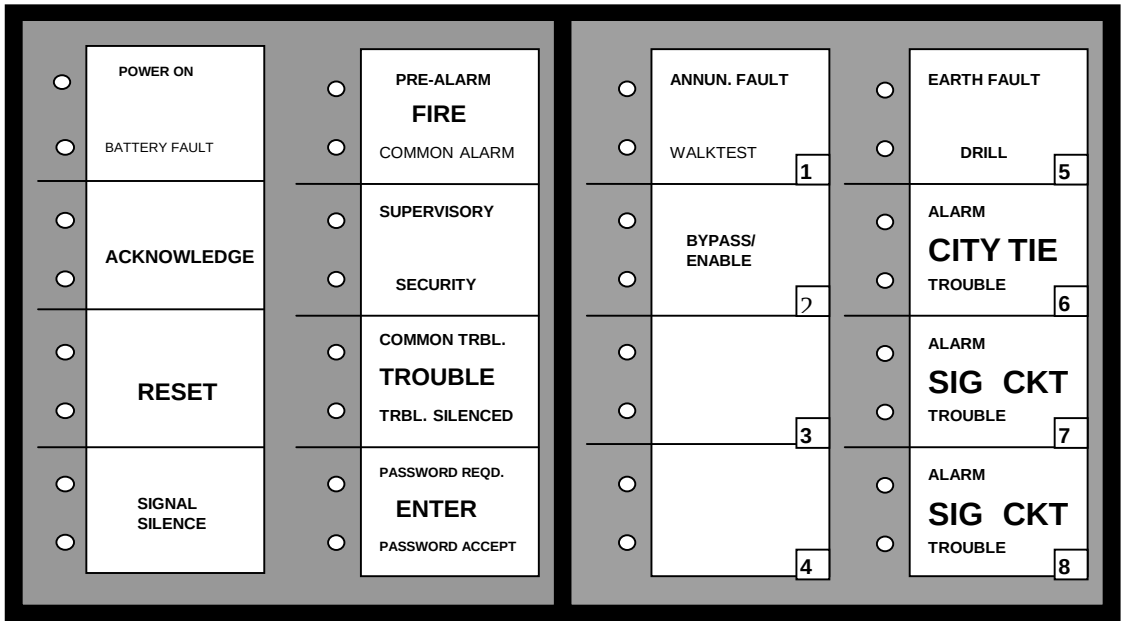


Figure P-1, Standard Operating Legend

Module Displays

Alarm Display (Standard)

The alarm display is a multi-purpose display module. The display module provides LED annunciation of alarm conditions for input circuits, signal circuits, and the city tie. The display layout is as follows; circuits 1 through 4 are fixed on the left side of the display (top to bottom). Circuits 5 through 8 are fixed on the right side of the display (top to bottom). The display is complete with eight tactile switches, eight red LED's and eight yellow LED's. The eight "point" tactile switches, governing individual circuits, are used for programming, bypassing, and WalkTest (only zone and signal circuits can utilize the WalkTest function).

The red LED indicates the circuit is;

- alarm/alarmed,
- activate/enabled.

The yellow LED (on steady) indicates;

- trouble/fault,
- off normal indication
- or service is required
- problem exists
- check for open
- short or ground

Relay Module Display

The relay module display is used as a display module. The display is configured with relays 1 through 4 are fixed on the left side of the display (top to bottom). Relays 5 through 8 are fixed on the right side of the display (top to bottom). The display is complete with eight tactile switches, eight red LED's and eight green LED's. The eight "point" tactile switches, governing individual circuits, are used for programming and bypassing the selected circuit.

The red LED (on steady) indicates;

- alarm/alarmed,
- activate/enabled

The green LED indicates;

- normal
- not energized
- feedback point normal

In the programming mode, the green LED (on steady) indicates the relay is selected. If the green LED is flashing indicates the relay is bypassed.

Building Control Display

The building control display is used as a control display module. Rotary switches provide for manual control of the relays. The switch is a three position ON/OFF/AUTO. The normal position is (AUTO) and the system controls the operation of building control circuits. The other two positions are for manual control. The (ON) position activates the ON relay and (OFF) position activates the OFF relay. The ON relays and/or OFF relays are unable to be active simultaneously on the same circuit.

The red LED (on steady) indicates;

- alarm/alarmed,
- activate/enabled.

The green LED indicates;

- normal
- not energized
- feedback point normal

In the programming mode, the green LED (on steady) indicates the relay is selected. If the green LED is flashing indicates the relay is bypassed.

System Operating Characteristics

Overview

The following sections briefly describe the Flex 620's operating characteristics under different general conditions. The system operation descriptions are intended as an overview to help familiarize users with the Flex 620. Careful review of this section of the manual will assist the user to understand many of the concepts and functions discussed later in this manual.

The section's titled *Fire Alarm Condition* and *Trouble Condition* describe the default operation of the Flex 620 in the Alarm and Trouble Modes. The *Supervisory Condition* section describe general system operation for specific functions which must be programmed into your system.

Û **Note**: The following descriptions are not intended to provide detail operating information about your system. Detailed information about your Flex 620 system should be obtained from your system installer or authorized **Gamewell** distributor.

Normal Quiescent Condition

When the system is in the normal quiescent condition (also referred as the Idle Condition) the green power on LED is illuminated, indicating the system is operating from normal AC line power. All relay and building controls programmed with feedback will have the associated LED lit indicating either an active or inactive relay position. All other LEDs are extinguished, the system internal buzzer is silent, all switches are inactive (with the exception of the "**Enter**" button), and all indicating devices are inactive.

Alarm Condition

The Flex 620 will go into an *Alarm* condition when an initiation device activates on any alarm circuit. The associated circuit's red *Alarm* LED will light in a fast flash condition indicating the circuit where the initiation device is located. The form C common alarm relay will transfer, and the city tie circuit will be energized and will turn on its red *Alarm* LED. The common system internal buzzer will activate and can be silenced by depressing the *Acknowledge* switch. All auxiliary relay circuits will activate and illuminate the red *active* LED. All building control off relays will activate and illuminate the red "Off" LED. If feedback is connected for either the relay circuits or the building control the active LED to be lit during an *Alarm* state will be the reverse of the one that is lit during normal quiescent condition.

The *Alarm* LED(s) (slow flash for first alarm and steady for subsequent alarms) and the *Alarm* relay will remain energized, until the initiating device(s) have been cleared and the momentary reset switch is depressed. If there are multiple alarms the 1st alarm LED will slow pulse after acknowledge, all others will go steady. The panel will remain in an alarm condition until all initiating devices are cleared and reset. At that time the panel will return to normal quiescent condition. Should the city tie be programmed for local energy master box trip, the city tie will be in trouble and box should be reset at this time.

Trouble Condition

A trouble condition occurs when a fault or potential problem develops within the system, system components or system wiring connections. If a fault is detected, the system trouble LED will be illuminated on the display board with the associated fault LED and the system trouble audible will be sounded. When the *Acknowledge* button is depressed, the system trouble audible is silenced and the system trouble LED remains illuminated. Should another trouble occur the panel will return the trouble audible. When the trouble condition has been corrected the panel will extinguish the common trouble LED, returning the system to the normal quiescent condition.

Supervisory Condition

A supervisory alarm condition occurs when a supervisory device activates on any supervisory alarm circuit. The associated circuit supervisory red *alarm* LED illuminates indicating the circuit where the supervisory device is located. The common system buzzer will sound, and the form C common supervisory alarm relay will transfer. Any signal, relay, city tie or building control circuit programmed to the supervisory circuit will activate. Any supervisory alarms that are cleared before the circuit is acknowledged will not latch in or need to be reset. The information will still be placed into the history log.

When the momentary Acknowledge switch is pressed, the common system buzzer will be silenced. If a subsequent supervisory alarm should occur in a different supervisory alarm circuit, the supervisory alarm LED for the new zone will illuminate, and the system trouble signal will reactivate.

Acknowledged Supervisory Alarm

The acknowledged supervisory alarm LED(s) will remain lit until the device(s) has been cleared and the momentary reset switch has been depressed. If no further supervisory alarms exist in the system the panel will return to normal quiescent condition, otherwise the panel will return to supervisory alarm condition.

Should the supervisory alarm circuit be programmed to the city tie circuit, the city tie circuit that was programmed will transmit the alarm or trouble to the central station.

Alarm Verification

Alarm verification is used to reduce the occurrence of nuisance alarm conditions (transient smoke etc.). Careful consideration should be taken before enabling the Alarm Verification feature on any zone. Programming the Alarm Verification feature may delay the reporting of an actual emergency. Only those zones that are subject to conditions that require verification should be programmed with this feature.

Individual zones within the Flex 620 system may be programmed as verification zones. When this feature is enabled, all two wire automatic devices connected to the zone are subject to the alarm verification cycle.

Any two wire automatic device reporting an alarm condition, on a zone programmed for Alarm Verification., will start the pre-set verification timer (see Programming section), and the event will be recorded in the verification history log. At the expiration of the Verification Timer, the zone is automatically reset for a period of four seconds and the devices are allowed a stabilization period. After the device stabilization period a monitor cycle begins. If an alarm condition is detected during any portion of the monitor cycle the system will activate all of the associated control functions. If no other alarm conditions are reported during this period the system resumes normal operation. A short on the circuit will initiate an alarm immediately.

And Initiating Circuit

This circuit is a two-stage automatic detection zone that will operate as an Automatic Alarm Initiating Circuit for the first two-wire smoke detector alarm reported to the panel. Should another two wire smoke detector go into alarm on the same AND circuit, a second alarm output will occur. This circuit is useful for a simple cross zone of two detectors. An example of typical application would be in an elevator lobby, where elevator capture doesn't occur until both detectors have alarmed. However, other normal alarm responses occur when the first detector activates. A short on the circuit will initiate a second stage alarm immediately.

System Operating Conditions

Default Mode

When shipped from the factory, the FlexAlarm 620 system has been initialized to a "default" configuration. In this default configuration:

1. All (input) initiating points are configured to be "Automatic Alarm" points
2. The system defaults to Security Level #2 (all features EXCEPT - programming enabled).
3. Whenever any input point(s) goes into alarm:
   - A. All output signaling circuits activate and produce a steady output.
   - B. All output relays are activated.
   - C. All building control "OFF" relays are activated.
   - D. The city-tie and common alarm relays activated.

Normal Quiescent Condition (default)

When the system is in the normal quiescent condition the green "Power On" LED is illuminated indicating the system is operating from normal AC line power. All input and output circuits are "normal" (no alarm or trouble conditions). All other LED's and alphanumeric display are extinguished, the system internal buzzer is silent. Relay modules without feedback will indicate normal green LED “ON”.

In the normal condition, the green AC "Power-On" LED will be 'ON' - steady (upper left hand corner of the bus driver module display). Only the following keys will be active:
Enter
Password

The membrane push button switches on the building control module will be inactive. The default for the rotary On/Off/Auto switch(es) is "AUTO". The Flex 620 system operating program controls the output.

Alarm Condition (default)

The Flex 620 will go into an ALARM state when any automatic alarm initiating points goes into an alarm condition. By default the following actions will occur:

1. The red "Alarm" LED on the bus driver module display will begin pulsing at an accelerated rate. The pulse rate is as a continuously repeating sequence of 1/4 second 'On' followed by 1/4 second 'Off'. The internal system buzzer will sound.

2. The red "Alarm" LED at the initiating point which reported the alarm will pulse at the accelerated rate. Alarm information is logged into the History Buffer to provide a time stamped record of the event's occurrence.

3. The red Alarm LED on the bus driver module display for "City Tie" will be continually 'On' (steady) to indicate that the line-reversal city tie relay has been energized.

4. Signaling Circuits indication will be as follows;

A. The red alarm LED's on the bus driver module display for (Signal Circuit 1 and Signal Circuit 2) will be 'On' (steady) to indicate that the signaling circuits have been energized.
B. If there are additional signal circuits in the system, each circuit's red Alarm LED will be 'On' steady to indicate that the circuit has been energized.

5. Building Control Relay Circuits (if utilized):

A. If a building control circuit's feedback point is NOT connected, the circuit's red LED will be 'On' steady to indicate that the "OFF" relay has been energized.
B. If a building control circuit's feedback point IS connected, the green LED is used to indicate normal (feedback point normal) and the RED active LED used to indicate an Alarm condition (feedback contacts shorted).

6. Relay Circuits:
A. If a relay circuit's feedback point is NOT connected, the circuit's red LED will be 'On' steady for each active relay point to indicate that the relay has been energized.
B. If the relay circuit's feedback point IS connected, the green LED is used to indicate normal (feedback point normal) and the RED active LED used to indicate an Alarm condition (feedback contacts shorted).

7. Both yellow LED's on the bus driver module display "acknowledge" switch will pulse at the accelerated rate. This guided prompt feature shows the user that the next expected action is to press "ACK", acknowledging the alarm condition.

Operating Procedures

Acknowledging the Alarm Condition

When the user presses the "ACK" switch to acknowledge an alarm condition, the following actions will occur:

1. The control panel's internal audible buzzer will (always) silence.

2. The acknowledge key's activation is logged into the History Buffer to provide a time stamped record of the event's occurrence.

3. The red Alarm LED on the first initiating point reporting an alarm will change from pulsing at the accelerated rate to a slower rate. The slower rate is defined as a continuously repeating sequence of 1/2 second 'On' followed by 1/2 second 'Off'.

- If there are subsequent initiating points in alarm, the associated red Alarm LED(s) will change from pulsing at an accelerated rate to "On' steady. All previously acknowledged point-in-alarm continue to have their red Alarm LED's 'On' steady.

4. The two yellow LED's on the bus driver module display acknowledge "ACK" switch will stop pulsing and extinguish. Any outputs programmed to return to the normal condition upon pressing the "ACK" switch will return to normal at this time.

5. Both yellow LED's on the bus driver module display for the RESET and signal silence switches will pulse at the accelerated rate. This "guided prompt" feature notifies the user that the next expected action is to *Reset* the system or silence the signals.

Signal Silence

If Signal Silence option is programmed, the yellow LED for the signal silence switch will pulse at an accelerated rate. This guided prompt feature notifies the user that it is possible, but not necessary, to press the SIGNAL SILENCE switch In the *default mode*, all signal circuits will silence.

If the user presses the SIGNAL SILENCE switch, the following actions will occur:

1. The yellow LED for the SIGNAL SILENCE switch will be pulsing,.

2. All output signal circuits which have been programmed to silence when the SIGNAL SILENCE switch is activated (which is all output circuits in the "default" case) will silence.

Resound or Return of Signals

The signal silence switch is alternating action switch. If the user subsequently presses the SIGNAL SILENCE switch again, the signal circuits will activate.

1. The lower yellow LED for the SIGNAL SILENCE switch will extinguish.
2. The yellow LED for the SIGNAL SILENCE switch will pulse.
3. All the output signal circuits which had de-activated will re-activate returning the system status to the original alarm condition.

Reset

After the initiating device(s) have been restored (i.e. cleared to normal condition), the momentary *Reset* switch should be depressed. When the user presses the RESET switch the following actions will occur:

1. All signal circuits will deactivate.
2. All output relays circuits programmed for "immediate reset" will deactivate without delay (** *System default* **). The control panel will return to the normal condition.
3. If any output relay circuits are programmed for sequential reset, the highest circuit so programmed will de-activate first. Four seconds later the next highest addressed programmed will de-activate. This pattern will continue until all of the sequentially reset relays have been de-activated.
4. Power will be removed from all initiating input points for four (4) seconds to restore any latched devices.
5. The RESET key's activation is logged into the History Buffer to provide a time stamped record of the event's occurrence.
6. The control panel will re-enter into the normal quiescent condition.

BYPASS Programming

Bypass is used to disable input and output circuits. To use the Bypass option, enter the proper Access level and press the Bypass key. The LED will flash at a fast rate indicating that you are in the Bypass circuit selection mode. Select the desired input and output circuits to be Bypassed and press the Bypass key again. The selected circuit(s) and Bypass LEDs should flash at the same rate indicating the circuits are Bypassed. To deselect circuits, press the Bypass switch (Bypass LED Flashes fast) Deselect circuits and press the Bypass switch again. Circuits deselected will extinguish.

A. Input Points Bypassed

When the Bypass is utilized it will disable an input circuit that is damaged and cannot be cleared.

B. Output Signal Circuit Bypassed

Programming any output signal circuit to Bypass will disable the circuit from activating.

C. Output Relay Circuits bypassed

Programming any output relay circuit to Bypass will disable the circuit from activating.

D. Building Control Circuits bypassed

Programming any building control circuit to Bypass will disable the circuit from activating.

E. City Tie(s) bypassed

Programming any City Tie circuit to Bypass will disable the circuit from the transmitting alarm.

WALKTEST Programming

WalkTest is designed to allow 1 man to test the fire alarm system. To WalkTest the system select the WalkTest switch (WalkTest LED flashes fast), select the circuits to be tested and press the WalkTest switch again. The circuits in WalkTest mode will flash at the same rate as the WalkTest LED. To deselect circuits, press the WalkTest switch (WalkTest LED Flashes fast) Deselect circuits and press the WalkTest switch again. Circuits deselected will extinguish.

A. Input Points Assigned To WalkTest

Any initiating circuits (Conventional Input Modules) may be selected for WalkTest. Any selected Input circuits will not activate any outputs that are not selected for WalkTest. When the user has completed selecting the circuits press the "**ENTER**" key. Then select the output circuits or press enter again.

