

SENTROL ZX440F

Security System Control

Installation/ Programming

Table of Contents

New Features	6
ZX440F Wiring Diagram	7
ZX440F Terminal Descriptions	8
ZXCFM Connection Descriptions	9
“2 in 1” Zoning™	10
Conventional Methods of Wiring	12
Class ‘B’ End-Of-Line Resistor Supervised Zones	12
Non-Supervised Closed Circuit Loop (No EOL Resistor Supervision)	12
Control Station Addressing and Supervision	13
SSD, LCD, and VFD Control Stations	13
LED Control Stations	13
Control Station Troubleshooting	14
Clearing Trouble Messages	14
12 VDC Outputs	15
Additional Outputs	15
Expansion Zones	17
ZXEXP Zone Expander Module	18
Installation	18
Fire Zone Modules	19
ZEM Zone Expansion Module	19
ZRM Zone Relay Module	21
ZXCFM Commercial Fire Module	22
UL 864 Compliance	22
ZXCFK Fire Module Kit	22
Upgrading a ZX410 With a ZXCFK	22
Installation of the F2600 Transformer Enclosure	24
Defaulting the Control for Commercial Fire Alarm Use	24
Optional Battery Configurations	25
ZX440F Power Worksheet	26
Auxiliary Power Supply Installation	27
System Power Routing	28

ZXPTR Printer Interface Module 29

Specifications And Features 30

- Control Board 30
- Power Supply 30
- Recommended Battery 30
- Transformer 30
- Enclosure 30
- Digital Communicator 30
- Control Stations 31
- ZXLCD Control Station 31
- ZXVFD Control Station 31
- ZXLED12 Control Station 31
- ZXSSD Control Station 31
- Optional Accessories 31
- Output Provisions 32

List Of Compatible Accessories 33

- ESL Two-Wire Smoke Detectors 33
- ESL Four-Wire Smoke Detectors 33
- System Sensors Two-Wire Smoke Detectors 33
- System Sensors Four-Wire Smoke Detectors 33
- Wheelock 33
- Compatible Central Station Receivers 33

Agency Requirements 34

- UL and ULC Listings 35

National Fire Protection Association (NFPA) Rules 36

- Smoke Detector Locations 36
- Testing 36

System Troubleshooting 37

Operating the System 38

- Introduction 38
- Powering Up With the Control Station 38
- Control Stations 39
- Control Station Overview 40
- Control Station Function Keys 41
- Secondary Function Keys 41
- Installer Arming and Disarming 42
- Installer On Premises 42
- Testing 42

Programming the Control	43
Introduction	43
Local Programming	43
Remote Programming (RPM/2)	43
Area Partitioning	43
LED Control Station Programming	45
 Installer Level Programming	 46
Menu Options	46
Remote Connect	46
Set Clock	46
Edit Function Map	47
Entering a New Value at a Location	47
Programming Account Code and Telephone Number Digits	48
Programming Report Codes and Attribute Fields	48
Additional Programming Notes	48
Programming Zone Names	48
Programming User Codes	49
Restore Factory Defaults	50
Days Until Next Comm Test	50
Call RPM	50
Function Map	51
Area Data Descriptions	51
Keypad Data Descriptions	54
Zone Data Descriptions	56
User Data Description	59
Authority Levels	60
Output Definitions Description	62
Programmable Output Activation	64
Other Bell Output Activation	64
Fire Bell Outputs Activation	64
Global System Options Description	66
Communicator Data Description	68
Communication Telephone Numbers Description	69
Dialed Digits Allowed	70
Event Reporting Description	70
Zone Report Codes Description	72
User Report Codes Description	74
System Report Codes Description	75
Area Schedules Description	77
Automatic Arming	77
Latch Key Schedules	77
Programming Options	79
Programming Notes	80

Digital Communicator Table For Contact ID Formats..... 84

UL Programming Requirements 87

 Underwriters Laboratories (UL) Listing 87

 UL Notes In This Manual 87

 UL Notes About Program Functions 87

 UL Notes About Zone Planning 88

ZX440F Operating Instructions Placard 91

FCC Compliance 93

New Features

- 12 Zones with Sentrol's unique "2 in 1" Zoning™
- Plus one 2-wire fire zone
- Expandable to 28 zones, plus two 2-wire fire zones
- Two truly independent partitions
- Up to 50 user codes with 15 levels of authority
- 75 event log
- Four interchangeable Control Stations to choose from
- Customized scheduling with special supervisory report
- Ideal for residential, commercial, and industrial applications
- Control Station programming in less than 2 minutes with factory defaults

The Sentrol ZX440F Security Control features ease of installation and programming. The ZX440F is easily programmed with any one of four Control Stations (LCD, LED, SSD, or VFD). The control may also be programmed remotely with the aid of a personal computer (PC) and a modem using Sentrol's remote programming software (RPM2PRO) and a panel support module (PRO400). The Control Stations are easy-to-operate and contain features such as cross-zoning, and an audible "mute" function to help reduce false alarms.

The ZX440F is pre-programmed at the factory with one 2-wire smoke detector zone and ten burglar zones (one delay, two interior and seven instant). Zones 6 & 12 are dedicated as Phone Line Monitor and Ground Fault Monitor inputs and may not

be used. A zone expander may be added to provide an additional 2-wire smoke detector zone and, with the use of "2 in 1" Zoning™, up to 16 additional zones.

The Control's on-board RAM maintains its data even with the power disconnected. A "Watchdog" timer monitors the microprocessor to ensure the operational integrity of the system. The ZXCFCM on a ZX440F is equipped with one low current programmable output (PGO1) and three high current bell outputs (FIRE BELL 1, FIRE BELL 2 & OTHER BELL). No outputs are available on the ZX440F Control Board. In addition, two ZXODMs (Output Driver Modules) can be added to provide 20 more programmable low current outputs which may be used to trigger other devices.

ZX440F Wiring Diagram

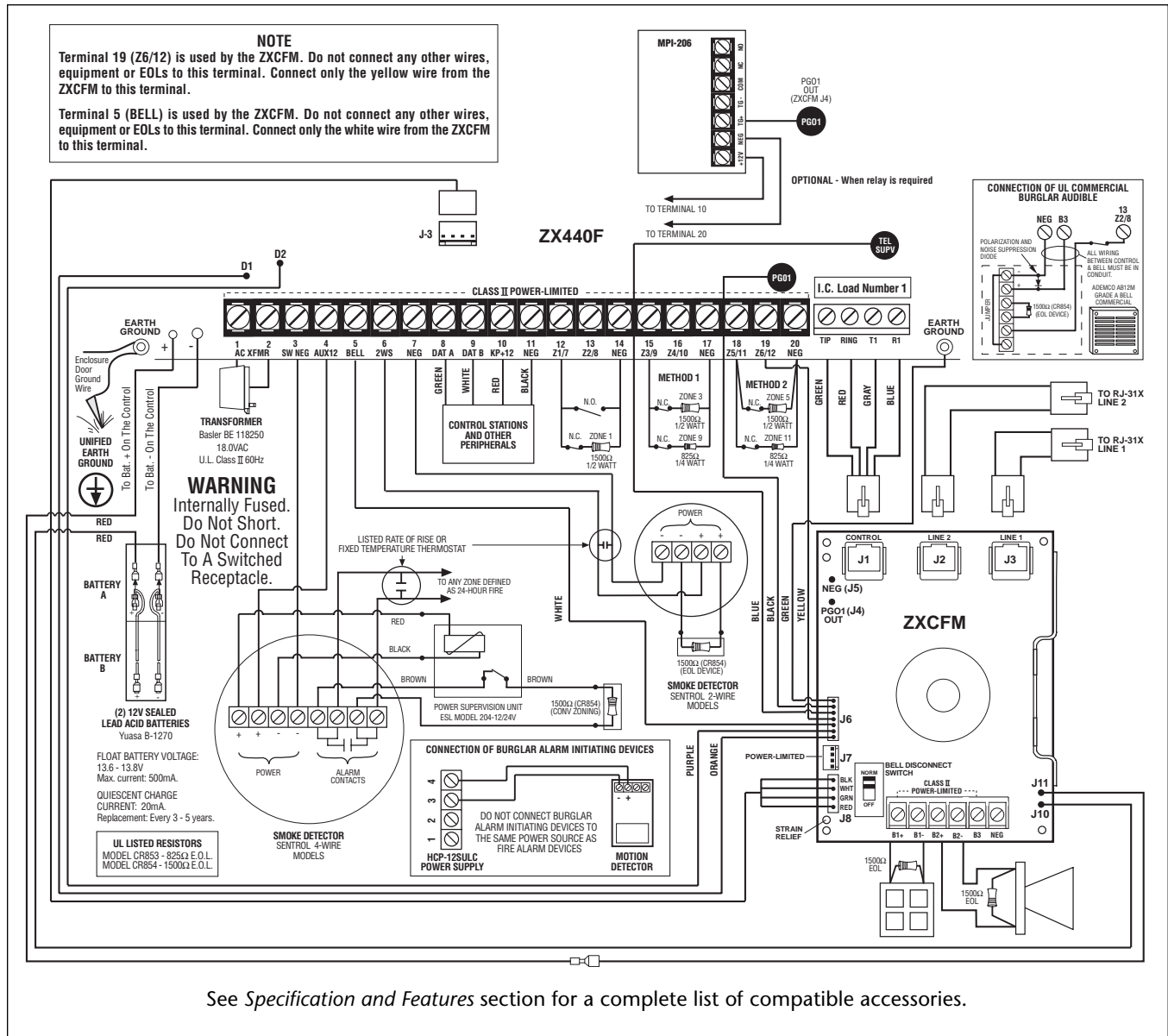


FIGURE 1 Suggested UL Household Burglar Alarm and/or Fire (ff) Alarm Hookup

ZX440F Terminal Descriptions

TERMINAL	FUNCTION	DESCRIPTION
1, 2	AC Input	Connect the appropriate UL Class II transformer using 18 gauge minimum 2 conductor wire. Do not exceed 50 feet. Use a T1850 transformer. CAUTION: Do not short the terminals of the transformer together. This causes the internal fuse to blow. The transformer must be connected to a 120 VAC, 24-hour outlet not controlled by a switch other than an approved over-current protection device. NOTE: For commercial fire applications, an F2600 transformer enclosure must be installed prior to connection of the primary power source. The AC power wiring must be routed through dedicated conduit and a dedicated enclosure knockout. It may not be intermixed with any low voltage power limited field wiring per NFPA 70.
3	Switched Negative	(-) Current limited 100 mA terminal. Negative connection for 4-wire smoke detectors, glass break detectors, and devices requiring resettable power.
4	Auxiliary Power (power-limited)	(+)12 VDC 500 mA continuous power. Overcurrent protected at 1.35 amps (PTC4). Used for powering motion detectors, 4-wire smoke detectors, glass break detectors, and other accessories. CAUTION: Use terminals 4 and 10 when calculating total current drain.
5	Supervised Bell Output (power-limited)	(+)12 VDC. Combined alarm current should not exceed 1.5 amps. Overcurrent protected at 1.85 amps (PTC2). Terminal 5 is connected to the ZXCFCM and the Bells and their EOLs are connected off of the ZXCFCM. Do not connect anything else to terminal 5.
6	Two Wire Smoke (Zone 30) (power-limited)	(+)12VDC of two-wire smoke detectors connected to this terminal. A 1500 Ohm EOL resistor (CR854) must be connected between terminals 6 and 7 regardless of whether a two-wire smoke detector is used or not. The maximum series resistance is 30 Ohms. The maximum voltage is 13.85 VDC. The maximum number of detectors is 20.
7, 11	Common Negative	BLACK WIRE - (-)12 VDC. Negative connection for Control Stations, zone expander, printer interface, ODMs, 2-wire smoke detectors, motion detectors, and other devices.
8	Local Data Bus In (A)	GREEN WIRE - Connection for Control Stations, zone expander, printer interface and ODMs. Use 22 gauge wire up to 1000 ft. Use 18 gauge wire up to 2000 ft.
9	Local Data Bus Out (B)	WHITE WIRE - Connection for Control Stations, zone expander, printer interface and ODMs. Use 22 gauge wire up to 1000 ft. Use 18 gauge wire up to 2000 ft.
10	Control Station Power (power-limited)	RED WIRE - (+)12 VDC 500 mA continuous power connection for Control Stations, zone expander, printer interface and ODMs. Overcurrent protected at 1.85 amps (PTC4). CAUTION: Use terminals 4 and 10 when calculating total current drain.
12 13 14 15 16 17 18 19 20	Zone 1/7 Loop (+) Zone 2/8 Loop (+) Common Negative Zone 3/9 Loop (+) Zone 4/10 Loop (+) Common Negative Zone 5/11 Loop (+) Zone 6/12 Loop (+) Common Negative	Each loop requires a 1500 Ohm end-of-line resistor (P/N CR854) for the primary zone, and an 825 Ohm end-of-line resistor (P/N CR853) for the secondary zone. A common negative is shared among all zones. The need for end-of-line resistors may be eliminated on all Burglar defined zones through programming. See Figure 1 for "2 in 1" Zoning™ wiring examples. Terminal 19 (Zones 6/12) is connected to the ZXCFCM for Phone Line Monitor and Ground Fault Monitor. Do not connect anything else to terminal 19.
TIP	Incoming Telephone Line	GREEN wire from RJ-31X direct connect telephone cord.
RING	Incoming Telephone Line	RED wire from RJ-31X direct connect telephone cord.
T1	House Phone Connection	BROWN wire from RJ-31X direct connect telephone cord.
R1	House Phone Connection	GRAY wire from RJ-31X direct connect telephone cord.
PGO1	Programmable Output 1	PGO1 is connected to the ZXCFCM.
TEL SUPV	Telephone Supervision	TEL SUPV is connected to the ZXCFCM.

ZXCFM Connection Descriptions

CONN	FUNCTION	DESCRIPTION
J1	Phone Interconnect	Phone connection to control panel.
J2	Phone Line 2	RJ-31X connection.
J3	Phone Line 1	RJ-31X connection.
J4	PGO1 Output	+12 VDC, 40 mA programmable output. (See Figure 1).
J5	NEG	Negative connection for PGO1.
J6	Panel Interconnect	Seven pin connection to panel. Provides AC Power, Bell Monitor, Phone Line Monitor, Ground Fault Monitor, Earth Ground, Phone Line Control, Bell and PGO1 Control and Sounder Control.
J7	Data Bus	Four-wire Data Bus connection for devices (NEG, DATA A, DATA B, +12 VDC). 500 mA continuous power, overcurrent protected at 0.9 Amps (PTC1).
J8	Data Bus Interconnect	Four-wire Data Bus connection to panel.
J10	Battery In	Connection to battery.
J11	Battery Out	Connection to (+) RED battery lead on control.
B1+	Fire Bell 1	(+)12 VDC. Alarm current should not exceed 0.5 Amps. Overcurrent protected at 0.9 Amps (PTC2). A 1500 Ohm EOL resistor (CR854) must be connected between terminals B1+ and B1-; otherwise a bell output fault will occur. The Bell Disconnect switch will disable the bell and cause a bell fault.
B1-	Fire Bell 1 Neg	(-) 12 VDC. Negative connection for Fire Bell 1.
B2+	Fire Bell 2	(+)12 VDC. Alarm current should not exceed 0.5 Amps. Overcurrent protected at 0.9 Amps (PTC7). A 1500 Ohm EOL resistor (CR854) must be connected between terminals B2+ and B2-; otherwise a bell output fault will occur. The Bell Disconnect switch will disable the bell and cause a bell fault.
B2-	Fire Bell 2 Neg	(-) 12 VDC. Negative connection for Fire Bell 2.
B3	Other Bell	(+)12 VDC. Alarm current should not exceed 0.5 Amps. Overcurrent protected at 0.9 Amps (PTC8). Unsupervised, an EOL resistor is not required.
NEG	NEG	(-) 12 VDC. Negative connection for Other Bell.

"2 in 1" Zoning™

NOTE

If a Normally Open Device is used with "2 in 1" Zoning™, a short will occur across both zone loops when that device goes into alarm. It is recommended that these types of devices be used with Conventional Zone wiring only. This type of wiring is not suitable for fire alarm initiating circuits.

The Sentrol ZX440F Security Control introduces an all new method of wiring zones that saves both time and wire costs. "2 in 1" Zoning™ allows the installer to wire two separate zones in parallel into one set of terminals.

Each zone is uniquely identified by its end-of-line resistor. The Primary Zone (zones 1-6) in each terminal is identified by a 1500 Ohm EOL resistor. The Secondary Zone (zones 7 - 12) is identified by an 825 Ohm EOL resistor. The Primary and Secondary zones operate as two independent zones to provide separate reporting, programming, and displays. Each zone is fully programmable as described in Installer Level Programming - Zone Data Descriptions. The zones are for Form A, Form B, or Form C sensors. **Maximum total loop wire and contact resistance (not including EOL) must not exceed 100 Ohms for the loop to function properly.**

There are two methods of wiring for "2 in 1" Zoning™. Method 1 wires one zone loop back to the control while a second zone loop is added in parallel off the first. This method may be employed in system retrofits, system expansions, or just simply to save wire cost and labor.

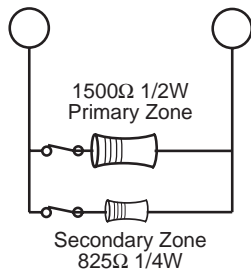


Figure 2 "2 in 1" Zoning™ Wiring - Method 1

Method 2 wires two separate zone loops back into one set of terminals. The panel recognizes each loop independently because two different EOL resistor values are used to differentiate between the Primary Zone (1500 Ohm 1/2 Watt) and the Secondary Zone (825 Ohm 1/4 Watt). This method provides two zones with one set of terminals and is ideal for pre-wire or already installed wiring.

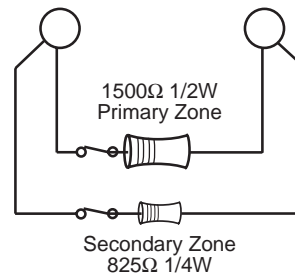


Figure 3 "2 in 1" Zoning™ Wiring - Method 2

NOTE

The resistors in Figure 2 & 3 are 1% values to maintain proper loop resistance values. If replacements are required, please refer to the manufacturer for correct replacements. The 1500 ohm resistor is color coded **Brown•Green•Black•Brown•Brown**. The 825 ohm resistor is color coded **Gray•Red•Green•Black•Brown**.

All zones sense five different voltage levels enabling one zone to act as two. Troubleshooting is simple using just a voltmeter at the control. The control monitors the voltage level across the zone and uses the voltage levels in Table 1 to determine whether the zone is normal, open, or shorted.

CONDITION	NOMINAL LOOP RESISTANCE	VOLTAGE READING
Primary Zone and Secondary Zone Open Contacts; Loop Cut or Open	Infinite Ohms	5.24 - 8.25 V
Secondary Zone Open Contact, Primary Zone Normal	1500 Ohms	4.24 - 5.23 V
Primary Zone Open Contact, Secondary Zone Normal	825 Ohms	3.24 - 4.23 V
Primary Zone and Secondary Zone Normal	825 Ohms in parallel with 1500 Ohms = 532 Ohms	2.00 - 3.23 V
Primary Zone and Secondary Zone Shorted	0 Ohms	0 - 1.99 V

TABLE 1 "2 in 1" Zoning™ Troubleshooting Chart

Conventional Methods of Wiring

Class 'B' End-Of-Line Resistor Supervised Zones

A Class 'B' zone must be supervised with a 1500 Ohm 1/2 Watt end-of-line resistor (P/N CR854). This resistor should be installed in series at the furthest point from the control. This configuration must be used whenever both Form A and Form B devices are connected and provides a high degree of protection against compromise or tampering. The control monitors the voltage level across the Primary zone and uses the Primary zone voltage levels in Table 1 to determine whether the zone is normal, open, or shorted. The operation of a zone is programmable as described in Installer Level Programming - Zone Data Descriptions. **Maximum total loop wire and contact resistance (not including EOLs) must not exceed 100 Ohms for the loop to function properly. The 1500 Ohm EOL resistor is optional for Form A connections but is required for Form B.**

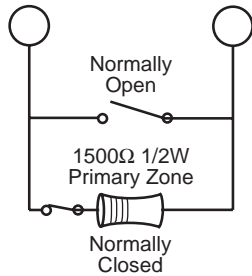


Figure 4 Conventional Zone Wiring Method

NOTE

For UL Listed systems, EOL Supervision is required.

Non-Supervised Closed Circuit Loop (No EOL Resistor Supervision)

The EOL resistor is not required on Burglar zones. A conventional closed circuit loop may be connected directly to a primary zone and the zone will have either a short or an open condition. See Installer Level Programming - Zone Data Descriptions for programming an unsupervised zone. Fire zones may not be installed as unsupervised. **Only Burglar defined zones may be wired non-supervised. "2 in 1" Zoning™ is not allowed.**

Control Station Addressing and Supervision

All Control Stations are shipped from the factory as Control Station #1. They may be set to other addresses as described below.

A supervised Control Station is reported as missing when the system fails to get any response from it. In order to maintain supervision, each supervised Control Station must have its own unique address.

SSD, LCD, and VFD Control Stations

These Control Stations have a four position DIP switch on the circuit board to set the address. To change the address, the DIP switch setting must be positioned according to Figure 5.

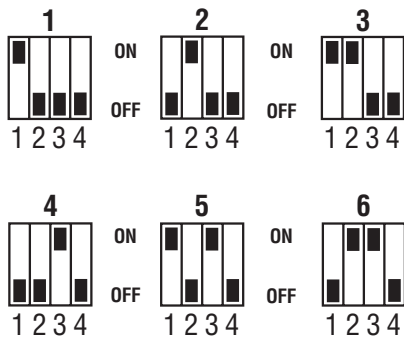


Figure 5 Control Station DIP Switch Settings

LED Control Stations

These Control Stations have a jumper on the circuit board to set the address. To change the address of the Control Station #1 to Control Station #2, remove JP2 (see Figure 6).

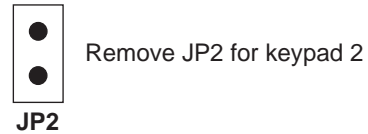


Figure 6 LED Control Station Jumper

Control Station Troubleshooting

If a Control Station is incorrectly wired, it will not accept keystroke entries. The following symptoms may appear:

SYMPTOM	CONDITION
No Control Station LED's or display	Black or Red Wire removed or cut
No response from key presses	Green Wire removed or cut or two supervised Control Stations at the same address
LED's flash and may display "No Communication From Control" code	White Wire removed or cut Green/White Wires reversed Green & White Wires shorted together

The nominal voltage at the control should measure as follows:

TERMINAL	VOLTAGE
from Common Negative (Terminal 7 or 11) to Data A (Terminal 8)	~ 8.7 VDC
from Common Negative (Terminal 7 or 11) to Data B (Terminal 9)	~ 3.5 VDC
from Common Negative (Terminal 7 or 11) to Control Station Power (Terminal 10)	~13.8 VDC

Clearing Trouble Messages

Once the system is up and running, trouble conditions may occur. Most trouble conditions are cleared automatically when the condition that initiated the trouble is restored or is eliminated. Three trouble conditions (Memory Error, Smoke Trouble and Missing Keypad) may be cleared manually by pressing and holding the Clear key for three seconds (until two beeps are heard). This action is also required to turn off the Duress output after it has been activated and to cause an "Installer Off Premises" event (see Operating the System - Installer On Premises).

A Bell 1 Silenced or Bell 2 Silenced trouble condition may only be cleared by performing a smoke reset operation.

12 VDC Outputs

The ZX440F control provides one switched negative output, one Control Station power output, one auxiliary power output, and one 2-wire smoke power terminal. The ZXCfm on a ZX440F provides three bell outputs and one programmable low current output (PGO1). (See Figure 1).

Additional Outputs

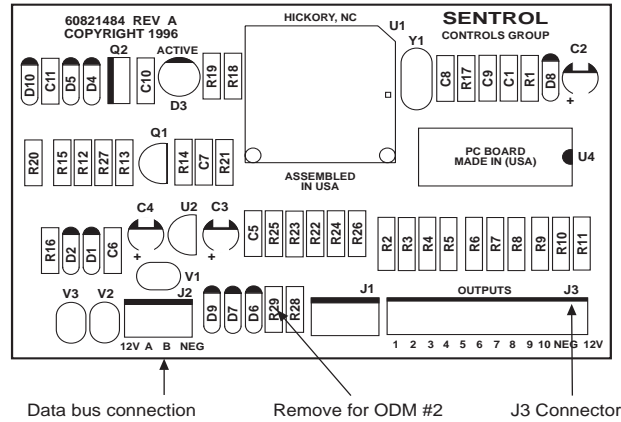
Additional outputs can be added with the ZXODM Output Driver Modules. Each module receives its data from the local data bus and provides ten additional programmable outputs. The outputs provide +12 VDC on activation and must be limited to 40 mA of current draw. ODM1 has 10 unique outputs. ODM2 also has 10 unique outputs.

The ODMs may be addressed as ODM1 or ODM2. You may use multiple ODMs at a given address provided that power restrictions are followed. The ODMs come defaulted from the factory as ODM1. To change from ODM1 to ODM2, remove power, cut resistor R29, and re-apply power. Connect the ODMs to the control as shown in Figure 7. Use the twelve (12) wire cable provided with the ODMs for the outputs as shown.

Output conditions can be programmed as one of many conditions. Refer to Installer Level Programming - Output Definitions Description for programming information and restrictions.

A ZXODM may be mounted in the control enclosure using the stand-offs provided in the ZEM/ODM mounting hardware pack (P/N 13000515), as shown in Figure 22.

DATA BUS CONNECTION	
RED	Connect to Control terminal 10
GREEN	Connect to Control terminal 8
WHITE	Connect to Control terminal 9
BLACK	Connect to Control terminal 7



J3 CONNECTIONS			
OUTPUT	WIRE COLOR	DEFAULT	DESCRIPTION
1	Tan	13	Burglar
2	Pink	3	Fire
3	Gray	14	Holdup
4	Violet	15	Auxiliary/Medical
5	Yellow	19	Arm AWAY
6	Orange	31	Chime
7	Blue	18	Ready
8	Dk Brown	25	Pre-Alarm
9	Green	34	Lamp
10	White	39	Access
NEG	Black		
12V	Red		

Figure 7 ZXODM Wiring Diagram

NOTE

The outputs on this module have limited transient immunity and should not leave the enclosure.

Outputs may be wired to indicator devices or relay module triggers (MPI-206) provided the 40 mA current draw condition is not exceeded. Figure 8 shows a wiring example for a relay to ODM 1 Output 2. Figure 9 shows a wiring example of ODM 1 Output 1 to trigger an LED.

NOTE

Connection to the ODM is only permitted in residential fire and all burglary applications.

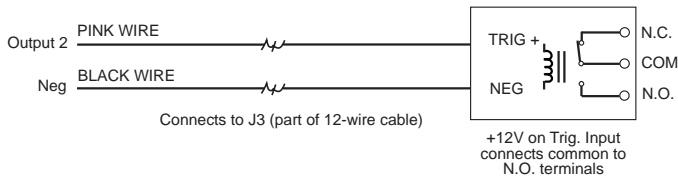


FIGURE 8 Output Connected to a Relay

NOTE

Do not exceed 250 mA of total current through the Red (+12V) and Black wires (Negative) of the twelve wire cable. Add 18 gauge wire from the appropriate control panel terminals for total current drains in excess of 250 mA.

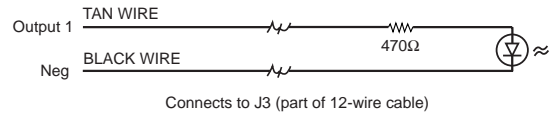


FIGURE 9 Output Connected to an LED

NOTE

The LED & 470 Ohm current limiting resistor shown in Figure 9 are not supplied.

Expansion Zones

Zones 13-28 are expansion zones. They may reside on any zone expansion device (ZXEXP or ZEM). Assignment of these zones to expansion devices is done through programming (see Installer Level Programming - Zone Data Descriptions).

The options available for all zones are described in the table below.

ZONE	ON-BOARD	ZXP ZONE	ZEM ZONE
1	On-Board Zone 1 Primary		
2	On-Board Zone 2 Primary		
3	On-Board Zone 3 Primary		
4	On-Board Zone 4 Primary		
5	On-Board Zone 5 Primary		
6	On-Board Zone 6 Primary		
7	On-board Zone 1 Secondary		
8	On-Board Zone 2 Secondary		
9	On-Board Zone 3 Secondary		
10	On-Board Zone 4 Secondary		
11	On-Board Zone 5 Secondary		
12	On-Board Zone 6 Secondary		
13		ZXP1 Zone 1 Primary	ZEM1 Zone 1
14		ZXP1 Zone 2 Primary	ZEM1 Zone 2
15		ZXP1 Zone 3 Primary	ZEM1 Zone 3
16		ZXP1 Zone 4 Primary	ZEM1 Zone 4
17		ZXP1 Zone 5 Primary	ZEM2 Zone 1
18		ZXP1 Zone 6 Primary	ZEM2 Zone 2
19		ZXP1 Zone 7 Primary	ZEM2 Zone 3
20		ZXP1 Zone 8 Primary	ZEM2 Zone 4
21		ZXP1 Zone 1 Secondary	ZEM3 Zone 1
22		ZXP1 Zone 2 Secondary	ZEM3 Zone 2
23		ZXP1 Zone 3 Secondary	ZEM3 Zone 3
24		ZXP1 Zone 4 Secondary	ZEM3 Zone 4
25		ZXP1 Zone 5 Secondary	ZEM4 Zone 1
26		ZXP1 Zone 6 Secondary	ZEM4 Zone 2
27		ZXP1 Zone 7 Secondary	ZEM4 Zone 3
28		ZXP1 Zone 8 Secondary	ZEM4 Zone 4
29		ZXP1 2-Wire Smoke Zone	
30	On-Board 2-Wire Smoke Zone		

TABLE 2 ZX440F Zone ID Assignments

ZXEXP Zone Expander Module

This module provides an additional 8 zones for the ZX440F Control. If "2 in 1" Zoning™ is desired, this module provides 16 zones. All zones are fully programmable (see Installer Level Programming - Zone Data Descriptions). The Zone Expander terminals map into zones on the control as shown in Table 2. An additional Two-Wire Smoke loop is also provided on this module (Zone 29). This loop follows the same wiring restrictions as Terminal 6 on the ZX440F control (max. 10 detectors). Fast zones may not be used on the Zone Expander Module.