B. Output Signal Circuits Activated During WalkTest

Any indicating circuits (Universal Signal Modules) may be selected for WalkTest. When the user has completed selecting the circuits press the "Enter" key. The selected indicating signals will annunciate any alarm with two short outputs and troubles created will sound one short output.

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Section 3

FlexAlarm 620

Installation

Flex 620 System Housing

The base Flex 620 system control panel comes complete in two different size housings. The F624 model is a four bay cabinet enclosure and the F628 is an eight bay cabinet enclosure. The F624 model holds 4 of the 600 series modules in addition to the common control, power supply and batteries. When the cabinet used as an expansion unit, the cabinet accommodates 4 additional modules, an additional power supply with a battery storage area. The F628 model holds 8 of the 600 series modules in addition to the common control, power supply and battery storage. As an expansion cabinet, it can house an additional 8 modules plus a power supply with available area for battery storage.

The housings are designed with ample field wiring space and conduit knockouts mounting options. The control panel's main power supply with transformer independently mounts to the chassis. The unit's dead front design allows all operation, programming and user interface to take place without exposure of the system modules or field wiring. Field wiring terminals which the modules plug into are mounted directly to the backbox for ease of installation and servicing. Modules can be removed for servicing without disturbing field wiring. Systems are all factory assembled.

Refer to the flowing table for applicable installation wiring diagrams. Wiring diagrams are found at the end of this manual. All field wiring must be in accordance with N.F.P.A. pamphlet #70 article #760.

Drawing #	Issue Date	Part No.	Title	Module Display P/N
D-W1142	3/29/94		Wiring, Minimum System Flex 620	
C-W847	3/29/94	30879	Bus Driver Module	
C-W845	3/28/94	30868-01	Initiating Module 4 Circuit (CIM-4)	30870-02
C-W845	3/28/94	30868	Initiating Module 8 Circuit (CIM-8)	30870-02
C-W846	3/29/94	30878-01	Indicating Module 4 Circuit (USM-4)	30870-02
C-W846	3/29/94	30878	Indicating Module 8 Circuit (USM-8)	30870-02
C-W848	3/29/94	30873	Relay Module 4 Circuit (RM-4)	30870-03
C-W848	3/29/94	30874	Relay Expander Module (RM-4E)	
C-W849	7/7/94	30871	Building Control Module (BC-4)	30870-04
C-W849	7/7/94	30872	Building Control Expander (BC-4E)	
C-W845	3/28/94	30869	Class "A" Adapter (CIM-SDA)	
C-W846	3/29/94	30940	Class "A" Adapter (USM-SZA)	
C-W861	3/31/94	30875	City Tie Extender Module (CTX-4)	30870-02
C-W856	3/28/94	30889	Main Power Supply 8 Amp (MPS-8)	
C-W857	3/28/94	30890	Aux. Power Supply 8 Amps (APS-8)	

Table I-1, Installation Wiring Diagrams

Hardware Assembly

Systems are all factory assembled. The 600 series modules will be positioned within a cabinet (reading left to right, top to bottom) in the following order. Blank dress plates will be supplied for any unused module bays.

1. CIM(Conventional Input Module - *Initiating Module*)
2. USM (Universal Signal Module - *Indicating Module*)
3. RM (Relay Module)
4. BC (Building Control Module)
5. CTX (City Tie Expander)
6. APS (Auxiliary Power Supply)

Û Note: Upon receiving control panel, remove all packaging materials. Inspect for any damage that may have occurred during shipment. Notify the manufacturer immediately if damage is detected.

Flex 620 Control Panel Mounting

Complete the following instructions to mount the Flex 620 control panel. The instructions are applicable for either the F624 or F628 housings. All control panel displays as well as the power supply are not installed and are shipped separately. Refer to drawing D-W1142, Wiring, Minimum System Flex 620.

Cabinet Dimensions

F624 (4) Bay Cabinet	
Dimensions	37.2"H x 24"W x 6"D
Battery Storage	8"H x 14.25" x 6"D
Weight	approx. 65 lbs
F628 (8) Bay Cabinet	
Dimensions	52.25"H x 24"W x 6"D
Battery Storage	8"H x 14.25" x 6"D
Weight	approx. 75 lbs

Table I-2, Cabinet Dimensions

Cabinet Mounting and Assembly Procedure

1. Unlock the front panel door. Lift up and remove.
2. Remove the mounting screws securing the three horizontal cross rails.

CAUTION !

Protect all cabinet components when mounting the control panel to the foundation. Failure to cover enclosed circuit boards from debris (metal shavings, dust etc.) may damage components.

3. Secure the cabinet to the mounting foundation. Connect all conduit and secure.
4. Connect all field wiring. Reference all installation wiring diagrams as required. (All field wiring must be in accordance with N.F.P.A. pamphlet #70 article #760.) Ensure the cabinet is clean.
5. Secure the main power supply module (MPS-8 p/n 30889) to the main chassis. Plug in the battery charger card. If applicable, connect the auxiliary power supply (APS-8) in accordance with drawings D-W1142, C-W856 and C-W857.
6. Mount the three cross rails and secure (if disassembled).
7. Mount the common control display into the alignment pins of the top cross rail. Mount the two display (for initiating, indicating, building control module etc.) into alignment pins of cross rails.
8. Connect the following interconnecting cables (ribbon and power cables). Reference drawing D-W1142 all applicable wiring diagrams shown in above Table 1.

A. Ribbon cable (p/n 71157) interconnecting the bus driver module (J11) to the common control display.

B. Ribbon cable (p/n 71158) interconnecting CPU module (ISBX1) and bus driver module (P1).

C. 4 conductor interconnecting cable (p/n 30881) from CPU module (P3) to the bus driver module (J13 - CPU power).

Note: All dual part numbers listed below refer to the correct cables for 4 and 8 bay cabinets respectively

D. Ribbon cable (p/n 71156/71161) interconnecting left display bus and the bus driver module (J6).

E. Ribbon cable (p/n 71155/71160) interconnecting left I/O module bus with the bus driver module (J5).

F. Ribbon cable (p/n 71156/71161) interconnecting right display bus and the bus driver module (J7).

G. Ribbon cable (p/n 77154/71159) interconnecting right I/O module bus with the bus driver module (J8).

H. Power cable (p/n 30883) from the power supply (J3) to bus driver module (J16).

I. Power cable (p/n 30882-01) from the power supply (J2) to bus driver module (J12).

9. Plug in battery charger card.

Module Identification and Placement

Module Bus

The Module bus interconnects the I/O modules and the display modules with the bus driver module. The left I/O modules are linked (via ribbon cable) with the bus driver module at the J5 connector (labeled I/O Left). The left display modules are linked (via ribbon cable) with the bus driver module at the J6 connector (labeled Display Left). The right I/O modules are interconnected at the J8 connector (labeled I/O Right), and the right display modules are linked at the J6 connector (labeled Display Right). Each I/O module and its associated display occupies one bay of the system cabinet.

Module Addressing

The Flex 620 system utilizes a unique addressing scheme that allows it to monitor *card locations* and supervise the *card types* within the locations. There are 40 card locations within the Flex 620 system. Upon initialization, each card location returns a *card type* code when polled by the main CPU. Card type codes are fixed codes that are pre-assigned to each type of module. When a valid *card type* response from a *card location* is detected, a data base is created for it. The specific card type codes are defined in the programming section of this manual.

Cards # 0 - 7

Card locations 0 through 7 are pre-assigned to the common control section of the system . These locations define the circuits present in the common control section (operating display signal circuits, city tie, etc.).

Cards # 8 - 39

Card locations 8 through 39 are the optional modules installed in the cabinet bays see Figure I-1. Each module (I/O module or display module) has a programmable addressing jumper which is designated as S1. This jumper must be set according to the physical placement of the module within its I/O or display bus. If the module is the first module (vertically top to bottom) within its bus, the S1 jumper should be located in position 1. If the module is the second module within the bus, its S1 jumpers should be located in position 2, and so on. This jumper placement determines the card location of the module. Each bus has four card locations pre-assigned to it. The left I/O bus has card locations 8-11 assigned to it. The left display bus has card locations 12 - 15, the right I/O bus has card locations 16 - 19 and the right display bus has card locations 20 - 23 assigned to them. This same sequence is repeated in the expander cabinet accounting for card locations 24 - 39.

Circuit # Assignments

Circuit assignments are also predefined within the system. Each cabinet bay has 8 circuits reserved for it. From Left to right, top to bottom the circuits are allocated to each bay in 8 circuit increments. Beginning with the top left bay the circuit assignments are 1 - 8. The top right bay is assigned circuits 9 - 16, and so on. The expansion cabinet's top right bay would have circuits 65 - 72 assigned to it regardless of the main cabinet's size, module placement or the card types installed. If a card does not require all 8 of the circuit assignments allocated to its bay, the lowest circuit numbers associated with that bay will be assigned to its circuits.

FLEX 620 CABINET ASSEMBLIES - (4 Bay & 8 Bay Cabinets Shown)

Common Control Section
Cards ID# 0 - 7

DISPLAY BUS	Display Module (Left)	MODULE BUS	I/O Modules (Left)		I/O Modules (Right)	MODULE BUS	Display Module (Right)	DISPLAY BUS
	12 jumper to 1		8 Ckt. 1-8 jumper to 1		16 Ckt. 9-16 jumper to 1		20 jumper to 1	
	13 jumper to 2		9 Ckt. 17-24 jumper to 2		17 Ckt. 25-32 jumper to 2		21 jumper to 2	
	14 jumper to 3		10 Ckt. 33-40 jumper to 3		18 Ckt. 41-48 jumper to 3		22 jumper to 3	
	15 jumper to 4		11 Ckt. 49-56 jumper to 4		19 Ckt. 57-64 jumper to 4		23 jumper to 4	

FLEX 620
Expansion Cabinets
w/Bus Extender

DISPLAY BUS	Display Module (Left)	MODULE BUS	I/O Modules (Left)		I/O Modules (Right)	MODULE BUS	Display Module (Right)	DISPLAY BUS
	28 jumper to 1		24 Ckt. 65-72 jumper to 1		32 Ckt. 73-80 jumper to 1		36 jumper to 1	
	29 jumper to 2		25 Ckt. 81-88 jumper to 2		33 Ckt. 89-96 jumper to 2		37 jumper to 2	
	30 jumper to 3		26 Ckt. 97-104 jumper to 3		34 Ckt. 105-112 jumper to 3		38 jumper to 3	
	31 jumper to 4		27 Ckt. 113-120 jumper to 4		35 Ckt. 121-128 jumper to 4		39 jumper to 4	

Figure 3-1, Cabinet Module Locations

Main Power Supply

The main power supply (p/n 30889) is a combination 8 amp system power supply and battery charger. It provides the system with five supplies (a 24Vdc regulated, 24Vdc unregulated, 12Vdc, 5Vdc and the battery charger). The standard battery charger is sized to maintain up to 60 AH batteries. The battery charger is designed to operate during set intervals extending the battery life of the lead acid batteries.

When installing 5 - 20 AH batteries remove R17 (both resistors) from the battery charger card (P/N 30843). When installing 21 - 40 AH batteries remove R1.

Installation Diagram

Refer to drawings C-W856 Main Power Supply and D-W1142 Wiring, Minimum System Flex 620 for installation and cable connections. When applicable, refer to C-W857 Aux. Power Supply.

Specifications

Input Voltage	120 VAC 50/60 Hz 3 amps Max. (Optional 220V AC available)
Output Voltage	24 Volt DC regulated @ 4 Amps - system power, S+ S- and A+ A-**{**XE "\"Smart Start\""**}**
	24 Volt DC filtered @ 4 Amps - for signal circuit power
	5 Volt DC regulated - supply for logic circuits
	12 Volt DC regulated @ 2 Amps
Operating Temperature	0 to +49 degrees C
Humidity	85% non-condensing

Interconnects

24 VAC	(2) secondary transformer connection
C+, C-	Connection (Red, Black) to Filter Capacitor
BO (Brown-out Output)	Brown Out - connects to auxiliary power supply BI (Brown-out Input) terminal
B+, B-	(Red, Black) connections to Battery Distribution Block
J4 connector	Not used on F620 System
J3 connector	Interconnects to J16 on bus driver module
J2 connector	Interconnects to J12 on bus driver module (5V, 12V, and 24V supervision)

Auxiliary Power Supply

Auxiliary Power supply (p/n 30890) is a 8 amp auxiliary supply, which mounts into one module expansion slot. It provides the system with 24 VDC auxiliary power full wave rectified and filtered. Two 4 amp outputs are provided for signaling or auxiliary power.

Note: *Terminals Black, Red are not power limited outputs.*

Interconnects

Card APS-8	Terminal Designation	Description
OUTPUT		
J1 connector	RED	+24VDC auxiliary power (4 amps available for signal circuits)
J1 connector	BLK	-24VDC auxiliary power (4 amps available for signal circuits)
J1 connector	WHT	Monitor point for AC/Battery fault
J2 connector	RED	+24VDC auxiliary power (4 amps available for signal circuits)
J2 connector	BLK	-24VDC auxiliary power (4 amps available for signal circuits)
J2 connector	WHT	Monitor point for AC/Battery fault
POWER	B+	Battery +24V Input
	B-	Battery -24V Input
	BO	Connect to next aux. power supply terminal “BI”
	BI	From terminal "BO” of main power supply or previous aux. power supply
	24VAC	24VAC from transformer
	24VAC	24VAC from transformer

Common Control Specifications

The specifications listed identify the interfacing modules housed in the common control section; the common control display module, the bus driver module, a relay expander card, and the CPU module.

Common Control	
Input Power	24VDC
Quiescent Current	275 mA
Alarm Current	407 mA plus Signal Circuit power plus 2mA for master box or 22 mA for reverse polarity

	Terminal #	**Terminal Designation**	**Description**
Auxiliary Output	1	A+	21 VDC, 2 Amps regulated auxiliary power*
	2	A-	21 VDC Common*
Smoke Detector Power	3	S+	21 VDC @ 125mA, resetable regulated power * (4 second reset time)
	4	S-	21 VDC common *
Security Power	5	(+)12	12VDC, 2 Amps regulated power
	6	(-)12	common for +12VDC
City Tie	7	M1	Connections for master box or line reversal option.
	8	M2	Line Reversal - 24VDC @ 15mA nominal
Signal Circuit 1			Signal CCT#1, 24V@2A, Style Y or Z
	9	1L1R	Style Z (+) Return
	10	1L1	(+) Signal Power (normal condition) **
	11	1L2	(-) Signal Power (normal condition) **
	12	1L2R	Style Z (-) Return
Signal Circuit 2			Signal CCT#2, 24V@2A, Style Y or Z
	13	2L1R	Style Z (+) Return
	14	2L1	(+) Signal Power (normal condition) **
	15	2L2	(-) Signal Power (normal condition) **
	16	2L2R	Style Z (-) Return

* Note 1**:** *Total load of regulated power including system power, A+ A- and S+S- must not exceed 4 amps.*
Note 2: *Style Y signal circuit wiring requires 3.9K EOL resistor.*

Relay Expander Card

The relay expansion module provides four programmable relay circuits with Form C (normally open) contacts. When connected to the bus driver module this module provides for *Common Alarm, Common Trouble,* and *Supervisory Alarm* relay. Each relay has a fused common rated at ten (10) amps and provides positive feedback for status indication. Each relay on the bus driver module draws 22mA when activated. In normal operation only the trouble relay is activated. The system initialization determines if the feedback loop is utilized. A feedback circuit must have less than 50 ohms in loop resistance. The function of relays (K1 - K4):

- Relay K1 Common Alarm
- Relay K2 Common Trouble (Relay is normally energized)
- Relay K3 Common Supervisory
- Relay K4 AC failure when dialer is enabled or city tie trouble when Chicago mode is enabled.

Installation Diagram

Refer to (drawing # D-W1143) for wiring the Relay Expander Card. No switch settings are required. Card location identification number is "5".

Cable Connection & Notes

J2 Connector	Interconnection (ribbon cable) to J17 connector on the bus driver module
F1 fuse	10 Amp overload protection K1 relay
F2 fuse	10 Amp overload protection K2 relay
F3 fuse	10 Amp overload protection K3 relay
F4 fuse	10 Amp overload protection K4 relay

Relay Expander Card

RELAY 1 COMMON ALARM	Terminal #	Designation	Description
	1	1 NO	Normally open Alarm contact
	2	1 NC	Normally closed Alarm contact
	3	1 C	Alarm relay common contact 10A @ 30 VDC or 220 VAC resistive, fused @ 10 amps.
	4	1 M	Alarm relay feedback point to monitor status of controlled device

RELAY 2 COMMON TROUBLE	Terminal #	Designation	* Relay is shown normally energized (normal condition)
	5	2 NC	Normally closed Trouble contact
	6	2 NO	Normally open Trouble contact
	7	2 C	Trouble relay common contact 10A @ 30 VDC or 220 VAC resistive, fused @ 10 amps.
	8	2 M	Trouble relay feedback point to monitor status of controlled device

RELAY 3 COMMON SUPERVISORY	Terminal #	Designation	Description
	9	3 NO	Normally open Supervisory contact
	10	3 NC	Normally closed Supervisory contact
	11	3 C	Supervisory relay common contact 10A @ 30 VDC or 220 VAC resistive, fused @ 10 amps.
	12	3 M	Supervisory relay feedback point to monitor status of controlled device

RELAY 4 SPARE	Terminal #	Designation	Description **Note: When the City Tie is programmed in the Chicago mode the spare relay will transfer during City Tie circuit faults.**
	13	4 NO	Normally open spare contact
	14	4 NC	Normally closed spare contact
	15	4 C	Spare relay common contact 10A @ 30 VDC or 220 VAC resistive, fused @ 10 amps.
	16	4 M	Spare relay feedback point to monitor status of controlled device

Bus Driver Module

The bus driver module contains the circuitry that interfaces with the CPU module and the system modules. The bus driver module is equipped with two Style Y or Z, limited energy signaling circuits and a city tie circuit.