Ten power-limited programmable outputs are available on the ZXEXP Zone Expander Module. These outputs are identical to the 10 outputs on ODM2. Connect the outputs to J2 on the ZXEXP in the same manner as J3 on the ZXODM. When using the outputs on this module, make sure all restrictions mentioned in the ZXODM section for power and negative are observed. The outputs have limited transient protection and should be properly protected (buffered by relays, etc.). They should be mounted in a suitable enclosure such as an EB1511 or EX1414 (part # 13000421).

Installation

1. Remove the plastic lid from the ZXEXP Zone Expander Module. Choose a suitable mounting place and mount the module with the two screws provided. It is recommended that the module be placed in a suitable enclosure like the EB1511 for additional environmental protection.
2. Connect the ZXEXP to the ZX440F local data bus. **For a UL Household Fire System, the ZXEXP must be mounted within 500 ft. of the ZX440F and the maximum Smoke Zone resistance is 20 Ohms.**
3. Wire initiating devices to the appropriate zone terminals on the ZXEXP module (see Table 2). Follow the same guidelines for "Hardware Zone Wiring" as completed for the control zones.
4. Use the 12 wire cable to connect outputs as described in the ZXODM section.
5. The "Active" LED will flash to indicate the ZXEXP is communicating with the control.

DATA BUS CONNECTION	
RED	Connect to Control terminal 10
GREEN	Connect to Control terminal 8
WHITE	Connect to Control terminal 9
BLACK	Connect to Control terminal 7

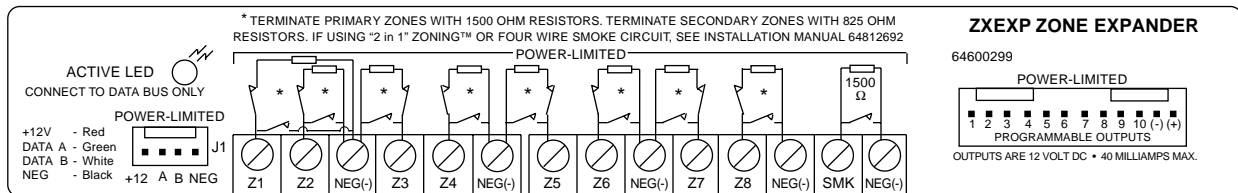


FIGURE 10 ZXEXP Zone Expander Module

Fire Zone Modules

ZEM Zone Expansion Module

The ZX440F provides an option for adding Class A and Class B Fire zones. These zones may be connected to ZEM Fire Zone Expansion Modules. There are three models of ZEMs available:

- 2502-ZEM Two Class B Zones
- 2502A-ZEM Two Class A Zones
- 2504-ZEM Four Class B Zones

Refer to the ESL 2504/2502/2502A-ZEM Installation Instructions 64812713B for additional information.

A ZEM may be mounted in a ZX440F control enclosure as shown in Figure 11. A ZEM may also be mounted in an EX1414 enclosure (P/N 13000421). Always use a ZEM/ODM mounting hardware pack (P/N 13000515). Connect the ZEM to the ZX440F local data bus using one of the ZEM's two data bus connectors. The second data bus connector may be used to connect another ZEM to the system.

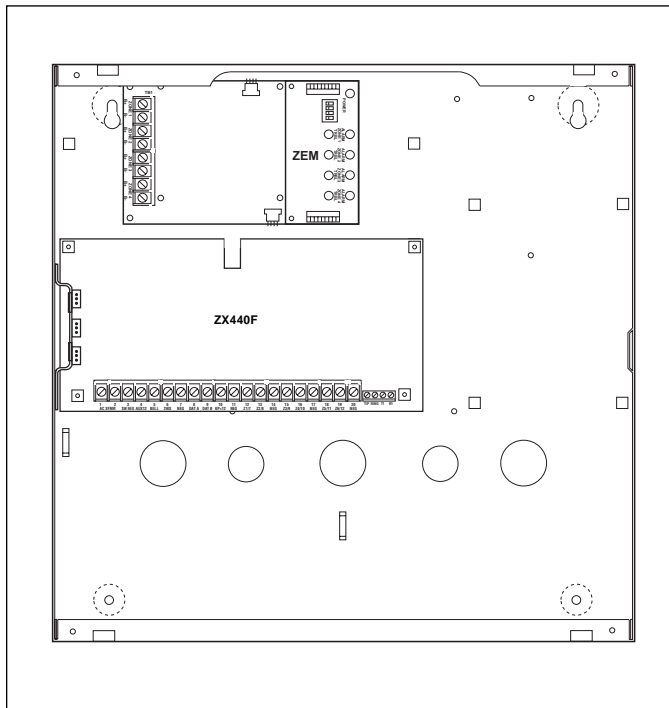


FIGURE 11 ZEM Mounting

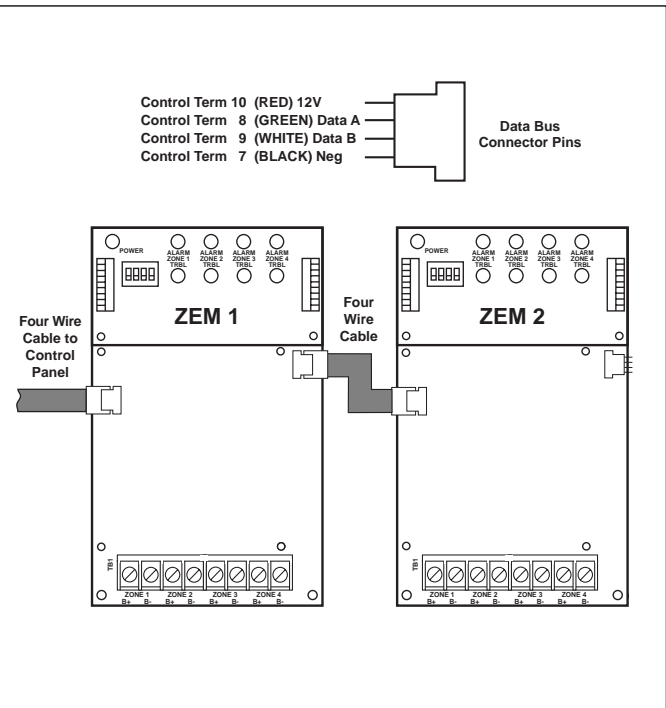


FIGURE 12 ZEM Module Connection

Up to four ZEMs may be connected to the system. Set the address switches on a ZEM to provide the following zones:

Be sure that no two ZEMs have the same address settings.

ZEM #	S1	S2	S3	S4	ZONES
1	ON	OFF	OFF	OFF	13 & 14 OR 13 - 16
2	OFF	ON	OFF	OFF	17 & 18 OR 17 - 20
3	ON	ON	OFF	OFF	21 & 22 OR 21 - 24
4	OFF	OFF	ON	OFF	25 & 26 OR 25 - 28

TABLE 3 ZEM Address Switch Settings

Connect initiating devices to the ZEM (see figures below).

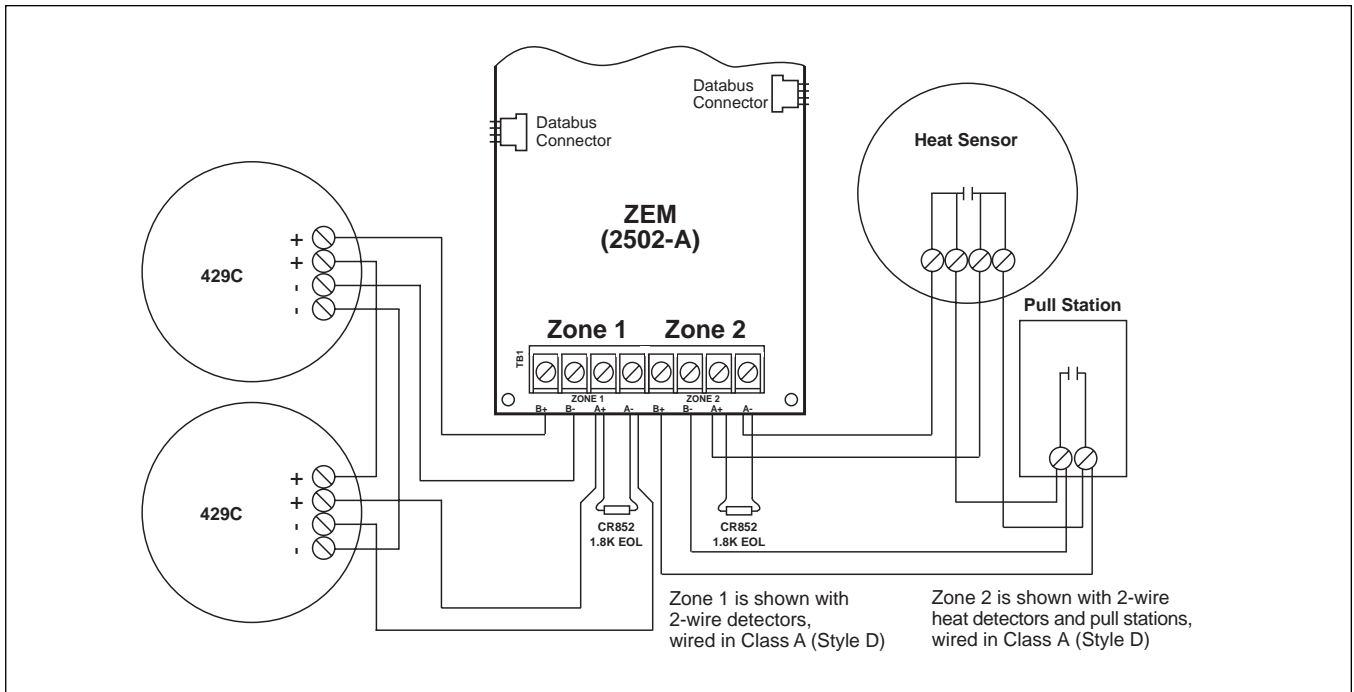


FIGURE 13 Class A Connection

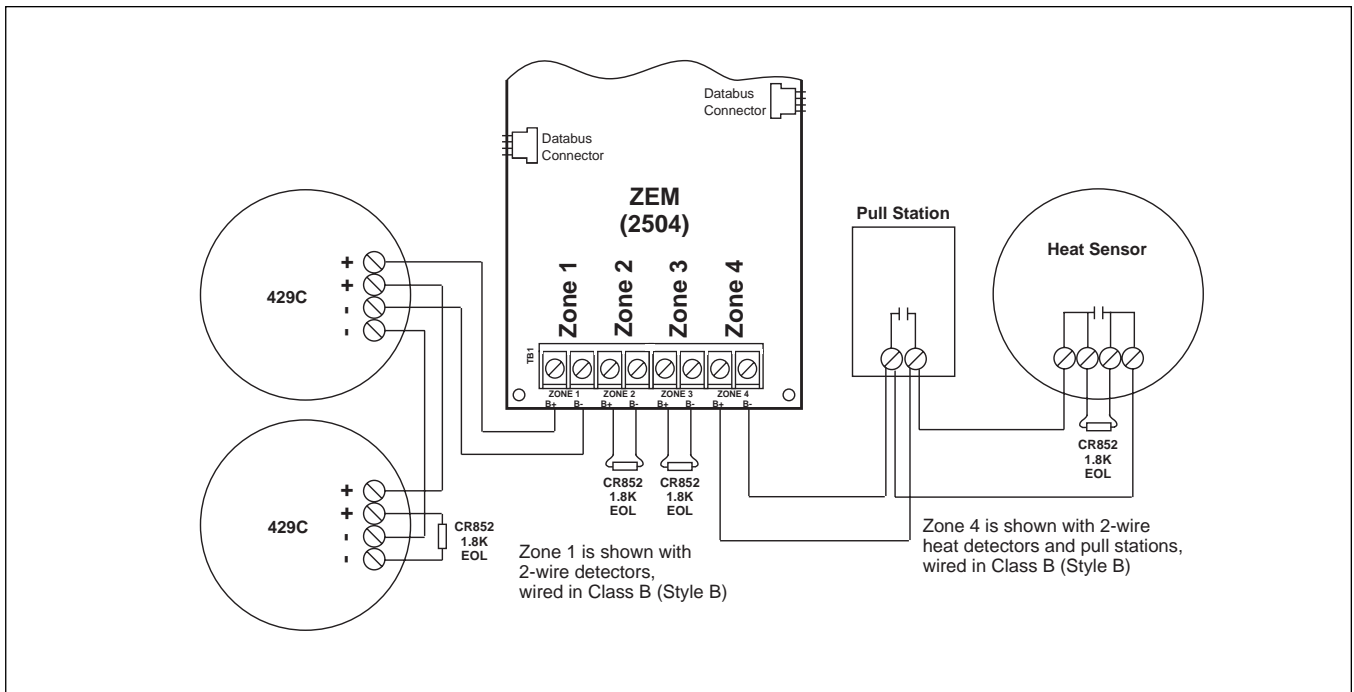


FIGURE 14 Class B Connection

Ensure that the Function Jumper for each zone is always in the NORM position.

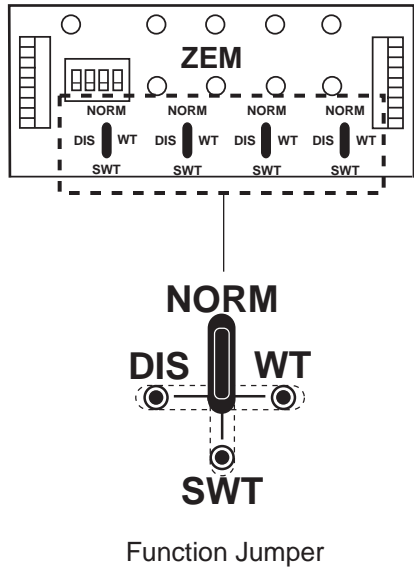


FIGURE 15 ZEM Function Jumpers

ZRM Zone Relay Module

The ZRM Zone Relay Module is a zone follower with a relay following its corresponding zone on a ZEM. A ZRM plugs directly into a ZEM and only requires wiring the terminals labeled NO, COM, and NC. Each relay has dry, Form "C" contacts rated 2A @ 30 VDC resistive.

NOTE

Circuits connected to a ZRM must be power-limited.

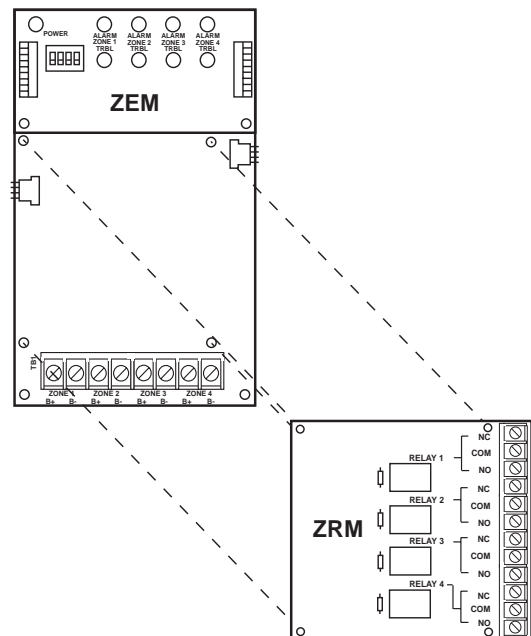


FIGURE 16 Mounting ZRM to ZEM Module

ZXCFCM Commercial Fire Module

UL 864 Compliance

The ZX440F with a properly installed ZXCFCM Fire Module complies with the following UL Control Unit Classifications (3.6) definitions under UL 864 Standard for Control Units for Fire Protective Signaling Systems:

- NFPA 72 - Local Protective Signaling Systems and Central Station Systems

If a Printer Interface and/or Zone Expander(s) are used with the Commercial Fire System, they must be installed within 20 feet of the control unit with all interconnections in conduit.

Minimum System Configurations

- One ZX440F Control/Communicator
 - ZX400 Control Board
 - ZXCFCM Fire Module
 - EX1414-RED Enclosure
 - Dual Battery Harness
- One ZXLCD Control Station
- Two 12 VDC, 7 Ah sealed lead acid batteries
- One T1850, 18 VAC, 50 VA Transformer
- One F2600 Transformer Enclosure
- One UL Listed Smoke Detector (see List of Compatible Accessories)
- One UL Listed Fire Audible Signaling Device

Maximum System Configurations

- One ZX440F Control/Communicator
 - ZX400 Control Board
 - ZXCFCM Fire Module
 - EX1414-RED Enclosure
- One ZXLCD Control Station
- Two 12 VDC, 17.2 Ah sealed lead acid batteries
- One CR862 dual battery harness
- One EB1511 Auxiliary Battery Enclosure
- One T1850, 18 VAC, 50 VA Transformer
- One F2600 Transformer Enclosure
- UL Listed peripheral devices including smoke detectors and audibles must not exceed a combined current drain of 450 mA (see List of Compatible Devices)

ZXCFCM Fire Module Kit

The ZXCFCM Fire Module Kit is designed to provide the hardware necessary to upgrade a ZX410 to meet the requirements for a UL Listed commercial fire system per UL 864/NFPA 72 Local Protective Signaling Systems and Central Station Systems.

ZXCFCM Contents

- One ZXCFCM Fire Module
- One dual battery harness
- Two ZXCFCM battery leads
- One phone cable assembly (Part Number 13000505)
- Four PCB Supports
- Four #6-32 x 3/8" mounting screws
- Two #6 x 1/4" hex heat sink screws
- Two output wire assemblies
- One T1850 18 VAC, 50 VA transformer

Upgrading a ZX410 With a ZXCFCM

1. Before connecting the control to its external power source, remove the ZXCFCM components from the packing material and inspect to ensure that all components are present.
2. Disconnect battery. Remove power and replace transformer with T1850 transformer.
3. Locate the (4) ZXCFCM PCB Supports in the hardware pack.
4. Press the supports into the enclosure, either from the rear or from the front of the enclosure, in the four square embossed holes (see Figure 18). The snaps may be pressed into the holes from the rear of the enclosure or installed from the front by compressing the snap before insertion into the hold.
5. Align the four holes in the ZXCFCM printed circuit board with the four PCB supports.
6. Secure the ZXCFCM to the enclosure using four (4) #6-32 x 3/8" machine screws provided. Secure the ZXCFCM heat sink to the side of the enclosure using two (2) #6 x 1/4" hex heat sink screws provided.

7. Make the following wire connections from the ZXCFM (J6) to the ZX400 control panel (see Figure 1):
 - a. Orange wire to AC post D1
 - b. Purple wire to AC post D2
 - c. White wire to Bell (terminal 5)
 - d. Yellow wire to Z6/12 (terminal 19)
 - e. Blue wire to post TEL SUPV (TP1)
 - f. Black wire to post PGO1 (TP2)
 - g. Green wire to Earth Ground
8. Connect the phone cable assembly from the ZX400 control panel to Telco jack (J1) on the ZXCFM.
9. Connect the 4-wire cable (J8) on the ZXCFM to the bus connector (J3) on the ZX400 control board.

10. Connect two 7 Ah batteries with the dual battery harness provided. (See Figure 17). Connect the (-) battery terminal to (J2) on the control using the control battery lead. Connect the (+) battery terminal to (J10) on the ZXCFM using a ZXCFM battery lead. Connect (J1) on the control to (J11) on the ZXCFM using the control battery lead and the other ZXCFM battery lead.

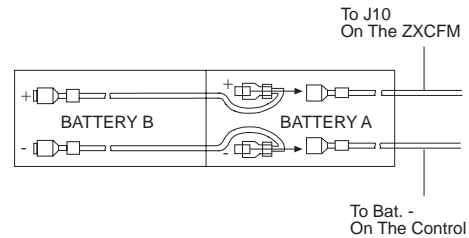


FIGURE 17 Connection of the Dual Battery Harness

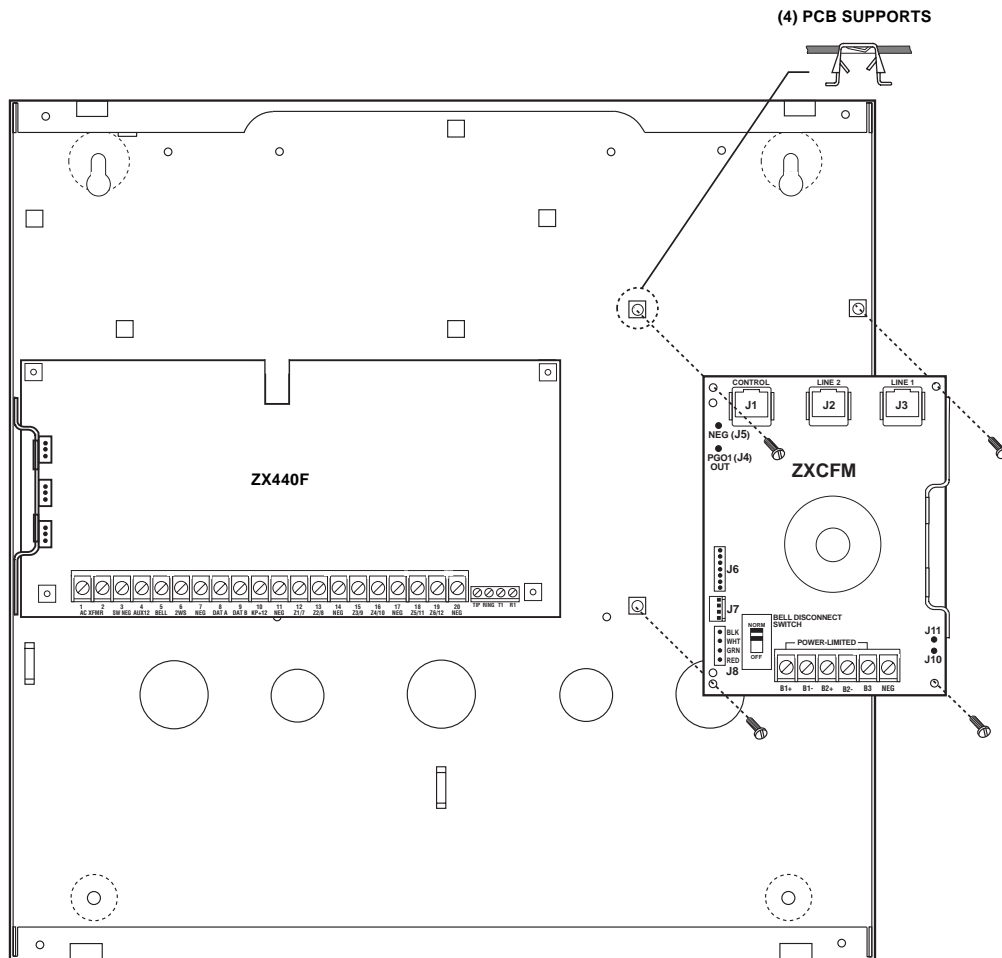


FIGURE 18 Installing the ZXCFM Fire Module to the ZX410 enclosure

Installation of the F2600 Transformer Enclosure

The transformer enclosure ensures that the AC plug-in transformer remains securely fixed to the AC wall outlet. Before installing, disconnect primary power source. Restore power only after the transformer connection has been double-checked for accuracy.

1. Mount the gang box to the wall or supporting structure.
2. Insert the gang box partition into the gang box. The partition divides the gang box into two sections. The large section contains high voltage wiring; the small section contains low voltage wiring.
3. Punch out a conduit knockout in the high voltage side of the gang box. Route the 110 VAC wiring through the knockout hole and into the gang box. Connect the isolated 110 VAC wiring to the duplex outlet.
4. Mount the duplex outlet to the cover plate and the cover plate to the gang box.
5. Punch out a conduit knockout in the low voltage side of the gang box. Route the low voltage wiring to the transformer.
6. Plug the transformer into the bottom outlet of the duplex outlet. Secure the transformer to the duplex outlet.
7. Attach the cover to the cover plate.

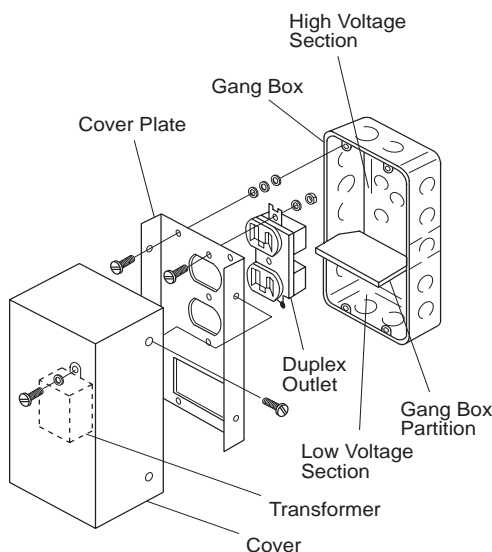


FIGURE 19 Transformer Enclosure

Defaulting the Control for Commercial Fire Alarm Use

If the ZXCFM is added to an existing ZX410 control, then the ZX410 control panel must be defaulted in software programming for commercial fire use.

To default the control panel for commercial fire use:

1. Press 9 (Program)
2. Enter Installer Passcode
3. Select Option 6 (Default the Panel)
4. Select Option 1 (Commercial Fire)
5. Re-enter installer passcode to verify

The system default changes are:

PROGRAM FUNCTION	STANDARD DEFAULT	COMMERCIAL FIRE
AC Fail Delay	30 min	7 hours
Zone 6	Burglar	Not Used (Telco Monitor)
Zone 12	Burglar	Not Used (Ground Fault)
Phone Line 1	Enabled, No Monitor	Enabled with Monitor
Phone Line 2	Disabled	Enabled with Monitor
System Events Phone No.	0	3
Comm Test Not Normal Report Code	00	F2
Comm Test Report Code	00	F1
Days Between Comm Tests	0	1

Optional Battery Configurations

In order to meet UL864 standby current requirements of 24 hours at 450 mA, a minimum of two 12 VDC, 7 Ah sealed lead acid batteries must be installed utilizing the dual battery harness as shown in Figure 17. However, a single 12 VDC, 17.2 Ah sealed lead acid battery may be used in place of the two 7 Ah batteries to obtain the same standby current using the CR862 Dual Battery Harness. See Figure 20 with Battery A only.

To increase standby current to 60 hours at 180 mA, two 12 VDC, 17.2 Ah sealed lead acid batteries may be installed in place of the two 12 VDC, 7 Ah batteries. The CR862 Dual Battery Harness must be used to connect the 17.2 Ah batteries to the control. The EB1511 Auxiliary Battery Enclosure is required to house the batteries. Additionally, all interconnections must be run in conduit. Install the batteries as shown in Figure 20.