The bus driver module provides the system with the following :

- Controls default alarm bus if the CPU fails
- Monitors system modules for placement
- Monitors system for ground faults
- Watchdog circuit
- Programmable Signal Circuits (1 & 2)
- Auxiliary Power Outputs (A+/A-, S+/S-, +/- 12VDC)

The internal circuitry draws about 18mA from the +24V power supply with both signal circuits terminated with a 3.9K ohm resistor (with no current draw on the city tie circuit). Each relay on the bus driver module draws 22mA when activated. In normal operation only the trouble relay is energized.

City Tie Programming

The bus driver module contains three jumpers for city tie programming (J1, J2, & J3) located in the center of the board. These three jumpers are used to select the reverse polarity or the master box option for the city tie connection.

City Tie Programming - Set jumpers as follows:	J1	J2	J3
Reverse Polarity	X		X
Master Box		X	

X = jumper installed

Installation Diagram

Refer to drawings D-W1142, Wiring Minimum System Flex 620 and C-W847, Bus Driver Module.

Cable Connections

P1 Connector	Interconnect (ribbon cable) to IBX1 on the CPU module
J5 Connector	Interconnect (ribbon cable) to Left I/O modules
J6 Connector	Interconnect (ribbon cable) to Left Display modules
J7 Connector	Interconnect (ribbon cable) to Right Display modules
J8 Connector	Interconnect (ribbon cable) to Right I/O modules
J9 Connector	Interconnect (ribbon Cable) to Cabinet Expander
J11 Connector	Interconnect (ribbon cable) to P1 on the common control display
J12 Connector	Cable connector to J2 - Power Supply
J13 Connector	Cable connector to P3 - CPU module
J16 connector	Three conductor cable to J3 power supply
J17 Connector	Interconnect (ribbon cable) to J2 on the Relay Expander Card

CPU Module

The CPU module (or micro processor module) contains the system operating firmware and non-volatile memory. It provides all the system memory and processing functions as well as providing the local/remote communications and supervision. System field programming, via a laptop PC link, is accomplished utilizing the P2 interface. The CPU module jumper settings are preset at the factory and do not require any field programming. Do not place any jumpers on the module.

The settings of DIP switch SW1 regulates the system's baud rate. The switch settings are preset at the factory; see SW1 default settings table.

The module contains a serial communications port for serial device interface (Isolated RS-232 Card). To install, the U18 IC must be removed from its socket and replaced with the interconnecting cable from the Isolated RS-232 Card.

SW1 - Default Settings		
S1	Open	Do Not Change
S2	Open	Do Not Change
S3	Always Closed	Do Not Change
S4	Open	Do Not Change
S5	Open	Do Not Change
S6	Open	Do Not Change
S7, S8 Open	9600 Baud Rate	
S7, S8 Closed	4800 Baud Rate	
S7 Open, S8 Closed	2400 Baud Rate	
S7 Closed, S8 Open	1200 Baud Rate	

DIP Switch SW1 Table

LED Indication

All four LED's "On"	Hardware Reset
D1 "On" only	*not used*
D2 "On" only	*not used*
D3 "On" only	*not used*
D4 "On" only	*not used*

Cable Connections:

IBX1 connector	Interconnection (ribbon cable) to P1 connection on the bus driver module
P2 connector	Interconnection (ribbon cable) for system field programming link, via laptop PC
P3 connector	Interconnecting cable for CPU power via J13 connector on the bus driver module
P4 (pins 3 & 4)	System Hardware Reset (momentary short) jumper pins
U18 socket	Interface socket for the 16 pin ribbon cable provided for the Isolated RS232 Card

Common Control Display

The common control display (CCD) is the main interface to the system. The display (i.e. left bus driver display and right bus driver display) provides the user with all necessary switches and annunciation points to maintain and monitor the system. Alarm, supervisory and trouble conditions are indicated by dedicated LED's and the internal sounder. LED annunciation is also provided for AC power, PreAlarm, (2) signal circuits, City Tie connection and Bypass.

Installation Diagram

Refer to (drawing # D-W1142) Wiring, F620 Minimum System. The 34 pin ribbon cable (p/n 71157) interconnects the CCD to the bus driver module (J11 connector).

Power Requirements

- 2mA operating current
- 1mA for each Red LED (ON)
- 6mA for each Yellow or Green LED (ON)

Note: When the CIM-4 and CIM-8 circuits are programmed as AND zones types use only Gamewell 70133,70134 and 70135 detectors.

System I/O Components (600 Series)

Conventional Input Module

The conventional input module (CIM) consists of up to 3 assemblies. The *I/O Circuit module*, the *Style D (Class A) adapter*, and the *Alarm Display*. To view a comprehensive listing of compatible devices with the Flex 620 control panel, refer to Figure 3-3, Compatible Initiation Devices found at the end of this section. Also refer to Figure 3-4, Compatible Auxiliary Devices for comprehensive listing of auxiliary devices.

Circuit Module

The circuit module provides four (CIM-4) or eight (CIM-8) conventional circuits. All circuits operate on the Style B (Class B) mode of operation. The *End of Line Resistor* (EOLR) required is 3.9k ohms with a maximum of 25 ohms line resistance. Programming jumper (S1) is provided on each board for setting the vertical position/address of the card (S1-1 through S1-4). The I/O circuit module uses the lower terminal block and connects via cables to the bus driver module. The conventional input module and its display require one bay of the F620 system.

Note: When the CIM-4 and CIM-8 circuits are programmed as AND zone types use only Gamewell model 70133,70134 and 70135 detectors.

Style "D" Adapter

The style D adapter card (CIM-SDA) provides 4 or 8 Style D (Class A) circuits to the I/O circuit module. When the Style D adapter is used the EOLR's are not required. The style D adapter uses the upper terminal block, and is cabled to the I/O circuit module.

Display Module

The display module provides eight (8) red circuit alarm LED's, eight (8) yellow circuit trouble LED's. Eight (8) circuit tactile switches are provided for *programming*, *Bypass* and *WalkTest* functions. The display module connects (via the display bus) to the bus driver module. The physical location of the display is set by the addressing jumper S1. Ensure addressing jumper is set according to its physical location in the cabinet and matches associated I/O module address jumper setting. Refer to Figure I-1, Cabinet Module Locations.

Conventional Input Module Terminal Description

Bottom card (30868) CIM-8	Terminal #	Designation	Description
	1	1L1	Initiating CCT # 1 (-)
	2	1L2	Initiating CCT #1 (+)
	3	2L1	Initiating CCT # 2 (-)
	4	2L2	Initiating CCT #2 (+)
	5	3L1	Initiating CCT # 3 (-)
	6	3L2	Initiating CCT #3 (+)
	7	4L1	Initiating CCT # 4 (-)
	8	4L2	Initiating CCT #4 (+)
	9	5L1	Initiating CCT # 5 (-)
	10	5L2	Initiating CCT #5 (+)
	11	6L1	Initiating CCT # 6 (-)
	12	6L2	Initiating CCT #6 (+)
	13	7L1	Initiating CCT # 7 (-)
	14	7L2	Initiating CCT #7 (+)
	15	8L1	Initiating CCT # 8 (-)
	16	8L2	Initiating CCT #8 (+)

Class "A" Adapter -Conventional Input Module - Terminal Description

Top Card (30869) (CIM-SDA)	Terminal #	Designation	Description
	1	1L1	Initiating CCT #1 (-) Class "A" Return
	2	1L2	Initiating CCT #1 (+) Class "A" Return
	3	2L1	Initiating CCT #2 (-) Class "A" Return
	4	2L2	Initiating CCT #2 (+) Class "A" Return
	5	3L1	Initiating CCT #3 (-) Class "A" Return
	6	3L2	Initiating CCT #3 (+) Class "A" Return
	7	4L1	Initiating CCT #4 (-) Class "A" Return
	8	4L2	Initiating CCT #4 (+) Class "A" Return
	9	5L1	Initiating CCT #5 (-) Class "A" Return
	10	5L2	Initiating CCT #5 (+) Class "A" Return
	11	6L1	Initiating CCT #6 (-) Class "A" Return
	12	6L2	Initiating CCT #6 (+) Class "A" Return
	13	7L1	Initiating CCT #7 (-) Class "A" Return
	14	7L2	Initiating CCT #7 (+) Class "A" Return
	15	8L1	Initiating CCT #8 (-) Class "A" Return
	16	8L2	Initiating CCT #8 (+) Class "A" Return

Universal Signal Circuit Module

The indicating signal circuit modules (USM-4, USM-8) consists of up to three (3) assemblies. The *I/O Signal Module*, *Style "Z" Adapter*, and the *Alarm Display Card*. To view a comprehensive listing of compatible devices with the Flex 620 control panel, refer to Figure I-4, Compatible Indicating Appliances found at the end of this section. Also reference to Figure I-5, Wiring Guidelines Signaling Circuit Wire Sizes.

Signal Circuit Module

The signal circuit module provides four (4) or eight (8), 2 amp DC, current limited analog signaling circuits. All circuits operate on the Style Y (Class B) mode of operation. The end of line resistor (EOLR) is 3.9K ohm. Programming jumper (S1) is provided on each board for setting the vertical position/address of the card (J1 through J4). The I/O signal module uses the lower terminal block and connects via cable to the bus driver module. Each universal signal module communicates via the Module bus and requires one bay position each.

The SIGNAL I/O board has an option that allows programming of the signal circuits to be operable under Default Alarm Mode. A DIP switch (S2) is provided on the module to select which signaling circuits operate under default alarm mode. To set the circuits that are active, close their respective switch on S2. I.E.: Switch 1 for circuit 1, Switch 2 for circuit 2, through Switch 8 for circuit 8.

Style "Z" Adapter

The Style D adapter (USM-SZA) card provides four (4) or eight (8) Style Z (Class A) circuits to the I/O signal card. When the Style Z adapter is used the EOLR's are not required. The Style Z adapter uses the upper terminal block, and is cabled to the I/O signal module.

Display Module

The alarm display module provides eight (8) red zone alarmed LED's, eight (8) yellow zone trouble LED's. Eight (8) zone tactile switches are provided for *programming*, *Bypass* and *WalkTest* functions. Card slots are furnished for zone description, comments. The display module connects (via the display bus) to the bus driver module. The physical location of the display is set by the addressing jumper S1. Ensure addressing jumper is set according to its physical location in the cabinet and matches associated I/O module address jumper setting. Refer to Figure I-1, Cabinet Module Locations.

Universal Signal Circuit Module Terminal Description

Bottom card (30878) USM-8	Terminal #	Designation	Description
	1	1AL1	Indicating CCT #1 (+) output
	2	1AL2	Indicating CCT #1 (-) output
	3	2AL1	Indicating CCT #2 (+) output
	4	2AL2	Indicating CCT #2 (-) output
	5	3AL1	Indicating CCT #3 (+) output
	6	3AL2	Indicating CCT #3 (-) output
	7	4AL1	Indicating CCT #4 (+) output
	8	4AL2	Indicating CCT #4 (-) output
	9	5AL1	Indicating CCT #5 (+) output
	10	5AL2	Indicating CCT #5 (-) output
	11	6AL1	Indicating CCT #6 (+) output
	12	6AL2	Indicating CCT #6 (-) output
	13	7AL1	Indicating CCT #7 (+) output
	14	7AL2	Indicating CCT #7 (-) output
	15	8AL1	Indicating CCT #8 (+) output
	16	8AL2	Indicating CCT #8 (-) output

Class "A" Adapter - Universal Signal Module - Terminal Description

Top Card (30940) (USM-SZA)	Terminal #	Designation	Description
	1	1AL1	Indicating CCT #1 (+) output Class "A" return
	2	1AL2	Indicating CCT #1 (-) output Class "A" return
	3	2AL1	Indicating CCT #2 (+) output Class "A" return
	4	2AL2	Indicating CCT #2 (-) output Class "A" return
	5	3AL1	Indicating CCT #3 (+) output Class "A" return
	6	3AL2	Indicating CCT #3 (-) output Class "A" return
	7	4AL1	Indicating CCT #4 (+) output Class "A" return
	8	4AL2	Indicating CCT #4 (-) output Class "A" return
	9	5AL1	Indicating CCT #5 (+) output Class "A" return
	10	5AL2	Indicating CCT #5 (-) output Class "A" return
	11	6AL1	Indicating CCT #6 (+) output Class "A" return
	12	6AL2	Indicating CCT #6 (-) output Class "A" return
	13	7AL1	Indicating CCT #7 (+) output Class "A" return
	14	7AL2	Indicating CCT #7 (-) output Class "A" return
	15	8AL1	Indicating CCT #8 (+) output Class "A" return
	16	8AL2	Indicating CCT #8 (-) output Class "A" return

Relay Module

The relay module (RM-4, RM-8) consists of three (3) assemblies. The *I/O Relay Module*, the *Relay Expander*, and the *Control Display*.

Relay Circuit Module

The relay module consists of four (4) form "C" 10 amp fused relay contacts. The module also provides four (4) feedback input points (switched negative) using 3.9K ohm resistors in parallel with an open feedback contact. If the feedback points are connected the LED's on the control display will follow the status of the feedback input point. A (-) connected directly to the feedback point will actuate the Red LED and a (-) through the 3.9k resistor will actuate the Green LED. Otherwise the LED's on the display will follow the status of the relay. Programming jumper (S1) is provided on each board for setting the vertical position/address of the card (S1-1 through S1-4). The relay module uses the lower terminal block and cables to the bus driver module. Each position on the Module bus can accommodate an expanded relay module.

Relay Expander Module

The relay expander provides the addition of four (4) supplementary form "C" 10 amp fused relay contacts. The module also provides four (4) feedback input points (switched negative) using 3.9K ohm resistors in parallel with an open feedback contact. If the feedback points are connected (when the system is initialized) the LED's on the control display will follow the status of the feedback input point. Otherwise the LED's on the display will follow the status of the relay. The relay expander module uses the upper terminal block and cables to the I/O relay module.

Relay Display Module

The control display module provides eight (8) red relay activated LED's, eight (8) green relay normal LED's. Eight (8) circuit tactile switches are provided for *programming* and *Bypass* functions. Card slots are furnished for relay descriptions and comments. The display module connects (via the display bus) to the bus driver module. The physical location of the display is set by the addressing jumper S1. Ensure addressing jumper is set according to its physical location in the cabinet and matches associated I/O module address jumper setting. Refer to Figure I-1, Cabinet Module Locations.

Relay Module

RM-4 (30873)	Terminal Number	Designator	Description
	1	1 NO	Form C normally open contact
	2	1 NC	Form C normally closed contact
	3	1 C	Form C common contact 10A @ 30VDC or 220VAC resistive, fused @ 10A.
	4	1 M	CCT #1 Relay feedback point to monitor status of controlled device
	5	2 NO	Form C normally open contact
	6	2 NC	Form C normally closed contact
	7	2 C	Form C common contact 10A @ 30VDC or 220VAC resistive, fused @ 10A.
	8	2 M	CCT #2 Relay feedback point to monitor status of controlled device
	9	3 NO	Form C normally open contact
	10	3 NC	Form C normally closed contact
	11	3 C	Form C common contact 10A @ 30VDC or 220VAC resistive, fused @ 10A.
	12	3 M	CCT #3 Relay feedback point to monitor status of controlled device
	13	4 NO	Form C normally open contact
	14	4 NC	Form C normally closed contact
	15	4 C	Form C common contact 10A @ 30VDC or 220VAC resistive, fused @ 10A.
	16	4 M	CCT #4 Relay feedback point to monitor status of controlled device

Relay Expansion Module

RM-4E (30874)	Terminal #	Designator	Description
	1	5 NO	Form C normally open contact
	2	5 NC	Form C normally closed contact
	3	5 C	Form C common contact 10A @ 30VDC or 220VAC resistive, fused @ 10A .
	4	5 M	CCT #5 Relay feedback point to monitor status of controlled device
	5	6 NO	Form C normally open contact
	6	6 NC	Form C normally closed contact
	7	6 C	Form C common contact 10A @ 30VDC or 220VAC resistive, fused @ 10A.
	8	6 M	CCT #6 Relay feedback point to monitor status of controlled device
	9	7 NO	Form C normally open contact
	10	7 NC	Form C normally closed contact
	11	7 C	Form C common contact 10A @ 30VDC or 220VAC resistive, fused @ 10A.
	12	7 M	CCT #7 Relay feedback point to monitor status of controlled device
	13	8 NO	Form C normally open contact
	14	8 NC	Form C normally closed contact
	15	8 C	Form C common contact 10A @ 30VDC or 220VAC resistive, fused @ 10A.
	16	8 M	CCT #8 Relay feedback point to monitor status of controlled device

Building Control Module

The building control module (BC) consists of three (3) assemblies. The *I/O Building Control Module*, the *Building Control Expander*, and the *Building Control Display/Switch Module.*

Building Control Circuit Module

The building control module consists of eight (8) form A/B (jumper programmable) 10 amp relays set up in four (4) "ON" relays and four (4) "OFF" relays, with a 10 amp fused common. Each relay (ON and OFF) is programmable for N/O or N/C contacts by removing the A or B jumper. Remove the A jumper for N/C contacts or the B jumper for N/O contacts. The module also provides four (4) feedback input points (switched negative) using 3.9K ohm resistors in parallel with an open feedback contact. A (-) connected directly to the feedback point will actuate the Red LED and a (-) through the 3.9k resistor will actuate the Green LED. Should the feedback points be connected the LED's on the building control display will follow the status of the feedback input point. Otherwise the LED's on the display will follow the status of the active relay. Programming jumper (S1) is provided on each board for setting the vertical position/address of the card (S1-1 through S1-4). The building control module uses the lower terminal block and cables to the bus driver module. The building control module uses one slot in the Module bus.

Building Control Expander

The building control expander module provides an additional eight (8) form A/B (jumper programmable) 10 amp relays set up in four (4) "ON" relays and four (4) "OFF" relays, with a 10 amp fused common. The module functions identically as the building control module - providing four (4) feedback input points (switched negative) using 3.9k ohm resistors in parallel with an open feedback contact. The expander module mounts to the building control module (via standoffs) and uses the upper terminal block and cables to the I/O building control module.

Building Control Display/Switch Module

The control display module provides eight (8) red "OFF" relay activated LED's, eight (8) green "ON" relay activated LED's. Eight (8) three (3) position (AUTO,ON,OFF) rotary switches are provided for manual control of the I/O building control module and building control expander. Eight (8) circuit tactile switches are provided for *programming* and *Bypass* functions. Card slots are provided for building control description, comments. The building control display module mounts to the display door and is cabled to the bus driver module. The physical location of the display is set by the addressing jumper S1. Ensure addressing jumper is set according to its physical location in the cabinet and matches associated I/O module address jumper setting. Refer to Figure I-1, Cabinet Module Locations.

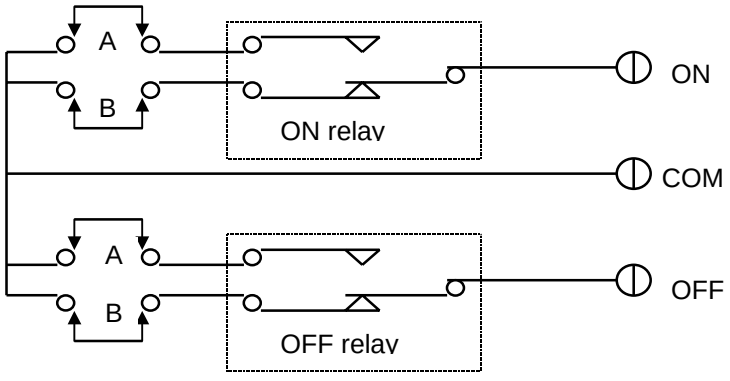

Figure 3.2 Typical building control circuit relay configuration

Building Control Module

BC-4 (30871)	Terminal #	Designation	Description
	1	1 ON	CCT 1 relay N/O contact - remove the W2 B Jumper
	2	1 COM	Common for CCT1 relays (terminals 1 & 3)
	3	1 OFF	CCT 1 relay N/C contact - remove the W3 A Jumper
	4	1 MON	Monitor point for CCT1 (requires 3.9K resistor to (-) when used)
	5	2 ON	CCT 2 relay N/O contact - remove the W6 B Jumper
	6	2 COM	Common for CCT2 relays (terminals 5 & 7)
	7	2 OFF	CCT 2 relay N/C contact - remove the W7 A Jumper
	8	2 MON	Monitor point for CCT2 (requires 3.9K resistor to (-) when used)
	9	3 ON	CCT 3 relay N/O contact - remove the W10 B Jumper
	10	3 COM	Common for CCT 3 relays (terminals 9 & 11)
	11	3 OFF	CCT 3 relay N/C contact - remove the W11 A Jumper
	12	3 MON	Monitor point for CCT 3 (requires 3.9K resistor to (-) when used)
	13	4 ON	CCT 4 relay N/O contact - remove the W14 B Jumper
	14	4 COM	Common for CCT 4 relays (terminals 13 & 15)
	15	4 OFF	CCT 4 relay N/C contact - remove the W15 A Jumper
	16	4 MON	Monitor point for CCT 4 (use 3.9K to (-) when req.)

BC-4E (30872)	Terminal #	Designation	Description
	1	5 ON	CCT 5 relay N/O contact - remove the W2 B Jumper
	2	5 COM	Common for CCT 5 relays (terminals 1 & 3)
	3	5 OFF	CCT 5 relay N/C contact - remove the W3 A Jumper
	4	5 MON	Monitor point for CCT 5 (requires 3.9K resistor to (-) when used)
	5	6 ON	CCT 6 relay N/O contact - remove the W6 B Jumper
	6	6 COM	Common for CCT6 relays (terminals 5 & 7)
	7	6 OFF	CCT 6 relay N/C contact - remove the W7 A Jumper
	8	6 MON	Monitor point for CCT6 (requires 3.9K resistor to (-) when used)
	9	7 ON	CCT 7 relay N/O contact - remove the W10 B Jumper
	10	7 COM	Common for CCT 7 relays (terminals 9 & 11)
	11	7 OFF	CCT 7 relay N/C contact - remove the W11 A Jumper
	12	7 MON	Monitor point for CCT 7 (requires 3.9K resistor to (-) when used)
	13	8 ON	CCT 8 relay N/O contact - remove the W14 B Jumper
	14	8 COM	Common for CCT 8 relays (terminals 13 & 15)
	15	8 OFF	CCT 8 relay N/C contact - remove the W15 A Jumper
	16	8 MON	Monitor point for CCT 8 (use 3.9K to (-) when req.)

City Tie Extender Module

The city tie extender module (CTX) consists of two (2) assemblies. These include the *I/O City Tie Extender Module* and *Alarm Display Module*.

City Tie Extender Circuit Module

The I/O city tie extender module provides for four (4) additional reverse polarity city tie circuits. These circuits can be programmed for multiple buildings being controlled by one panel, multiple entrances, or different types of alarms including supervisory or building notification. Each circuit transmits trouble for the zones associated to its circuit. Programming jumper (S1) is provided on each board for setting the vertical position/address of the card (S1-1 through S1-4). The city tie extender module uses the lower terminal block and cables to the bus driver module. This module uses one slot in the Module bus.

Display Module

The display module provides eight (8) red circuit alarm LED's, eight (8) yellow circuit trouble LED's. Eight (8) circuit tactile switches are provided for *programming* and *Bypass* functions. A card slot is furnished for circuit description and comments. The display module mounts to the display door and is cabled to the bus driver module. The physical location of the display is set by the addressing jumper S1. Ensure addressing jumper is set according to its physical location in the cabinet and matches associated I/O module address jumper setting. Refer to Figure I-1, Cabinet Module Locations.

City Tie Expander Module

4 Circuits (30875) CTX-4	Terminal #	Designation	Description
	1	1M1	Circuit 1 (+) line connection
	2	1M2	Circuit 1 (-) line connection
	3	2M1	Circuit 2 (+) line connection
	4	2M2	Circuit 2 (-) line connection
	5	3M1	Circuit 3 (+) line connection
	6	3M2	Circuit 3 (-) line connection
	7	4M1	Circuit 4 (+) line connection
	8	4M2	Circuit 4 (-) line connection
	9	5M1	not used
	10	5M2	not used
	11	6M1	not used
	12	6M2	not used
	13	7M1	not used
	14	7M2	not used
	15	8M1	not used
	16	8M2	not used

Initial System Startup

CAUTION !

Connect primary AC power to the system before connecting the battery/standby power source.

1. Connect primary AC supply (120VAC 50/60 Hz 3 amps).
2. Activate main power. Press the "Power On" tactile switch.
3. The "Power ON" green LED starts to pulse (15 second duration).
4. "Battery Fault" LED flashes. Connect the battery positive and negative leads.
5. At the completion of the "Power On" process, each conventional zone circuit LED will come 'On' for a four second period confirming circuit is reset during the power up sequence.
6. System is at idle, the normal quiescent condition. The "Power On" is illuminated.

SmartStart™

1. Activate main power. The "Power ON" green LED starts to pulse (15 second duration). During this time press the "Power On" tactile switch.
2. System will commence an initialization process (i.e. SmartStart™). The "Enter" key will begin to flash. Press "Enter" again confirming the SmartStart™ initialization.

Û **Note**: If the "Enter" key is not pressed, the system will not initialize.

3. At the completion of the initialization process, each conventional zone circuit LED will come 'On' for a four second period confirming circuit is reset during the power up sequence.
4. System is initialized. "Power ON" green LED illuminated.

FLEX 600 CONTROL PANEL
COMPATIBLE SMOKE DETECTORS & BASES

PART#/IDENTIFIER	DEVICE	DESCRIPTION	DETECTOR	QTY/CCT
30780-01/30780-01	Z77B	STANDARD BASE	F7, D9, R7, RT7	25
30780-02/30780-02	Z77D	STANDARD BASE W/ REMOTE	F7, D9, R7, RT7	25
30780-03/30780-03	Z77R	STANDARD BASE W/ REMOTE & RELAY	F7, D9, R7, RT7	25
30780-04/30780-04	Z77F	STANDARD BASE W/FLASH STANDBY, REMOTE	F7, D9, R7, RT7	25
30780-05/30780-05	Z77FR	STANDARD BASE W/FLASH STANDBY, REMOTE & RELAY	F7, D9, R7 RT7	25
71036	SERIES 60 - 4“ DETECTOR BASE		71033, 71034, 71035	25
71086	SERIES 60 - 6“ DETECTOR BASE		71033, 71034, 71035	25
70891 / (HB-4)	STANDARD BASE (SMOKE)		70884,70885 70886/(HD-3)	25
70892 /(HB-13)	STANDARD BASE W/RELAY (SMOKE)		70884,70885 70886/(HD-3)	25
70893	STANDARD BASE (HEAT DETECTOR)		70887,70888, 70889,70890	MAX AL. CURRENT 100 MA
70894 /(HB-18)	STANDARD BASE W/LATCHING LED (HEAT DETECTOR)		70887,70888, 70889,70890	MAX AL. CURRENT 100 MA
69121/69124	LINEAR BEAM SMOKE DETECTOR			1 SET

Figure 3-3, Compatible Smoke Detectors

FLEX 600 CONTROL PANEL
COMPATIBLE AUXILIARY DEVICES

PART NUMBER	DESCRIPTION
30954	4 WIRE IONIZATION DUCT DETECTOR, APOLLO
30955	4 WIRE, PHOTOELECTRIC DUCT DETECTOR< APOLLO
30069	END OF LINE SUPERVISORY RELAY
30844	4 WIRE, DUCT SMOKE DETECTOR
30845	4 WIRE, DUCT SMOKE DETECTOR

Figure 3-4, Compatible Auxiliary Devices

FLEX 600 CONTROL PANEL
COMPATIBLE INITIATING DEVICES FOR “AND“ ZONES

71036	SERIES 60 - 4“ DETECTOR BASE	71033, 71034, 71035	25
71086	SERIES 60 - 6“ DETECTOR BASE	71033, 71034, 71035	25

FLEX 600 COMPATIBLE INDICATING APPLIANCES			
PART NUMBER	**MODEL NUMBER**	**DESCRIPTION**	**CURRENT**
70874	MB-G6-24-R	MOTORBELL 6"	.030
70875	MB-G10-24-R	MOTORBELL 10"	.030
71557	RSP-2430-VFR	30 Cd Strobe Adapter Red	.124
71631	SRP-2475-VFR	75 Cd Strobe Adapter Red, Sync.	.215
71558	RSP-2475-VFR	75 Cd Strobe Adapter Red	.200
71561	SRP-24110-HFR	110 Cd Strobe Adapter Red	.250
71586	CSX10-24-DC-R	10” SS Exp indoor Red..	.500
71587	CSXG10-24DC-R	10” SS Exp outdoor Red..	.500
71581	CH-BF1-R	Chime SS/Vib Red	.020
71585	CH-CF1-W	Chime SS/Vib ceiling white	.020
68460-01	CH-DF1-R	Chime Vibrating	.020
71583	CH-CF1-LS-24-VFR	Chime SS/Vib Red	.100
71300	CH-DF1-LS-24-VFR	Chime SS/Vib Red	.100
71301	CH-DF1-LSM-24-VFR	Chime SS/Vib Red	.135
71584	CH-CF1-MS-24-CFW	Chime SS/Vib White	.155
71302	CH-DF1-MS-24-VFR	Chime SS/Vib Red	.155
71582	CH-CF1-IS-24-CFW	Chime SS/Vib White	.245
71303	CH-DF1-IS-24-VFR	Chime SS/Vib Red	.245
71548	SM-12/24-R	Single Circuit Sync Module	.025
71549	DSM-12/24-R	Dual or Class A Sync Module	.038
70871	MIZ-24-R	Mini Horn Red	.017
70873	MIZ-24-W	Mini Horn White	.017
71287	MIZ-24-LS-VFR	Mini Horn/Strobe 15 Cd	.092
71288	MIZ-24-LSM-VFR	Mini Horn/Strobe 15/75 Cd	.127
71289	MIZ-24-MS-VFR	Mini Horn/Strobe 30 Cd	.147
71290	MIZ-24-IS-VFR	Mini Horn/Strobe 75 Cd	.237
71138	MT-12/24-R	Multi-tone Horn Red	See DS851
71573	AMT-12/24-R	Multi-tone Horn Red 3 Input	See DS851
71614	MT4-12/24-R	Multi-tone Horn Red Surface	See DS851
71292	MT-24-LS-VFR	Multi-tone Horn/Strobe Red 15 Cd	See DS851
71574	AMT-24-LS-VFR	Multi-tone Horn/Strobe Red 15 Cd 3 input	See DS851
71295	MT-24-IS-VFR	Multi-tone Horn/Strobe Red 75 Cd	See DS851
71575	AMT-24-IS-VFR	Multi-tone Horn/Strobe Red 75 Cd 3 input	See DS851
71293	MT-24-LSM-VFR	Multi-tone Horn/Strobe Red 15/75 Cd	See DS851
71576	AMT-24-LSM-VFR	Multi-tone Horn/Strobe Red 15/75 Cd 3 input	See DS851
71294	MT-24-MS-VFR	Multi-tone Horn/Strobe Red 30 Cd	See DS851

FLEX 600 COMPATIBLE INDICATING APPLIANCES (Cont.)			
PART NUMBER	**MODEL NUMBER**	**DESCRIPTION**	**CURRENT**
71140	MT-24-WM-VFR	Multi-tone Horn/Strobe Red 110 Cd	See DS851
71426	MT-24-SL-VFR	Multi-tone Horn/Strobe Red 15 Cd Sync	See DS851
71427	MT-24-SLM-VFR	Multi-tone Horn/Strobe Red 15/75 Cd Sync	See DS851
71550	RS-2415-VFR	Strobe 15 Cd	.074
71553	RS-241575-VFR	Strobe 15/75 Cd	.100
71552	SRP-2415-VFR	Strobe 15 Cd Plate mount Sync	.096
71551	SR-2415-VFR	Strobe 15 Cd Sync	.096
71569	RSP-241575-VFR	Strobe 15/75 Cd Plate Mount	.100
71554	SRP-241575-VFR	Strobe 15/75 Cd Plate Mount Sync	.138
71555	SR-241575-VFR	Strobe 15/75 Cd Sync	.138
71557	RSP-2430-VFR	Strobe 30 Cd Plate mount	.124
71556	RS-2430-VFR	Strobe 30 Cd	.124
71558	RSP-2475-VFR	Strobe 75 Cd Plate mount	.200
71559	RS-2475-VFR	Strobe 75 Cd	.200
71616	SR-2475-VFR	Strobe 75 Cd Sync	.200
71560	RS-24110-HFR	Strobe 110 Cd	.200
71561	SRP-24110-HFR	Strobe 110 Cd Plate mount Sync	.200
71562	SR-24110-HFR	Strobe 110 Cd Sync	.200
71543	AS-2415-VFR	Horn/Strobe 15 Cd	.093
71544	AS-241575-VFR	Horn/Strobe 15/75 Cd	.121
71545	AS-2430-VFR	Horn/Strobe 30 Cd	.126
71546	AS-2475-VFR	Horn/Strobe 75 Cd	.239
71547	AS-24110-HFR	Horn/Strobe 110 Cd	.269

Table I-2

WIRING GUIDELINES
SIGNALLING CIRCUIT WIRE SIZES 24 VOLT DC PARALLEL

WIRE RESISTANCE		PAIR IN DISTANCE TO LAST DEVICE (MAXIMUM LINE LOSS 10%)			
AWG	OHM/1000	0.5amp	1.0amp	1.5amp	2.0amp
18	6.5	400'	200'	130'	100'
16	4.1	620'	300'	210'	160'
14	2.6	1000'	500'	330'	250'
12	1.6	1600'	800'	520'	400'
10	1.0	2500'	1250'	840'	620'

CIRCUIT CHARACTERISTICS			
CIRCUIT	EOL	LINE RESISTANCE	CABLE TYPE
INITIATION	3.9 K ohm 1/2 watt	50 ohm	strait lay - 18 ga
SIGNAL	3.9 K ohm 1/2 watt	4.8 ohm @0.5a	strait lay - 14 ga
		1.2 ohm @2.0a	strait lay - 12 ga

Figure I-5, Wiring Guidelines
Signaling Circuit Wire Sizes

Section 4

FlexAlarm 620

Programming

Programming Overview - FlexAlarm 620

Û **NOTE**: During all levels of programming, the system trouble relay will generate a trouble condition, indicating an 'off normal' condition. Notify all key personnel, monitoring companies and municipalities before proceeding.