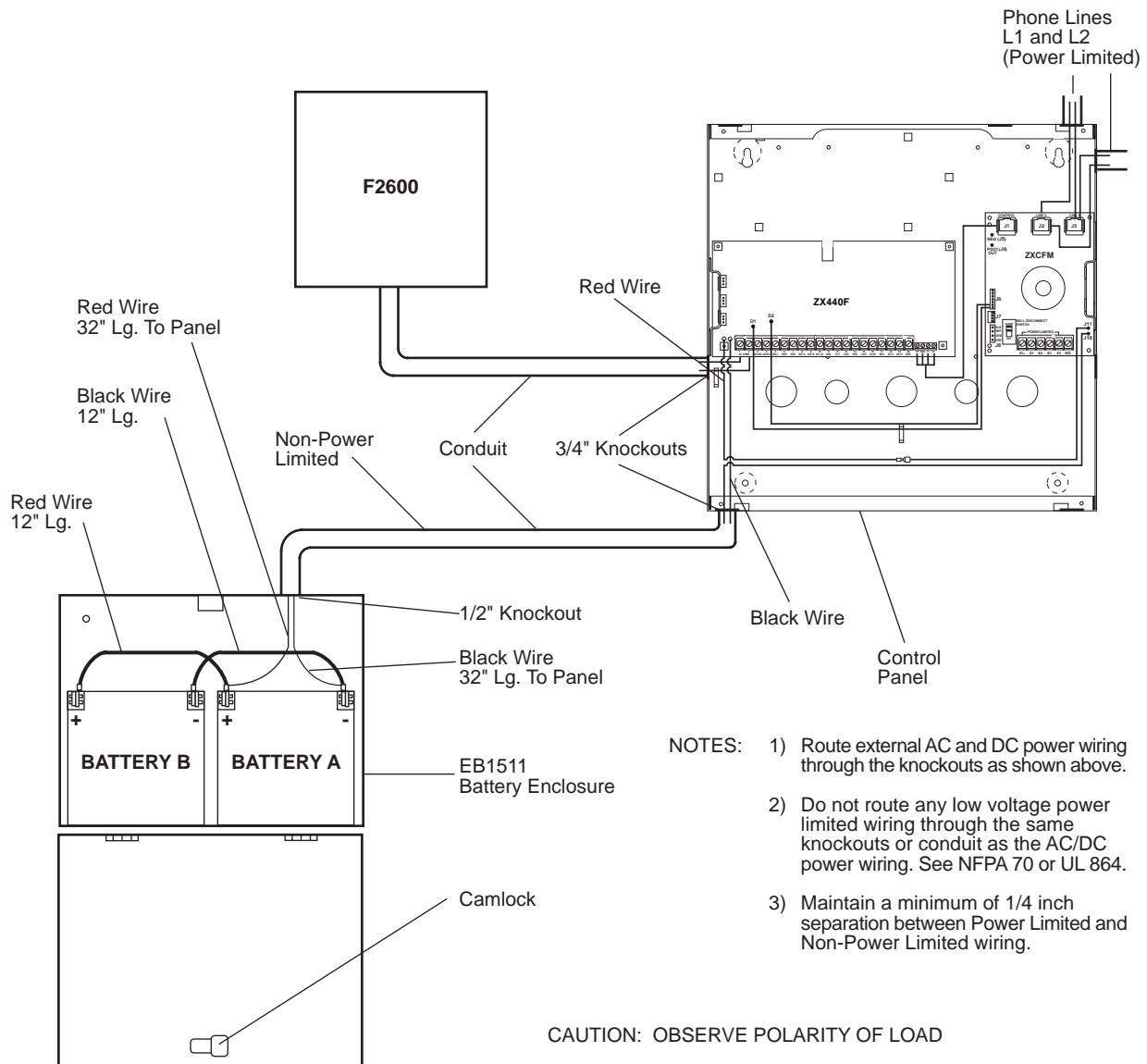


FIGURE 20 Connection of the CR862 Dual Battery Harness and Power Conductor Routing

ZX440F Power Worksheet

ITEM	DESCRIPTION	STANDBY CURRENT PER UNIT (AMPS)		QTY		TOTAL STANDBY CURRENT PER ITEM (AMPS)	TOTAL ALARM CURRENT PER UNIT (AMPS)		QTY		TOTAL SYSTEM ALARM CURRENT (AMPS)		
			X		=			X		=			
			X		=			X		=			
			X		=			X		=			
			X		=			X		=			
			X		=			X		=			
			X		=			X		=			
			X		=			X		=			
			X		=			X		=			
			X		=			X		=			
			X		=			X		=			
		TOTAL SYSTEM STANDBY CURRENT (AMPS)							TOTAL SYSTEM ALARM CURRENT (AMPS)				

REQUIRED OPERATING TIME OF SECONDARY POWER SOURCE FROM NFPA 72 1-5.2.5:

STANDBY: _____ HOURS ALARM: _____ MINUTES X 1/60 = _____ HOURS

REQUIRED STANDBY TIME (HOURS)		TOTAL SYSTEM STANDBY CURRENT (AMPS)		REQUIRED STANDBY CAPACITY (AMP-HOURS)	REQUIRED ALARM TIME (HOURS)		TOTAL SYSTEM ALARM CURRENT (AMPS)		REQUIRED ALARM CAPACITY (AMP-HOURS)
	X		=			X		=	

REQUIRED STANDBY CAPACITY (AMP-HOURS)		REQUIRED ALARM CAPACITY (AMP-HOURS)		TOTAL REQUIRED CAPACITY (AMP-HOURS)		OPTIONAL FACTOR OF SAFETY		REQUIRED BATTERY CAPACITY (AMP-HOURS)
	+		=		X			

Auxiliary Power Supply Installation

To increase the available current supplied by the ZXCFM, a HCP-12SULC Power Supply may be added. Each HCP-12SULC supplies an additional 450 mA of current, utilizing at least one 12 Ah battery. See Figure 21.

The HCP-12SULC Power Supply can provide a 12 VDC power output, with a current rating of 2.0 A continuous, while the AC primary power source is present. If the primary source is lost, the HCP-12SULC electronically switches to the standby battery.

When using this power supply on a listed system, a duplex utility cover for the primary power outlet must be installed. Install conduit or another listed raceway between all connecting junction boxes and protective enclosures as shown.

Use only the battery and transformer as recommended in the HCP-12SULC Installation Instructions P/N 64812502. For information about the connection of additional batteries, see "Optional Battery Configurations" earlier in this section.

The HCP-12SULC must not be connected to a load which exceeds 2.0A continuous demand.

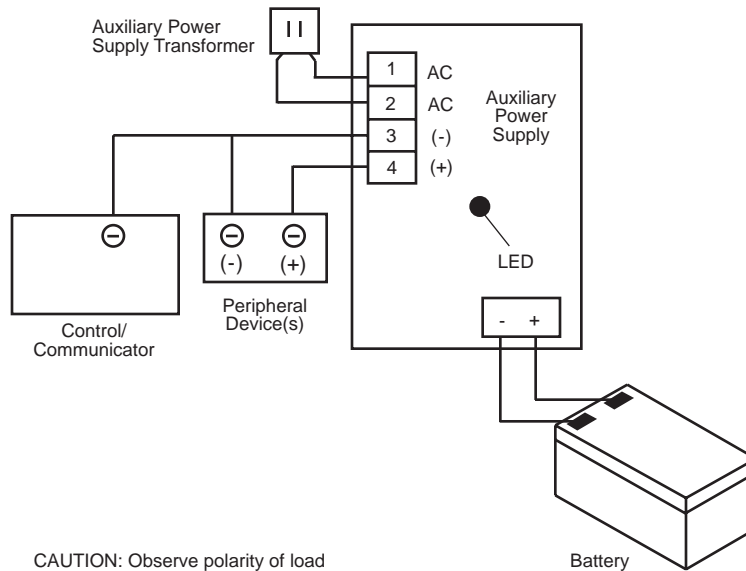


FIGURE 21 HCP-12SULC Power Supply Installation

System Power Routing

Non-power limited fire alarm system wiring may be installed using any of the methods permitted by Article 760 of the National Electrical Code (NEC), NFPA 70-1996, for non-power limited fire alarm (NPLFA) circuits. See 760-21 to 760-31 of NFPA 70-1996.

circuits must be separated from non-power limited fire alarm circuits and ordinary light and power circuits pursuant to the requirements of Article 760-54 of the NEC. Figure 22 below shows one method of routing conductors that can be used to comply with the required 1/4 inch separations.

The circuit conductors of power limited fire alarm

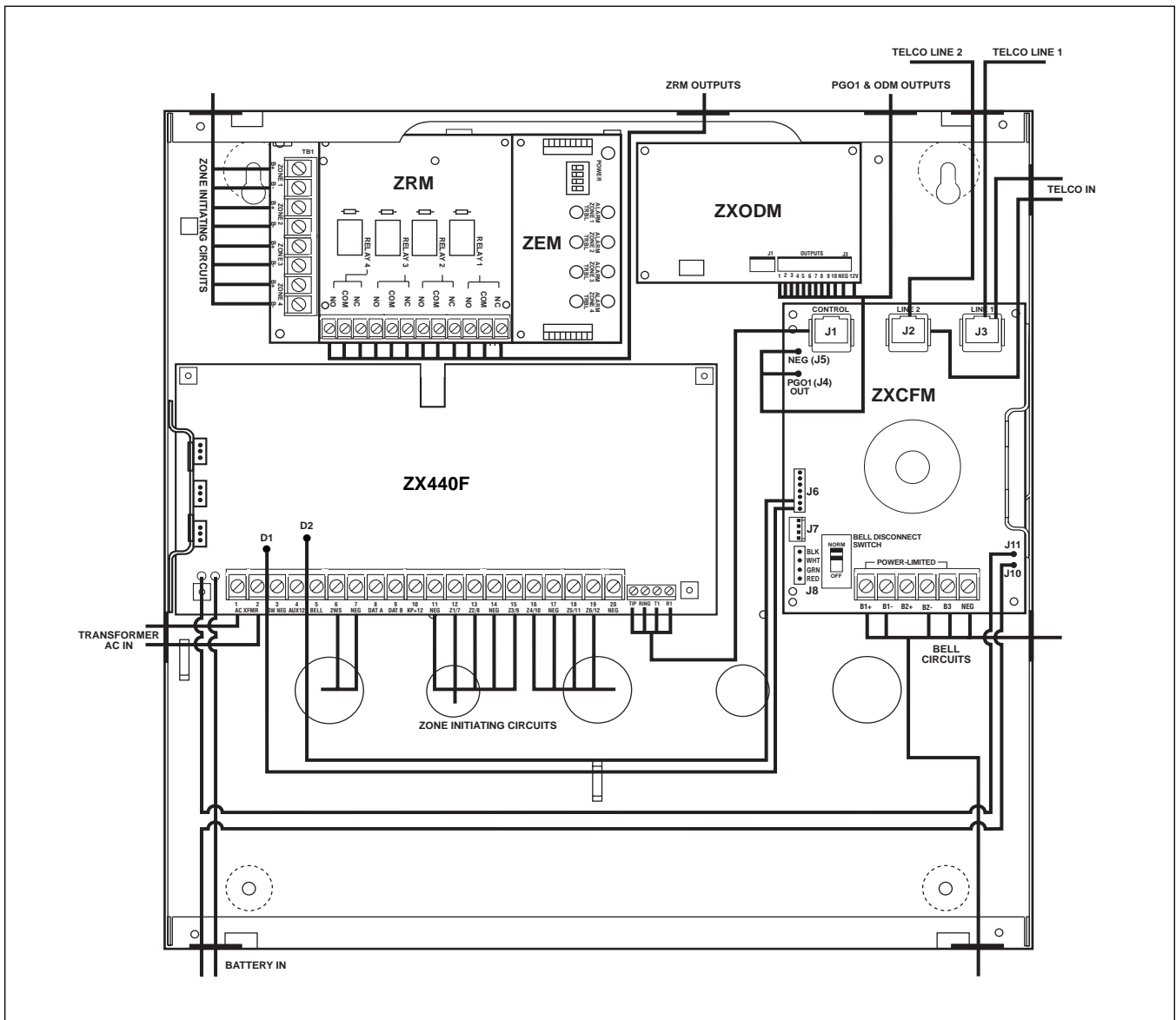


FIGURE 22 System Power Routing

ZXPTR Printer Interface Module

The optional ZXPTR Printer Interface Module connects to the local data bus and can be used for printing events in real-time or on command. This module interfaces with any Centronics-style parallel printer. Only one printer may be used per system. Note that the printer connection is not supervised.

1. To install the ZXPTR, choose a suitable location, but not more than 25 feet from the Centronics-style parallel printer, following the wiring description in Figure 1.
2. Remove the cover and circuit board and mount the base to an appropriate wall or desktop.
3. Attach the printer cable to the ZXPTR printer port and affix with screws if desired.
4. Wire the local data bus to the terminals: +12V is red; Data A is green; Data B is white; NEG is Black.
5. Reinstall the circuit board and cover.
6. The "Active" LED will flash to indicate the ZXPTR is communicating with the control.

Specifications And Features

Control Board

- Five (5) two-wire zones, each supervised with a 1500 Ohm end-of-line resistor. "2 in 1" Zoning™ provides ten (10) fully programmable zones with 1500 and 825 Ohm resistors. Zones 6 & 12 are dedicated to Telco Monitor and Ground Fault Monitor and are not available. System expansion to 26 fully programmable zones via Zone Expander Module (ZXEXP).
- Fast zone loop response time: 80 msec (zones 1-5), 20 msec (zones 7-11).
- Two supervised, assignable, high current, Fire Bell outputs via Fire Module (ZXCFCM).
- One assignable, high current, alarm output via ZXCFCM.
- One programmable low current output (40 mA) via ZXCFCM.
- Trouble sounder via ZXCFCM.
- Two supervised telephone lines via ZXCFCM.
- Dedicated two-wire smoke detector zones on control (zone 30) and zone expander (zone 29).
- Three (3) Control Station activated panic zones.
- Nominal current drain for control board only 126 - 154 mA.
- Watchdog microprocessor monitoring.
- Superior six (6) stage lightning/transient protection.
- One switched negative output (100 mA).
- Expandable to twenty-one (21) programmable low current outputs via two output driver modules, and/or a zone expander.
- Continuous battery monitoring.
- Low voltage detection monitoring @ 11.3 volts threshold.
- Automatic system shutdown if voltage falls below 9.8V.
- Operating temperature range inside the enclosure: 32°F to 122°F (0°C to +50°C).
- Two and four-wire smoke zones available.
- Control Station Programmable.
- Upload/Download via RPM/2 Pro.
- Loop response time: 320 msec (general purpose hardwired zones), 1600 msec (two-wire smoke zones).

Power Supply

- Fully regulated 13.8 volt 2.0 Amp supply available with an 18 VAC 50 VA transformer.
- Reverse polarity protection on battery inputs.
- Floating charging circuit: 13.8 volts DC.

Recommended Battery

- Two rechargeable 12 VDC 7 Ah sealed lead acid batteries to meet the UL 864 and UL 985 Fire requirement of 24 hour standby at 450 mA.
- Two rechargeable 12 VDC 17.2 Ah sealed lead acid batteries to meet UL 864 Fire requirement of 60 hour standby of 180 mA.

Transformer

- UL Listed Class II plug-in; 18 VAC 50 VA secondary; 120 V 60 Hz primary connected to 24-hour unswitched outlet. Sentrol P/N T1850.

Enclosure

- EX1414F red enclosure.

Digital Communicator

- DTMF Touchtone™ or Rotary (pulse) dialing. Rotary speed: 10pps, (selectable U.S. style 60% break, 40% make or International style 66% break, 33% make).
- Ringer equivalence: 0.0B.
- Transmission formats include: Contact ID, 20 and 40 baud Pulse Formats (3/1, 4/1, 4/2, Hexadecimal Reporting), Non-Telco Contact ID, Pager.
- Reports to most major Central Station receivers.
- Primary phone number can have up to 20 digits.
- Secondary phone number can have up to 20 digits.
- Two pager phone numbers, each can have up to 20 digits

- Remote programming phone number can have up to 20 digits.
- Reporting capabilities: two 4-digit account codes per area, two 4-digit system account codes, report by zone, opening and closing reports, force arm/bypass reports, restoral reports, trouble reports, cancel reporting, low battery, AC failure/restoral.
- Dual and split reporting capability.
- Sentrol communication defaults for quick programming.
- Disable call waiting.

Control Stations

- Color-coded four-wire data bus connection.
- 19-Button Control Station with audible feedback.
- Three (3) Control Station panic button zones.
- Surface mountable; mounts to any standard single or double gang electrical box.
- Built-in piezo sounder.
- Easy-to-read arming level: AWAY, STAY, and NIGHT backlit LEDs.
- Backlit keys with door.
- Unsupervised Control Stations allows up to 12 Control Stations.

ZXLCD Control Station

(Required for Commercial Fire Applications)

- LCD backlighting.
- Two lines x 16 characters LCD display.
- Area assignable/Multi-area.
- Addressable with DIP switches, supervised/unsupervised.
- Plain English display.
- Nominal current drain: 20mA - 110mA.
- Up to six (6) supervised Control Stations per system.
- Size: 5.33"H x 6.08"W x 1.024"D (135.4 mm x 154.4 mm x 26.0 mm).
- Optional red plastic for Commercial Fire applications

ZXVFD Control Station

- Two lines x 16 characters VFD display.
- Area assignable/Multi-area.
- Addressable with DIP switches, supervised/unsupervised.
- Plain English display.
- Nominal current drain: 20 - 170 mA.
- Up to six (6) supervised Control Stations per system.
- Size: 5.33"H x 6.08"W x 1.024"D (135.4 mm x 154.4 mm x 26.0 mm).

ZXLED12 Control Station

- Thirteen (13) LEDs annunciate general purpose zones 1 through 12 and control board Two-Wire Fire zone.
- Ready & trouble LEDs.
- Addressable as Control Station #1 or #2. Jumper change makes Control Station unsupervised.
- Area assignable/Single area.
- Nominal Current Drain: 23 - 31 mA.
- Size: 5.0"H x 4.5"W x 1.0"D (127 mm x 114.3 mm x 25.4 mm).

ZXSSD Control Station

- Three 0.56" (14.2 mm) seven segment display digits.
- Ready & trouble LEDs.
- Up to six (6) supervised Control Stations per system.
- Area assignable/Multi-area.
- Addressable with DIP switches, supervised/unsupervised.
- Nominal Current Drain: 23 - 116 mA.
- Size: 5.0"H x 4.5"W x 1.0"D (127 mm x 114.3 mm x 25.4 mm).

Optional Accessories

- ZXEXP Zone Expander Module: Expands the control to 8/16 additional zones. Provides an additional two-wire smoke zone (max. 10 detectors). Provides 10 additional programmable outputs. Nominal current drain: 60 - 72 mA with no outputs connected.

- ZXODM: Output Driver Module: Provides ten (10) fully programmable 40 mA + 12 VDC outputs. Nominal current drain: 10 - 13 mA with no outputs connected.
- ZXPTR Printer Interface Module: Allows connection of a standard parallel printer via interface. Nominal current drain: 45 - 55 mA without printer connected.
- ZX410 - ZX400 Control board mounted in EX1414 enclosure. (The ZX410 assembly is required for Burglary applications).
- ZX440F - ZX400 Control board mounted in EX1414F enclosure with ZXCFCM Fire Module. (The ZX440F assembly is required for Commercial Fire applications).
- F2600 Transformer Enclosure: Ensures that the AC plug-in transformer remains securely fixed to the AC wall outlet. (Required for Commercial Fire applications).
- T1850 Transformer: UL Listed Class II plug-in 18 VAC 50 VA secondary.
- HCP-12SULC Power Supply: Provides a 12 or 24 VDC power-limited output with a current rating of 2.0 A continuous while the AC primary power source is present.
- Dual Battery Harness: Allows for an additional 12 VDC 7 Ah sealed lead acid battery connection to the control to meet additional standby requirements.
- CR862 Battery Harness: Allows for 12 VDC 17.2 Ah sealed lead acid battery connection to the control to meet additional standby requirements.
- EB1511 Auxiliary Enclosure: 15" x 11" x 4" enclosure with cam lock allows wall mounting of accessories and batteries.
- AE912 Raucous Sounder: Current consumption: 28 mA @ 12 VDC.
- MPI-266 Battery Cut-Off Module: Disconnects battery from deep discharges.
- MPI-267 Power Disconnect Module: Disconnects battery from deep discharges.
- MPI-268 Earth Ground Fault Detector: Current consumption: less than 20 mA.
- MPI-206 General Purpose Relay Module.
- ZEM Fire Zone Expansion Modules:
 - 2502-ZEM Two Class B Zones
 - 2502A-ZEM Two Class A Zones
 - 2504-ZEM Four Class B ZonesCurrent Drain: 40 - 60 mA.
Max. Line Resistance: 100 Ohms (Class B)
50 Ohms (Class A)

- ZRM Zone Relay Modules:
 - ZRM-2 (2 Zones)
 - ZRM-4 (4 Zones)Contact Rating: 5 A @ 12 VDC, 120 VAC resistive.
- ZXLCD1 LCD Keypad Demonstrator. (*Demo Unit Only*).
- ZXVFDD1 VFD Keypad Demonstrator. (*Demo Unit Only*).

Output Provisions

Low Current Trigger Outputs: Current output of 40 mA each. One output on ZXCFCM Fire Module, expandable to 21 with ZXODM Output Driver Modules and/or ZXEXP Zone Expander Module.

Maximum combined continuous current drain at Terminals 4, 6 and 10 on the control board and B1+, B2+, B3, J6 and PGO1 on the ZXCFCM is 2.0 Amps with an 18 VAC 50 VA transformer.

Current Limits: The 12V Auxiliary current (terminals 4 & 10) is limited by PTC4 to 1.85 Amps. Reverse battery protection is limited to 1.85 Amps (PTC3). B1+, B2+ and B3 are limited to 0.5 Amps.

List Of Compatible Accessories

ESL Two-Wire Smoke Detectors

429 AT, C, CT: Standby Current: 70 µA max. (Max. of 20 detectors per zone)
521 B, BXT: Standby Current: 70 µA max. (Max. 20 detectors per zone)
711U, 712U, 713-5U, 713-6U: Standby Current: 70 µA max. (Max. 20 detectors per zone)
721U, 721UT, 721UD, 722U, 722UD: Standby Current: 70 µA max. (Max. 20 detectors per zone)

ESL Four-Wire Smoke Detectors

445 AT: Standby Current: 500 µA @ 6 V; 1.5 mA @ 15 V
445 C, CR, CRT, CSH: Standby Current: 40 µA @12 V; 100 µA @ 24 V
449 CTE: Standby Current: 10 µA max
449 C, CT, CRT, CST, CSRT, CSRH, CSST: Standby Current: 70 µA max

System Sensors Two-Wire Smoke Detectors

1100 Ionization	2100T Photoelectric
1400 Ionization	2400 Photoelectric
1400TH Ionization	2400AT Photoelectric
2100 Photoelectric	2400TH Photoelectric

System Sensors Four-Wire Smoke Detectors

1412B Ionization	2412B Photoelectric
2112, 212 Photoelectric	2412THB Photoelectric
2112, 2124T Photoelectric	2451 Photoelectric
2112, 2124TSR Photoelectric	2451TH Photoelectric

Wheelock

34T-12R Horn: Input voltage: 9-15.6 VDC; Rated Current: 0.125 A
EH-DL1-R Electronic Horn: Input voltage 12/24 VDC; Input Current; (@ 12 VDC) 0.015 A/(@24 VDC) 0.017 A
EH-DL2-R Electronic Horn: Input voltage: 12 VDC; Input Current: 0.047 A.
EH-EL1-R Electronic Horn: Input voltage: 12/24 VDC; Input Current: (@12 VDC) 0.015 A/(@ 24 VDC) 0.017 A
EH-EL2-R Electronic Horn: Input voltage: 12 VDC; Input Current: 0.047 A
AES-DL2-R Multi-tone Electronic Signal: voltage: 12 VDC; Current (High): 0.050 A; Current (Low): 0.025 A
AES-EL2-R Multi-tone Electronic Signal: voltage: 12VDC; Current (High): 0.0100 A; Current (Low): 0.050 A
MIZ-12-R Mini horn: voltage: 12 VDC; Current: 0.010 A
MIZ-12-W Mini-horn: voltage: 12 VDC; Current 0.010 A
CH-BF2-R Fire Chime: Input voltage: 12 VDC; Input Current: 0.020 A
CH-CF2-W Fire Chime: Input voltage: 12 VDC; Input Current: 0.020 A
CH-DF2-R Fire Chime: Input voltage: 12 VDC; Input Current: 0.020 A
46T-G4-12-R DC Vibrating Bells: Shell Size: 4 Inches; Input voltage: 12 VDC; Input Current: 0.125 A
46T-G6-12-R DC Vibrating Bells: Shell Size: 6 Inches; Input voltage: 12 VDC; Input Current: 0.125 A
46T-G10-12-R DC Vibrating Bells: Shell Size: 10 Inches; Input voltage: 12 VDC; Input Current: 0.080 A

Compatible Central Station Receivers

UL permits communication with the following UL Listed Central Station receivers (see Installer Level Programming - Communication Data Description for format):

<u>Manufacturer</u>	<u>Model Number</u>
Ademco	685
Fire Burglary Instruments	CP-220
Osborne-Hoffman	Quick Alert II
Radionics	6000
Radionics	6500
Silent Knight	9000
Sur-Gard	MLR2-DG

Agency Requirements

UL has established certain requirements which pertain to the installation, use, and programming of this equipment. The local Authority Having Jurisdiction (AHJ) and/or UL may have other requirements which apply to the installation of this system that are not

detailed in this manual. It is the responsibility of the installing dealer to check with the AHJ and/or UL before installing this system. The following table details guidelines that must be followed in order to comply with the UL listings as stated in Table 5.

For Home Health Care systems, two (2) Control Stations are required.

Application	Listing	Maximum Continuous Current Drain (milliamps) w/ 7 AH Battery	Minimum Battery Standby Time In Hours	LCD or LED Control Stations	SSD or VFD Control Stations	Smoke Detector ESL 429 & 700 series, System Sensors 1400 & 2400 series	Auxiliary Equipment Required
Home Health Care Household Burglary	UL 1637 UL 1023	400	4	6	4	N/A	UL listed signaling device
Household Fire	CSFM UL985	400	24	6	4	Required	UL listed signaling device
Household Burglary/ Fire Combination	UL 1023 UL 985	400	4 24	6	4	Required	UL listed signaling device
Central Station Burglary (Grade C)	UL 1610 UL 1635	400	4	6	4	N/A	TC1100 Tamper Resistant cover with a ZX410
Central Station (Grade B)	UL 1610 UL 1635	400	4	6	4	N/A	TC1100 Tamper Burglary Resistant cover with a ZX410 and a UL listed audible device (AB12M recommended)
Local Burglary (Grade A)	UL 609	400	4	6	4	N/A	TC1100 Tamper Resistant cover with a ZX410 and a UL listed audible device (AB12M recommended)
Police Station Connection (Grade A)	UL 365	400	4	6	4	N/A	TC1100 Tamper Burglary Resistant cover with a ZX410 and a UL listed audible device (AB12M recommended)
Commercial Fire	UL864	450	24	6	4	Required	ZX440F, two 12 VDC 7 Ah sealed lead acid batteries, one 18 VAC 50 VA transformer, one F2600 Transformer Enclosure and a UL listed signaling device

Maximum combined continuous current drain (standby) refers to terminals 4, 6, and 10, and B1+, B2+, B3, J6 and PGO1. Under alarm conditions, the combined output current drain should not exceed 2000 mA with an 18 VAC 50 VA transformer. Two 7 Ah batteries are required.

TABLE 4 Agency Power and Configuration Requirement

UL and ULC Listings

APPLICATION	LISTING
Household Burglary	UL 1023
Household Fire	UL 985
Household Burglary/Household Fire Combination	UL 1023/UL 985
Local Burglar Alarm Grades A, B and C Central Station	UL 609
Police Station Connect Burglar Alarm Unit	UL 365
Digital Alarm Communicator System	UL 1635
Home Health Care Signal System	UL 1637
Central Station Burglar Alarm Unit	UL 1610
California State Fire Marshal	TBD
Residential Burglar System	ULC 5310
Local Burglar Alarm	ULC 5303
Central Station	ULC 5301
Commercial Burglary	ULC 5302
Burglar Alarm Units Central & Monitoring	ULC 5304
Commercial Fire	UL 864

TABLE 5 UL and ULC Listings

National Fire Protection Association (NFPA) Rules

The National Fire and Burglar Alarm Association (NFPA) has established rules to follow pertaining to fire prevention and the installation of fire detection equipment.

Smoke Detector Locations

For residential applications, install smoke detectors in each bedroom and outside each separate sleeping area in the immediate vicinity of the bedrooms and on each additional story of the family living unit including basement and excluding crawl spaces and unfinished attics. In new construction, a smoke detector should also be installed in each sleeping area. For family living units with one or more split levels (i.e.: adjacent levels with less than one full story separation between levels), a smoke detector required by the above is sufficient for an adjacent lower level, including basements. **EXCEPTION:** Where there is an intervening door between one level and the adjacent lower level, install a smoke detection on the lower level. For commercial applications, install smoke detectors in each separate work area, including hallways and storage areas.

Install ceiling-mounted smoke detectors in the center of the room or hall, not less than 4 inches from any wall. When mounting the detector on a wall, place the top of the detector 4 to 12 inches from the ceiling.

Do not install smoke detectors where normal ambient temperatures are above 100°F. (37.8°C.)

Do not position smoke detectors in front of air conditioners, heating registers, ceiling fans, or other locations where normal air circulation will keep smoke from entering the detector.

Heat from a fire rises to the ceiling, spreads out across the ceiling surface and begins to bank down from the ceiling. Corners where the ceiling and walls meet create air spaces in to which heat has difficulty penetrating. Usually, these dead air spaces measure about four (4) inches (0.1m) along the ceiling from the corner and four (4) inches (0.1m) down the wall. Do not place heat or smoke detectors in these dead air spaces.

Testing

This system should be tested weekly. All switches, contacts, and accessories must be UL Listed devices. This equipment should be installed in accordance with the National Fire Protection Association Standard No. 72 (National Fire Protection Association, Batterymarch Park, Quincy MA 02269). Control panel specifications are subject to change without notice.

Consult smoke detector specifications and local and national codes for coverage descriptions.