Programming Overview

Programming the system configuration is accomplished through the Common Control Display (CCD) tactile switches. How the program is configured defines how the system operates and is application specific. Every programming operation has been designed to follow the same basic pattern of steps. Once one programming operation is completed, the user can apply that knowledge to all of the other programmable features.

Functional Key Switch Labels

The common control legend strips (identifying each of the display's key function designators with associated LED's) have additional programming text printed on the reverse side. The programming text identifies the function of the tactile key switches while in the programming mode. Subsequent to entering the programming mode, remove each of the 4 legend strips (pulled out from the top of the column) "reverse" each legend strip so that the back side is visible. Reinsert each strip back into its original "pocket" on the CCD. The CCD's keys are now labeled for programming mode.

Selecting Options

1. Each labeled key function switch on the CCD has an 'Upper' and a 'Lower' LED associated with it. To choose a particular option, press the tactile key switch which is associated with the LED.
    A. When the key is pressed the 1st time, the 'Upper' LED turns "On".
    B. When the key is pressed the 2nd time, the 'Upper' LED turns "Off", and the 'Lower' LED turns "on".
2. Each time the key switch is pressed the LED will toggle back and forth.
3. If a completely different key is pressed , the LED which is currently "On" will turn "Off", and the 'Upper' LED on the new key will turn "On".
4. When the desired programming option has been selected, press the "**ENTER**" key to select the choice.

Point Selection

Depending on the option selected, various other LED's on the input point cards, output signal cards, output relay cards and/or building control cards will turn on to indicate the inputs and outputs that are active.

A. To add new points, press the key associated with the point until its corresponding LED turns "On".
B. To remove a point, press the key associated with the point until its corresponding LED turns "Off".
C. When all changes to a particular option are completed, press the "**ENTER**" key to save your changes.
D. To program a different option, repeat the process from above steps # 1 through 4. If all programming changes are completed, press the "ENTER" key twice to exit PROGRAM mode and return to IDLE mode.

Û **NOTE**: Reverse the display legend strips back to the "Standard Operating" labeling side after exiting the programming mode.

Programming Options

The following options can be programmed from the F620 control panel keypad.

Input Circuit Types

A. Fire Alarm Control Panel (FACP) Initiating Points

1. AUTOMATIC

   The Automatic Fire Alarm Initiating Circuit is the (*System Default*). It operates as a standard fire alarm circuit, receiving alarm signals from contact closures and two wire detectors. Devices configured as automatic will activate 1st level alarm functions.

2. VERIFIED

   The Verified Automatic Fire Alarm Initiating Circuit works like an Automatic Alarm Initiating Circuit when the panel receives an alarm signal from a contact closure devices. When a (two-wire) detector initiates an alarm the panel will recognize the alarm, reset the circuit and the detector, and not take any further action while it waits for a second alarm. If, within a specified period of time, a second detector alarms or a contact device closes on the same circuit, the Alarm will be activated. If no second alarm occurs within the specified time limit the first alarm is ignored.

3. AND

   The AND Fire Initiating Circuit will operate as an Automatic Alarm Initiating Circuit for the first (two-wire) smoke detector alarm reported to the panel. Should another two wire smoke detector go into alarm on the same AND circuit, a second alarm output will occur. This circuit is useful for a simple cross zone of two or more detectors. An example of a typical application would be in an elevator lobby where elevator capture doesn't occur until both detectors have alarmed. However, other normal alarm responses occur when the first detector activates. A short on the circuit will initiate a second stage alarm immediately.

4. SUPERVISORY

   The Supervisory Alarm Circuit provides a sprinkler supervision type circuit. When acknowledged the circuit will lock in and will need to be reset. When the Supervisory Circuit is not acknowledged, and the device causing the Supervisory alarm clears itself or is cleared without being acknowledged, it will automatically return to normal.

B. Remote FACP switches

1. ACKNOWLEDGE

   Remote Acknowledge switch causes the panel to 'acknowledge' when activated from a remote location.

2. RESET

   When in alarm, the Reset switch will 'reset' the system from a remote location.

Input Circuit Type (continued)

3. SIGNAL SILENCE

When in alarm the Signal Silence Circuit will Signal Silence the System from a remote location. Each new alarm on the Signal Silence Circuit will switch the system between de-active and active.

4. DRILL

When activated the Drill Circuit will Drill the system from a remote location.

Output Signal Circuit Type

A. STEADY DC

Steady DC type signal circuit is the System Default. When Activated, any signal circuits programmed for Steady DC will provide a 24VDC uninterrupted output.

B. MARCHTIME 60

Marchtime 60 circuits, when activated, will provide a 24 VDC output on the selected circuits at a 60 pulses per minute rate with a duration of 50% on and 50% off cycle.

C. MARCHTIME 120

Marchtime 120 circuits, when activated, will provide a 24 VDC output on the selected circuits at a 120 pulses per minute rate with a duration of 50% on and 50% off cycle.

D. TEMPORAL

Temporal signaling circuits, when activated, will provide a 24 VDC output in the pattern of a Morse Code "U", this pattern is active for .25 seconds, off for .25 seconds, active for .25 seconds, off for .25 seconds, active for .75 seconds, off for .75 seconds. The pattern repeats until the circuit is returned to Idle.

E. CALIFORNIA UNIFORM FIRE CODE

California Uniform Fire Code Signal circuits, when activated, will provide a 24 VDC output in Marchtime 120 format for 10 seconds on and 5 seconds off. The pattern repeats until the circuit is returned to Idle.

F. CODED

Zone coded signaling circuits when activated will produce a 24VDC pulsed numeric code to be transmitted up to 6 times or as programmed. A separate code is usually transmitted for each input zone.

Signal Circuit Restore

A. Restore On - ACKNOWLEDGE

Any active output point programmed to restore on ACKNOWLEDGE will return to Idle whenever the Acknowledge switch is pressed. All output points that were returned to Idle will reactivate upon a subsequent alarm.

B Restore On - SIGNAL SILENCE (** System Default **)

Any active output point programmed to restore on Signal Silence will be silenced by the activation of the Signal Silence Switch and will return to Idle. The Signal Silence Switch operates as a toggle switch. All outputs that were returned to idle will reactivate upon a subsequent alarm or by depressing the Signal Silence Switch again. Both Signal Circuits and Relay Outputs can be programmed to restore on Signal Silence.

C. Restore On - RESET

Serves as System Default. Any active output point not programmed or de-programmed from Restore on Acknowledge, or Restore on Signal Silence will cause the output point to restore on RESET.

Û **NOTE**: There are a few restrictions to be aware of regarding output signal circuits:

1. The two signal circuits on the Bus Driver Module (BDM) can be used for steady or pulsing DC (marchtime, temporal, etc.) and programmed separately.
2. Signal Circuit types being selected on a USM Module are always allocated in circuit pairs (an upper & lower pair). Each signal circuit has its own individual relay to control when it is activated or deactivated, but each pair of signal circuits shares a single driver transistor which is used to generate the selected type of signal output for both signal circuits.

Alarm Levels

There are three levels of alarm that can be assigned to each type of output circuit, PreAlarm, 1st Alarm or 2nd Alarm. These levels designate at which level of alarm an output circuit will activate. Output circuits assigned to 1st alarm level (system default) will activate when a first alarm is detected on its assigned input circuit(s), provided the input circuit is assigned to activate that output circuit in the CBE table. Circuits designated as PreAlarm will activate when a PreAlarm level is detected on an input circuit. Circuits requiring activation on 2nd alarm (AND zones) can be assigned to alarm level 2. An AND zone assigned to activate both 1st and 2nd alarm level output circuits will activate only those outputs assigned to level 1 during a first alarm condition. When a second alarm is detected both first and second alarm outputs will activate. A shorting device will activate both first and second alarm outputs.

Special Signal Circuit Functions

A. SIGNAL SILENCE INHIBIT

Silence Inhibit will prevent the operation of the Signal Silence function for a period of one (1) minute from the time the first point goes into alarm. If the panel is programmed for Silence Inhibit any activation of the Signal Silence Switch will be ignored, allowing the output signal circuits to be active, until the one (1) minute delay has elapsed. The one (1) minute timer can be adjusted via the laptop programming.

B. AUTO SILENCE - Automatic Signal Cutoff

If an output signaling circuit is programmed for Auto Silence it will automatically silence the signal circuits ten (10) minutes from the time the first point goes into alarm. If, subsequent to its silencing, a new alarm occurs, the output signaling circuit will resound and the auto silence time-out feature will reset its timer to silence its associated outputs at ten (10) minutes past the last alarm.

C. Drillable

Any signal circuit programmed as drillable will activate when the drill feature is activated.

Restoring Outputs

A. Restore On - ACKNOWLEDGE

Any active output point programmed to restore on ACKNOWLEDGE will return to Idle whenever the Acknowledge switch is Depressed. All output points that were returned to Idle will reactivate upon a subsequent alarm.

B. Restore On - RESET (** System Default **)

Serves as System Default. Any active output point not programmed or de-programmed from Restore on Acknowledge, or Restore on Signal Silence will cause the output point to restore on RESET.

C. SEQUENTIAL RESTORE - Upon System Reset

The sequential restore only applies to relay outputs. Any active *Output Control Relay* or *Building Control Relay* programmed for Sequential Restore will only restore on Reset, not on Acknowledge. Selected relays will return to Idle 4 seconds apart, starting with the highest output point and ending at the lowest point set. The restore sequence is determined by the actual wired location of the relay on the board and is not programmable.

Control By Event

Control-by-Event programming allows the user to create a matrix whereby selected groups of input circuits are logically arranged to select output circuit groups. The SmartStart™ feature automatically assigns all input circuit groups to select all output circuit groups.

Input Zone (CBE)

A. Input circuit assigned to a " Group"

Control-By-Event programming allows the user to create a matrix whereby selected conventional input circuits (i.e. zones) can be logically arranged to select any combination of output groups (i.e. Signal, Relay and Building Control Circuits).

B. Signal Circuit Activation

Any combination of signal circuit(s) may be assigned to activate from an input group. When an alarm is received from an input group, the output signal circuit(s) are activated (provided the circuits are assigned to the corresponding alarm level). System Default activates ALL output signal circuits during a level 1 alarm.

C. Relay Circuits Activation

Any combination of relay circuit(s) may be assigned to activate from an input group. When any member of the input group goes into alarm condition, the output relay circuit is activated (provided the circuits are assigned to the corresponding alarm level). System Default activates ALL output relays during a level 1 alarm.

D Building Control Circuits "OFF" or "ON" relays

Any output building control circuit can be assigned to a logical input point group. When any member of the logical input group goes into alarm condition, the system may be programmed to select either the ON or OFF relay. System Default activates ALL ”OFF” relays during a level 1 alarm.

E. City Tie Expander Circuits Activated

City Tie expander circuits can be programmed to reverse polarity for alarm and transmit trouble when any member of the assigned logical input point group goes into an alarm or fault condition. (*System Default disables all Expander Circuits*)

Access Levels

Û **Note**: System configuration (i.e. SmartStart™) defaults to level 2 password access. When the password access level is changed, the system defaults to that level (except programming) including after power failure occurs.

Access Levels:

The system has four levels of access. The levels are defined as follows:

Primary - LEVEL 1:
User has access only to the [ACK] acknowledge function. The default password for level 1 is 1111.

Operating - LEVEL 2:
User has access to all Level 1 functions plus the [Reset], [Signal Silence] and [Drill] functions. The default password for level 2 is 2222.

Maintenance - LEVEL 3:
User has access to all Level 1 and Level 2 functions plus the [Bypass] and [WalkTest] functions. The default password for level 3 is 3333.

Service - LEVEL 4:
Access to programming. Programming can only be completed using the level 4 password entry. Default password for level 4 is 4444. When this mode is entered the key switches are redefined. Reversing the front display strips will reveal the programming display functions. After a period of approximately 10 minutes of no Key action is detected, the system will automatically come out of programming mode and return to the last access level used.

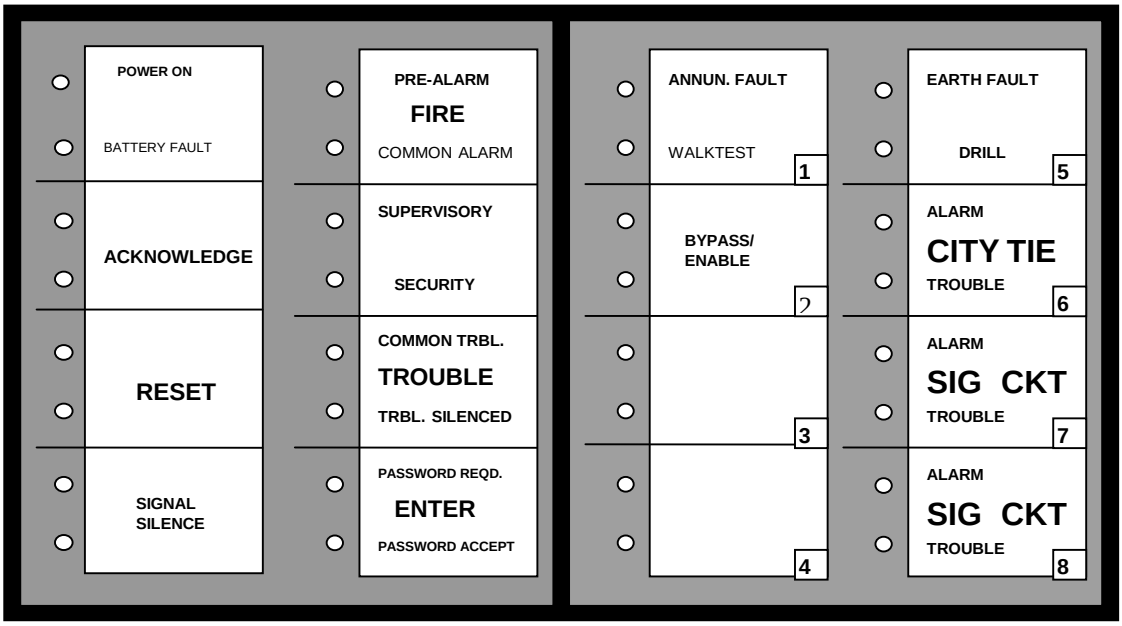

Figure 4.1 Common Control Display - Operating Mode

Password Entry

Entering Passwords

1. With the system in the IDLE mode, press the "ENTER" key on the CCD.

2. The 8 lower LEDs on the right display will flash to indicate that the digits 1-8 are active for entering the password.

3. Enter the password by depressing the associated numerical key. The upper LED will blink indicating that the key has been pressed. Press "**ENTER**" again to signify the end of the password

A. **Password Accepted** = The password accepted LED will flash twice when a new password is entered. This indicates that a new access level has been accepted.

B. **Password Required** = If a function is attempted from a level that does not allow access to that function (i.e. Bypass from level 2), the password required LED will flash indicating that a higher password level must be accessed to perform that function. This also occurs when a wrong password is entered.

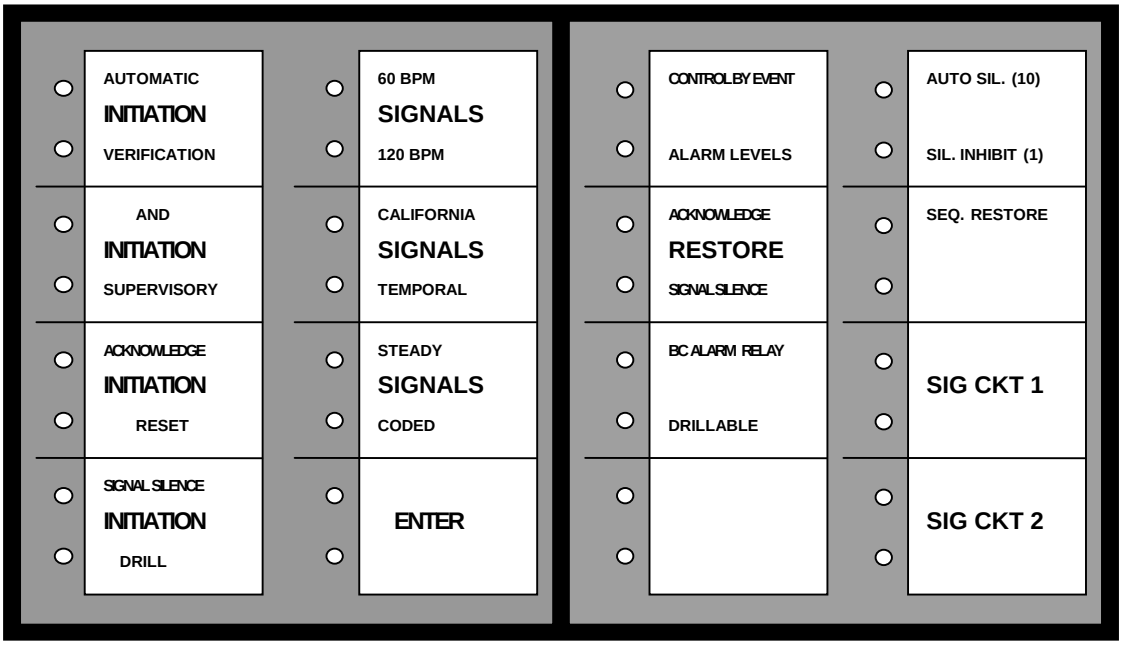

Figure 4.2 Common Control Display - Programming Mode

Entering Programming Mode

Press the ENTER key. Using the right hand CCD display keys, select the programming password and press the ENTER key again. The Password Required and the Password Accepted LEDs should be illuminated steady. This indicates that the system is in the Programming Mode, ready to accept changes. Reverse the display strips.

Selecting Programming Options

1. Each label key function switch on the CCD has an 'Upper' and a 'Lower' LED associated with it. To choose a particular option press the tactile key which is associated with the LED.

A. When the key is pressed the 1st time, the 'Upper' LED turns "On" . Both the password required and password accepted LEDs will extinguish.

B. When the key is pressed the 2nd time, the 'Upper' LED turns "Off", and the 'Lower' LED turns "On".

2. Each time the key is pressed the LED will toggle back and forth.

3. If a completely different key is pressed , the LED which is currently "On" will turn "Off", and the 'Upper' LED on the new key will turn "On".

4. When the desired programming option has been selected, press the "**ENTER**" key. The Password Required and Password Accepted LEDs will flash twice indicating that your selection has been accepted.

> **Note**: If a key that is not available for selection during any phase of programming is pressed, the sonarlert will beep indicating that the selection is not valid.

Circuit Selection

Depending on the option selected, various other LEDs on the input point cards, output signal cards, output relay cards and/or building control cards will turn on to indicate the inputs and outputs that are active.

A. To add new points, press the key associated with the point until its corresponding LED turns "On".
B. To remove a point, press the key associated with the point until its corresponding LED turns "Off".
C. When all changes to a particular option are completed, press the "**ENTER**" key to save your changes.
D. To program a different option, repeat the process from above steps # 1 through 4. If all programming changes are completed, press the "ENTER" key twice to exit PROGRAM mode and return to IDLE mode.

Û **NOTE**: Reverse the display legend strips back to the "Standard Operating" labeling side after exiting the programming mode.

Input Circuit - Programming

Conventional Input Circuit Types

1. Enter the programming mode password. See Password Entry section. Each of the 'Input Circuit Types' are defined in the "Programming Options" section.

2. Verify the legend strips are positioned to the Programming Mode.

   A. Select the desired circuit type by depressing the key associated with the circuit type legend strip until its LED is lit. The following choices are available for input circuit types:

      Automatic
      Verified
      And
      Supervisory
      Acknowledge
      Reset
      Signal Silence
      Drill

   B. Once the desired circuit type LED is illuminated, press the "**ENTER**" key to select the indicated choice.

   C. Select all of the input circuits that are to operate as the selected circuit type by depressing their associated circuit switch. When all of the circuits are selected (indicated by the circuit LED on) press the **ENTER** switch.

Note: To deselect a circuit, press the associated circuit switch until the LED is extinguished. Any circuit deselected will default to an Automatic Zone and all control by event information will be removed.

3. If additional Input Circuit Type changes are required, repeat the procedure in step #2.

Output Circuit - Programming

Signal Circuit Type

1. Enter the programming mode password. See Password Entry section. Each of the 'Output Signal Circuit Types' are defined in the "Programming Options" section.

2. Verify the legend strips are positioned to the Programming Mode.

    A. Select the desired output circuit type by depressing the key associated with the circuit type legend strip until its LED is lit. The following choices are available for output circuit types:

    A. Steady DC (** System Default **)
    B. Slow Marchtime (60 ppm)
    C. Fast Marchtime (120 ppm)
    D. Temporal Code
    E. California Uniform Fire Code

    B. Once the desired circuit type LED is illuminated, press the "**ENTER**" key to select the indicated choice.

    C. Select all of the output circuits that are to operate as the selected circuit type by depressing their associated circuit switch. When all of the circuits are selected (indicated by the circuit LED on) press the **ENTER** switch.

Note: To deselect a circuit, press the associated circuit switch until the LED is extinguished. Any circuit deselected will default to a steady signal and all control by event information will be removed.

3. If additional Output Circuit Types are required, repeat the procedure from step 2.

BC Relay Selection

The BC Relay option selects the appropriate relay ("ON" or "OFF") of each Building Control Module circuit to activate when an alarm condition is detected (provided the circuits are selected in Control By Event).

1. From the programming mode select the BC relay option and press the **"ENTER"** key.

2. Select all of the Relays to be activated on each Building Control Circuit by pressing the circuit key until the appropriate LED is illuminated. The GREEN LED indicates the "ON" relay will energize and the RED led indicates the "OFF" relay will energize.

3. After all of the circuits are selected press the **"ENTER"** key.

4. If additional changes are required, repeat this procedure.

Restoring Output Circuits

Signal Silence, Acknowledge

Default restoral setting for signal circuits is signal silence and relay circuits is reset.

1. Enter the programming mode password. Verify the legend strips are positioned to the Programming Mode.

2. Select the desired output restoral option, Signal Silence or Acknowledge and press the **"ENTER"** key. Press the key once to illuminate the "Upper, Signal Silence" LED, or twice to illuminate the "Lower, Acknowledge" LED.

3. Assign the selected Output Circuit Restore type to any combination of Signal Circuits and/or Control Relays by depressing their associated circuit. The selected point's LED will turn "ON".

Note: To change a signal circuit to the reset option, select the Signal Silence option, (all Signal Circuits LED's should be Lit in the default configuration) then deselect the desired circuit(s). This will cause the LED to extinguish. When the circuit LED is not lit for both the Signal Silence and Acknowledge options the output circuit will restore upon system Reset.

4. When all of the desired output circuits have been selected, and any unwanted ones have been removed, press the "**ENTER**" key to save your changes.

5. If additional changes are required, repeat this procedure from step 2.

Sequential Restore

Sequential restoring applies to Relay and Building Control circuits only.

1. From the programming mode select the sequential restore option and press the **"ENTER"** key.

2. Select all of the Relay and Building Control circuits that should restore sequentially (from highest to lowest circuit number every four seconds).

3. After all of the circuits are selected (circuit LED's "ON") press the **"ENTER"** key.

4. If additional changes are required, repeat this procedure.

Programming Signal Circuit Special Functions

Silence Inhibit

The Signal Silence Inhibit feature will prevent **ALL** of the systems signal circuits from being silenced for a period of 1 minute (Default, programmable) after an initial alarm is received. This is a system wide feature and cannot be selected on a per circuit basis.

While in the programming mode select the Silence Inhibit key. It's associated LED will illuminate. To deselect this option press the Silence Inhibit key again (LED off).

Auto Silence

The Automatic Signal Silence feature will automatically silence any signal circuits selected for this option after a period of 10 minutes (default).

1. From the programming mode select the Auto Silence option and press the **"ENTER"** key.
2. Select all of the Signal Circuits that should automatically silence by pressing their associated circuit key.
3. After all of the circuits are selected (circuit LED's "ON") press the **"ENTER"** key.
4. If additional changes are required, repeat this procedure.

Drillable

The Drillable feature determines if the Signal Circuits will activate when the drill feature is selected.

1. From the programming mode select the Drillable option and press the **"ENTER"** key.
2. Select all of the Signal Circuits that should activate when the Drill switch is pressed by pressing their associated circuit key.
3. After all of the circuits are selected (circuit LED's "ON") press the **"ENTER"** key.
4. If additional changes are required, repeat this procedure.

Control-By-Event - Programming

Selecting CBE

1. Enter the programming mode password. See Password Entry section. Each of the 'Signal Circuit Special Function Types' are defined in the "Programming Options" section.

2. Select the Control-by-Event (CBE) by pressing the CBE key. When the associated LED turns "ON", press the "ENTER" key.

Selecting Input Circuits

3. Select the desired input circuit(s) by pressing the associated circuit key. Once the desired group has been selected (indicated by their associated LED's on) press the "ENTER" key to confirm the selection.

   Û **Note**: If any previously programmed or any default point assignments are already in this group their respective LEDs will turn "ON" at this time. To deselect them press their associated circuit key.

Selecting Output Circuits

4. Select the desired Output Circuit(s) to activate when any of the selected inputs is alarmed. When all of the desired output circuits have been selected (indicated by the circuit LED on), press the "ENTER" key.

5. If additional circuit assignments are required, repeat the procedure from step #2.

Computer/Laptop Programming Overview

Overview of Computer Programming

This section describes the system communications via a computer. System monitoring, General Control functions and system programming can only be accessed from a computer terminal with the F620. All figures shown are displayed on the computer screen.

Interconnect

The 14 pin ribbon cable P/N 71332, is used to connect the computer to the CPU Module port P2. If the SIM-232 card is installed use cable P/N 70703 to connect to the Com2 port of SIM-232 module. Refer to (drawing # D-W1142).

Communication Protocol

The system communicates with a computer at baud rates of 1200,2400,4800 and 9600 BPS (see baud rate settings in CPU installation section). The standard protocol is Xon/Xoff, No Parity, 8 Data Bits and 1 Stop Bit.

Û **Note**: Most standard communication packages for computers will allow you to set the proper protocol for the communications port of your computer.

Procomm Software

Configuration

When using PROCOMM to communicate with your FLEX 600 system the following configuration should be used. Several areas of the ProComm setup menu and the line settings menu must be accessed to configure the protocol required.

Line Settings

The Line Settings option can be selected by pressing the ALT and P keys simultaneously. From this menu select the option that your RS-232 port is set for (e.g., 2400,N,8,1 would be selected if your port speed is set to 2400 baud). The protocol is Baud Rate (port speed setting), No Parity (N), 8 Data bits (8) and 1 Stop Bit (1).

Setup Menu

The ProComm SETUP MENU is accessed by pressing the ALT and S keys simultaneously. The following screen should appear:

1) MODEM SETUP
2) TERMINAL SETUP
3) KERMIT SETUP
4) GENERAL SETUP
5) HOST MODE SETUP
6) ASCII TRANSFER SETUP
S) SAVE TO DISK

Terminal Setup

Select option 2 from the ProComm SETUP MENU to display the TERMINAL SETUP menu. The following options should be displayed. To change the settings select the desired number and use the up/down arrows to scroll through the selections. Press ESC to return to the SETUP MENU.

1) Terminal emulation... VT-100	10) Break Length (ms) 350
2) Duplex ..... Full	11) Inquiry (CTRL-E) ..... OFF
3) Flow control..... XON/XOFF	
4) CR translation (in).. CR	
5) CR translation (out). CR	
6) BS translation ..... NON-DEST	
7) BS key definition.... BS	
8) Line wrap ..... ON	
9) Scroll ..... ON	

General Setup

From the ProComm SETUP MENU select option 4 to display the GENERAL SETUP menu. The following settings should be displayed.

1) Editor name	12) Xlat pause character . ~
2) Default d/l path	13) Xlat CR character .... !
	14) Xlat CTRL character .. ^
3) Default log file ..... PROCOMM.LOG	15) Xlat ESC character ... |
4) Screen dump file ..... PROCOMM.IMG	
	16) Aborted downloads .... KEEP
5) Screen write method .. DIRECT	
6) Translate table ..... OFF	17) Transmit pacing (ms) . 25
7) Sound effects ..... ON	
8) Alarm sound ..... ON	
9) Alarm time (seconds)..... 5	
10) Exploding windows .... YES	
11) XMODEM mode ..... NORMAL	

NOTE: The Editor Name should be set to reflect the name of the text editor you are using. The Default D/L Path option should be set to the directory where you want to keep your downloaded Configuration and Dictionary files. With no directory specified downloaded files will be saved in the current directory.

ASCII Transfer

From the ASCII TRANSFER SETUP menu select option 6 to display the ASCII TRANSFER SETUP menu. The following settings should be displayed.

```
         ASCII UPLOAD

1) Echo locally ......... NO
2) Expand Blank Lines ... NO

3) Pace character ....... 0    (ASCII)
4) Character pacing ..... 1    (1/1000 sec)
5) Line pacing .......... 1    (1/10 sec)

6) CR translation ....... NONE
7) LF translation ....... STRIP

         ASCII DOWNLOAD

8) CR translation ....... NONE
9) LF translation ....... NONE
```

System Monitoring & Control

Status Monitoring

The computer can be used to monitor the status of the system. All status changes are transmitted from the P2 port of the CPU. The data transmitted can provide detailed information on alarm, trouble and system status changes. It can also aid in troubleshooting by providing detailed information of system faults.

Access Levels

System access levels may be accessed via the computer. By transmitting a Carriage Return (Enter) to the system you will be prompted with " ENTER PASSWORD" . By entering the proper password you may set the system to it's various Access Levels.

Control Strings

Certain control strings may be transmitted to the system that provide remote control of the system from the computer. If the proper access level is enabled (see access levels) the system can be acknowledged, the signals can be silenced or the system can be reset from the computer. The following control strings provide these functions:

RESET = ^[Ox
ACKNOWLEDGE = ^[OP
SIGNAL SILENCE = ^[Or

Most software communication packages will allow the function keys to be configured for transmission of these control strings.

System Programming via Computer

Programming

System programming menus may be accessed if the proper programming password is entered at the “ENTER PASSWORD:” prompt.

Û **Note**: Before proceeding, notify all personnel, monitoring companies and municipalities the system will be temporarily "out of service". During all levels of programming, the system will be in an off-line status.

System Menu

The “System Menu” menu is displayed when the programming password is entered.

System Menu
1=Display 2=Change 3=Test
0=Exit

Display Menu

Selecting the “Display” option from the “System Menu” allows the user to display or download various system parameters. There are four options that may be selected from this menu (see Figure 5-2) and four options that may be selected from the “MISC.” menu. selection. (Figure 5-3).

Display Menu
1=Config 2=Dict 3=Events
4=Misc 0=Exit

Config Menu

The Configuration Menu allows the user to select either displaying the system module configuration or downloading the entire system configuration.

Configuration Menu
1=Display 2=Download 0=Exit

Display Config

The system module configuration is displayed when option 1 is selected from the Configuration Menu. This display shows the modules that are present in each card location, their associated card type code and a description of the card. The modules displayed are retrieved from the system configuration memory and are not a real time scan of the actual cards present (refer to the system test menu for a real time display).

```
                    Configuration Menu
              1=Display 2=Download 0=Exit
>1
Card:0, ID:16 is CCM0: LEDs/T Switches
Card:1, ID:12 is CCM1: LEDs/T Switches
Card:2, ID:FF is Vacant
Card:3, ID:FF is Vacant
Card:4, ID:01 is CCM4: 2 Sig Ckt, Class A
Card:5, ID:02 is CCM5: 4 Rel Ckt
Card:6, ID:05 is CCM6: Misc. Ckts.
Card:7, ID:07 is CCM7: Unused
Card:8, ID:2C is Bad
Card:9, ID:0F is 4 BC Ckt
Card:10, ID:04 is 4 City Ties
Card:11, ID:2E is 8 Zone, Class B
Card:12, ID:1E is RY LEDs/T Switches
Card:13, ID:18 is RG LEDs/TR Switches
Card:14, ID:1E is RY LEDs/T Switches
Card:15, ID:1E is RY LEDs/T Switches
Card:16, ID:30 is 8 Sig Ckt, Class A
Card:17, ID:5E is 8 Rel Ckt
Card:18, ID:FF is Vacant
Card:19, ID:FF is Vacant
Card:20, ID:1E is RY LEDs/T Switches
Card:21, ID:1A is RG LEDs/T Switches
    Press Enter Key To Continue
```

System Configuration Codes Defined

Select this field to view the system modular placement (hardware configuration, card identification number and I/O card type assignment). The Identiflex 600 series systems utilize a fixed card placement design for identifying I/O module types (and associated displays), installed in the main cabinet as well as any expander cabinets. The card locations are pre-defined and can not be altered.

Modular Placement

Card numbered 0 through 7 are reserved for the various common control module sections. These card location numbers are hardwired physical circuits. Card locations 8 - 39 are assigned to specific cards and displays utilized in Gamewell's FlexAlarm 620 system and the IdentiFlex 650 systems. The exception is the analog addressable module which is assigned to card location number 17.

Card Locations 0 through 7

Cards numbered 0 through 7 identify the location of card types that reference the common control section of the system. Specifically, the electronic module functions are identified. These card location numbers reference hardwired physical circuits. Card identification numbered 0 through 3 reference designated hardwired circuits interconnecting to the common control display module. Card identification numbered 4 - 7 reference designated hardwired circuits on the bus driver module.

Cards # 8 - 39

Card numbered 8 through 39 are individual modules physically installed in cabinet bays (4 & 8 bay cabinets and 4 & 8 bay expander cabinets), see Installation Section 3, Figure 3-1 for cabinet layout. Each module (i.e. individual display or I/O module) has programmable addressing jumpers (1, 2, 3 or 4) which are designated on each module as S1. The addressing jumpers must be set according to the physical placement in the cabinet bay locations (1 through 4). Set the module addressing jumper (1 - 4) in the proper location to match the bay location (1 - 4).