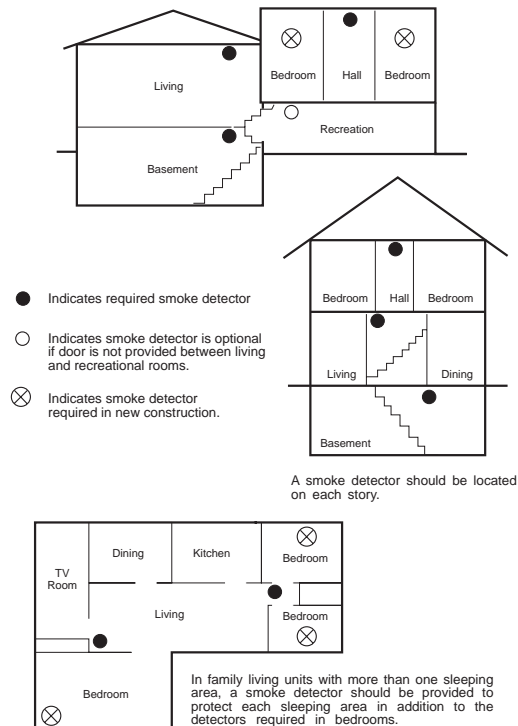
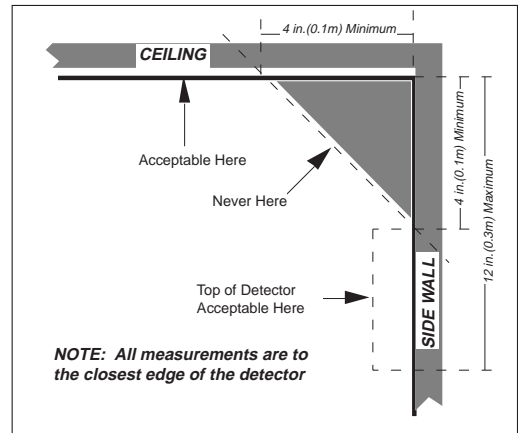


FIGURE 23 Smoke Detector Placement

System Troubleshooting

When the system detects a trouble condition, it is periodically displayed on the Control Station(s) and a trouble tone is sounded. The trouble tone will sound until it is either silenced (with an OFF + passcode) or until the trouble condition restores. If a trouble condition is silenced and then is still present

4 hours after it was silenced, then the trouble sounder will be re-activated for 5 seconds and again every 4 hours. The display of a trouble condition will continue to appear until the condition either restores or is cleared.

TROUBLE	DESCRIPTION
AC FAILURE	Indicates the loss of AC power or that the AC voltage is not high enough to power the system.
ALARM SILENCED	Indicates that an Auxiliary or Holdup Alarm condition is present and the alarm has been manually silenced.
BELL 1 FAULT	Indicates that there is a short or an open in the wiring or that the EOL is missing on Fire Bell 1 or that the Bell Disconnect switch on the ZXCFM is on.
BELL 2 FAULT	Indicates that there is a short or an open in the wiring or that the EOL is missing on Fire Bell 2 or that the Bell Disconnect switch on the ZXCFM is on. ZX440F alternates monitoring between Fire Bell 1 and Fire Bell 2, so it may take a minute before a fault or restore occurs.
BELL 1/BELL 2 SILENCED	Indicates that a Fire Alarm condition is present and the Fire Bell(s) has been manually silenced. A manual Smoke Reset is required to clear the alarm condition.
CALL RPM FAIL	Indicates that an installer initiated call to the Remote Programming computer was unsuccessful.
COMM FAILURE	Indicates that an event was not successfully communicated to the Central Station. This condition can be cleared by disabling both phone lines.
FIRE TROUBLE	Indicates that there is wiring problem on a Fire zone or that a Fire Alarm condition is present and the Fire Bell(s) has been manually silenced. A manual Smoke Reset is required to clear the alarm condition.
GROUND FAULT	Indicates an earth ground connection on any output circuit.
KEYPAD MISSING	Indicates that a supervised keypad is no longer responding to polls from the control panel. Possible causes include: The keypad has been removed or had its address changed, faulty data bus wiring, or multiple supervised keypads at the same address. This condition can be cleared by pressing the CLEAR key for 3 seconds.
LOW/NO BATTERY	Indicates that the battery voltage is low or that no battery is present.
MEMORY ERROR	Indicates that the system has detected corruption of Function Map data. This condition can only be cleared by pressing the CLEAR key for 3 seconds.
NO COMMUNICATION FROM CONTROL	Indicates that the keypad is not receiving commands from the control panel. Possible causes include: Faulty data bus wiring, bad address setting on the keypad, control panel failure, or control panel shutdown due to low operating voltage (hibernation mode).
NON-TELCO FAIL	Indicates that Non-Telco event reporting has been selected, but the Non-Telco interface is not functioning.
PHONE LINE 1 FAIL	Indicates that Phone Line Monitoring has been enabled for Phone Line 1 and a fault has been detected on Phone Line 1. This condition can be cleared by disabling Monitoring of Phone Line 1.
PHONE LINE 2 FAIL	Indicates that Phone Line Monitoring has been enabled for Phone Line 2 and a fault has been detected on Phone Line 2. This condition can be cleared by disabling Monitoring of Phone Line 2. ZX440F alternates monitoring between Phone Line 1 and Phone Line 2, so it may take several minutes before a fault or restore occurs.
SMOKE TROUBLE	Indicates that a Smoke Detector needs to be cleaned. This condition will clear automatically some time after the detector(s) has been cleaned or it may be cleared by performing a Smoke Reset or by pressing the CLEAR key for 3 seconds.
SUPERVISORY TROUBLE	Indicates that there is a wiring problem on a Fire Supervisory zone or that a Supervisory Alarm condition is present and has been manually silenced.
ZONE MISSING	Indicates that the zone's expansion device is not responding to polls from the control panel.
ZONE TROUBLE	Indicates that a wiring problem exists on the zone or that a Burglar Tamper condition exists and the condition has been silenced.

Operating the System

Introduction

The Sentrol ZX440F Security System incorporates the most desired operational features available today. The ZX440F features ease of installation and programming with an easy-to-operate keypad. Features such as cross-zoning, and an audibles “mute” function on the keypad help reduce false alarms.

The ZX440F, when defaulted to Commercial Fire mode, provides one 2-wire smoke detector zone and ten burglar zones (one delay, two interior and seven instant). Zones 6 & 12 are dedicated as Phone Line Monitor and Ground Fault Monitor inputs and may not be used.

A Zone Expander Module (ZXEXP) may be added to provide an additional 2-wire smoke detector zone and up to 16 additional zones. Up to 16 RF Points may be used with the 4710 and 4720 RF Gateways.

The ZX440F Security Control is easily programmed with any one of four Control Stations (LCD, LED, SSD, or VFD). The Control’s on-board RAM maintains its data even with the power disconnected.

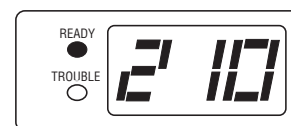
The ZX440F Security Control allows the division of a single system into two distinct areas, with an optional common area. To the customer, each area appears to be a fully functional system. The common area appears to be an extension of both areas. Each zone must be assigned to one of the two areas or to the common area. Each Control Station must be assigned to one of the two areas and may be extended to operate in the other area as a secondary area. The common area is accessible to all Control Stations.

The Control may have up to 50 user codes. Each user passcode must be assigned to one or both of the areas, and it must also be programmed with one of the 15 different levels of authority.

Powering Up With The Control Station

The control comes from the manufacturer with a factory set (default) program. The factory default code for user passcode No. 1 is “1234”. This passcode is authorized to perform all user level functions. The default setting for the installer passcode is “9632”. The installer passcode can perform the installer level functions. (See Installer Level Programming – User Data Description for the listed functions). All zones and Control Stations are assigned to Area 1 at default. The default setting for user passcode No. 50 is “1245” and it is authorized to perform all user level functions. It is assigned to both Area 1 and 2.

When a Control Station is powered-up, it briefly displays a test pattern followed by its data bus address. The Control Station will then begin displaying information from the control panel. During the first fifteen seconds after power-up, the control panel will instruct the Control Station to display the panel’s software revision and flash the AWAY, STAY, NIGHT, READY, and TROUBLE LEDs.



PANEL REV 2.10
WITH FIRE MODULE

NOTE

Rev number may change as software is upgraded.

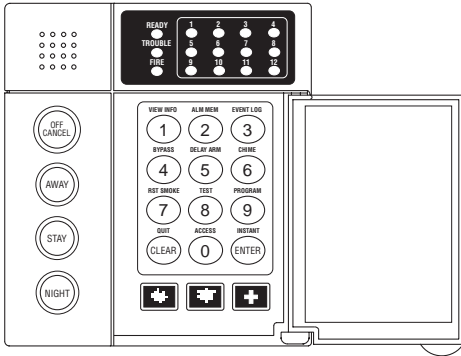
Once the zones are in a secure state, the Control Station displays:



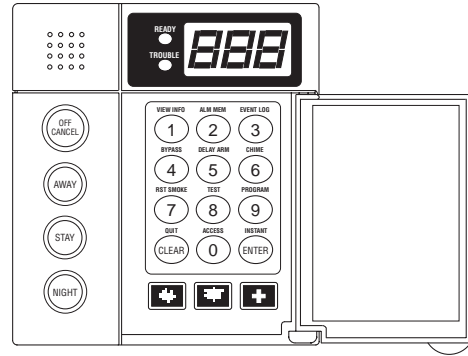
A1 READY TO ARM
JAN 21 05:27:52

Nearly every option on the control requires the use of a valid user passcode. The user passcode may be used for functions in a specific area or system-wide. Most of the options may be performed at any time, even while the control is fully or partially armed. To perform a function, a user must press the key corresponding to that function and then enter a passcode with the appropriate authority level. For purposes of discussion, the installer and the end user are both considered system users, but have different levels of authorization.

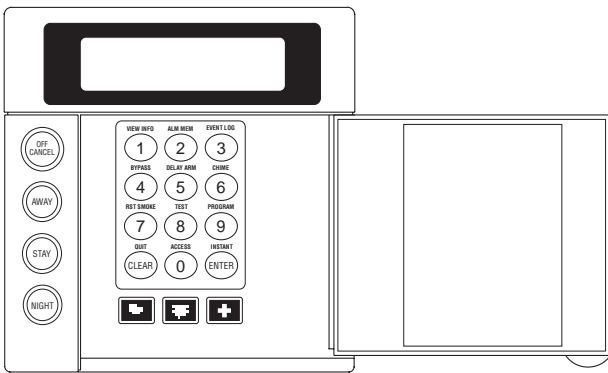
Control Stations



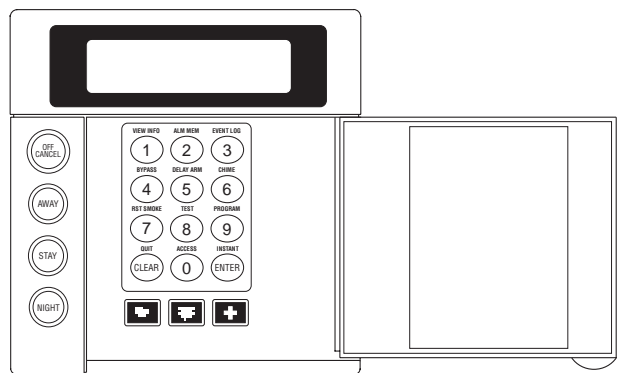
LED Control Station (ZXLED12)



SSD Control Station (ZXSSD)



LCD Control Station (ZXLCD)



VFD Control Station (ZXVFD)

FIGURE 22 System Control Stations

Control Station Overview

For SSD, LED, LCD, and VFD Control Stations:

Away, Stay, and Night Keys	These keys, followed by a passcode, arm one or both areas to the AWAY, STAY, or NIGHT level.
Away, Stay, and Night LED's	These LEDs backlight the AWAY, STAY, and NIGHT keys to indicate the armed level of the Control Station's primary area. These will flash during Exit Time or during a Burglar Alarm after Dialer Delay has expired.
Off/Cancel Key	This key, followed by a valid user code, disarms an area(s), silences and cancels alarms, and silences trouble conditions.
Instant/Enter Key	This key is used in programming to store entered data. Also, when pressed during an exit time from a STAY or NIGHT arming, this key disables both the entry and exit times for the primary area of the Control Station.
Keypad Audibles	The piezo resonator activates for conditions including entry and exit notification, alarm, trouble, chime, etc.
Panic Keys	When enabled, these keys activate the panic alarms (Fire, Police, Medical Emergency) or call a pager.
Clear/Quit Key	This key is used to reset any entry error and to allow you to escape out of an operation. To clear a "Missing Keypad", "Memory Error", or "Smoke Trouble" system trouble condition or to turn off the Duress output, press and hold the CLEAR key for three seconds.
Keyboard Backlighting	The Control Station contains recessed LEDs to provide a light in dark or dimly lit environments.

For SSD and LED Control Stations only:

Ready LED	This LED indicates the status of the Burglar zones assigned to the Control Station's primary area. It illuminates when the Burglar zones are all secure.
Trouble LED	This LED will illuminate for system troubles (AC failure, low battery, communication failure), zone troubles, and Burglar Tamper conditions. (See Operating the System – Trouble Conditions for a complete list of trouble conditions).

For LED Control Stations only:

Zone Status LED's	These LEDs generally indicate the condition of zones 1 through 12. See the <i>ZXLED8/ZXLED12 User Guide</i> for how the LEDs indicate the Normal, Faulted, Bypassed, Trouble, and Alarm conditions. These LEDs may also display system trouble conditions and programming information.
Fire Zone LED	This LED indicates the status of the two-wire smoke zone on the main control board (Zone 30).

For SSD Control Stations only:

Seven Segment Display	The three Seven Segment Display (SSD) characters enunciate system status, zone status and user information. See the <i>ZXSSD User Guide</i> for details.
-----------------------	--

Control Station Function Keys

All Control Station function keys (except the View Info Key) require that the function key be pressed followed by a valid passcode. The passcode's authority level will determine if the selected function can be performed. While entering the passcode, there will be a four second time-out for no activity. After the passcode has been entered, there will be a three minute time-out for no activity. The time-out will return the Control Station to idle. The operator may press the CLEAR key at any time to return the Control Station to idle.

Below are the functions associated with keys 0 – 9 and a brief description of the functions. For details on the operation of these functions, as well as on the three arming keys, see the appropriate User Guide.

- 1** VIEW INFO KEY
This key is used to view information and scroll through alarm and trouble conditions. A passcode is not required to perform this function.
- 2** ALM MEM KEY
This key allows you to view the most recent alarm event(s) on the Control Station.
- 3** EVENT LOG KEY
From an LED or SSD Control Station, this key will initiate printing of the Event Log. From an LCD or VFD Control Station, this key will allow you to view the Event Log on the Control Station or initiate printing the log.
- 4** BYPASS KEY
This key allows you to select zones to be bypassed (removed from the system) and unbypassed (restored to the system).
- 5** DELAY ARM KEY
This key extends or postpones an automatic arming by one hour.
- 6** CHIME KEY
This key turns the chime function on or off for a particular area.
- 7** RST SMOKE KEY
This key resets all latched smoked detectors and clears "Smoke Troubles" and "Bell Silenced".

- 8** TEST KEY
This key allows you to perform one of the six following tests: Walk, Battery, Bell, Communications, Keypad, and RF Signal Strength. After a valid passcode is entered, you may select the test to perform.
- 9** PROGRAM KEY
This key is used to enter installer or user level programming. User level programming is described in the appropriate User Guide. Installer level programming is described in Installer Level Programming.
- 0** ACCESS KEY
This key is used to activate a door strike or other similar function.

Secondary Function Keys

The Control Station secondary function keys may be activated by pressing the ENTER key followed by Key #1 through Key #6. A passcode is not required to activate these functions. These functions are activated by pressing the following:

- ENTER + **1** Turns Lamp Trigger Output ON or OFF
- ENTER + **2** Turns Universal Output ON or OFF
- ENTER + **3** Quick Access from Keypad
- ENTER + **4** Turns Key 4 Output ON or OFF
- ENTER + **5** Turns Key 5 Output ON or OFF
- ENTER + **6** Turns Key 6 Output ON or OFF

Please see Installer Level Programming – Output Definitions Description for more details on the operation of these functions. The above outputs are only available to the user if you program them as Programmable Outputs. If any of these features are made available to the user, please instruct the user on their operation as it is not detailed in the appropriate User Guide.

Installer Arming and Disarming

The installer passcode may be used to arm one or both areas. It may be used to disarm one or both areas, but only if the area was armed by the installer passcode. It may be used to silence alarms and to silence trouble conditions. When it is used to silence a Burglar alarm, it will not disarm the area or cancel the alarm unless the area was armed by the installer passcode. For a detailed description of arming and disarming procedures, see the appropriate User Guide.

Installer On Premises

When the installer passcode is used to program Function Map data or User Codes, a “Local Program Begin” event is logged to be reported. A “Local Program End” event is logged to be reported 255 seconds after the programming mode is exited or upon the CLEAR key being pressed and held for three seconds.

Testing

The ZX440F provides the following testing capabilities: Walk Test, Battery Test, Bell Test, Communicator Test, Keypad Test and RF Signal Strength Test. Refer to the appropriate User Guide for instructions on performing these tests. Always ensure that a Walk Test (and an RF Signal Strength Test when applicable) is performed on a new installation.

To test the Received Signal Strength of each RF Zone Device, use Test 6 – RF Signal Strength Test. From the Control Station press the “8” key, followed by the Installer Code (9632) and then press the “6” key. Next press the RF Zone Device Number (13 to 28). The Control Station will display and sound the Received Signal Strength of the last transmission sent by the RF Zone Device. See results below:

Strong Signal (HOT or 5 Control Station beeps): a strong or high level RF signal was measured by the receiver for that location of the transmitter. This is a good location for the transmitter and receiver.

Acceptable (ACC or 3 Control Station beeps): a normal or acceptable level of RF signal was measured by the receiver for that location of the transmitter. This is a good location for the transmitter and receiver.

Low Signal (LOW or 1 Control Station beep): a low or not acceptable level of RF signal was measured by the receiver for that location of the transmitter. Make multiple test transmissions, making sure that obstructions between the transmitter and receiver are normal but minimized (hands away from units, metal ladders away from receiver, etc.) during these tests. The transmitter and/or receiver will need to be relocated to obtain ACCEPTABLE level readings.

No Signal (NO or 1 long Control Station beep): no RF signal or an extremely low RF signal was measured by the receiver for that location of the transmitter. Bring the transmitter to the RF Gateway and activate the transmitter. The red LED on the RF Gateway should blink. If it does not, then the transmitter is not working. If the red LED does blink, but the signal strength is still NO SIGNAL, then a programming error exists. Check the programming of the zone in both the RF Gateway and the panel. If the signal strength is STRONG or ACCEPTABLE, then the transmitter and/or receiver will need to be relocated to obtain ACCEPTABLE level readings. Be sure to power down the control to clear out all signal strength levels before testing the transmitter at its new location.

After testing has been completed, the RF Gateway and RF Zone Devices should be permanently mounted.

NOTE

Series 4000 RF Gateways and transmitters which are not UL Labeled are not allowed in UL Certified installations.

Programming the Control

Introduction

The control may be programmed locally from any LED, SSD, LCD, or VFD Control Station. Throughout this section, the three Panic keys are referred to as the Left Panic key, Center Panic key and Right Panic key.

Local Programming

There are two levels of Control Station programming: User level and Installer level.

User Level Programming

Provides the ability to add, change, or delete user passcodes. It also allows Scheduled Arming and Latch Key operation to be changed. A user passcode with authority level 9, 10, or 15 is required to access the user level programming (see Installer Level Programming – Authority Levels). See the appropriate User Guide for more information regarding user level programming.

Installer Level Programming

Allows total customization of the control's operating features. Only the installer code may access this level. Anyone attempting installer level programming should be familiar with the contents of this publication prior to programming the control panel.

NOTE

If the installer code is lost or forgotten, it may be impossible to program the control locally.

If remote programming is used, it is possible to “lock-out” or prevent takeover of a control by another installation company by selecting “Lockout Local Prog.” This prevents the installer passcode from gaining access through local Control Station programming. The installer passcode may still be used for the non-programming functions described in Installer Level Programming – Authority Levels. Lockout Local Prog does not affect remote programming.

Area Partitioning

The control may be divided (partitioned) into two independent areas. To the customer, each area appears to be a full-featured system. This allows one control to be shared by two independent departments within a common structure.

NOTE

LED Control Stations *cannot* have a Secondary Area.

Each area can be programmed to control separate outputs with a dedicated audible or annunciator. It is also possible to combine the outputs of both areas so that a central siren, bell or audible can be used. The audible should be positioned so that it can be heard by all partitions. When partitioning is not desired, simply designate all zones to a single area (Area 1).

An example of a partitioning application is a business that is divided into two departments with both departments occupied by a different manager. The control communicator would be installed in a secure area (common utility closet) with dedicated and uninterrupted AC power and telephone service. This must be considered when planning the control panel position as the power and phone service to a tenant may be terminated if that tenant leaves.

Each tenant's compartment is assigned an area with a number of zones, codes, and Control Stations. When an area experiences an alarm or other event, the adjacent system area is not alerted to the event since the Control Station would be programmed to respond only to events in the assigned area (see Table 1).

Another programming feature is the ability to allow crossover between areas. This allows the user(s) from one area to operate the other area from a designated Control Station. Programming is discussed in detail later in this manual. By factory default, users are only allowed to see and operate their primary assigned area. Multi-area operation may be useful for applications where the security system is installed in a facility that is divided into departments. Each department has a set of users who are responsible

for arming and disarming only the security system to which they are assigned. If desired, the system may be set up to allow one or more users to have control over both areas (see Table 2).

Another programming feature is common area burglar zones (see Operating the System – Introduction). These zones may be used when a system needs to be configured with two separate areas of protection and a common area. For example, an office building with two separate offices and a common lobby. The lobby (or common area) only gets armed when both areas are armed in the AWAY mode. When one area is armed in the AWAY mode, the common area becomes an extension of the other area. When either area is disarmed, the common area also is disarmed. Faulted common area zones may be viewed on all Control Stations.

Arming and disarming operations with a common area are the same as without a common area, except that when an area is armed in the AWAY mode, all common area zones may need to be secure. Common area zones may not be force-armed, but they may be bypassed. Common area zones may be violated while either of the two areas is in Exit or Entry time countdown.

Maximum Zones = 28

Up to 26 zones may be assigned to either area or the common area (fire zones are system-wide and have no area assignment).

Maximum Users = 50

Any number of users may be assigned to either or both areas.

Maximum Supervised Control Stations = 6

SSD, LCD, and VFD Control Stations can be assigned to operate in both areas if desired. LED Control Stations can only be assigned to operate in either Area 1 or Area 2.

When reporting to the Central Station, the control has three sets of Account Numbers. One set for system events, one set for Area 1 events and one set for Area 2 events. Examples of System events include: Fire Alarms and Troubles, Common Area Burglar Alarms, AC Power Failure, Low Battery and automatic tests. Examples of Area 1 or Area 2 events include: Burglar Alarms, Holdup Alarms, Opening/Closings.

All events are grouped into several categories with each category having options of reporting to receiver A, receiver B and/or a Pager.

SYSTEM	AREA 1	AREA 2
System Account Numbers	Area 1 Account Numbers	Area 2 Account Numbers
Fire Zone 30	Burglar Zones 1 – 3	Burglar Zones 4 – 5
	Users 1 – 3	Users 4 – 6
	Control Stations 1 & 2	Control Stations 3 & 4

Table 1 Two Separate Areas

SYSTEM	AREA 1	AREA 2
System Account Numbers	Area 1 Account Numbers	Area 2 Account Numbers
Common Burglar Zones 7 & 8	Burglar Zones 1 – 3	Burglar Zones 4 – 5
Fire Zone 30	Users 1 – 3, 7	Users 4 – 7
	Control Stations 1, 2, 5	Control Stations 3 – 5

Table 2 Two Areas with Two Common Burglar Zones (Zones 7 & 8)
A Multi-Area User Code (User 7) and a Multi-Area Control Station (Keypad 5)

LED Control Station Programming

When in programming mode, an LED Control Station will mimic what is displayed on an SSD Control Station. The top row of LEDs will correspond to the first SSD character, the second row to the second SSD character and the third row to the third SSD character. If an SSD character is 1 – 9 or A – F, then

that hexadecimal digit will be displayed in binary on the appropriate row of LEDs. See the Installer Level Programming section for programming with the Control Station. It will also show examples of SSD, LCD, or VFD Control Station displays. There are no examples for LED Control Stations (see Figure 23).

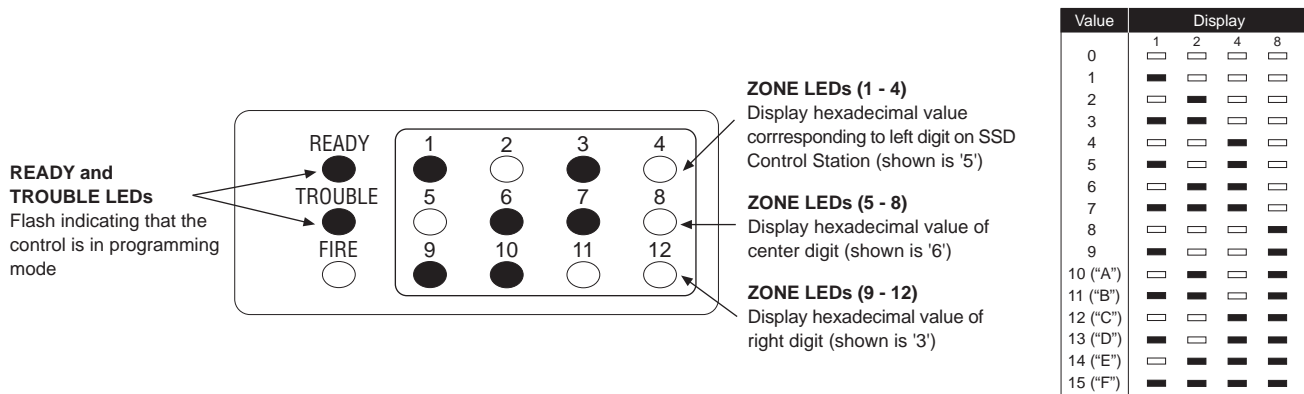


Figure 23 LED Display

Installer Level Programming

Menu Options

This section will describe Installer Level Programming as performed locally from a Control Station.

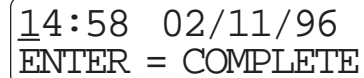
To enter Installer Level Programming, press the PROGRAM (9) key and enter the installer passcode (default = 9632). The Control Station will then prompt you to select a programming option from 1 to 9 where:

- 1 = SET CLOCK
- 2 = EDIT FUNCTION MAP
- 3 = PROGRAMMING ZONE NAMES
- 4 = PROGRAMMING USER CODES
- 5 = RESTORE FACTORY DEFAULTS
- 6 = SET DAYS UNTIL NEXT COMM TEST
- 7 = PROGRAM RF DATA

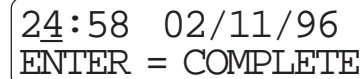
Set Clock

Press the '9' key and enter the installer passcode to enter programming mode. Press the '2' key for Set Clock programming. The Control Station will go into clock set mode.

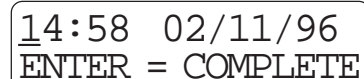
The SSD Control Station will have a Set Clock prompt display. The LCD and VFD Control Station will display the current hour, minute, month, day, and year (HH:MM MM/DD/YY). The zone LEDs on an LED Control Station will remain off. The hour must be entered in 24-hour format.



The operator may start entering numbers from the first hour digit. As a number is entered, it is displayed and the cursor automatically moves to the next position on the LCD and VFD Control Station. When a digit is entered, the Control Station will display:



If the CLEAR key is pressed, the cursor will move back to the first hour digit and any changes that were entered will be erased, i.e.: the current time and date will be re-displayed. If the CLEAR key is pressed and no changes have been entered, the Control Station will return to idle with no changes to the time or date.



If the ENTER key is pressed, all changes that were entered will be range checked. The entire time and date need not be entered. Any fields that are not entered will remain unchanged. If the data entered is within range parameters, the clock will be updated and the Control Station will return to idle. A “Begin Set Clock” event will indicate the time before the change and an “End Set Clock” event will indicate the time after the change. If the entered data is out of range, the Control Station will indicate an error, erase the previous entries and re-display the current time and date.



INVALID SETTING

Edit Function Map

Press the ‘9’ key and enter the installer passcode to enter programming mode. Press the ‘3’ key to enter Edit Function Map mode. The Control Station will prompt you for a location to be programmed. The location numbers, definitions, and valid entries for the locations are described in the Installer Level Programming – Function Map section. From this mode, you may edit the entire Function Map except for User Codes and Zone Names. Editing Zone Names is described in the Installer Level Programming – Programming Zone Names section. Editing User Codes is described in the Installer Level Programming – Programming User Codes section.

From the LOCATION prompt, enter digits for the desired location number. The digits entered will be displayed. If more than three digits are entered, the first digit entered will be discarded. If you make a mistake, you may press the CLEAR key to clear out the location and start over. When the desired location number is displayed, press the ENTER key. The Control Station will then display the current value programmed at that location.

Entering a New Value at a Location

While the Control Station is displaying the value at a location, you can enter digits to change the value at that location. The new value is displayed as you enter the digits. Other keys work as follows:

- ENTER
 - if pressed after new digits are entered, the displayed value is stored at the current location.
 - if pressed with no new digits entered, then it will go to the next location.
- Right Panic Key
 - if pressed, it will go back one location and ignore any digits entered.
- CLEAR
 - if pressed after new digits are entered, the new digits will be erased and the original value will be re-displayed at the location.
 - if pressed with no new digits entered, then it will return to the LOCATION prompt.
- OFF CANCEL – on an LED or SSD Control Station, it will momentarily display the present location number.

NOTE

When you press the ENTER key to store the new value, the system will store the value as entered. It is the responsibility of the programmer to enter a value within the specified range. If the value entered is out of the range, then undesirable operation may occur. In some cases, if the value entered is too large, it will be truncated before it is stored causing a different value to be stored than was entered.

Programming Account Code and Telephone Number Digits

When the location being programmed is an account code or telephone number digit (see Installer Level Programming – Communication Telephone Numbers Description and Area Event Reporting Description), the value will be displayed as an “H” followed by a single digit. The “H” indicates that this location is a Hexadecimal field. The valid entries for these locations are “0” through “F”, where A – F correspond to 10 – 15 respectively.

To program a digit, enter digits as normal. To enter an A – F, enter a ‘1’ followed by a ‘0’ through ‘5’.

As in programming normal fields, if too many digits are entered, the first digit entered will be discarded. The ENTER, OFF CANCEL, Right Panic key, and CLEAR keys will work the same as described above.

Programming Report Codes and Attribute Fields

When the location being programmed is a report code (see Installer Level Programming – Zone Report Codes Description thru System Report Codes Description) or an attribute field (see Installer Level Programming – Area Data Descriptions thru Zone Data Descriptions and System Report Codes Description thru Area Schedules Description), the value will be displayed as an “H” followed by two digits. The “H” indicates that this location is a Hexadecimal field. The valid entries for these locations are “00” through “FF”, where A – F correspond with 10 – 15 respectively. The Control Station display will automatically display the hexadecimal value.

To program one of these locations, enter digits as normal. To display a ‘1’ in the first digit location, you must enter a ‘0’ before the ‘1’, i.e. ‘01’ displays a ‘1’. To enter an A – F, enter a ‘1’ followed by a ‘0’ through ‘5’. For example:

<u>Enter</u>	<u>To Get</u>
1-2-3	C3
0-1-2	12
1-8	18
0-1-1-0	1A
1-2	0C
2-1	21

As in programming normal fields, if too many digits are entered, the first digit entered will be discarded. The ENTER, OFF CANCEL, Right Panic key, and CLEAR keys will work the same as described above.

Additional Programming Notes

To exit out of Edit Function Map mode and return the Control Station to the idle state, press the CLEAR key from the LOCATION prompt. (You may need to press the CLEAR key several times to get to the LOCATION prompt). An “End Local Programming” event will not be logged until 255 seconds after you exit programming mode. This is to allow you to exit and re-enter programming mode repeatedly without logging each one. To force an “End Local Programming” event to be logged, immediately (i.e.: to have it reported to the Central Station), press and hold the CLEAR key for three seconds.

When programming the value at the last programming location, the Control Station will return to the LOCATION prompt if the ENTER key is pressed.

If the panel has been programmed from RPM/2 Pro and the Agency Code has been loaded into the panel, then the locations corresponding to the telephone numbers and account codes will not be editable.

Programming Zone Names

Only the LCD and VFD Control Station may be used to program zone names. Press the ‘9’ key and enter the installer passcode to enter programming mode. Press the ‘4’ key to program the zone names. The Control Station will prompt you for a Zone ID to be programmed. The valid Zone IDs are 1 – 5, 7 – 11, 13 – 30.

Enter a number corresponding to the Zone ID and press ENTER. Once a valid Zone ID is selected, the control will display the Zone ID and the current Zone Name with the cursor on the first character. Press the key associated with each character. Each keypress will change the display to the next character listed for that key. The characters available for programming the Zone Names are located on the next page.

Key #1	0 1 2 3 4 5 6 7 8 9 : ; < = > ? @
Key #2	A B C
Key #3	D E F
Key #4	G H I
Key #5	J K L
Key #6	M N O
Key #7	P Q R S
Key #8	T U V
Key #9	W X Y Z [¥] ^ _
Key #0	space ! " # \$ % & ' * + , - . /
Left Panic Key	Used to move the cursor back one position
Right Panic Key	Used to move the cursor forward one position

If the ENTER or CLEAR key is pressed and no changes have been made, the Control Station will return to the Zone ID prompt. If the CLEAR key is pressed and changes have been made, all changes will be cleared and the Control Station will return to displaying the original Zone Name. To save any changes made to the Zone Name, press the ENTER key. The Control Station will return to the Zone ID prompt. Press the CLEAR key to return to idle.

Programming User Codes

The installer passcode has the authority to program user passcodes locally if Lockout Local Installer Programming is disabled. The control may be programmed with up to 50 user passcodes. See Installer Level Programming – User Data Description for instructions on setting the authority level and area assignment for each passcode. To program or change a user passcode:

1. Press the '9' key and enter the installer passcode to enter programming mode.
2. Press the '5' key to Program User Codes. The Control Station will prompt you to enter the User ID of the passcode that you wish to program.
3. Enter the ID number and press the ENTER key.
4. Enter the new four-digit passcode. The Control Station will beep twice and return to the User ID prompt.
5. Enter a new ID number or press the CLEAR key to exit.

The entire passcode is displayed on an LCD/VFD Control Station. Only one digit at a time is displayed on an SSD Control Station. To view the existing passcode on an SSD Control Station, press the ENTER key after each digit is displayed.

If the new passcode being entered is a duplicate of an existing one, the Control Station will sound an error tone and return to the first digit location so that you may try again. To make a User passcode inoperable, enter "0000" as the new four-digit passcode.

Restore Factory Defaults

This function provides a means to completely wipe out the panel’s memory and restore it to a factory default state. If successfully completed, the panel will:

- default the entire Function Map (including Zone Names and User Passcodes)
- clear the Event Log and log a “System Startup” event
- clear all alarm, trouble and armed conditions
- not affect the System Clock (time and date)

Press the ‘9’ key and enter the installer passcode to enter programming mode. Press the ‘6’ key to enter Restore Factory Defaults mode. The Control Station will prompt you to select the default mode.



ENT 0=STANDARD
1=COMM FIRE

For a ZX400 or ZX410, enter 0. For a ZX440F, enter 1. To convert a ZX410 to a ZX440F with a ZCFC (Commercial Fire Kit), you must default the panel with option 1. Once the default mode is selected, the Control Station will prompt you to re-enter the installer passcode for verification.

NOTE

The ZX440F will not function correctly if option 0 is enabled.



TO DEFAULT PANEL
ENTER PASSCODE

If it is entered correctly, the Control Station will go back to the system powering up display.

Days Until Next Comm Test

The scheduling of Automatic Communications Tests requires programming a “Comm Test Time-of-Day” and the number of “Days Between Comm Tests” as described in Installer Level Programming – Communicator Data Description. If “Days Between Comm Tests” is zero, then no automatic comm tests will occur. Otherwise, a comm test will occur when a *Days Until the Next Comm Test* counter ticks down to zero. This function allows you to view that *Days* counter. If the value displayed is zero or one, then the next comm test will occur at the next “Comm Test Time-of-Day”. This function also allows you to change the number of *Days Until the Next Comm Test*.

Press the ‘9’ key and enter the installer passcode to enter programming mode. Press the ‘7’ key to enter Days Until Next Comm Test programming. The Control Station will display the number of days until the next scheduled comm test.

To change this value, enter a number between 0 and 255. If a mistake is made, press the CLEAR key to start over. If a number greater than 255 is entered, the first digit entered will be discarded. When the desired number of days is displayed, press the ENTER key. The Control Station will return to idle. To exit out of this function without adjusting the number of days, press the CLEAR key.

Program RF Data

In order for an RF Zone Device or RF User Device to be received by an RF Gateway, the address of the RF Device must be programmed into the RF Gateway (as described in the next two sections). The ZX440F can support up to 12 RF User Devices per RF Gateway and up to 16 RF Zones. The 16 RF Zones are programmed into the RF Gateways as devices 13–28 corresponding to zones 13–28. The 12 RF User Devices are programmed into a RF Gateway as devices 1–12 in any order (there is no correlation between these devices and the Control Panel’s configuration data). The 4710 RF Gateway is restricted to devices 13–20 for zones 13–20 and devices 1–12 for twelve RF User Devices.

Programming RF Zone Devices Into the RF Gateway

Press the ‘9’ key and enter the installer passcode to enter programming mode. Press the ‘9’ key to Program RF Data. The Control Station prompts you to select an RF Gateway to program. Press ‘1’ or ‘2’. The Control Station then prompts you to select an RF Device to program.

Enter 13 thru 28 to select an RF Zone and press ENTER. The Control Station displays the eight digits that are currently programmed in the RF Gateway for that zone. For each digit, you may program a new value by pressing a digit key. The Control Station will automatically move to the next digit. To move to the next digit without changing the current digit, press the ENTER key.

The first digit to enter is the Supervision setting where:

- 0 = Unsupervised
- 1 = Reserved
- 2 = Reserved
- 3 = 4 Hours
- 4 = 24 Hours

The next seven digits to enter come directly off of a label on the RF Device.

If you make a mistake while entering the eight digits, press the CLEAR key and the Control Station returns to the first digit.

After the last digit is entered, the data is sent to the RF Gateway and is confirmed and the Control Station returns to the RF Device selection prompt. If the data is successfully loaded into the RF Gateway, the Control Station beeps twice. If the RF Gateway does not respond, the Control Station sounds an error tone and briefly displays an error message. Check the data bus connections to the RF Gateway. If the 8 digit number entered for the RF Zone is already stored in the RF Gateway for another zone, the Control Station sounds an error tone and briefly displays a message indicating the duplicate zone.

From the RF Device prompt, select another RF Zone Device or press the CLEAR key to return to the RF Gateway prompt. From the RF Gateway prompt you can switch to program the other RF Gateway (if applicable) or press the CLEAR key to exit.

One RF Zone Device may be programmed into both RF Gateways, but it must be programmed into a different zone on each gateway. When programming RF Zone Data into two RF Gateways, be sure to note which zones are programmed into each RF Gateway. When the zones are then programmed into the Control Panel, select the correct RF Gateway as the Expansion Device for that zone.

Programming RF User Devices Into the RF Gateway

Press the ‘9’ key and enter the installer passcode to enter programming mode. Press the ‘9’ key to Program RF Data. The Control Station prompts you to select an RF Gateway to program. Press ‘1’ or ‘2’. The Control Station then prompts you to select an RF Device to program.

Enter 1 thru 12 to select an RF User Device and press ENTER. The Control Station displays the eight digits that are currently programmed in the RF Gateway for that device. For each digit, you may program a new value by pressing a digit key. The Control Station will automatically move to the next digit. To move to the next digit without changing the current digit, press the ENTER key.

The first digit to enter assigns the RF User Device to a keypad. This is required to determine the area of operation of the RF User Device and for the Access function. Enter ‘1’ thru ‘6’ for a keypad assignment.

The second digit to enter defines the operation of the key(s) on the RF User Device, where:

SEC DIGIT	KEY A	KEY B	KEY C	KEY D
1	AWAY	STAY	NIGHT	OFF/CANCEL
2	AWAY	STAY	ACCESS	OFF/CANCEL
3	AWAY	STAY	PANIC/HOLDUP	OFF/CANCEL
4	AWAY	STAY	AUX/MED	OFF/CANCEL
5	AWAY	STAY	ENTER 4	OFF/CANCEL
6	AWAY	PANIC/HOLDUP	ENTER 4	OFF/CANCEL
7	STAY	PANIC/HOLDUP	ENTER 4	OFF/CANCEL
8	STAY	PANIC/HOLDUP	AUX/MED	OFF/CANCEL
9	AWAY	ENTER 4	ENTER 6	OFF/CANCEL

The next six digits to enter come directly off of a label on the RF User Device.

If you make a mistake while entering the eight digits, press the CLEAR key and the Control Station returns to the first digit.

After the last digit is entered, the data is sent to the RF Gateway and is confirmed and the Control Station returns to the RF Device selection prompt. If the data is successfully loaded into the RF Gateway, the Control Station beeps twice. If the RF Gateway does not respond, the Control Station sounds an error tone and briefly displays an error message. Check the data bus connections to the RF Gateway. If the 8 digit number entered for the RF User Device is already stored in the RF Gateway for another device, the Control Station sounds an error tone and briefly displays a message indicating the duplicate device.

From the RF Device prompt, select another RF User Device or press the CLEAR key to return to the RF Gateway prompt. From the RF Gateway prompt you can switch to program the other RF Gateway (if applicable) or press the CLEAR key to exit. In most cases, you can program an RF User device into both RF Gateways.

Programming RF Devices Into the Control Panel

After the RF Devices have been programmed into the RF Gateway, they must also be programmed in the Control Panel. The programming options for the Control Panel’s Function Map are described in Installer Level Programming – Function Map. When RF Devices are used in an installation, be sure to consider the following:

For an RF Zone Device, the zone data described in Installer Level Programming – Zone Data Descriptions must be programmed for the selected zone. The Zone Type, Area Number and Burglar Zone Attributes locations are programmed as usual. The Expansion Device location must be set to the appropriate RF Gateway for the zone. The first digit of Zone Attributes location doesn’t need to be programmed because it is ignored for Wireless Zones, but the second digit must be programmed as usual.

For an RF User Device, a user passcode must be created that consists of the last four digits of the RF Device’s address (see Installer Level Programming – Programming User Codes). An appropriate authority level and area assignment must also be programmed for that user (see Installer Level Programming – User Data Description). It is also required that either the area assignment of the user passcode or the area assignment of the associated keypad must be a single area (i.e. an RF User Device on an RF Gateway can only operate on one area). An RF User Device can be programmed into two RF Gateways with different keypad assignments on each. If the device’s passcode is operational in both areas and the keypad on one RF Gateway is operational in one area and the keypad on the other RF Gateway is operational on the other area, then the RF User Device can operate on either area depending on which RF Gateway detects it.

NOTE

For UL 1637 Home Health Care, RF User Devices may only be assigned to user passcodes 1–30.

Function Map

To edit the Function Map, press the PROGRAM (9) key, enter the installer passcode, and press the '3' key to select the Edit Function Map programming option. The Control Station will prompt for a location to be programmed. All function map locations can be programmed except for user codes and zone names.

NOTE

When entering values into the programming locations, it is possible to enter values which exceed the valid range of the programmed options. It is the responsibility of the installer to ensure the correct value of any entry programmed into the control. The valid entries for each location are detailed in the following sections.

Area Data Descriptions

The following table refers to programming locations 1 through 20.

ITEM	VALID RANGE	DESCRIPTION
AWAY Exit Delay Time	0 to 255 seconds	Time in seconds for all Burglar zones, may be audibly annunciated. (See Inst. Level Prog. – Prog. Notes, Note 1).
STAY & NIGHT Exit Time	0 to 255 seconds	Time in seconds for all Burglar zones, always silent.
Entry Delay Time 1	0 to 255 seconds	Time in seconds to enter Burglar zones defined as Delay #1, may be audibly annunciated. (See Inst. Level Prog. – Prog. Notes, Note 1A).
Entry Delay Time 2	0 to 255 seconds	Time in seconds to enter Burglar zones defined as Delay #2, may be audibly annunciated.
Pre-Alarm Warning Time	0 to 255 seconds	Time in seconds to correct a false alarm, always audible. (See Inst. Level Prog. – Prog. Notes, Note 2).
Panic Key Alarms	00 to 33 (see the Panic Key Table)	The first digit defines the annunciation of an alarm activated by the Center Panic key. The second digit defines the annunciation of an alarm activated by the Right Panic key. Either key may also be used to initiate a call to a pager.
Closing Ringback	0 = Ringback Output 1 = Ringback Output and Keypads 2 = Ringback Output, Bell Output and Keypads	Determines how the system annunciates the successful transmission of an AWAY closing report to the Central Station.
Burglar Audible Lockout	0 = No Lockout 1 to 15 = Alarms for an Area	Determines the number of times that a Bell Output may be activated during an armed cycle, resets with disarm.

ITEM	VALID RANGE	DESCRIPTION
Swinger Shunt	0= No Shunt 1 to 15 = Violations for a Zone	Determines the number of violations that may occur from an armed burglar zone before that zone is automatically bypassed.
Area Attributes	00 to FF (see the Area Attribute Table)	<ul style="list-style-type: none"> • Bypassing – enables selective bypassing of any zone that is defined as bypassable in this area. • Force-Arming – permits arming of the area with zones faulted. Faulted zones are temporarily bypassed and return to operation if the fault is corrected. Only zones that are defined as bypassable may be force-armed. (See Inst. Level Prog. – Prog. Notes, Note 4). • Exit Arm – (See Inst. Level Prog. – Prog. Notes, Note 3). • 3 Second Panic Keys – requires all panic keys to be pressed and held for approximately 3 seconds in order to activate alarm condition. Only pertains to Control Stations that are Primary to this area. • Double Press Panic Keys – requires all panic keys to be pressed twice within one second to activate. Only pertains to Control Stations that are Primary to this area. • Two Button Arm – enables quick arming by pressing AWAY, STAY, or NIGHT followed by the ENTER key. Cannot be used with force-arming. • Double Press Arm – enables quick arming by pressing AWAY, STAY, or NIGHT twice. Cannot be used with force-arming. • Open After Alarm – enables opening reports to be reported only if they occur after an alarm. All “opening” events will be logged in the Event Log regardless of setting. • Display Bypass Armed – when armed in STAY or NIGHT mode with bypassed or force-armed zones, Control Stations with the area as the Primary area will indicate that there are zones that are bypassed.

Area Data Default Table

	AREA 1		AREA 2	
	Loc	Default	Loc	Default
AWAY Exit Time (sec)	[1]	60	[11]	60
STAY/NIGHT Exit Time (sec)	[2]	60	[12]	60
Entry Time 1 (sec)	[3]	20	[13]	20
Entry Time 2 (sec)	[4]	40	[14]	40
Pre-Alarm Time (sec)	[5]	0	[15]	0
Panic Key Alarms	[6]	H-21	[16]	H-21
Closing Ringback	[7]	0	[17]	0
Burglar Audible Lockout	[8]	0	[18]	0
Swinger Shunt	[9]	0	[19]	0
Area Attributes	[10]	H-09	[20]	H-09

Panic Key Table

FIRST DIGIT (Center Panic Key)	SECOND DIGIT (Right Panic Key)
0 = No Keypad Sounder or Bell Output (invisible)	0 = No Keypad Sounder or Bell Output (visible)
1 = Keypad Sounder Only	1 = Keypad Sounder Only
2 = Keypad Sounder and Bell Output	2 = Keypad Sounder and Bell Output
3 = Call Pager, No Alarm	3 = Call Pager, No Alarm

If the First Digit entered is '1', it must be entered as '01'

Area Attribute Table

FIRST DIGIT	ENTER FOR:															
	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
All Features Below Disabled	•															
Two Button Arm		•		•		•		•		•		•		•		•
Double Press Arm			•	•			•	•			•	•			•	•
Open After Alarm					•	•	•	•					•	•	•	•
Display Bypassed Armed									•	•	•	•	•	•	•	•
SECOND DIGIT																
Double Press Panic Keys	•	•	•	•	•	•	•	•								
Bypass		•		•		•		•		•		•		•		•
Force-Arm			•	•			•	•			•	•			•	•
Exit Arm					•	•	•	•					•	•	•	•
3 Second Panic Keys									•	•	•	•	•	•	•	•

If the First Digit entered is '1', it must be entered as '01'. A = 10; B = 11; C = 12; D = 13; E = 14; F = 15

Keypad Data Descriptions

Keypad Data Default Table

	KEYPAD 1 Loc Default	KEYPAD 2 Loc Default	KEYPAD 3 Loc Default	KEYPAD 4 Loc Default	KEYPAD 5 Loc Default	KEYPAD 6 Loc Default
Keypad Type	LED	LED	SSD	SSD	LCD/VFD	LCD/VFD
Keypad Attribute	[21] H-1C	[23] H-1C	[25] H-1C	[27] H-1C	[29] H-1C	[31] H-1E
Access Time (sec)	[22] 5	[24] 5	[26] 5	[28] 5	[30] 5	[32] 5

The following table refers to programming locations 21 through 32.

ITEM	VALID RANGE	DESCRIPTION
Keypad Attributes	00 to FF (see the Keypad Attribute table.)	<ul style="list-style-type: none"> • Primary Area 1 or 2 – determines which area the Control Station’s status indicator will reflect and which area the Control Station will display area status for when it is idle. • Secondary Area Enabled – (See Inst. Level Prog. – Prog. Notes, Note 5). • Left Panic Key Enabled – defines if the Left Panic key is to be enabled for Fire at this Control Station. • Center Panic Key Enabled – defines if the Center Panic key is to be enabled for Police or pager at this Control Station. • Right Panic Key Enabled – defines if the Right Panic key is to be enabled for Medical/Emergency or Pager at this Control Station. • Silent Exit Time – silences the exit alert at the Control Station. • Silent Entry Time – silences the entry alert at the Control Station. This does not affect Pre-Alarm Warning Time. • Silent Trouble – silences the trouble conditions at the Control Station.
Access Time	0 = Toggle 1 – 255 seconds	<ul style="list-style-type: none"> • Time in seconds for an access output activated from this Control Station. Toggle access feature allows the output to latch ON/OFF. • All access outputs assigned to this Control Station are affected when the access function and a valid code is entered for this Control Station (See Inst. Level Prog. – Output Definitions Description). It is not area dependent. Typically used to activate electrically operated door strikes.

This control is not a UL Listed Access Control System. The access feature should not be used in UL Listed installations.

Keypad Attribute Table

ENTER FOR:																
FIRST DIGIT	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
All Features Below Disabled	•															
Right Panic Key Enabled		•		•		•		•		•		•		•		•
Silent Exit Time			•	•			•	•			•	•			•	•
Silent Entry Time					•	•	•	•					•	•	•	•
Silent Troubles									•	•	•	•	•	•	•	•
SECOND DIGIT																
Primary Area 1	•				•				•				•			
Primary Area 2		•				•				•				•		
Primary Area 1, Secondary Area 2			•				•				•				•	
Primary Area 2, Secondary Area 1				•				•				•				•
Left Panic Key Enabled					•	•	•	•					•	•	•	•
Center Panic Key Enabled									•	•	•	•	•	•	•	•

If the First Digit entered is '1', it must be entered as '01'. A = 10; B = 11; C = 12; D = 13; E = 14; F = 15

Zone Data Descriptions

Zone Data Default Table

	ZONE TYPE		AREA		EXPANSION DEVICE		BURGLAR ZONE ATTRIBUTE		ZONE ATTRIBUTE	
	Loc	Default	Loc	Default	Loc	Default	Loc	Default	Loc	Default
Zone 01	[33]	1	[34]	1			[35]	H-0D	[36]	H-37
Zone 02	[37]	1	[38]	1			[39]	H-03	[40]	H-37
Zone 03	[41]	1	[42]	1			[43]	H-03	[44]	H-37
Zone 04	[45]	1	[46]	1			[47]	H-0C	[48]	H-37
Zone 05	[49]	1	[50]	1			[51]	H-0C	[52]	H-37
Zone 06	[53]	0 [†]	[54]	0 [†]			[55]	H-0CN/A	[56]	H-37N/A
Zone 07	[57]	1	[58]	1			[59]	H-0C	[60]	H-37
Zone 08	[61]	1	[62]	1			[63]	H-0C	[64]	H-37
Zone 09	[65]	1	[66]	1			[67]	H-0C	[68]	H-37
Zone 10	[69]	1	[70]	1			[71]	H-0C	[72]	H-37
Zone 11	[73]	1	[74]	1			[75]	H-0C	[76]	H-37
Zone 12	[77]	0 [†]	[78]	0 [†]			[79]	H-0CN/A	[80]	H-37N/A
Zone 13	[81]	1	[82]	0	[83]	0	[84]	H-0C	[85]	H-37
Zone 14	[86]	1	[87]	0	[88]	0	[89]	H-0C	[90]	H-37
Zone 15	[91]	1	[92]	0	[93]	0	[94]	H-0C	[95]	H-37
Zone 16	[96]	1	[97]	0	[98]	0	[99]	H-0C	[100]	H-37
Zone 17	[101]	1	[102]	0	[103]	0	[104]	H-0C	[105]	H-37
Zone 18	[106]	1	[107]	0	[108]	0	[109]	H-0C	[110]	H-37
Zone 19	[111]	1	[112]	0	[113]	0	[114]	H-0C	[115]	H-37
Zone 20	[116]	1	[117]	0	[118]	0	[119]	H-0C	[120]	H-37
Zone 21	[121]	1	[122]	0	[123]	0	[124]	H-0C	[125]	H-37
Zone 22	[126]	1	[127]	0	[128]	0	[129]	H-0C	[130]	H-37
Zone 23	[131]	1	[132]	0	[133]	0	[134]	H-0C	[135]	H-37
Zone 24	[136]	1	[137]	0	[138]	0	[139]	H-0C	[140]	H-37
Zone 25	[141]	1	[142]	0	[143]	0	[144]	H-0C	[145]	H-37
Zone 26	[146]	1	[147]	0	[148]	0	[149]	H-0C	[150]	H-37
Zone 27	[151]	1	[152]	0	[153]	0	[154]	H-0C	[155]	H-37
Zone 28	[156]	1	[157]	0	[158]	0	[159]	H-0C	[160]	H-37
Zone 29*	[161]	0							[162]	H-63
Zone 30**	[163]	2							[164]	H-63

* Zone 29 is the Two-Wire Smoke Zone on the ZXEXP Module

** Zone 30 is the Two-Wire Smoke Zone on the Control Board

† ZX440F uses Zone 6 and Zone 12 for Telco Monitor and Ground Fault Monitor inputs. They are not available for programming.

INSTALLER LEVEL PROGRAMMING

The following table refers to programming locations 33 – 164.

ITEM	VALID RANGE	DESCRIPTION
<p>Zone Type</p> <p>Note: Zone 29 & 30 may only be programmed as 24 Hour Fire, Verified Fire, Fire Supervisory, 24 Hour Water Flow or Not Used; any other will be interpreted as Not Used. All other zones may be programmed as any zone type.</p>	<p>0 = Not Used 1 = Burglar 2 = 24 Hour Fire 3 = 24 Hour Holdup 4 = 24 Hour Auxiliary 5 = Momentary Keyswitch (Arm AWAY/Disarm) 6 = 24 Hour Communicator 7 = 24 Hour Burglar Tamper 8 = Universal 9 = Universal Logged</p> <p>10 = Verified Fire</p> <p>11 = Fire Supervisory 12 = Reserved 13 = 24 Hour Water Flow 14 = 24 Hour Non-Alarm</p>	<ul style="list-style-type: none"> • Critical Condition Monitor (CCM), no local display. • May be used to activate an output that is programmed as Universal. Only the Universal Logged is posted in the Event Log when activated. No events are reported to the Central Station. • Upon activation, control resets switched smoke power. The loop is ignored for 30 seconds. Subsequent activation within the next 60 seconds causes an alarm. • See Inst. Level Prog. – Prog. Notes, Note 16. • Communicator with local display, but no local sounder.
Area Number	<p>0 = Disable 1 = Area 1 2 = Area 2 3 = Common Area</p>	<ul style="list-style-type: none"> • Determines which area the zone belongs to. Fire zones are visible to both areas regardless of settings. Only Burglar zones may be assigned to the Common Area (see Operating the System – Introduction).
Expansion Device	<p>0 = ZXEXP 1 = RF Gateway 1 2 = RF Gateway 2 3 = ZEM</p>	<ul style="list-style-type: none"> • Determines which data bus device the system will poll to get the zone's status data.
Burglar Zone Attributes	<p>00 to FF (see the Burglar Zone Attribute Table)</p>	<ul style="list-style-type: none"> • See Inst. Level Prog. – Prog. Notes, Note 2, 6, and 7 for a complete description of the Burglar Zone Attributes. The Chime Always attribute may be used with Universal zones as well as Burglar zones.
Zone Attributes	<p>00 to FF (see the Zone Attribute Table)</p>	<ul style="list-style-type: none"> • Bell Output on Alarm – determines if Bell Output activates due to an alarm from the zone. (See Inst. Level Prog. – Prog. Notes, Note 8). • Keypad Sounder on Alarm – determines if Control Station sounder activates due to an alarm from the zone. (See Inst. Level Prog. – Prog. Notes, Note 8). • Fire Bell 2 on Alarm – determines if Fire Bell 2 activates due to an alarm from the zone. This only applies to Fire and Verified Fire Zones on where there is no Water Flow Zone. (See Inst. Level Prog. – Prog. Notes, Note 8). • Bypassable – determines if a zone may be bypassed or force-armed. (See Inst. Level Prog. – Prog. Notes, Note 17). • Secure Watch – (See Inst. Level Prog. – Prog. Notes, Note 9). • Zone Supervision – determines how opens and shorts are handled. • Fast Zones – only applies to zones 1 – 12. A Fast Zone on zones 1 – 6 has a loop response time of 80 msec. A Fast Zone on zones 7 – 12 has a loop response time of 20 msec.

Burglar Zone Attribute Table

ENTER FOR:																
FIRST DIGIT	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Standard (all below disabled)	•															
Chime Always		•		•		•		•		•		•		•		•
Verifying			•	•			•	•			•	•			•	•
Self-Verifying					•	•	•	•					•	•	•	•
Sentry Test									•	•	•	•	•	•	•	•
SECOND DIGIT	Armed AWAY only (interior)				Armed AWAY & STAY				Armed AWAY & NIGHT				Armed AWAY, STAY & NIGHT (perimeter)			
Instant	•				•				•				•			
Delay 1		•				•				•				•		
Delay 2			•				•				•				•	
Follower				•				•				•				•
Arm STAY					•	•	•	•					•	•	•	•
Arm NIGHT									•	•	•	•	•	•	•	•

Zone Attribute Table

ENTER FOR:																
FIRST DIGIT	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Invalid	•								•							
Alarm on Open – No Trouble (EOL optional)		•								•						
Alarm on Short – No Trouble (EOL optional)			•								•					
Alarm on Open or Short – No Trouble (with EOL)				•								•				
Trouble on Open or Short					•								•			
Alarm on Open – Trouble on Short						•								•		
Alarm on Short – Trouble on Open							•								•	
Alarm on Open or Short – Trouble on Open when disarmed (Burg only)								•								•
Fast Zones										•	•	•	•	•	•	•
SECOND DIGIT																
All Features Below Disabled	•															
Bell Output on Alarm		•		•		•		•		•		•		•		•
Keypad Sounder/Fire Bell 2 on Alarm*			•	•			•	•			•	•			•	•
Bypassable					•	•	•	•					•	•	•	•
Secure Watch									•	•	•	•	•	•	•	•

If the First Digit entered is '1', it must be entered as '01'. A = 10; B = 11; C = 12; D = 13; E = 14; F = 15

- The first digit of the zone attribute is ignored for RF and ZEM zones.
- The only valid zone attributes for Zones 29 and 30 are '61', '62', '63', '65', '66' and '67'.
- * Keypad Sounder for Non-fire zones, Fire Bell 2 for fire zones.