Module Bus

The Module bus interconnects the left I/O modules and the right I/O modules with the bus driver module. The left I/O modules are linked (via ribbon cable) and interface with the bus driver module at J5 connector (labeled I/O Left). The right I/O modules also interconnect (via ribbon cable) and interface with the bus driver module at J8 connector (labeled I/O Right). Each I/O module occupies one slot on the module bus.

The left I/O module displays are linked (via ribbon cable) and interface with the bus driver module at J6 connector (Display Left). The right I/O module displays are linked (via ribbon cable) and interface with the bus driver module at J7 connector (Display Right). The addressing jumper of each display must match the associated I/O module addressing jumper placement.

Card ID #

Each type of card is assigned a unique 8 bit code that the card transmits to the CPU when it is polled. In operation each card is periodically polled and returns its type code. The CPU detects if the card is functioning correctly, for a card type at that location. Refer to Table L4, IF650 Card ID Type.

Card Location	Card Type ID (Hex)	Card description
00	16	LEFT CCM 1: LEDs & T Switches
01	12	RIGHT CCM 2: LEDs & T Switches
02	FF	*vacant*
03	FF	*vacant*
04	01	CCM: 2 Signal Circuits, Class A
05	02	CCM: 4 Relay Circuits
06	05	CCM: City Tie, Buzzer etc
07	07	*vacant*
	09	*Apollo I/O card*
	0A	Analog Control Panel - Tactile SW installed
	0B	Analog Control Panel - Tactile SW missing
	0E	Building Control I/O Card - 8 circuit
	0F	Building Control I/O Card - 4 circuit
	1F	Red/Yellow LEDs, no 3 pos sw, no tactile sw (Alarm Display)
	1E	Red/Yellow LEDs, no 3 pos sw, tactile sw installed (Alarm Display)
	1B	Red/Green LEDs, no 3 pos sw, no tactile sw (Control Display)
	1A	Red/Green LEDs, no 3 pos sw, tactile sw installed (Control Display)
	17	Combo Red/Green/Yellow LEDs no 3 pos sw, no tactile sw (Left Control Display)
	16	Combo Red/Green/Yellow LEDs no 3 pos sw, tactile sw installed (Left Control Display)
	13	Combo Red/Yellow LEDs, no 3 pos sw, no tactile sw (Right Control Display)
	12	Combo Red/Yellow LEDs, no 3 pos sw, tactile sw installed (Right Control Display)
	19	Red/Green LEDs, no 3 pos sw, no tactile sw (Fan Control)
	18	Red/Green LEDs, no 3 pos sw, tactile sw installed (Fan Control)
Zone Card	28	Eight Circuit Class A installation
(CIM)	29	Four Circuit Class A (Alternate)
	2A & 2B	Invalid
	2C	Four Circuit Class A, plus Four circuit Class B
	2D	Four Circuit Class A
	2E	8 Circuit Class B
	2F	Four Circuit Class B
Signal Card	38	Eight Circuit Class A installation
(USM)	39	Four Circuit Class A (Alternate)
	3A & 3B	Invalid
	3C	Four Circuit Class A, plus Four circuit Class B
	3D	Four Circuit Class A
	3E	8 Circuit Class B
	3F	Four Circuit Class B
Relay Card	5E	Eight circuit
	5F	Four Circuit

Download Config

Selecting Download from the Display Configuration Menu will prompt the system to transmit the complete system configuration file to the RS-232 port. When this is selected the system prompts the user to perform several steps. These steps are the actions required to receive an ASCII file when using PROCOMM communications software. When using alternate software packages follow the procedure required for that software to receive an ASCII file. The next CR the system receives will start the transmission of the file.

Configuration Menu
1=Display 2=Download 0=Exit

>2
Ready to Download Configuration File.

To Download:
1. Press PgDn
2. Choose 7 (ASCII)
3. Enter Filename

Display Dict. Menu

This display option allows the user to view the contents of word dictionaries 1 - 5. Dictionaries 1 - 4 may contain up to 128 entries and dictionary 5 may contain up to 1024 entries. By selecting this option the contents of all 5 user dictionaries are output to the laptop/computer screen.

Display Dictionary Menu
1=Display 2=Download 0=Exit

Display Dict. The following is the format in which the dictionary will be displayed.

```
Start of Dictionary #1

End of Dictionary #1
Start of Dictionary #2

End of Dictionary #2
Start of Dictionary #3

End of Dictionary #3
Start of Dictionary #4

End of Dictionary #4
Start of Dictionary #5

End of Dictionary #5

Press Enter Key to Continue.
```

Download Dict. Selecting Download from the Display Dictionary Menu will prompt the system to transmit the complete set of 5 dictionaries to the RS-232 port. When this is selected the system prompts the user to perform several steps. These steps are the actions required to receive an ASCII file when using PROCOMM communications software. When using alternate software packages follow the procedure required for that software to receive an ASCII file. The next CR the system receives will start the transmission of the file.

```
                    Display Dictionary Menu
                1=Display 2=Download 0=Exit
>2
Ready to Download Dictionary File.

        To Download:
        1. Press PgDn
        2. Choose 7 (ASCII)
        3. Enter Filename
```

Display Events

The display events selection will prompt the CPU to output it's complete history log to the RS-232 port. The history log will contain all information regarding the system status changes for the previous 1000 events or since the last time the system Smart Start™ feature was invoked.

```
                    Display Menu
            1=Config 2=Dict 3=Events
                 4=Misc 0=Exit
>3
**** Start of Event Buffer ****
Status:NORMAL          03/27/95 15:08

Press Enter Key To Continue
```

Display, Misc.

When 4 (Misc) is selected from the Display menu, a sub-menu of selections is displayed.

```
                    Display Menu
            1=Config 2=Dict 3=Event
                 4=Misc. 0=Exit
>4
                 Display Menu (Misc.)
                   1=Pass 2=Codes
                  3=Ver 4=Zone 0=Exit
```

Display Pass

Displaying the passwords allows the user to view the 10 passwords that are assigned to the system. Each password has a user ID and a security or access level assigned to it. This screen also shows the security levels that are assigned to each of the function keys. The following displays are the default settings for the Flex 600 system.

```
                    Display Menu
              1=Config 2=Dict 3=Event
                   4=Misc 0=Exit
>4
                 Display Menu (Misc.)
                   1=Pass 2=Codes
                 3=Ver 4=Zone 0=Exit
>1
1. Pass:1111 User ID:USER1 Sec:1
2. Pass:2222 User ID:USER2 Sec:2
3. Pass:3333 User ID:USER3 Sec:3
4. Pass:4444 User ID:USER4 Sec:4
5. Pass:5555 User ID:USER5 Sec:1
6. Pass:6666 User ID:USER6 Sec:1
7. Pass:7777 User ID:USER7 Sec:1
8. Pass:8888 User ID:USER8 Sec:1
9. Pass:7111 User ID:USER1 Sec:1
10. Pass:7222 User ID:USER2 Sec:1

Ack:01 Rst:02 Sig:02 Drl:03
Byp:03 Wlk:03
    Press Enter Key To Continue
```

Display Codes

Displaying the codes will allow the user to view the codes that are assigned to each of the 256 input groups. This is followed by information on the timing of the codes, number of rounds transmitted and weather the system reverts to March Time coding or silences after the coding is completed. The default setting for each code is 1,2,3,4,5,6.

```
                    Display Menu (Misc.)
                        1=Pass 2=Codes
                    3=Ver 4=Zone 0=Exit
>2
1=123456 2=123456 3=123456 4=123456
5=123456 6=123456 7=123456 8=123456
9=123456 10=123456 11=123456 12=123456
13=123456 14=123456 15=123456 16=123456
17=123456 18=123456 19=123456 20=123456
21=123456 22=123456 23=123456 24=123456
25=123456 26=123456 27=123456 28=123456
29=123456 30=123456 31=123456 32=123456
33=123456 34=123456 35=123456 36=123456
37=123456 38=123456 39=123456 40=123456
41=123456 42=123456 43=123456 44=123456
45=123456 46=123456 47=123456 48=123456
49=123456 50=123456 51=123456 52=123456
53=123456 54=123456 55=123456 56=123456
57=123456 58=123456 59=123456 60=123456
61=123456 62=123456 63=123456 64=123456
65=123456 66=123456 67=123456 68=123456
69=123456 70=123456 71=123456 72=123456
73=123456 74=123456 75=123456 76=123456
77=123456 78=123456 79=123456 80=123456
81=123456 82=123456 83=123456 84=123456
85=123456 86=123456 87=123456 88=123456
89=123456 90=123456 91=123456 92=123456
93=123456 94=123456 95=123456 96=123456
97=123456 98=123456 99=123456 100=123456
101=123456 102=123456 103=123456 104=123456
105=123456 106=123456 107=123456 108=123456
109=123456 110=123456 111=123456 112=123456
113=123456 114=123456 115=123456 116=123456
117=123456 118=123456 119=123456 120=123456
121=123456 122=123456 123=123456 124=123456
125=123456 126=123456 127=123456 128=123456

Pls:1.0Sec Cyl:04 Sig:OFF
Press Enter Key To Continue
```

Display Ver.

The version of firmware installed in the main CPU will be displayed when 3 (Ver) is selected from the Display Menu (Misc.).

```
                    Display Menu (Misc.)
                       1=Pass 2=Codes
                    3=Ver 4=Zone 0=Exit
>3
Flex 620 System, Version 1.0
Last Updated on Mar 14 1995 at 15:43:58

Press Enter Key To Continue
```

Display Zone

Displaying the zones allows the user to view the information associated with the conventional zone cards installed in the system. The card ID and description is displayed along with each associated circuit type and assigned code information.

```
                    Display Menu (Misc.)
                       1=Pass 2=Codes
                    3=Ver 4=Zone 0=Exit
>4

>>>>> Listing Zones Cards detected

Card #:0B is: 8 Zone, Class B
Ckt:38 Type:Auto Code:123456
Ckt:37 Type:Auto Code:123456
Ckt:36 Type:Auto Code:123456
Ckt:35 Type:Auto Code:123456
Ckt:34 Type:Auto Code:123456
Ckt:33 Type:Auto Code:123456
Ckt:32 Type:Auto Code:123456
Ckt:31 Type:Auto Code:123456
<<<<< End of Zones Cards detected
     Press Enter Key To Continue
```

Change Menu

The system change menu allows the user to change various system parameters.

```
                    Change Menu
              1=Config 2=Dict 3=Card
                   4=Misc 0=Exit
>
```

Change Config

Changing the system configuration requires a previously downloaded system configuration file. When selected, the user is prompted with the sequence of keystrokes required for the PROCOMM software package to Upload an ASCII file. When using other software packages, the keystrokes required to Upload an ASCII file should be followed. When using the PROCOMM software package the following settings should be configured.

```
                    Change Menu
              1=Config 2=Dict 3=Card
                   4=Misc 0=Exit
>1
Ready to Upload Configuration File.

        To Upload:
        1. Press PgUp
        2. Choose 7 (ASCII)
        3. Enter Filename
```

Change Dictionary

Changing the dictionary entries can be achieved by two means, changing the Words or Uploading an entirely new dictionary.

```
                    Change Menu
              1=Config 2=Dict 3=Card
                   4=Misc 0=Exit
>2
                Change Dictionary Menu
              1=Words 2=Upload 0=Exit
```

Change Dict.Words

To change the Dictionary words, select 1 from the Change Dictionary Menu. The system will prompt you with the dictionary and word number to be changed. The existing word is then displayed. To change the word, type the desired text or press enter to leave the existing text and return to the word number prompt.

```
                    Change Dictionary Menu
                    1=Words 2=Upload 0=Exit
>1
Enter Dictionary #:1
Enter Word #:1
      Overwrite Current Word:
           Fire Alarm
Enter New Word:
Enter Word #:22
 Word Doesn't Exist, Append New Word
Enter New Word:
Enter Word #:
```

Upload Dictionary

Uploading is accessed by selecting 2 from the Change Dictionary Menu. In order to upload a new dictionary, a file containing the new dictionary entries must be created using an ASCII text editor. The SAN-RAN disk (P/N XXXXX) contains the AHED text editor that may be used to create the dictionary file. The dictionary file is comprised of a simple format that has very few restrictions (See Dictionary File Format).

```
                    Change Dictionary Menu
                    1=Words 2=Upload 0=Exit
>2
Ready to Receive Dictionary File.

          To Upload:
          1. Press PgUp
          2. Choose 7 (ASCII)
          3. Enter Filename
```

Û **Note**: When changes are made to any of the dictionaries, they are appended to the existing dictionary. Therefore the entire number of added text may change when you exit the programming area. For example, if dictionary 2 has twelve entries and you add an entry as number 15, when you exit the program, the dictionary is appended and your new entry becomes number 13.

Dictionary File

The dictionary file format consists of the five dictionaries, each separated by two fore slashes (//) as delimiters. The first line of the dictionary file would contain two fore slashes indicating that it is the beginning of the file and the next line received will be word #0 of dictionary #1. This line should be left blank since each device defaults to word 0 of each dictionary. The following lines would contain the desired text entries, in numerical order, for dictionary one. When all of the entries for dictionary one have been entered, two fore slashes should be inserted on the next line to signify the end of dictionary one and the start of dictionary 2. Again the next line, word 0 dictionary 2, should be left blank for default purposes. This format is followed throughout the five dictionaries. The end of dictionary five is also signified by two fore slashes.

Some important points to keep in mind when writing the file are as follows. Dictionary one through dictionary four may contain up to 128 entries (0-127). Dictionary 5 may contain up to 1024 entries (0-1023). If all of the entries in any one dictionary are not used, the file does not need to contain blank lines before terminating the dictionary with two fore slashes. Each dictionary entry may contain up to 40 characters. However, entries from dictionaries one and two are displayed on the third line of the alphanumeric display, and, entries from dictionaries three, four and five are displayed on the fourth line of the alphanumeric display. The total characters of dictionary entries used in conjunction with each other should not exceed 40 characters.

The file below illustrates a simple dictionary file.

```
//

Fire Alarm
Supervisory Alarm
//

Smoke Detector
Heat Detector
//

First Floor
Second  Floor
Third Floor
//

Stairwell
Computer Room
Mechanical Room
//

Room 111
Room 112
Below Raised Floor
//
```

Change Card

The Flex 600 system allows components to be added or deleted without disturbing the programming (Control By Event, etc.) of other system components. When the Change Card menu is selected, an Add or Delete option is then prompted. Select the desired option and enter the card number to be changed. (See system configuration in the installation section of this manual for card location information)

NOTE: When changing card types in a location the existing card should be deleted before the new card is added. This will ensure that the control by event table is

```
                    Change Menu
                1=Config 2=Dict 3=Card
                   4=Misc 0=Exit
>3
                  Change Card Menu
                1=Add 2=Delete 0=Exit
>1
        Enter Card # To Add:
    Delete Existing Card First !
    Press Enter Key To Continue

          Change Card Menu
       1=Add 2=Delete 0=Exit
>2
      Enter Card # To Delete: 1
      Card Deleted From System
    Press Enter Key To Continue

          Change Card Menu
       1=Add 2=Delete 0=Exit

Enter Card # To Add: 1
        Card Added To System
    Press Enter Key To Continue
```

Change Misc

The Change Misc selection accesses two sub menus, Menu1 and Menu2 These menus allow access to other change functions when selected.

```
                    Change Menu
                1=Config 2=Dict 3=Card
                   4=Misc 0=Exit
>4
                  Change Card Menu
              1=Menu1  2=Menu2  0=Exit
```

Change Menu 1

Change Menu 1 accesses menus to change Passwords, Codes, Time and Date, Sequence Key Access levels and the Baud Rate detect function.

Change Pass

The Change Password menu is used to change the password, user name and/or the access level associated with the passwords. When this is selected from Change Menu 1, the previously programmed password information is displayed followed by a prompt requesting the password number to be changed. When the password number is entered the "Enter Password" prompt is displayed. Enter the new password (Four Digits) or press enter to leave the existing password. This is followed with the User ID prompt. The User ID may contain up to 8 ASCII characters. After defining the user the access level or security level (Sec:)assigned to that password is defined.

NOTE: Before changing the password # 4 (programming password) make sure that you have added a new password to access the programming (Sec: 4) area.

Change Menu (Misc.)
1=Menu1 2=Menu2
0=Exit

>1

Change Menu 1
1=Pass 2=Code 3=Date 4=Seq
5=Baud 6=Words 0=Exit

>1
1. Pass:1111 User ID:USER1 Sec:1
2. Pass:2222 User ID:USER2 Sec:2
3. Pass:3333 User ID:USER3 Sec:3
4. Pass:4444 User ID:USER4 Sec:4
5. Pass:5555 User ID:USER5 Sec:1
6. Pass:6666 User ID:USER6 Sec:1
7. Pass:7777 User ID:USER7 Sec:1
8. Pass:8888 User ID:USER8 Sec:1
9. Pass:7111 User ID:USER1 Sec:1
10. Pass:7222 User ID:USER2 Sec:1
Enter Password # To Change:1
Enter Password:1234
Enter User ID: John Doe
Enter Security level:1
1. Pass:1234 User ID:John Doe Sec:1
2. Pass:2222 User ID:USER2 Sec:2
3. Pass:3333 User ID:USER3 Sec:3
4. Pass:4444 User ID:USER4 Sec:4
5. Pass:5555 User ID:USER5 Sec:1
6. Pass:6666 User ID:USER6 Sec:1
7. Pass:7777 User ID:USER7 Sec:1
8. Pass:8888 User ID:USER8 Sec:1
9. Pass:7111 User ID:USER1 Sec:1
10. Pass:7222 User ID:USER2 Sec:1
Enter Password # To Change:

Change Code

The codes in the Flex 600 systems are assigned to the input groups. When a device within that group alarms, that code would be sounded on the signal circuits that have been programmed as coded circuits. Each input group may be assigned an individual code that contains up to 6 digits. The digits are defined in hexadecimal and range from 0-9 and A-F. When selected each digits (1-6) of the code is entered individually.