User Data Description

The user data block is used to set the level of authority that determines the level of activity the user can perform on the control and the areas that a particular user can perform operations on. The passcodes associated with each user may be programmed as described in Installer Level Programming – Programming User Codes.

User Data Default Table

	CODE	AUTHORITY LEVEL		OPERATION AREA			CODE	AUTHORITY LEVEL		OPERATION AREA	
	Default	Loc	Default	Loc	Default		Default	Loc	Default	Loc	Default
User 01	1234	[165]	10	[166]	1	User 26	0000	[215]	6	[216]	1
User 02	0000	[167]	6	[168]	1	User 27	0000	[217]	6	[218]	1
User 03	0000	[169]	6	[170]	1	User 28	0000	[219]	6	[220]	1
User 04	0000	[171]	6	[172]	1	User 29	0000	[221]	6	[222]	1
User 05	0000	[173]	6	[174]	1	User 30	0000	[223]	6	[224]	1
User 06	0000	[175]	6	[176]	1	User 31	0000	[225]	6	[226]	1
User 07	0000	[177]	6	[178]	1	User 32	0000	[227]	6	[228]	1
User 08	0000	[179]	6	[180]	1	User 33	0000	[229]	6	[230]	1
User 09	0000	[181]	6	[182]	1	User 34	0000	[231]	6	[232]	1
User 10	0000	[183]	6	[184]	1	User 35	0000	[233]	6	[234]	1
User 11	0000	[185]	6	[186]	1	User 36	0000	[235]	6	[236]	1
User 12	0000	[187]	6	[188]	1	User 37	0000	[237]	6	[238]	1
User 13	0000	[189]	6	[190]	1	User 38	0000	[239]	6	[240]	1
User 14	0000	[191]	6	[192]	1	User 39	0000	[241]	6	[242]	1
User 15	0000	[193]	6	[194]	1	User 40	0000	[243]	6	[244]	1
User 16	0000	[195]	6	[196]	1	User 41	0000	[245]	6	[246]	1
User 17	0000	[197]	6	[198]	1	User 42	0000	[247]	6	[248]	1
User 18	0000	[199]	6	[200]	1	User 43	0000	[249]	6	[250]	1
User 19	0000	[201]	6	[202]	1	User 44	0000	[251]	6	[252]	1
User 20	0000	[203]	6	[204]	1	User 45	0000	[253]	6	[254]	1
User 21	0000	[205]	6	[206]	1	User 46	0000	[255]	6	[256]	1
User 22	0000	[207]	6	[208]	1	User 47	0000	[257]	6	[258]	1
User 23	0000	[209]	6	[210]	1	User 48	0000	[259]	6	[260]	1
User 24	0000	[211]	6	[212]	1	User 49	0000	[261]	6	[262]	1
User 25	0000	[213]	6	[214]	1	User 50	1245	[263]	10	[264]	3

The following table refers to programming locations 165 – 264.

ITEM	VALID RANGE	DESCRIPTION
Authority Level	0 to 15	See table on following page for Authority Level options. (Enter 0 to disable).
Areas of Operation	0 = Disabled 1 = Area 1 2 = Area 2 3 = Both	Determines which areas the passcode can be used to perform operations on. If a 3 is selected, the Control Station it is used on must be programmed for both areas in order to access both areas.

Authority Levels

Authorities levels 1 through 10 are the general purpose levels with level 10 having the highest capabilities. Level 11 is for limited disarm capabilities (ie: Maid’s passcode). Level 12 is for User on Premises reporting. Level 13 is for Duress reporting.

For High Level Security applications, only levels 14 and 15 should be used. If levels 14 and 15 are used, all other users should be set to Level 0 (zero).

Level 14 needs 2 different level 14 passcodes in order to activate any of the options available. The

Control Station will beep 4 times after the 1st passcode is entered signifying that it has been accepted. The 2nd passcode may then be entered. Level 15 is for maintenance activities only. Level 15 does not allow the user to arm or disarm the system, only to maintain it.

See the table on the next page for the options available for each authority level. To disable all capabilities, set the authority level to zero (0).

The Installer passcode has the authority level to perform the following operations:

- | | |
|--|---------------------------------------|
| Access from Keypad * | Initiate Call to RPM/2 Pro |
| Arm (AWAY, STAY, NIGHT) * | Remote Connect |
| Disarm if Armed by an Installer * | Reset Smoke Power |
| Change Arming Level * | Program RF Data |
| Edit User Codes * | RF Signal Strength |
| Edit Zone Names * | Set Clock |
| Force-Arm * | Silence Trouble |
| View & Print Event Log * | View Alarm Memory |
| Bypass Zones * | Battery Test |
| Chime Enable/Disable * | Bell Test |
| Default Function Map * | Comm Test |
| Edit Function Map (except Zone Names & User Codes) * | Keypad Test |
| Silence/Cancel Alarm if not Armed or if Armed by Installer * | Walk Test |
| Silence Bell without Disarm if Armed by other than Installer | Adjust Days Until Next Auto Comm Test |

* Disabled if Lockout Local Programming is enabled (see Installer Level Programming - Programming Options).

INSTALLER LEVEL PROGRAMMING

CAPABILITIES	AUTHORITY LEVEL														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Access From Keypad	•	•	•	•	•	•	•	•	•	•	•			••	
Chime Enable/Disable	•	•	•	•	•	•	•	•	•	•	•				
Silence Bell Without Disarm		•	•	•											
Arm (AWAY, STAY, NIGHT)			•	•	•	•	•	•	•	•	•	•		••	
Changing Arming Level			•	•	•	•	•	•	•	•	•	•		••	
Remote Connect				•	•	•	•	•	•	•	•			••	••
Silence/Cancel Alarm					•	•	•	•	•	•				••	
Silence Trouble					•	•	•	•	•	•	•			••	
Disarm					•	•	•	•	•	•				••	
View Alarm Memory					•	•	•	•	•	•	•				••
Reset Smoke Power					•	•	•	•	•	•	•			••	
Bypass Zones						•	•	•	•	•	•				
Force-Arm						•	•	•	•	•	•	•		••	
Abort Exit Arm						•	•	•	•	•					
Walk Test							•	•	•	•					••
Comm Test							•	•	•	•					••
Bell Test							•	•	•	•					••
Battery Test							•	•	•	•					••
Keypad Test							•	•	•	•					••
RF Signal Strength Test							•	•	•	•					••
Delay Scheduled Arming								•	•	•				••	
View & Print Event Log								•	•	•					••
Edit Scheduled Arming									•	•					••
Edit Latch Key Operation									•	•					
Set Clock									•	•					
Abort Auto-Arming									•	•					••
Edit Zone Names									•	•					
Edit User Codes										•					••
Disarm If Armed By A Level 11 User Passcode											•				
Silence/Cancel Alarm If Not Armed Or If Armed By A Level 11 Passcode											•				
Silence Bell Without Disarm If Armed By Other Than A Level 11 Passcode											•				
Access From Keypad With User On Premises Report												•			
Silence/Cancel Alarm With User On Premises Report												•			
Disarm With User On Premises Report												•†			
Access From Keypad With Duress													•		
Arm (AWAY, STAY, NIGHT) with Duress													•		
Change Arming Level With Duress													•		
Force-Arm With Duress													•		
Silence/Cancel Alarm With Duress													•		
Disarm With Duress													•†		

•• For High Level Security applications only

† The Off/Cancel key followed by a Duress or User On Premises passcode will always produce a "Duress" or "User On Premises" report regardless of whether the system was armed.

Output Definitions Description

This data block is used to assign the programmable outputs. The ZXCFCM on a ZX440F is equipped with three bell outputs (FIRE BELL 1, FIRE BELL 2 & OTHER BELL) and one programmable output (PGO1). No outputs are available on the ZX440F Control Board. Additional outputs can be obtained in groups of ten by the addition of output driver modules (ZXODM) or a zone expander (ZXEXP). The 10 outputs on ODM2 are identical to the 10 outputs on the zone expander.

Each output is assigned a condition (i.e.: Burglar, Fire, Status, Alarm) and areas to which it should respond when the condition is active in those areas. For access conditions, the output is assigned to a Control Station(s). Output conditions 1 – 12 ignore the area setting.

Output Definitions Default Table

CONDITION		AREA OR KEYPAD		CONDITION		AREA OR KEYPAD	
Loc	Default	Loc	Default	Loc	Default	Loc	Default
ZXCFCM Other Bell		[265]	1	Zone Expander or ODM 2			
ZXCFCM PGO1	[266] 17	[267]	1	Output 01	[288] 13	[289]	1
ODM 1				Output 02	[290] 3	[291]	1
Output 01	[268] 13	[269]	1	Output 03	[292] 14	[293]	1
Output 02	[270] 3	[271]	1	Output 04	[294] 15	[295]	1
Output 03	[272] 14	[273]	1	Output 05	[296] 19	[297]	1
Output 04	[274] 15	[275]	1	Output 06	[298] 31	[299]	1
Output 05	[276] 19	[277]	1	Output 07	[300] 18	[301]	1
Output 06	[278] 31	[279]	1	Output 08	[302] 25	[303]	1
Output 07	[280] 18	[281]	1	Output 09	[304] 34	[305]	1
Output 08	[282] 25	[283]	1	Output 10	[306] 39	[307]	1
Output 09	[284] 34	[285]	1	Output conditions 39 and 40 add combinations of keypads 1 – 6.			
Output 10	[286] 39	[287]	1	Conditions 13 – 38 are specified as a combination of Areas 1 & 2.			

INSTALLER LEVEL PROGRAMMING

The following table refers to programming locations 265 through 307.

ITEM	VALID RANGE	
Output Condition	See next page for complete descriptions 0 = Not Used 1 = Fire Bell 1 Output Trigger 2 = Fire Bell 2 Output Trigger 3 = Fire Alarm 4 = Fire Supervisory 5 = Water Flow 6 = Fire Trouble 7 = Duress 8 = Low/No Battery 9 = Failed to Comm 10 = Telco Line Fault 11 = Telco Line Seized 12 = Reserved 13 = Burglar Alarm 14 = Holdup Alarm 15 = Auxiliary Alarm 16 = Other Bell Output Trigger 17 = Violation 18 = Ready 19 = Armed AWAY 20 = Armed STAY 21 = Armed NIGHT 22 = Armed and Exit Time Expired 23 = Exit Time 24 = Entry Time 25 = Pre-Alarm Warning Time 26 = Annunciation 27 = Auto-Arm Warning 28 = Closing Ringback 29 = Trouble 30 = Audible Trouble 31 = Chime 32 = Universal Output 33 = Reserved 34 = Lamp Trigger 35 = Key 4 Output 36 = Key 5 Output 37 = Key 6 Output 38 = RF Annunciator 39 = Access by Keypad 40 = Quick Access by Keypad 101 - 130 = Zone (1 to 30) Violated 201 - 230 = Zone (1 to 30) In Alarm or Secure Watch	
Areas of Operation	(for Output Conditions 13 - 38) 1 = Area 1 2 = Area 2 3 = Both	[add up selections] (for Output Conditions 39 & 40) 1 = Control Station 1 2 = Control Station 2 4 = Control Station 3 8 = Control Station 4 16 = Control Station 5 32 = Control Station 6

If the Output Condition is “Ready”, “Armed AWAY”, “Armed STAY”, “Armed NIGHT”, “Armed & Exit Time Expired”, “Exit Time”, “Entry Time”, “Annunciation”, “Key 4 Output”, “Key 5 Output”, or “Key 6 Output”, then the Areas of Operation should be limited to a single area.

Programmable Output Activation

The programmable outputs will be activated according to their Output Condition listed in the following table. The output will go ON STEADY for the following conditions unless otherwise specified in the table below.

Other Bell Output Activation

The Other Bell Output is assignable to a combination of areas and may activate due to an alarm condition in any of the areas. A Burglar Alarm, a Burglar Tamper, a Holdup Alarm, the Center Panic key, an Auxiliary Alarm, or the Right Panic key may activate the Other Bell Output.

Each alarm type is programmable for ‘Pulsed’ or ‘Steady’ (See Inst. Level Prog. – Global System Options). If more than one alarm type is active at the same time, the Other Bell Output will annunciate the highest priority alarm. The priority order is Auxiliary, Burglar and Holdup.

If any of the Other Bell Output’s areas have Closing Ringback Annunciation set to “Ringback Output, Keypads, and Bell Output”, the Other Bell Output will emit a two second ringback tone. (See Inst. Level Prog. – Area Data).

To prevent accidents, the Bell Test on AWAY arm and the Ringback Bell are disabled while the duress output is active.

Fire Bell Outputs Activation

The activation of the Fire Bell 1 & Fire Bell 2 Outputs depends on whether a zone is programmed for Water Flow or not. If a zone is programmed as Water Flow, then a Fire Alarm from that zone will always activate Fire Bell 2 and a Fire Alarm from a Fire or Verified Fire zone or the Left Panic key will always activate Fire Bell 1. If there is not a Water Flow zone, then a Fire Alarm from a Fire or Verified Fire zone or the Left Panic key may activate Fire Bell 1 and/or Fire Bell 2.

The cadences of both Fire Bell 1 and Fire Bell 2 are programmable.

CONDITION	OUTPUT BECOMES ACTIVE WHEN:
Fire Bell 1 Output Trigger	Activates according to cadence when a Fire or Verified Fire zone or the Left Panic key is in alarm as described above.
Fire Bell 2 Output Trigger	Activates according to cadence when a Water Flow zone is in alarm or when a Fire or Verified Fire zone or the Left Panic key is in alarm as described above.
Fire Alarm	A Fire, Verified Fire or Water Flow zone or the Left Panic key is in alarm.
Fire Supervisory	A zone defined as Fire Supervisory is in alarm.
Water Flow	A Water Flow zone is in alarm.
Fire Trouble	A Fire, Verified Fire or Water Flow zone is in Trouble.
Duress	A Duress code has been used. To turn off, press the CLEAR key for 3 seconds.
Panel Low/No Battery	A Panel Low/No Battery trouble condition occurs.
Failed to Comm	A Failed to Comm trouble condition occurs.
Telco Line Fault	Both Telco Line 1 Fault and Telco Line 2 Fault trouble conditions occur.
Telco Line Seized	The system seizes the telephone line for an RPM connection or prior to making a call to the Central Station.

INSTALLER LEVEL PROGRAMMING

Burglar Alarm	A Burglar or a Burglar Tamper defined zone is in alarm.
Holdup Alarm	A Holdup zone or the Center Panic key is in alarm.
Auxiliary Alarm	An Auxiliary zone or the Right Panic key is in alarm.
Other Bell Output Trigger	Activates according to cadence for an Auxiliary, Burglar or Holdup Alarm as described above.
Violation	A Fire, Fire Supervisory, Water Flow, Burglar, Auxiliary, Visible Holdup or Burglar Tamper is in alarm.
Ready	The area is ready to arm.
Armed AWAY	The area has been armed in the AWAY mode.
Armed STAY	The area has been armed in the STAY mode.
Armed NIGHT	The area has been armed in the NIGHT mode.
Armed & Exit Time Expired	The area has been armed in any way and the exit time has expired.
Exit Time	The exit time starts in its area due to an AWAY, STAY, or NIGHT arm. The output will go ON STEADY until the last ten seconds, then it will PULSE for the last ten seconds.
Entry Time	The entry time starts in its area. The output will stay ON STEADY until the last ten seconds of entry time. During the last ten seconds of entry time, it will PULSE.
Pre-Alarm Warning Time	Any of its areas are in Pre-Alarm Warning Time. The output will PULSE when any of its areas are in Pre-Alarm Warning Time.
Annunciation	The Annunciation output operates like a combination of the Exit Time, Entry Time, and Pre-Alarm Warning Time outputs. When the exit time starts in its area due to an AWAY, STAY, or NIGHT arm, the output will go ON STEADY until the last ten seconds. During the last ten seconds, it will PULSE. When the entry time starts in its area, the output will go ON STEADY until the last ten seconds of entry time. During the last ten seconds, it will PULSE. When in Pre-Alarm Warning Time, the output will PULSE.
Auto Arm Warning	The timer activates for 3 seconds for each minute of the ten minutes left before Auto-Arming occurs. It will also activate at one minute and two minutes until before an Exit Arm occurs.
Closing Ringback	A Closing Report due to an AWAY arm from a Control Station or keyswitch has been successfully transmitted to the Central Station.
Trouble	A System Trouble condition is present. (See System Troubleshooting).
Audible Trouble	A System Trouble condition is present and has not been Silenced.
Chime	A Disarmed Chime Always Burglar zone in any of its areas is violated, a Disarmed Perimeter (Arm on STAY & Arm on NIGHT) Burglar zone in any of its areas is violated and that area has Chime Enabled.
Universal	A Universal or Universal Logged zone is violated. (See Inst. Level Prog. – Prog. Notes, Note 13).
Lamp Trigger	Any of its areas are in exit time, entry time and five minutes after entry time. The Output will go ON STEADY when its areas are in entry time and will stay ON STEADY until five minutes after entry time expires or five minutes after disarm (whichever is shorter). (See Inst. Level Prog. – Prog. Notes, Note 14).
Key 4 Output	ENTER + Key #4 is pressed on a keypad primary to its area. May be used to toggle an output ON/OFF.
Key 5 Output	ENTER + Key #5 is pressed on a keypad primary to its area. May be used to toggle an output ON/OFF.
Key 6 Output	ENTER + Key #6 is pressed on a keypad primary to its area. May be used to toggle an output ON/OFF.
RF Annunciator	Activates when an RF User Device is used in one of the output's areas. The output will pulse once for an RF User Device disarm, twice for a successful RF User Device Arm, and three times for a failed RF User Device Arm.
Access by Keypad	Any of its Control Stations have an Access timer that is running or ON. (See Inst. Level Prog. – Prog. Notes, Note 15).
Quick Access By Keypad	Any of its Control Stations have a Quick Access timer that is running or ON. (See Inst. Level Prog. – Prog. Notes, Note 15).
Zone Violated	The zone is violated
Zone in Alarm or Secure Watch	The zone goes into alarm. For a Burglar zone, it will deactivate when the alarm is silenced. For Fire, Holdup, Auxiliary, Burglar Tamper, Verified Fire, and Fire Supervisory zones, it will deactivate when the zone restores after the alarm has been silenced. For Water Flow zones, it will deactivate when the zone restores. The zone goes into Secure Watch Trouble until the condition restores (See Inst. Level Prog. – Prog. Notes, Note 9).

Global System Options Description

Global System Options Default Table

	Loc	TIME Default		Loc	TIME Default
Fire Bell 1 Cutoff Time (min)	[308]	0	Reserved	[315]	0
Fire Bell 2 Cutoff Time (min)	[309]	0	AC Failure Delay (hrs)	[316]	7
Burglar Cutoff Time (min)	[310]	10	Secure Watch Time (hrs)	[317]	24
Holdup Cutoff Time (min)	[311]	10	Aux Key Fire Bells	[318]	1
Aux Cutoff Time (min)	[312]	10	Fire Bells	[319]	H-22
Universal Output Time (sec)	[313]	0	System Attributes	[320]	H-30
Delay Before Dial (sec)	[314]	0	Passcode Attempts	[321]	8

The following table refers to programming locations 308 through 321:

ITEM	VALID RANGE	DESCRIPTION
Fire 1 Cutoff Time	0 = No Cutoff, 1 to 255 minutes	Determines the time in minutes for Bell Output or Fire Bell 1 Output and Fire Alarm signaling device.
Fire 2 Cutoff Time	0 = No Cutoff, 1 to 255 minutes	Determines the time in minutes for Fire Bell 2 Output.
Burglar Cutoff Time	0 = No Cutoff, 1 to 255 minutes	Determines the time in minutes for Bell Output or Other Bell Output and Burglar Alarm signaling device.
Holdup Cutoff Time	0 = No Cutoff, 1 to 255 minutes	Determines the time in minutes for Bell Output or Other Bell Output and Holdup Alarm signaling device.
Auxiliary Cutoff Time	0 = No Cutoff, 1 to 255 minutes	Determines the time in minutes for Bell Output or Other Bell Output and Auxiliary Alarm signaling device.
Universal Output Time	0 = Toggle ON, 1 to 255 seconds	Controls the timer for output programmed as Universal. Activated from Universal or Universal Logged zones. (See Inst. Level Prog. – Prog. Notes, Note 13).
Delay Before Dial	0 to 255 seconds	Time in seconds that a user has after a Burglar, Holdup or Auxiliary Alarm from a zone has occurred to silence the alarm with a disarm and abort the alarm event. (See Inst. Level Prog. – Prog. Notes, Note 10).
AC Trouble Delay	0 to 255 hours	Determines the time that AC power must be down until the condition is reported to the Central Station. Time is in hours and it is always audible at the keypad.
Secure Watch Time	0 – 42 hours	Time in hours during which there is no activity before a Secure Watch event is logged to be reported. (See Inst. Level Prog. – Prog. Notes, Note 9).
Aux Key Fire Bells	0 = No Bells 1 = Fire Bell 1 2 = Fire Bell 2 3 = Fire Bell 1 & Fire Bell 2	This location is only used on a ZX440F with no Water Flow zone. Otherwise, it is ignored. It determines which Fire Bell Outputs are activated when a Fire panic causes an alarm.
Fire Bells	00 to 33 (see Fire Bell Table)	The first digit defines the cadence of Fire Bell 1 during a Fire Alarm. The second digit defines the cadence of Fire Bell 2 during a Fire Alarm.

ITEM	VALID RANGE	DESCRIPTION
System Attributes	00 to FF (see the System Attribute Table.)	<ul style="list-style-type: none"> • Burglar Bell (Steady/Pulsed) – determines the operation of the Bell Output or Other Bell Output during a Burglar alarm. • Holdup Bell (Steady/Pulsed) – determines the operation of the Bell Output or Other Bell Output during a Holdup alarm. • Auxiliary Bell (Steady/Pulsed) – determines the operation of the Bell Output or Other Bell Output during an Auxiliary alarm. • Bell Test on Arm – if enabled, then the Bell Output or Other Bell Output for an area will be activated for two seconds when that area is armed in the AWAY mode. • Log Alarm Abort Events – if enabled, Abort Alarm events are posted in the Event Log. (See Inst. Level Prog. – Prog. Notes, Note 10). • Log Access Events – if enabled, the “Keypad Access Activated” events will be posted in the Event Log. These events are not reportable to the Central Station. • Print Access Only R/T – if enabled with a printer connected, then only “Keypad Access Activated” events will be printed. This does not affect the Event Log print command.
Passcode Entry Lockout	0 = No Lock, 1 to 15 attempts	Sets the number of failed passcode entry attempts allowed before a 50 second lockout for a particular Control Station.

Fire Bell Table

FIRST (Fire Bell 1) & SECOND (Fire Bell 2) DIGITS	
0 = Steady	2 = Temporal
1 = Pulsed (March Time)	3 = Calif March Time

NOTE

Alarm Bell operations only affect the Bell Outputs. They do not affect the associated Alarm Indicator outputs.

System Attribute Table

ENTER FOR:																
FIRST DIGIT	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
All Features Below Disabled	•								•							
Log Alarm Abort Events		•		•		•		•		•		•		•		•
Log Access Events			•	•			•	•			•	•			•	•
Print Access Only Real Time					•	•	•	•					•	•	•	•
SECOND DIGIT																
Burglar Bell Steady	•		•		•		•		•		•		•		•	
Burglar Bell Pulsed		•		•		•		•		•		•		•		•
Holdup Bell Steady	•	•			•	•			•	•			•	•		
Holdup Bell Pulsed			•	•			•	•			•	•			•	•
Aux Bell Steady	•	•	•	•					•	•	•	•				
Aux Bell Pulsed					•	•	•	•					•	•	•	•
Bell Test on Arm									•	•	•	•	•	•	•	•

If the First Digit entered is '1', it must be entered as '01'. A = 10; B = 11; C = 12; D = 13; E = 14; F = 15

Communicator Data Description

Communicator Data Default Table

	Loc	Default		Loc	Default
Phone Lines	[322]	H-22	Dialer Types	[331]	H-11
Enable Skip Test	[323]	0	CS1 Dial Attempts	[332]	5
Power-up Comm Test	[324]	0	CS2 Dial Attempts	[333]	5
Disable Call Waiting	[325]	0	Pager Dial Attempts	[334]	1
Comm Test Time of Day (hr:min)	[326: 327]	00:00	Pager Delay Time (sec)	[335]	15
Days Between Comm Tests	[328]	1	On-Hook Time (sec)	[336]	5
Time Between Calls (sec)	[329]	5	Off-Hook Time (sec)	[337]	3
Trans Formats	[330]	H-33			

The following table refers to programming locations 322 through 337:

ITEM	VALID RANGE	DESCRIPTION
Phone Lines	0 to 22 (see Phone Lines Table)	First digit is used to enable phone line 1 for digital communicator event reporting and to enable monitoring of phone line 1. The second digit is used to enable phone line 2 for digital communicator event reporting and to enable monitoring of phone line 2. If a phone line is disconnected, turning off the monitoring of that line will clear the PHONE LINE FAIL trouble condition.
Enable Skip Test	0 = No 1 = Yes	Allows the auto comm test to be skipped if any signal has been transmitted to the Central Station since the last auto comm test.
Power-up Comm Test	0 = No 1 = Yes	Causes a communicator test to be initiated immediately upon system power up. Does not affect days between tests counter.
Disable Call Waiting	0 = No 1 = Yes	If enabled, the system will automatically dial "*70D" (Touchtone only) prior to dialing a telephone number. This will temporarily disable the Call Waiting beeps during a phone call.
Comm Test Time of Day	00:00 to 23:59 HH:MM	Sets the hour and minute in military format for the auto communicator test.
Days Between Comm Tests	0 = Disable, 1 to 255 days	Sets the time intervals in days for the auto communicator test. A setting of 0 disables Automatic Comm Test Reporting. Days until next comm test may be manually adjusted by Control Station. (See Installer Level Programming – Days Until Next Comm Test).
Time Between Calls	0 to 255 seconds	Time in seconds between a failed dial attempt to a Central Station and the next dial attempt.
Trans Formats	00 to 44 (see Trans Formats Table)	First digit defines the transmission format used when the communicator dials the phone number for Central Station 1. Second digit defines the transmission format used when the communicator dials the phone number for Central Station 2. (See Inst. Level Prog. – Prog. Notes, Note 11).
Dialer Types	00 to 22 (see Dialer Types Table)	First digit defines the type of dialing used on phone line 1. Second digit defines the type of dialing used on phone line 2.
CS1 Dial Attempts	1 to 15 attempts	Maximum number of dial attempts when the communicator dials the phone number for Central Station 1.
CS2 Dial Attempts	1 to 15 attempts	Maximum number of dial attempts when the communicator dials the phone number for Central Station 2.
Pager Dial Attempts	1 to 15 attempts	Total number of dial attempts when the communicator dials a Pager phone number. All attempts will be used.
Pager Delay Time	0 to 255 seconds	Time in seconds that the communicator waits after dialing before blindly sending a pager message.
On-Hook Time & Off-Hook Time	1 to 15 seconds	Before the communicator dials a phone number, it seizes the phone line and goes off-hook for two seconds. It will then go back on-hook for the On-Hook Time to disconnect an existing phone connection. The communicator will then go back off-hook for the Off-Hook Time to acquire dial tone before dialing.

Phone Lines Table

FIRST (Phone Line 1) & SECOND (Phone Line 2) DIGITS
0 = Disabled
1 = Enabled
2 = Enabled with Line Monitor

Transmission Formats Table

FIRST (CS1) & SECOND (CS2) DIGITS
0 = Pulsed 20 Baud - Non Extended 3 = Contact ID
1 = Pulsed 20 Baud - Extended 4 = Non-Telco Contact ID
2 = Pulsed 40 Baud - Extended

Dialer Types Table

FIRST (Phone Line 1) & SECOND (Phone Line 2) DIGITS
0 = US Rotary North American Standard (60/40) make/break ratio pulses.
1 = Touchtone® Industry standard DTMF tones. Touchtone is a trademark of AT&T.
2 = Foreign Rotary 67/33 make break ratio pulses, typical of foreign countries.

Receiver Compatibility Table

RECEIVERS	TRANSMISSION FORMAT	TRANSMISSION SPEEDS (Pulse Reporting Only)
Ademco 685	3/1, 4/2, Contact ID	20B
FBI CP220	3/1, 4/2, Contact ID	20B - 40B
Osborne-Hoffman (Quick Alert)	3/1, 4/2, Contact ID	20B - 40B
Radionics 6000	3/1	20B - 40B
Radionics 6500	3/1, 4/2	20B - 40B
Silent Knight 9000	3/1, 4/2	20B - 40B
MLR-2DG	3/1, 4/2, Contact ID	20B - 40B

All receivers listed functioned with the listed formats at time of testing. Modifications or programming changes may affect receiver operation. Consult manufacturer of specific receiver for setup and operation.

Communication Numbers Description

Event reporting assignments for each telephone number are programmed under the Installer Level Programming - Area Event Reporting section. The assignment

of telephone dialing options and reporting formats are programmed under the Installer Level Programming - Communicator Data Description section.

Communication Number Default Table

	Loc	Default
Central Station 1 Phone Number	[338 - 357]	all F's
Central Station 2 Phone Number	[358 - 377]	all F's
Area 1 Pager Phone Number	[378 - 397]	all F's
Area 2 Pager Phone Number	[398 - 417]	all F's
RPM/2 Pro Phone Number*	[418 - 437]	all F's
Area 1 Pager Header Message	[438 - 453]	all F's
Area 2 Pager Header Message	[454 - 469]	all F's

* Available for Call Back Command from RPM/2 Pro. Available for Call RPM in the future.

Dialed Digits Allowed

All five phone numbers allow up to 20 hex digits. The two Pager Header Messages allow up to 16 hex digits. See also Installer Level Programming – Programming Account Codes and Telephone Number Digits.

0-9	Numbers from 0 to 9 dial the appropriate Touchtone® or pulse digit.
A	Same as 0.
B	Programming a B into any digit position causes the communicator to produce a Touchtone® * tone. Useful for unique applications such as voice mail, cellular, or paging applications.
C	Programming a C into any digit position causes the communicator to produce a Touchtone® # tone.
D, E	D = 3 second pause E = 1 second pause
F	An 'F' may be programmed after the last digit of a number to signify end of dialing. An 'F' entered as the first digit of a number disables that number.

Pager Telephone Numbers

When an event is sent to a pager, the event's Area Pager Phone Number is dialed. System events are sent to the Area 1 Pager Phone Number. The communicator then waits the Pager Delay Time (see I.L.P. Communicator Data Descr.) before blindly sending a pager message. The pager message may consist of up to 16 digits from the appropriate Pager Header Message followed by a two digit code from the Pager Event Table. Or, if the Pager Header Message is not needed, put an 'F' in its first digit and the appropriate four digit account code is used in its place. The Pager Event Table is also available on a wallet card.

Only one message is sent per phone call and the call is made for the number of Pager Dial Attempts specified. There is no feedback from the pager, so pager events do not affect the failed to communicate condition.

NOTE

The paging network setup for your area determines if your pager will work with a pager telephone number.

Pager Event Table

2-DIGIT CODE	EVENT DESCRIPTION	2-DIGIT CODE	EVENT DESCRIPTION
11	Fire Alarm	35	System Trouble Restore
12	Supervisory Alarm	36	AC Power Restore
13	Burglar Alarm	37	Central Station Comm Restore
14	Holdup Alarm		
15	Duress	41	Arm
16	Auxiliary Alarm	42	Auto Arm Failed/Canceled
17	Critical Condition Monitor	43	Auto Arm Delayed
18	Exit Alarm	44	Recent Closing
		45	Disarm
21	Zone Trouble	46	Burglar Alarm Canceled
22	Testing (Fire Zone)		
23	Zone Bypassed	51	Latchkey Supervision
24	Unsuccessful Attempt to Access via Keypad	52	User On Premises
25	System Trouble		
26	AC Power Failure	61	Comm Test
		62	Comm Test (Not Normal)
31	Alarm Restore	63	Begin Installer Programming, Installer On Premise
32	Zone Trouble Restore	64	End Installer/Remote Programming, Installer Off Premise
33	Zone Unbypassed	65	Remote Programming Failure
		66	Call Home (Panic Key)

Event Reporting Description

Event Reporting Default Table

	SYSTEM		AREA 1		AREA 2	
	Loc	Default	Loc	Default	Loc	Default
Tel 1 Account No (4 Hex Digits)	[470 – 473]	0000	[478 – 481]	0000	[486 – 489]	0000
Tel 2 Account No (4 Hex digits)	[474 – 477]	0000	[482 – 485]	0000	[490 – 493]	0000
Fire Phone No.	[494]	3				
System Events Phone No.	[495]	3				
System Troubles Phone No.	[496]	3				
Burglar Phone No.			[497]	3	[505]	3
Hold-up Phone No.			[498]	3	[506]	3
Auxiliary Phone No.			[499]	3	[507]	3
CCM Phone No.			[500]	3	[508]	3
Zone Trouble/Restore Phone No.			[501]	0	[509]	0
Zone Bypass/Restore Phone No.			[502]	0	[510]	0
Open/Close Phone No.			[503]	0	[511]	0
Supervision Phone No.			[504]	0	[512]	0

The following table refers to programming locations 470 through 512:

ITEM	VALID RANGE	DESCRIPTION
Telephone 1 Account No.	4 Hex Digits	Account number used when dialing CS1 Phone Number or Pager. (See Inst. Level Prog. – Prog. Notes, Note 11).
Telephone 2 Account No.	4 Hex Digits	Account number used when dialing CS2 Phone Number. (See Inst. Level Prog. – Prog. Notes, Note 11).
Fire Phone No. Note: These events are reported using System account codes only.	0 to 11 (See Phone Directors Table)	Directs which telephone number(s) to report Fire Alarms, Fire Supervisories, and Restorals.
System Events Phone No. Note: These events are reported using System account codes only.	0 to 11 (See Phone Directors Table)	Directs which telephone number(s) to report system events. Includes Keypad Lockout, Auto Comm Test, Begin & End Installer Local Programming, End Remote Programming, Remote Programming Denied & Aborted.
System Troubles Phone No. Note: These events are reported using System account codes only.	0 to 11 (See Phone Directors Table)	Directs which telephone number(s) to report system events. Includes Keypad Missing & Restoral, AC Failure & Restoral, Panel Low/No Battery & Restoral, Bell Faults & Restoral, Comm Restoral, Ground Fault & Restoral, Memory Error, Phone Line Faults & Restoral, RF Jamming, RF Channel Clear and RF User Device Low Battery.
Burglar Phone No.	0 to 11 (See Phone Directors Table)	Directs which telephone number(s) to report Burglar Alarms, Burglar Tamper, Exit Alarm, Recent Closing, Burglar Alarm Canceled, and Restorals.
Hold-up Phone No.	0 to 11 (See Phone Directors Table)	Directs which telephone number(s) to report Holdup Alarms, Duress, and Restorals.
Auxiliary Phone No.	0 to 11 (See Phone Directors Table)	Directs which telephone number(s) to report Auxiliary Alarms and Restorals.
Critical Condition Monitor (CCM) Phone No.	0 to 11 (See Phone Directors Table)	Directs which telephone number(s) to report Critical Condition Monitoring events and Restorals.
Zone Trouble/Restore Phone No.	0 to 11 (See Phone Directors Table)	Directs which telephone number(s) to report Zone Troubles and Restorals.
Zone Bypass/Restore Phone No.	0 to 11 (See Phone Directors Table)	Directs which telephone number(s) to report Zone Bypasses and Restorals.
Open/Close Phone No.	0 to 11 (See Phone Directors Table)	Directs which telephone number(s) to report Openings, Closings, Auto Arm Fail, Auto Arm Aborted, and Closing Extended.
Supervision Phone No.	0 to 11 (See Phone Directors Table)	Directs which telephone number(s) to report Latch Key Supervision, User on Premises, Secure Watch, and Secure Watch Restore.

Phone Directors Table

0 = Do Not Report	6 = Pager Only
1 = CS1 Phone Only	7 = CS1 Phone and Pager
2 = CS2 Phone Only	8 = CS2 Phone and Pager
3 = CS1 Phone (CS2 Phone on Failure)	9 = CS1 Phone (CS2 Phone on Failure) and Pager
4 = CS2 Phone (CS1 Phone on Failure)	10 = CS2 Phone (CS1 Phone on Failure) and Pager
5 = CS1 Phone and CS2 Phone	11 = CS1 Phone, CS2 Phone and Pager

Zone Report Codes Description

The Zone Report Codes utilize programming locations 513 through 632. Each Zone has an alarm, restore, bypass and trouble code. The restore may be an alarm, trouble, or bypass restoral. A Zone Trouble may result from one of the following conditions:

- Wiring problem
- Secure Watch Trouble
- No Response from Zone Expander
- Fire Trouble
(Fire zone bypassed or Fire zone in Walk Test)
- Smoke Trouble
- RF Point Not Reporting
- RF Sensor Tamper
- RF Point Low Battery

These events will be posted and displayed differently in the Event Log. If one of these events is reported using a Pulsed format, then the standard Zone Trouble report code will be used. If one of these events is reported using Contact ID then a more descriptive report code will be used.

Each report code requires a two digit entry. The first digit sets the primary event code and the second digit sets the extended code. (See Installer Level Programming – Programming Report Codes). If a transmission format other than a Pulsed format is used, it is only necessary to program a value other than zero into either digit to enable that event to be reported, the correct transmitted data is automatically sent.

Zone Report Codes Default Table

	ALARM		RESTORE		BYPASS		TROUBLE	
	Loc	Default	Loc	Default	Loc	Default	Loc	Default
Zone 01	[513]	H-31	[514]	H-E3	[515]	H-AB	[516]	H-F3
Zone 02	[517]	H-32	[518]	H-E3	[519]	H-AB	[520]	H-F3
Zone 03	[521]	H-33	[522]	H-E3	[523]	H-AB	[524]	H-F3
Zone 04	[525]	H-34	[526]	H-E3	[527]	H-AB	[528]	H-F3
Zone 05	[529]	H-35	[530]	H-E3	[531]	H-AB	[532]	H-F3
Zone 06 [†]	[533]	H-36	[534]	H-E3	[535]	H-AB	[536]	H-F3
Zone 07	[537]	H-37	[538]	H-E3	[539]	H-AB	[540]	H-F3
Zone 08	[541]	H-38	[542]	H-E3	[543]	H-AB	[544]	H-F3
Zone 09	[545]	H-39	[546]	H-E3	[547]	H-AB	[548]	H-F3
Zone 10	[549]	H-3A	[550]	H-E3	[551]	H-AB	[552]	H-F3
Zone 11	[553]	H-3B	[554]	H-E3	[555]	H-AB	[556]	H-F3
Zone 12 [†]	[557]	H-3C	[558]	H-E3	[559]	H-AB	[560]	H-F3
Zone 13	[561]	H-3D	[562]	H-E3	[563]	H-AB	[564]	H-F3
Zone 14	[565]	H-3E	[566]	H-E3	[567]	H-AB	[568]	H-F3
Zone 15	[569]	H-3F	[570]	H-E3	[571]	H-AB	[572]	H-F3
Zone 16	[573]	H-61	[574]	H-E6	[575]	H-AB	[576]	H-F6
Zone 17	[577]	H-62	[578]	H-E6	[579]	H-AB	[580]	H-F6
Zone 18	[581]	H-63	[582]	H-E6	[583]	H-AB	[584]	H-F6
Zone 19	[585]	H-64	[586]	H-E6	[587]	H-AB	[588]	H-F6
Zone 20	[589]	H-65	[590]	H-E6	[591]	H-AB	[592]	H-F6
Zone 21	[593]	H-66	[594]	H-E6	[595]	H-AB	[596]	H-F6
Zone 22	[597]	H-67	[598]	H-E6	[599]	H-AB	[600]	H-F6
Zone 23	[601]	H-68	[602]	H-E6	[603]	H-AB	[604]	H-F6
Zone 24	[605]	H-69	[606]	H-E6	[607]	H-AB	[608]	H-F6
Zone 25	[609]	H-6A	[610]	H-E6	[611]	H-AB	[612]	H-F6
Zone 26	[613]	H-6B	[614]	H-E6	[615]	H-AB	[616]	H-F6
Zone 27	[617]	H-6C	[618]	H-E6	[619]	H-AB	[620]	H-F6
Zone 28	[621]	H-6D	[622]	H-E6	[623]	H-AB	[624]	H-F6
Zone 29	[625]	H-11	[626]	H-E1	[627]	H-AB	[628]	H-F1
Zone 30	[629]	H-12	[630]	H-E1	[631]	H-AB	[632]	H-F1

[†] Not Available

User Report Codes Description

The User Report Codes utilize programming locations 633 through 732. This data block is used to program the opening and closing reports for each user code.

Each report code requires a two digit entry. The first digit sets the primary event code and the second digit sets the extended code. (See Installer Level Programming – Programming Report Codes). If a transmission format other than a Pulsed format is used, it is only necessary to program a value other

than zero into either digit to enable that event to be reported, the correct transmitted data is automatically sent.

The open and close report code is assigned to the user, not the area. Some users may be assigned to arm and disarm multiple areas. Any user with the authority to arm and disarm multiple areas has the same opening and closing report codes. However, the Central Station can differentiate between areas by the account code transmitted.

User Report Code Default Table

	CLOSE		OPEN			CLOSE		OPEN	
	Loc	Default	Loc	Default		Loc	Default	Loc	Default
User 01	[633]	H-C1	[634]	H-B1	User 26	[683]	H-CF	[684]	H-BF
User 02	[635]	H-C2	[636]	H-B2	User 27	[685]	H-CF	[686]	H-BF
User 03	[637]	H-C3	[638]	H-B3	User 28	[687]	H-CF	[688]	H-BF
User 04	[639]	H-C4	[640]	H-B4	User 29	[689]	H-CF	[690]	H-BF
User 05	[641]	H-C5	[642]	H-B5	User 30	[691]	H-CF	[692]	H-BF
User 06	[643]	H-C6	[644]	H-B6	User 31	[693]	H-CF	[694]	H-BF
User 07	[645]	H-C7	[646]	H-B7	User 32	[695]	H-CF	[696]	H-BF
User 08	[647]	H-C8	[648]	H-B8	User 33	[697]	H-CF	[698]	H-BF
User 09	[649]	H-C9	[650]	H-B9	User 34	[699]	H-CF	[700]	H-BF
User 10	[651]	H-CA	[652]	H-BA	User 35	[701]	H-CF	[702]	H-BF
User 11	[653]	H-CB	[654]	H-BB	User 36	[703]	H-CF	[704]	H-BF
User 12	[655]	H-CC	[656]	H-BC	User 37	[705]	H-CF	[706]	H-BF
User 13	[657]	H-CD	[658]	H-BD	User 38	[707]	H-CF	[708]	H-BF
User 14	[659]	H-CE	[660]	H-BE	User 39	[709]	H-CF	[710]	H-BF
User 15	[661]	H-CF	[662]	H-BF	User 40	[711]	H-CF	[712]	H-BF
User 16	[663]	H-CF	[664]	H-BF	User 41	[713]	H-CF	[714]	H-BF
User 17	[665]	H-CF	[666]	H-BF	User 42	[715]	H-CF	[716]	H-BF
User 18	[667]	H-CF	[668]	H-BF	User 43	[717]	H-CF	[718]	H-BF
User 19	[669]	H-CF	[670]	H-BF	User 44	[719]	H-CF	[720]	H-BF
User 20	[671]	H-CF	[672]	H-BF	User 45	[721]	H-CF	[722]	H-BF
User 21	[673]	H-CF	[674]	H-BF	User 46	[723]	H-CF	[724]	H-BF
User 22	[675]	H-CF	[676]	H-BF	User 47	[725]	H-CF	[726]	H-BF
User 23	[677]	H-CF	[678]	H-BF	User 48	[727]	H-CF	[728]	H-BF
User 24	[679]	H-CF	[680]	H-BF	User 49	[729]	H-CF	[730]	H-BF
User 25	[681]	H-CF	[682]	H-BF	User 50	[731]	H-CF	[732]	H-BF

System Report Codes Description

Each report code requires a two digit entry. The first digit sets the primary event code and the second digit sets the extended code. (See Installer Level Programming – Programming Report Codes). If the transmission format is anything other than a Pulsed

format, it is only necessary to program a value other than zero into either digit to enable that event to be reported, the correct transmitted data is automatically sent.

System Event Report Codes Default Table

	Loc	Default		Loc	Default
Left Panic Key Report Code	[733]	H-19	AC Restore Report Code	[754]	H-EA
Center Panic Key Report Code	[734]	H-29	Low/No Battery Report Code	[755]	H-F9
Right Panic Key Report Code	[735]	H-49	Battery Restore Code	[756]	H-E9
Duress Code	[736]	H-99	Bell Fault Report Code	[757]	H-00
Keypad Lockout Code	[737]	H-00	Bell Restore Report Code	[758]	H-00
Burg Cancel Report Code	[738]	H-00	Telco Fault Report Code	[759]	H-00
Quick Arm Report Code	[739]	H-00	Telco Restore Report Code	[760]	H-00
Auto-Arm Code	[740]	H-00	Ground Fault Report Code	[761]	H-00
Auto-Arm Failed Code	[741]	H-00	Ground Restore Report Code	[762]	H-00
Keyswitch Closing Code	[742]	H-00	Comm Restore Report Code	[763]	H-00
Keyswitch Opening Code	[743]	H-00	Memory Error Report Code	[764]	H-00
Installer/RPM Closing Code	[744]	H-00	Local Program Begin Code	[765]	H-00
Installer/RPM Opening Code	[745]	H-00	Local Program End Code	[766]	H-00
Closing Extended Code	[746]	H-00	RPM End Report Code	[767]	H-00
Exit Alarm Code	[747]	H-00	RPM Denied Report Code	[768]	H-00
Recent Closing Code	[748]	H-00	RPM Abort Report Code	[769]	H-00
Latch Key Supervision Code	[749]	H-00	Missing Keypad Code	[770]	H-00
User on Premises Code	[750]	H-00	Restore Keypad Code	[771]	H-00
Comm Test Not Norm Code	[751]	H-F2	RF Jamming Report Code	[772]	H-00
Comm Test Report Code	[752]	H-F1	RF Channel Clear Report Code	[773]	H-00
AC Fail Report Code	[753]	H-FA	RF User Device Low Battery Code	[774]	H-00

The following table refers to programming locations 733 through 774:

ITEM	VALID RANGE	DESCRIPTION
Fire Panic Key Report Code	00 to FF	Code sent for alarms activated by pressing the Left Panic key.
Holdup Panic Key Report Code	00 to FF	Code sent for alarms activated by pressing the Center Panic key or an RF user device.
Aux/Med Panic Key Report Code	00 to FF	Code sent for alarms activated by pressing the Right Panic key or an RF user device.
Duress Code	00 to FF	Code sent for a duress (Authority Level 13) code arm or disarm.
Keypad Lockout Code	00 to FF	Code sent when a Control Station is locked out due to failed passcode attempts.
Burg Cancel Report Code	00 to FF	Code sent when an authorized user resets a burglar alarm after reporting and before the Burglar Bell Cutoff timer expires.
Quick Arm Report Code	00 to FF	Code sent when an area is armed using Two-Button or Double Press Arming.
Auto-Arming Code	00 to FF	Code sent when armed by scheduled program or Exit Arm.
Auto-Arm Failed Code	00 to FF	Code sent when a scheduled arming is aborted or could not be completed.

INSTALLER LEVEL PROGRAMMING

Keyswitch Closing Code	00 to FF	Code sent when an area is armed by keyswitch zone.
Keyswitch Opening Code	00 to FF	Code sent when an area is disarmed by keyswitch zone.
Installer/RPM Closing Code	00 to FF	Code sent when an area is armed by RPM or the installer at a Control Station.
Installer/RPM Opening Code	00 to FF	Code sent when an area is disarmed by RPM or the installer at a Control Station.
Closing Extended Code	00 to FF	Code sent when the scheduled closing time is extended.
Exit Alarm Code	00 to FF	Code sent in addition to a burglar alarm event if the alarm occurs when the exit time expires.
Recent Closing Code	00 to FF	Code sent in addition to a burglar alarm event if the alarm occurs within two minutes after exit time expires.
Latch Key Supervision Code	00 to FF	Code sent when the Latch Key code is not entered during the programmed time window.
User on Premises Code	00 to FF	Code sent when the User on Premises (Authority Level 12) passcode is entered to disarm the system or perform the access operation.
Comm Test Not Norm Code	00 to FF	Code sent at the comm test time-of-day in place of the comm test report when a trouble condition is present. If this report code is set to 00, a normal comm test event is transmitted.
Comm Test Report Code	00 to FF	Code sent at the comm test time-of-day when no trouble conditions are present. Transmitted at power-up, if Test On Power-Up is enabled. Transmitted for Manual Comm Test, if programmed. (See Inst. Level Prog. - Communication Data Description). Implies proper operation of the communicator and the telephone line.
AC Fail Report Code	00 to FF	Code sent when the control has lost the primary AC input. The delay time before this report is transmitted is located in Installer Level Programming - Global System Options Description.
AC Restore Report Code	00 to FF	Code sent when the AC primary power has been restored.
Low Battery Report Code	00 to FF	Code sent when the control detects a low battery voltage reading of 11.3 VDC or less.
Battery Restore Code	00 to FF	Code sent when the low battery condition has been restored.
Bell Fault Report Code	00 to FF	Code sent when the control panel detects a Bell Fault. Contact ID will distinguish between Bell 1 and Bell 2 faults.
Bell Restore Report Code	00 to FF	Code sent when a Bell Fault trouble restores. Contact ID will distinguish between Bell 1 and Bell 2 restores.
Telco Fault Report Code	00 to FF	Code sent when the control panel detects a Telco Fault. Contact ID will distinguish between Phone Line 1, Phone Line 2 and Non-Telco faults.
Telco Restore Report Code	00 to FF	Code sent when a Telco Fault trouble restores. Contact ID will distinguish between Phone Line 1, Phone Line 2 and Non-Telco restores.
Ground Fault Report Code	00 to FF	Code sent when the control panel detects a Ground Fault.
Ground Restore Report Code	00 to FF	Code sent when a Ground Fault trouble restores.
Comm Restore Report Code	00 to FF	When the control is unsuccessful in reporting an event, the fail to communicate (local trouble) displays. If a subsequent report of any type is successful, the control also reports this code.
Memory Error Report Code	00 to FF	Code sent when the internal memory check finds an unauthorized change in the value of one or more of the programming options.
Local Prog Begin Code	00 to FF	Code sent when a program function map is initiated at the control site.
Local Prog End Code	00 to FF	Code sent after programming mode is terminated at the installation site. This occurs 255 seconds after exiting programming mode or by holding the CLEAR key for three seconds.
RPM End Report Code	00 to FF	Code sent when an RPM session has been completed normally.
RPM Denied Report Code	00 to FF	Code sent when an unauthorized RPM session is attempted (i.e.: improper ID code or access device).
RPM Abort Report Code	00 to FF	Code sent when an RPM session is aborted. If an alarm event requiring a report to the Central Station occurs during an RPM session, the control may abort the session to report the event.
Missing Keypad Code	00 to FF	Code sent when a supervised Control Station is removed or fails to respond to system polling.
Restore Keypad Code	00 to FF	Code sent when a missing Control Station is restored to the data bus.
RF Jamming Report Code	00 to FF	Code sent when an RF Gateway detects an RF Jamming condition.
RF Channel Clear Code	00 to FF	Code sent when an RF Gateway detects an RF Jamming condition has cleared.
RF User Device Low Battery Code	00 to FF	Code sent when an RF Gateway detects a Low Battery condition on one of its User Devices.

Area Schedules Description

Automatic Arming

If automatic arming is enabled, the control produces a warning signal at the appropriate Control Station(s) once every minute beginning ten minutes prior to the event. During this warning, the same Control Station(s) may display a visual indication of the impending action and the amount of time remaining. This allows the user ample warning to exit or override the impending action. Auto Arming time may be extended by one hour during each ten minute warning period (but not past midnight) using the Delay Auto Arming function. The user can also abort the scheduled arming for that day through User Level programming. (See the appropriate User Guide). Auto Arming arms the control in the AWAY, STAY, or NIGHT mode with normal exit time.

Latch Key Schedules

A Latch Key User ID is used to determine which user passcode must be entered on selected Latch Key Days. The user passcode must be entered within a time window. If the user passcode is not entered during the Time Window, a Latch Key Supervision event will be posted in the Event Log to be reported.

For example, if Monday is a Latch Key Day and the Latch Key Time for Monday is 14:30 with a thirty minute Time Window and the Latch Key User ID is not entered between 14:00 and 15:00 hours, then a Latch Key Supervision event will be posted at 15:00 hours.

NOTE

The Latch Key Time Window cannot cross over the Midnight boundary. During the Time Window, the Control Station will chime once a minute until the user passcode is entered or the Time Window has expired, whichever comes first.

Area Schedules Default Table

	AREA 1		AREA 2	
	Loc	Default	Loc	Default
Scheduled Arm Mode	[775]	0	[808]	0
Scheduled Arm Days	[776]	H-00	[809]	H-00
Arm Time Sun (hr:min)	[777:778]	00:00	[810:811]	00:00
Arm Time Mon (hr:min)	[779:780]	00:00	[812:813]	00:00
Arm Time Tues (hr:min)	[781:782]	00:00	[814:815]	00:00
Arm Time Wed (hr:min)	[783:784]	00:00	[816:817]	00:00
Arm Time Thurs (hr:min)	[785:786]	00:00	[818:819]	00:00
Arm Time Fri (hr:min)	[787:788]	00:00	[820:821]	00:00
Arm Time Sat (hr:min)	[789:790]	00:00	[822:823]	00:00
Latch Key User ID	[791]	0	[824]	0
Latch Key Days	[792]	H-00	[825]	H-00
Latch Key Window (min)	[793]	0	[826]	0
Latch Time Sun (hr:min)	[794:795]	00:00	[827:828]	00:00
Latch Time Mon (hr:min)	[796:797]	00:00	[829:830]	00:00
Latch Time Tues (hr:min)	[798:799]	00:00	[831:832]	00:00
Latch Time Wed (hr:min)	[800:801]	00:00	[833:834]	00:00
Latch Time Thurs (hr:min)	[802:803]	00:00	[835:836]	00:00
Latch Time Fri (hr:min)	[804:805]	00:00	[837:838]	00:00
Latch Time Sat (hr:min)	[806:807]	00:00	[839:840]	00:00

INSTALLER LEVEL PROGRAMMING

The following table refers to programming locations 775 through 840:

ITEM	VALID RANGE	DESCRIPTION
Scheduled Arming Mode	0 = AWAY, 1 = STAY, 2 = NIGHT	Determines the Auto Arm mode.
Scheduled Arming Days	00 to FF (see the table below for a complete description of each value's activation)	Selects the days of the week the system automatically arms.
Sunday Arming Time	00:00 to 23:59	The time for Auto Arming on Sunday.
Monday Arming Time	00:00 to 23:59	The time for Auto Arming on Monday.
Tuesday Arming Time	00:00 to 23:59	The time for Auto Arming on Tuesday.
Wednesday Arming Time	00:00 to 23:59	The time for Auto Arming on Wednesday.
Thursday Arming Time	00:00 to 23:59	The time for Auto Arming on Thursday.
Friday Arming Time	00:00 to 23:59	The time for Auto Arming on Friday.
Saturday Arming Time	00:00 to 23:59	The time for Auto Arming on Saturday.
Latch Key User ID	0 = disable, User 1 to 50	Determines the user passcode that has Latch Key Supervision.
Latch Key Days	00 to FF (see Scheduled Arming and Latch Key Days Table.)	Selects the days of the week that Latch Key Supervision is performed.
Latch Key Time Window	0 to 255 minutes	Time in minutes (+/-) the Latch Key User Code may be entered.
Sunday Latch Key Time	00:00 to 23:59	The time, (+/-) the Time Window, the Latch Key user passcode must be entered on Sunday.
Monday Latch Key Time	00:00 to 23:59	The time, (+/-) the Time Window, the Latch Key user passcode must be entered on Monday.
Tuesday Latch Key Time	00:00 to 23:59	The time, (+/-) the Time Window, the Latch Key user passcode must be entered on Tuesday.
Wednesday Latch Key Time	00:00 to 23:59	The time, (+/-) the Time Window, the Latch Key user passcode must be entered on Wednesday.
Thursday Latch Key Time	00:00 to 23:59	The time, (+/-) the Time Window, the Latch Key user passcode must be entered on Thursday.
Friday Latch Key Time	00:00 to 23:59	The time, (+/-) the Time Window, the Latch Key user passcode must be entered on Friday.
Saturday Latch Key Time	00:00 to 23:59	The time, (+/-) the Time Window, the Latch Key user passcode must be entered on Saturday.

Scheduled Arming and Latch Key Days Table

ENTER FOR:																
FIRST DIGIT	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
All Days Below Disabled	•								•							
Thursday		•		•		•		•		•		•		•		•
Friday			•	•			•	•			•	•			•	•
Saturday					•	•	•	•					•	•	•	•
SECOND DIGIT																
All Days Below Disabled	•															
Sunday		•		•		•		•		•		•		•		•
Monday			•	•			•	•			•	•			•	•
Tuesday					•	•	•	•					•	•	•	•
Wednesday									•	•	•	•	•	•	•	•

If the First Digit entered is '1', it must be entered as '01'. A = 10; B = 11; C = 12; D = 13; E = 14; F = 15

Programming Options

This section deals with the attributes of the Remote Programming Manager Software. Before programming the specific functions, it is important to understand the following:

Abort: During a remote programming session, the control is fully functional and can detect and announce alarms locally. The control aborts a session with RPM/2 Pro to report alarm events.

Datalock: As a provision of anti-takeover, the control does not permit local programming of the account numbers and telephone numbers, or the Restore Factory Defaults option to operate when an agency code has been established and programmed by the RPM/2 Pro software. Other installer program-

ming changes are still allowed. When the Datalock (agency code) is set, the Control Station emits an error tone if any attempt is made to change an account number or a phone number or to default the control.