After the code has been entered a sub menu appears. This menu allows you to change the Timing, the number of Cycles and the output of the signal circuits after the code is complete, silence or March Time signal.

Change Menu 1
1=Pass 2=Code 3=Date 4=Seq
5=Baud 6=Words 0=Exit

>2
Enter Input Ckt/Group Number:1
Current Code For Ckt/Group1=123456
Enter Digit 01:656565Re-enter Input :6
Enter Digit 02:5
Enter Digit 03:4
Enter Digit 04:3
Enter Digit 05:2
Enter Digit 06:1
New Code For Ckt/Group1=654321
Enter Input Ckt/Group Number:

Change Coded Signal's Parameters
1=Timing 2=Cycles 3=Signal
0=Exit

>1

Change Coded Signal's Timing
1=0.5 2=1.0 3=1.5 4=2.0
0=Exit

>2
Enter # of Cycles (1-8):

>3

Choose Signal
1=OFF 2=March Time
0=Exit

Change Date

To change the date and/or time in the Flex 600 system the Change Date Menu must be selected. This menu prompts the user with the information the system requires to enter a new time and date.

```
                    Change Menu 1
                1=Pass 2=Code 3=Date 4=Seq
                5=Baud 6=Words 0=Exit
>3
        Current Date/Time
    Date 03/31/95  Time 09:52:41
Enter Month  :03
Enter Date   :30
Enter Year   :95
Enter Hour   :10
Enter Minutes: 43
          New Date/Time
    Date 03/30/95  Time 10:43:00
    Press Enter Key To Continue
```

Change Seq

The Change Sequence option allows the user to redefine the access levels associated with each of the sequence keys. Each of these keys is assigned an access level by default. The Acknowledge key is assigned to level 1 access, the Reset, Signal Silence and Drill keys are assigned to level 2 and the Detector test, WalkTest and Bypass keys are assigned to level 3.

Any of these keys may be reassigned by selecting this option, pressing the key to be reassigned and entering the access level desired. These keys may also be assigned to level 4 access (programming level). By assigning a key to level 4 access, that keys operation is inhibited.

```
                    Change Menu 1
                1=Pass 2=Code 3=Date 4=Seq
                5=Baud 6=Words 0=Exit
>4

     Change Sequence's Security
      Press A Sequence's Key
      Press Enter Key To Exit

  Acknowledge, Current:01 Enter New:01
```

Change Baud

The Change Baud selection will cause the system to output a printer test pattern to the RS-232 port. This continuous output allows the user to select the baud rate of the connected device without having to cause system abnormalities.

Change Menu 1
1=Pass 2=Code 3=Date 4=Seq
5=Baud 6=Words 0=Exit

```
>5
Ready To Read Dip Switch and Set
Serial Port 1's Baud Rate.
Press Enter Key To Proceed...

0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdef
ghijklmnopqrstuvwxyz{|}~!"#$%&'()*+,./0123456789:;<=>?@ABCDEFGH
IJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~!"#$%
&'()*+,./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^
_`abcdefghijklmnopqrstuvwxyz{|}~!"#$%&'()*+,./0123456789:;<=>?@AB
CDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|
}~!"#$%&'()*+,./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUV
WXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~!"#$%&'()*+,./0123456789:;
<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqr
stuvwxyz{|}~!"#$%&'()*+,./0123456789:;<=>?@ABCDEFGHIJKLMNOP
QRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~!"#$%&'()*+,-
./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ{|}~
```

Baud Rate Switch Settings

The baud rate is changed by setting DIP switch SW1 on the CPU module to the desired speed (see below table). Select this option to read new setting.

SW1 - Settings		
S1	Open	Do Not Change
S2	Open	Do Not Change
S3	Always Closed	Do Not Change
S4	Open	Do Not Change
S5	Open	Do Not Change
S6	Open	Do Not Change
Note:	P2 baud rate of is selected via S7 and S8. **Auto Detect Baud rate is utilized for peripheral devices.**	
S7, S8 Open	9600 Baud Rate	
S7, S8 Closed	*4800 Baud Rate*	
S7 Open, S8 Closed	*2400 Baud Rate*	
S7 Closed, S8 Open	*1200 Baud Rate*	

Change Words

The Change Words option allows descriptions of individual hardwired circuits to be assigned. Each circuit (input and output) may be assigned an entry from each of the five dictionaries. When selected the system prompts the user to enter the dictionary then the word number of that dictionary. Pressing the enter key twice on a blank line will exit this menu.

Change Menu 1
1=Pass 2=Code 3=Date 4=Seq
5=Baud 6=Words 0=Exit

```
>6
Press an I/O Ckt. or Enter Ckt. #:01
Press an I/O Ckt. or Enter Ckt. #:49
Enter Ckt.'s Word # To Change (1-5):1
Current Word:
Enter Replacement Word # (0-127):1
Fire Alarm
Enter Ckt.'s Word # To Change (1-5):2
Current Word:
Enter Replacement Word # (0-127):1
Fire Alarm Smoke Detector
Enter Ckt.'s Word # To Change (1-5):3
Current Word:
Enter Replacem1ent Word # (0-127):
Fire Alarm Smoke Detector
1st.
Enter Ckt.'s Word # To Change (1-5):4
Current Word:
Enter Replacement Word # (0-127):1
Fire Alarm Smoke Detector
1st. Floor Room Number
Enter Ckt.'s Word # To Change (1-5):5
Current Word:
Enter Replacement Word # (0-127):1
Fire Alarm Smoke Detector
1st. Floor Room Number 1
Enter Ckt.'s Word # To Change (1-5):
Press an I/O Ckt. or Enter Ckt. #:
```

To select word options from the faceplate of the control panel:

Prompt	Description
<a1> =	first lower case letter of a word or key
<a2> =	second lower case letter of a word or key
<a3> =	third lower case letter of a word or key
<a#> =	etc. (sequential order)
<A1> =	First Upper Case letter of a word or key
<A2> =	Second Upper Case letter of a word or key
<A#>	etc. (sequential order)

- **Note**: The term "key" used in the above table refers to any user identifying code which is entered as a word.

1. Press the Letters/ Numbers key on the Keypad until the proper selection is displayed. The display indicates the selection by the following means.

1.1 When assigning the first letter to a word (or key) <a1> should be displayed in the upper right hand corner of the display. To select the second letter of that word, press the Letters/ Numbers key until <a2> is displayed. <a3> should be displayed if the third letter is desired and <#> should be displayed if the number associated with that key is desired.

1.2 The case of the letters may be changed by pressing the Caps key. The case is indicated by the case setting of the <A> within the brackets shown on the display. When the desired number or letter field is displayed press the key associated with it then go on to the next letter, number or punctuation mark. When the text entry is complete press the "**Enter**" key and go on to the next text entry to change. To exit the programming area, and save the changes made, press the "**Enter**" key.

- **Note**: When changes are made to any dictionaries they are appended to the existing dictionary. Therefore the entire number of added text may change when you enter the programming area. For example, if dictionary 2 has twelve entries and you add an entry as number 15, when you exit the program, the new entry becomes number 13.

Change Menu 2

Change menu 2 has options to change the City Tie operation, the Automatic Signal Silence Timer, The Annunciator Supervision, The Trouble Relay operation and the Automatic Dialer connection.

Change City

The City Tie Circuit is designed to operate in two modes of operation. Standard mode and Chicago mode. In the standard mode alarms and troubles are transmitted over the city tie circuit. In the Chicago mode the city tie transmits all troubles and alarms with the exception of City Tie troubles. If the city tie circuit detects a trouble condition the Spare relay will transfer for use with a local indicator that indicates troubles and alarms can't be transmitted.

Change Menu (Misc.)
1=Menu1 2=Menu2
0=Exit

Change Menu 2
1=City 2=Sig Sil 3=Ann 4=Trbl
5=Dialer 6=Prefix 0=Exit

>1
Press Enter Key To Exit
Press Any Other Key To Toggle
City Tie Is In Standard Mode
City Tie Is In Chicago Mode

Change Sig Sil

The Sig Sil option allows the user to set the Automatic Signal Silence timer. This is the length of time the signal circuits will operate before automatically silencing when selected.
EXAMPLE: Entry of the number 3 would equal 90 seconds (3 x 30 sec.= 90sec.)

Change Menu 2
1=City 2=Sig Sil 3=Ann 4=Trbl
5=Dialer 6=Prefix 0=Exit

>2
Sig Sil Delay Is Set To:0 Min
Delay = Entry (0-10) x 30 Sec
Enter New Sig Sil Delay (0-10):

Change Ann

The change Ann option allows the user to enable and disable the supervision of the supervised annunciator devices connected to the RS-232 port.

Change Menu 2
1=City 2=Sig Sil 3=Ann 4=Trbl
5=Dialer 6=Prefix 0=Exit

Press Enter Key To Exit
Press Any Other Key To Toggle
Remote Annunciator is Detached
Remote Annunciator is Attached

Change Trbl

The Change Trouble option should be in the "Troubles are Annunciated" Mode. This feature is used in Special Applications where a backup system is required. Special modules and wiring are required to utilize this option. Please consult your factory representative for applications requiring redundant system operation.

```
                Change Menu 2
        1=City 2=Sig Sil 3=Ann 4=Trbl
          5=Dialer 6=Prefix  0=Exit
>4
      Press Enter Key To Exit
    Press Any Other Key To Toggle
   I/O Troubles Are Annunciated
   I/O Troubles Are Not Annunciated
```

Change Dialer

This option allows the system to delay the reporting of AC failure as required by UL when the "Dialer Is Installed" is selected. Normal reporting of AC failure troubles is restored when the "Dialer Is Not Installed " option is selected.

```
                Change Menu 2
        1=City 2=Sig Sil 3=Ann 4=Trbl
          5=Dialer 6=Prefix 0=Exit
>5
      Press Enter Key To Exit
    Press Any Other Key To Toggle
     Dialer Is Not Installed
     Dialer Is Installed
```

Change Prefix

This option allows the user to change the Prefix for alarm events that occur. The default setting is FIRE Alarm. If the panel were monitoring Gas detectors, for example. The Prefix could be changed to GAS and therefore display GAS Alarm during alarm conditions.

```
                Change Menu 2
        1=City 2=Sig Sil 3=Ann 4=Trbl
          5=Dialer 6=Prefix 0=Exit
>6
Current Alarm Prefix is: Fire
Enter New Alarm Prefix: XXXX

Do you want to clear prefix Y/N? N

Alarm Prefix is set to! Fire
Press any key to continue
```

Test Menu

The test menu is a useful tool when testing and troubleshooting the Flex 600 systems. The various options allow the testing of the input and output devices a circuits, ground fault monitoring and system communications.

Test Input

The Input Test allows the user to test input circuit cards and monitor for circuit noise. This selection requires the input of the card location number (see installation section for card location numbers) to be tested. The card is continuously scanned and a "real time" value in Hexadecimal format (base 16) is returned for each of the 8 circuits (0-7) for that card location.

EXAMPLE: The normal value for a CIM card to return would be approximately 0E hex. If the circuit is open the value would drop to 00 hex . If a short circuit occurs the value returned would increase up to FF hex.

```
                    Test Menu
          1=Input 2=Output 3=ID 4=Gnd
             5=Lamp 0=Exit
>1

        Input Card Test
      Enter Input Card #:11
     Press Enter Key To Exit
0=0E 1=0E 2=0E 3=0E 4=0E 5=0E 6=0E 7=0E
0=0F 1=0E 2=0E 3=0E 4=0F 5=0F 6=0E 7=0F
```

Test Output

The Output Test is used to test the interaction between an input circuit and an output circuit. When selected the user is prompted to enter the output card location number to be tested. Then the input card location that is to be used to control the output card is entered. When the input circuit is activated, the corresponding output card circuit will activate.

EXAMPLE1: If card location 12 (CIM display) is selected as the output card location and card location 12 is selected as the input card location, when a switch on card 12 is pressed
the corresponding LED will light.

EXAMPLE2: If output card location 17 (USM-8) is selected and input card 21 (USM-8 display) is selected, the corresponding signal circuit will activate when the display switch is pressed.

NOTE : When card 0 (main display) is selected on the 630 and 650 systems, no input card option is displayed. Pressing the front panel switches will toggle the LED's and display the switch number pressed.

```
                    Test Menu
          1=Input 2=Output 3=ID 4=Gnd
               5=Lamp 0=Exit
>2

        Output Card Test
Enter Output Card #:9
Enter Input (Keys) Card #:13
      Press Enter Key To Exit
```

Test ID

Selecting the Test ID option will continuously display the "real time" card readings from the system card locations. The card locations (0-39) should always equal the card type installed in that location.

```
                    Test Menu
          1=Input 2=Output 3=ID 4=Gnd
               5=Lamp 0=Exit
>3

00=16 01=12 02=FF 03=FF 04=01 05=02
06=05 07=07 08=2C 09=0F 10=04 11=2E
12=1E 13=18 14=1E 15=1E 16=30 17=5E
18=FF 19=FF 20=1E 21=1A 22=FF 23=FF
24=FF 25=FF 26=FF 27=FF 28=FF 29=FF
30=FF 31=FF 32=FF 33=FF 34=FF 35=FF
36=FF 37=FF 38=FF 39=FF
```

Test Gnd

The Gnd (Ground) test utilizes a unique method of ground detection. A measurement is taken from the +5 supply to earth ground and a value is displayed. Then a measurement from system common is taken and its value is displayed. The differential value between these two measurements must be greater than 142 but less than 255 for a reading of "Good".

Note : The values displayed are derived from an A/D conversion and not displayed in actual voltages.

```
                    Test Menu
          1=Input 2=Output 3=ID 4=Gnd
               5=Lamp 0=Exit
>4
        Ground Fault Test
      Press Enter Key To Exit
        142 < Diff < 255
     5V=216, Gnd=1, Diff=215 : Good
```

Test Lamp

The Test Lamp selection will cause the system to test the LED's on all of the modules in the system. The sounder will alternate on and off while each cards LED's are lit in sequence.

```
                    Test Menu
          1=Input 2=Output 3=ID 4=Gnd
               5=Lamp 0=Exit
>5
```

IDENTIFLEX 620 BATTERY CALCULATION CHART

MODULE		QTY	NORMAL CURRENT	ALARM CURRENT	NORMAL TOTAL[1]	ALARM TOTAL[2]
3	BDM	1	.205	.337 + signal circuit power + .002 for master box and .022 for reverse polarity		
	CPU	1	.070	.070		
	S+S-	see note[4]				
	A+A-	see note[4]				
	12VDC	see note[4]				
CIM-4			.050	.050 per active ckt		
CIN-8			.090	.050 per active ckt		
CIM-4 W/CIM-SDA			.050	.050 per active ckt .022 per active class a relay		
CIM-8 W/CIM-SDA			.050	.050 per active ckt .022 per active class a relay		
USM-4			.018	.020 PER CKT + signal load		
USM-8			.018	.020 PER CKT + signal load		
USM-4 W/USM-SZA			.018	.020 PER CKT + signal load .022 per active class a relay		
USM-4 W/USM-SZA			.018	.020 PER CKT + signal load .022 per active class a relay		
CTX			.020 +.005 per active ckt	.020 +max .046 per active circuit		
RM-4			.010 +.003 for each inactive feedback point and .006 for each active	Normal +.022 per active circuit		
RM-8			.010 +.003 for each inactive feedback point and .006 for each active	Normal +.022 per active circuit		
BC-4			.010 +.003 for each inactive feedback point and .006 for each active	Normal +.022 per active circuit		
BC-8			.010 +.003 for each inactive feedback point and .006 for each active	Normal +.022 per active circuit		
CABINET EXPANDER			.001	.001		
ALARM PERCENT CALCULATION 0.10=10% 1.00=100%				TOTAL NORMAL CURRENT		
HOURS OF STANDBY			TOTAL NORMAL CURRENT	= NORMAL Amp Hours	TOTAL ALARM CURRENT	
		X			NORMAL Amp Hours	
HOURS OF ALARM[5]			TOTAL ALARM CURRENT	=ALARM Amp Hours	ALARM Amp Hours	
		X			TOTAL	
					TOTAL X 1.25	
					BATTERY AH REQUIRED (note 6)	

[1]NORMAL TOTAL is figured by multiplying the number of modules times the current values for that module
[2]ALARM TOTAL is figured by multiplying the number of modules/active points times the current values for that module
[3]The Common Control Module consists of Bus Driver Module, CPU, Common Relays, Power Supply and Common Displays.
[4]The actual loads for Normal and Alarm currents being drawn on the power terminals should be placed in the Normal Total and Alarm Total boxes for each power output.
[5]Minutes of alarm is figured by dividing the minutes required by 60. 5 minutes divided by 60 equals .083 minutes
[6]Maximum of 50 AH Permitted