Programming Options Default Table

	Loc	Default
Installer Passcode	[841 - 844]	9632
Call 2 Timer (sec)	[845]	0
Auto Answer Ring Count	[846]	0
Enable RPM	[847]	1
Enable Power Up Program	[848]	0
Lockout Local Program	[849]	0

The following table refers to programming locations 841 through 849:

ITEM	VALID RANGE	DESCRIPTION
Installer Passcode	0000 to 9999	The installer passcode is the only passcode that may program the entire Function Map. See Installer Level Programming – User Data Description for a description of the other functions that may be performed.
2nd Call Timer	0 – 255 seconds	Time in seconds for the answering machine bypass time window. This allows the remote programmer to bypass an answering machine by making two calls to the premises. The first call must ring three times or less and not be answered. The answering machine bypass time window starts ten seconds after the last ring of the first call. If the first ring of the second call occurs within the answering machine bypass time window, the panel answers the second call on the first ring. Remote Programming must be enabled and Auto-Answer Ring count must be non-zero.
Auto Answer Ring Count	0 – 15 rings	Sets the number of rings that must occur before the panel automatically answers the telephone for operation with RPM/2 Pro. A ring count of 0 disables automatic answering, but manual connection may still be used. If Remote Programming is not enabled, then the auto-answer ring count is ignored and the panel never answers.
Enable RPM	0 = No 1 = Yes	Enables operation of the control with the RPM/2 Pro package. Connection to RPM/2 Pro may only be achieved using Phone Line 1.
Enable Power Up Program	0 = No 1 = Yes	A quick way to enter program mode upon power up. Pressing the "9" key and entering "9999" within the first 60 seconds after power up enters the control into Installer Level Programming mode. Consider disabling this feature for anti-takeover.
Lockout Local Program	0 = No 1 = Yes	This is provided for anti-takeover protection. If it is enabled, the installer passcode is limited as noted in Installer Level Programming – User Data Description. A user may still be able to perform user level programming and RPM/2 Pro will be fully operational. Do not enable this unless an RPM/2 Pro account has been established for the control.

Programming Notes

Note 1: Restarting Exit Time

If an exit time is counting down from an AWAY arming, the exit time may be automatically restarted once to reduce false alarms.

The exit time will be restarted if a Perimeter (arm in STAY mode and arm in NIGHT mode) Burglar zone is violated anytime during the last ten seconds of exit time.

If the exit time is not due to an Exit Arm or a Scheduled Arming, then the exit time will be restarted if it expires and a Perimeter (Arm in STAY mode and Arm in NIGHT mode) Burglar zone has not been violated during the exit time (i.e.: nobody went out the door).

Note 1A: Entry Delay Times

The Entry Delay Times (Entry Delay 1 and Entry Delay 2) of an area work together to provide a more secure Entry Delay Time. For example, Entry Delay 1 may be programmed as 4 minutes and Entry Delay 2 may be programmed as 1 minute. If Entry Delay 1 (4 min.) is started and counts down to 2 minutes remaining when an armed Delay 2 zone is violated, then the Entry Delay Time is reduced to the more secure Entry Delay 2 time (1 minute remaining). However, if the Entry Delay Time counts down below the Entry Delay 2 Time (i.e. to 30 seconds remaining), then no adjustment is made. Entry Delay Time is only decreased, it is never increased.

Note 2: Entry Time versus Pre-Alarm Warning Time

Assuming Exit, Entry and Pre-Alarm Warning Times are inactive, a violation of an armed Burglar zone will cause the following actions depending on the area's arm level and the type of Burglar zone:

	AWAY	STAY	STAY INSTANT	NIGHT	NIGHT INSTANT
Instant Burglar	Instant Alarm	Pre-Alarm Warning Time	Pre-Alarm Warning Time	Pre-Alarm Warning Time	Pre-Alarm Warning Time
Delay Burglar	Entry Time	Entry Time	Instant	Entry Time	Instant
Follower Burglar	Pre-Alarm Warning Time	Pre-Alarm Warning Time	Pre-Alarm Warning Time	Pre-Alarm Warning Time	Pre-Alarm Warning Time

Note 3: Exit Arm

An Exit Arm is intended to automatically arm an area ten minutes after the premises are vacated. An Exit Arm will only be attempted when it is enabled for an area and the area is disarmed and not in alarm. The end user can disable the Exit Arm feature on a day-to-day basis (see the appropriate User Guide). If a Disable Exit Arming is performed, the Exit Arm will be disabled until midnight.

When a Delay Burglar zone restores from a violation, the area's Exit Arm timer is started at ten minutes. During this time, the Control Station may display a visual indication of the impending action and the amount of time remaining. An audible warning signal will occur at two minutes until arming and at one minute until arming. When any Burglar zone is violated, the area's Exit Arm timer is halted. If a Delay zone restores from a violation while the timer is running, the timer is restarted at ten minutes. If an Instant or Follower Burglar zone restores from a violation, the timer is halted.

If the timer expires (i.e.: ten minutes of no Burglar zone activity following a Delay zone restoration), then the system attempts to arm the area in the AWAY mode. If Force-Arming is enabled, then a Force-Arm may occur if needed. If the arming is successful, then Exit time is started and an Auto-Arm event is logged to be reported. If the arming cannot be completed, then nothing will happen.

Note 4: Force-Arming

If Force-Arming is enabled for an area, then an arming from a keyswitch zone, an Exit Arming or a Scheduled Arming will be Force-Armed if necessary.

Note 5: LED Control Stations

The Secondary Area setting is ignored for LED Control Stations since they cannot provide area infor-

mation and prompts. Therefore, LED Control Stations cannot have a Secondary Area.

Note 6: Verifying or Self-Verifying Burglar Zones

If an armed Verifying Burglar zone is violated, then a forty second Verification Timer is started. If the timer expires and the zone that started it is still in violation, then the zone's violation is verified. If another armed Burglar zone is violated while the timer is still running, then that violation verifies the first zone's violation.

If an armed Self-Verifying Burglar zone is violated, then a forty second Verification Timer is started. If the Timer expires and the zone is still in violation, then the zone's violation is verified. If another armed Burglar zone is violated while the Timer is still running, then that violation verifies the first zone's violation. If the same armed Burglar zone is violated a second time while the Timer is still running, then the zone's violation is verified.

If the area is armed such that a violation from the zone would normally cause an instant alarm:

- when the zone is first violated, nothing happens.
- when the violation is verified, an instant alarm occurs.
- if the Verification Timer expires without the violation being verified, then nothing happens.

If the area is armed such that a violation from the zone would normally cause an Entry Time or Pre-Alarm Warning Time Delay:

- when the zone is first violated, the Delay Timer is started.
- if the violation is verified while the Delay Timer is still running, then the Delay Timer continues as normal.
- if the Verification Timer expires while the Delay Timer is still running and the violation has not been verified, then the time continues. If the Delay Timer expires and no zones are violated from the Delay Time, then nothing happens.
- if the Delay timer expires before the Verification timer expires and the violation has not been verified, then nothing will happen until either the violation is verified or the Verification Timer expires.
- if the violation is verified after the Delay Timer has expired, then an instant alarm occurs.

- if the Verification Timer expires after the Delay Timer has expired without the violation being verified, then nothing happens.

Common Area Burglar zones cannot be programmed as verifying or self-verifying, but they can verify a verifying or self-verifying zone from Area 1 or Area 2 (see Operating the System – Introduction).

Note 7: Sentry Test Burglar Zones

If a Burglar zone has Sentry Test enabled, then each time the zone is disarmed, it must be tested before it can be armed again. A test consists of violating the zone from a restored state and then restoring it again.

If the zone has not been tested, then it appears as a faulted zone and is displayed as "Zone Untested" from the View Info key. An untested zone cannot be armed and its area is therefore not ready to arm. If the zone is bypassable, then it may be bypassed to prevent testing. Force-Arming should not be enabled on systems with Sentry Test Burglar Zones.

Note 8: Zone Activation of Bell Output and Keypad Sounders

The Bell Output on Alarm attribute determines whether the Bell Output for the zone's area activates due to an alarm from the zone. It does not affect the activation of any other programmable outputs, including an associated Alarm output.

This attribute is used for the Other Bell Output if the Zone Type is Burglar, Holdup, Auxiliary or Burglar Tamper. It is also used for the Fire Bell 1 Output if the Zone Type is Fire or Verified Fire and there is no Water Flow zone. Otherwise, it is ignored. If Water Flow zones are used, then Fire Bell 2 activates on alarms from Water Flow zones and Fire Bell 1 activate activates on all alarms from Fire and Verified Fire zones and from the Left Panic key.

The Keypad Sounder on Alarm attribute generally determines whether the Control Station sounders activate due to an alarm from the zone. This attribute is only used for Keypad Sounders if the Zone Type is Burglar, Holdup or Auxiliary. It does not affect the activation of any programmable outputs for these zones. This attribute is also used for the Fire Bell 2 Output if the Zone Type is Fire or Verified Fire and there is no Water Flow zone. Otherwise, it is ignored. Keypad sounders activate on all alarms from Fire,

Water Flow and Verified Fire zones and from the Left Panic key, as well as from Burglar Tamper and Fire Supervisory zones. They never activate from the other Zone Types.

If a Holdup zone is programmed with neither Bell Output on Alarm nor Keypad Sounder on Alarm, then an alarm from the zone will be invisible on the Control Stations.

Note 9: Secure Watch

The Secure Watch attribute may only be used with Burglar, Critical Condition Monitor, Non-Alarm, Universal, and Universal Logged zones. It is ignored for all other zone types.

If a Burglar zone has Secure Watch enabled, then the Secure Watch only applies when the zone is disarmed and not bypassed. Whenever the zone is violated, disarmed or unbypassed, the zone's Secure Watch timer is reset to the programmed time. If that timer expires and the zone is disarmed and not bypassed, then a Secure Watch Trouble event is posted for the zone to be reported. The trouble condition is not displayed on the keypad and it does not prevent the area from being armed. A Secure Watch Trouble Restore event is posted for the zone to be reported if the zone is then either violated, armed, or bypassed.

If a Critical Condition Monitor, Non-Alarm, Universal, or Universal Logged zone has Secure Watch enabled, then the Secure Watch only applies when the zone is not bypassed. When the zone is violated or unbypassed, the zone's Secure Watch timer is reset to the programmed time. If that timer expires and the zone is not bypassed, then a Secure Watch Trouble event is posted for the zone to be reported. The trouble condition is not displayed on the keypad. A Secure Watch Trouble restore event is posted for the zone to be reported if the zone is either violated or bypassed.

While a zone has a Secure Watch Trouble condition, its corresponding Secure Watch signaling device (programmable output) will stay ON steady.

Note 10: Delay Before Dial Time

The Delay Before Dial Time is used as the time that a user has after a Burglar, Holdup, or Auxiliary Alarm from a zone has occurred to silence the alarm with a disarm and abort the Alarm event.

If the Delay Before Dial Time is not zero and the alarm is silenced before the Delay Before Dial Time expires, then no Alarm events are posted to be reported. If this occurs and Log Alarm Aborted Events is enabled, then Alarm Aborted events are posted for each zone that went into alarm, but they are not reported.

If the Delay Before Dial Time is zero or if the Delay Before Dial Time expires before the alarm is silenced with a disarm, then the Alarm events are posted to be reported. If the alarm is a Burglar Alarm and the alarm is silenced with a disarm before the Burglar Bell Cutoff Timer expires, then a "Cancel Alarm" event is logged to be reported.

If an alarm in a Control Station's Primary or Secondary area is in Delay Before Dial Time, then when the OFF CANCEL key is pressed on the Control Station, all alarms in the Control Station's Primary and Secondary areas are muted until the Delay Before Dial Time expires. While an alarm is muted, the Control Stations do not produce the alarm tone for the alarm and the Bell Output(s) are silent. The muting of an alarm does not affect the operation of programmed outputs. If the Delay Before Dial Time expires without the alarm being silenced, then the Control Stations resume the alarm tone and the Bell Output(s) re-activate. The alarm cut-off timer(s) continue to count while the alarm is muted.

Note 11: Transmission Formats

If the Data Format is "Pulsed 20 Baud - Non-Extended", then the number of digits in the account code determines how events are reported. If the fourth digit of the account code is 0, then events are reported in the 3/1 Non-Extended format. If the fourth digit of the account code is not 0, then events are reported in the 4/1 Non-Extended format. Only the first digit of the report code is sent. If an account code digit or the first digit of the report code is 0, then that digit is transmitted as an 'A'. Each event is reported in two rounds for verification.

For the 3/1 Non-Extended format, the first three digits of the account code and the first digit of the report code are transmitted in a round. For the 4/1 Non-Extended format, all four digits of the account code and the first digit of the report code are transmitted in a round.

If the Data Format is “Pulsed 20 Baud – Extended” or “Pulsed 40 Baud – Extended”, then the number of digits in the account code must be four (4) digits. Both digits of the report code are sent. If an account code digit or one of the report code digits is 0, then that digit is transmitted as an ‘A’. Each event is reported in two rounds for verification.

For the 4/2 Extended format, then all four digits of the account code and both digits of the report code are transmitted in a round.

If the Data Format is “Contact ID”, then all four digits of the account code are sent. The report code is only used to determine if the event is sent or not. The reports are generated from a Contact ID report table. This is an Ademco developed format.

If the Data Format is “Non-Telco Contact ID”, then all four digits of the account code are sent. The report code is only used to determine if the event is sent or not. The reports are generated from a Contact ID report table. The report will be sent to an interface device over the data bus. The interface device will send an acknowledgment to the system upon successful transmission of an event. The associated Central Station telephone number will not be used, but its first digit must not be an ‘F’. If the interface device responds back with a transmission failure or if the interface device “loses” the event, the system will view it as a failed dial attempt. If the interface device is not responding on the data bus, a “Non-Telco Failure” condition will be posted and the system will not try to report through the interface. This may cause a “Comm Failure” condition to occur or the event may be reported using another phone number.

If the Pager option is used, up to 16 digits of the Pager Header Message and a 2-digit Pager Event Message are sent. (If the Pager Header Message is not used, a 4-digit Account Code and a 2-digit Pager Event Message are sent). The telephone number will be dialed for the number of dial attempts programmed and the pager message will be blindly sent each time. There will be no feedback and, therefore, no failed to communicate.

The Pager option is perfect for the parent who works late and wants to know if their child arrived home safely. When the child disarms the system, the parent is paged. Since arming/disarming reports are

programmed for each user, the system can be programmed to only page when the child’s user passcode is used or when a passcode with the User on Premises authority level is used. The pager option can also be used with the Latch Key Supervision report to page the parent when the child does not come home when expected.

Note 12: Powering Up While Armed

If either area is armed when the panel powers up, violations from all the burglar zones are ignored for three minutes. This allows all armed PIRs to stabilize without causing false alarms.

Note 13: Universal Outputs

A Universal output may be assigned to any combination of areas and is controlled by the Universal timer or keypad in each of the areas. When a Universal or Universal Logged zone in an area is violated, the area’s Universal timer will begin a countdown. If the Universal Output Time is set to zero (0), then the area’s Universal timer will turn ON. To turn it OFF, use the ENTER + Key #2 secondary function.

If the Universal Output Time is not set to zero (0), then the ENTER + Key #2 secondary function will override the Universal Output timer. For example, if the timer is running when the function is performed, then the output will be turned OFF and the timer will halt. A new zone activation will turn the output ON and re-start the timer. If the timer is not running when the function is performed, then the function will turn the output ON and subsequent zone violations will be ignored until after the output is turned OFF by performing the function again.

A Universal output will go ON STEADY when any of its areas have a Universal timer that is either running or ON. If the Universal Output Time is 0, only one area should be used to control a Universal output. Otherwise, an area will not be able to turn the output OFF if another area has turned it ON.

Note 14: Lamp Trigger Outputs

A Lamp Trigger output will change state (ON to OFF or OFF to ON) for the Control Station’s Primary area when the ENTER + Key #1 secondary function is performed. If the output is turned ON with the EN-

TER + Key #1 secondary function and then an arming occurs, the output will turn OFF when the Exit Time expires.

Note 15: Access and Quick Access Outputs

An Access output will be controlled by the Access operations (0 + passcode) performed on any of its Control Stations or from RPM. A Quick Access output will be controlled by pressing ENTER + Key #3.

If a Control Station is used to toggle an Access or Quick Access output between ON and OFF, then it should be the only Control Station controlling that output. Otherwise, you may not be able to turn the output OFF if another Control Station has turned it ON.

Note 16: Water Flow Zone

If a zone is programmed as Water Flow, then Fire Bell 2 shall be dedicated to the Water Flow zone and Fire Bell 1 shall be dedicated to the other Fire zones.

Note 17: Bypassable Zones – Shunting Fire Zones

All zones may be programmed as Bypassable. If a Fire, Verified Fire, Water Flow or Fire Supervisory Zone is bypassable and is bypassed, a fire trouble condition occurs and is reported and the trouble tone is sounded. The condition remains until the zone is unbypassed. If the zone is violated when it is unbypassed, the trouble tone is resounded and a smoke reset must be performed to clear the trouble condition.

Digital Communicator Table For Contact ID Formats

This section cross-references many of the reporting options and equivalent codes sent by Sentrol-manufactured controls when transmitting in the Contact ID formats.

Simplified example of data sent in Contact ID format:

SSSS 18 Q XYZ AA CCC

SSSS = 4 decimal digit subscriber #

18 = Contact ID que for automation systems

Q = Event qualifier; 1 = new event or opening;
3 = new restore or closing; 6 = previously reported event

XYZ = Event code (3 decimal digits)

AA = Area number (00 for system events)

CCC = Zone, sensor, or user # (3 decimal digits)

EVENT TYPE	CID CODE	EVENT SOURCE
Left Panic Key Fire Alarm	1115	500 + Keypad (1 - 6)
Zone Fire Alarm	1110	Zone (1 - 30)
Zone Water Flow Alarm	1113	Zone (1 - 30)
Zone Fire Supervisory	1200	Zone (1 - 30)
Zone Burglar Alarm	1130	Zone (1 - 28)
Zone Burglar Tamper	1137	Zone (1 - 28)
Center Panic Key or RF User Device Holdup Alarm	1120	500 + Keypad (1 - 6)
Zone Holdup Alarm	1120	Zone (1 - 28)
Duress	1121	User (1 - 50)
Right Panic Key or RF User Device Auxiliary Alarm	1100	500 + Keypad (1 - 6)
Zone Auxiliary Alarm	1100	Zone (1 - 28)
Zone CCM Alarm	1150	Zone (1 - 28)
Zone Non-Alarm	1163	Zone (1 - 28)
Zone Fire Trouble	1373	Zone (1 - 30)
Zone Fire Test Mode Begin	1604	Zone (1 - 30)
Zone Burglar Trouble	1370	Zone (1 - 28)
Zone Holdup Trouble	1370	Zone (1 - 28)
Zone Auxiliary Trouble	1370	Zone (1 - 28)
Zone Other Trouble	1370	Zone (1 - 28)
Secure Watch Trouble	1641	Zone (1 - 28)
Zone No Response on Bus	1333	Zone (13 - 29)
RF Point Not Reporting	1381	Zone (13 - 28)
Smoke Trouble	1393	Zone (13 - 30)
RF Sensor Tamper	1383	Zone (13 - 28)
RF Point Low Battery	1384	Zone (13 - 28)
Zone Burglar Bypass	1573	Zone (1 - 28)
Zone Holdup Bypass	1572	Zone (1 - 28)
Zone Auxiliary Bypass	1572	Zone (1 - 28)
Zone Other Bypass	1570	Zone (1 - 28)

CONTACT ID FORMATS

Zone Fire Alarm Restore	3110	Zone (1 – 30)
Zone Water Flow Restore	3113	Zone (1 – 30)
Zone Fire Supervisory Restore	3200	Zone (1 – 30)
Zone Burglar Alarm Restore	3130	Zone (1 – 28)
Zone Burglar Tamper Restore	3137	Zone (1 – 28)
Zone Holdup Alarm Restore	3120	Zone (1 – 28)
Zone Auxiliary Alarm Restore	3100	Zone (1 – 28)
Zone Critical Condition Monitor Alarm Restore	3150	Zone (1 – 28)
Zone Non-Alarm Restore	3163	Zone (1 – 28)
Zone Fire Trouble Restore	3373	Zone (1 – 30)
Zone Fire Test Mode End	3604	Zone (1 – 30)
Zone Burglar Trouble Restore	3370	Zone (1 – 28)
Zone Holdup Trouble Restore	3370	Zone (1 – 28)
Zone Auxiliary Trouble Restore	3370	Zone (1 – 28)
Zone Other Trouble Restore	3370	Zone (1 – 28)
Secure Watch Trouble Restore	3641	Zone (1 – 28)
Zone No Response Restore	3333	Zone (13 – 29)
RF Point Reporting	3381	Zone (13 – 28)
Smoke Trouble Restore	3393	Zone (13 – 30)
RF Sensor Tamper Restore	3383	Zone (13 – 28)
RF Point Low Battery Restore	3384	Zone (13 – 28)
Zone Burglar Bypass Restore	3573	Zone (1 – 28)
Zone Holdup Bypass Restore	3572	Zone (1 – 28)
Zone Auxiliary Bypass Restore	3572	Zone (1 – 28)
Zone Other Bypass Restore	3570	Zone (1 – 28)
User AWAY Arm from Keypad	3401	User (1 – 50)
User STAY or NIGHT Keypad Arm	3456	User (1 – 50)
Quick AWAY Arm from Keypad	3408	No Data
Quick STAY or NIGHT Keypad Arm	3408	No Data
Keyswitch Arm	3409	Zone (1 – 28)
Installer Arm	3400	No Data
RPM/2 Pro Arm	3407	No Data
Auto Arm	3403	No Data
Auto Arm Failed	1455	No Data
Auto Arm Aborted	3455	User (1 – 50)
Closing Extended	3464	User (1 – 50)
Exit Alarm	1374	Zone (1 – 28)
Recent Closing	3459	User (1 – 50)
User Disarm from Keypad	1401	User (1 – 50)
Keyswitch Disarm	1409	Zone (1 – 28)
Installer Disarm	1400	No Data
RPM/2 Pro Disarm	1407	No Data
Latch Key Supervision	1642	User (1 – 50)
User on Premises	1458	User (1 – 50)
Keypad Locked-out	1300	500 + Keypad (1 – 6)
Keypad Missing	1330	500 + Keypad (1 – 6)
Keypad Missing Restore	3330	500 + Keypad (1 – 6)

Burglar Alarm Canceled	3406	User (1 - 50)
Auto-Comm Test (Not Normal)	1608	No Data
Auto-Communicator Test	1602	No Data
Manual Communicator Test	1601	No Data
AC Failure	1301	No Data
AC Restore	3301	No Data
Panel Low/No Battery	1302	No Data
Panel Battery Restore	3302	No Data
Bell or Fire Bell 1 Fault	1321	No Data
Bell or Fire Bell 1 Restore	3321	No Data
Fire Bell 2 Fault	1322	No Data
Fire Bell 2 Restore	3322	No Data
Ground Fault	1310	No Data
Ground Restore	3310	No Data
Communication Restore	3354	No Data
Memory Error	1303	No Data
Begin Installer Local Program	1627	No Data
End Installer Local Program	1628	No Data
End Remote Programming	3412	No Data
Remote Programming Denied	1413	No Data
Remote Programming Aborted	1412	No Data
RF Jamming	1381	No Data
RF Channel Clear	3381	No Data
RF User Device Low Battery	1384	User (1 - 30)
Phone Line 1 Failure	1351	No Data
Phone Line 1 Restore	3351	No Data
Phone Line 2 Failure	1352	No Data
Phone Line 2 Restore	3352	No Data
Non-Telco Failure	1353	No Data
Non-Telco Restore	3353	No Data

UL Programming Requirements

Underwriters Laboratories (UL) Listing

This control is listed by Underwriters Laboratories (UL) as follows:

APPLICATION	LISTING
Household Burglary (Grade A)	UL 1023
Household Fire	UL 985
Central Station Burglary (Grade C)	UL 1610/1635
Central Station Burglary (Grade B)	UL 1610/1635
Home Health Care Signaling Equipment	UL 1637
Local Burglary (Grade A)	UL 609
Police Station Burglary Connection (Grade A)	UL 365
Control Units For Fire Protective Signaling Systems	UL 864

UL has established certain requirements which pertain to the installation, use, and programming of this equipment. The local Authority Having Jurisdiction (AHJ) and/or UL may have other requirements which apply to the installation of this system that are not detailed in this manual. It is the responsibility of the installing dealer to check with the AHJ and/or UL before installing this system. The following pages detail guidelines that must be followed in order to comply with the UL listings as stated above.

UL Notes In This Manual

- Key “0” (Access) – The control has not been investigated to UL 294 Access Control System requirements.
- Unsupervised Burglary Zones – UL does not permit the use of unsupervised zones.

UL Notes About Program Functions

- Entrance Delay Time (1 and 2) – Maximum of 45 seconds.
- AWAY Exit Delay Time – Maximum of 60 seconds.
- Burglar Alarm Cutoff Time – Four minutes minimum for household BA/FA and 15 minutes for

commercial burglar alarm and police station connected burglar alarm system.

- Fire Cutoff Time – minimum of five (5) minutes.
- Communicator Enable – Local or police station connected burglar alarm installations: The communicator must be enabled.
- Days Between Comm. Tests – Commercial installations: automatic test performed every 24 hours.
- Time Between Dial Attempts – UL certified accounts: no more than 45 seconds between attempts.
- Dial Type – Will not be programmed for foreign pulse.
- Dial Attempts Before Shutdown – Five dial attempts minimum, ten dial attempts maximum.
- Arming/Disarming Reports – This function will be enabled by programming report codes.
- Low Battery Reporting – This function will be enabled by programming a report code for Grade A Local Burglar, Grade A Police Connected, and Grade B and C Central Station Burglar installations.
- Two Button/Double Press Arming – These functions will be disabled. Four digit passcodes will be used.
- Enable Force Arming – This function will be disabled.
- Enable Bypassing – This function will be disabled.
- Burglar Alarm Output – Will be programmed to STEADY.
- Fire Alarm Output – Will be programmed to TEMPORAL.

- Burglar Loop Audible Lockout – This function will be disabled.
- Enable Bell Test Upon Arming – This function will be enabled for Grade A Local Central Station Connected installations.
- Enable Keypad Sounder for BA Zones – The system will have an audible alarm output upon alarm.
- Auto-Arming – This function will be disabled.
- Burglar zones will not be programmed as Verifying or Self-Verifying.
- RF User Devices must be assigned to User Passcodes 1 – 30.

UL Notes About Zone Planning

- Burglar Loops – Will be defined as Alarm on Open/Alarm on Short.
- Fire, Holdup, and Auxiliary Emergency Zones – Will not be defined as bypassable.
- Special Functions/Alarms – Burglar zones will have an audible output.
- Medical Emergency – At least one Control Station will be used as part of the system.

UL Notes About RF Devices

For UL Burglary and Home Health Care installations with wireless devices, an output programmed as “Audible Trouble” is required. This output will be silenced with an OFF + passcode, but will reactivate for 5 seconds at 4 hour intervals if a wireless device has a low battery or a wireless point has been tampered.

ZX440F Operating Instructions

Refer to the ZX440F Installation/Programming Manual for more information, Part # 64812853.

NORMAL STANDBY CONDITION

- Keypad displays "A1 READY TO ARM"
- All switches are "UP"
- Integral sounder and keypad sounder are silent

ALARM CONDITION

- Keypad displays either "FIRE ALARM", "HOLDUP ALARM", "MEDICAL/AUXILLARY ALARM" or a combination of these and "OFF TO SILENCE" is also displayed
- Keypad sounder sounds a slow intermittent signal
- Indicating circuits are ON

ALARM SILENCE

- Press the "OFF CANCEL" button once and enter the 4 digit passcode
- The keypad will display "A1 READY TO ARM", "BELL 1 SILENCED", and/or "BELL 2 SILENCED"
- To restore the bells to normal condition, press "7" followed by the 4 digit passcode

RESET SMOKE OPERATED

- Initiating circuit power removed (smoke detectors reset)
- System restored to normal unless initiating devices are NOT reset

FIRE ALARM BELL DISCONNECT SWITCH

(For Maintenance Use Only)

- Disconnects local zone alarms from indicating circuits
- Keypad will indicate "BELL FAULT, OFF TO SILENCE"
- Integral sounder sounds a steady signal and the keypad sounder sounds a fast, intermittent signal

TROUBLE CONDITION

- Keypad displays "A1 READY TO ARM" plus any trouble conditions
- Any trouble conditions will be annunciated on the LCD display along with "OFF TO SILENCE"
- Integral sounder sounds a steady signal and the keypad sounder sounds a fast, intermittent signal

TROUBLE SILENCED

- Press the "OFF CANCEL" button once and enter the 4 digit passcode
- The sounder will then turn OFF, but the trouble message will remain on the screen until the trouble is no longer present

SUPERVISORY ALARM SIGNAL

- Integral sounder sounds a steady signal and the keypad sounder sounds a slow, intermittent signal.
- Keypad displays "SUPERVISORY ALRM"
- Indicating circuits are NOT activated

SUPERVISORY TROUBLE SIGNAL

- Integral sounder sounds a steady signal and the keypad sounder sounds a fast, intermittent signal
- Keypad displays "SUPERVISORY TRBL"
- Indicating circuits are not activated

The following applies to Household Fire Warning Systems only:

TESTING – In a Household Fire Warning System, Test Monthly. Disconnect the AC power source during testing. If, after testing, a low battery condition exists, replace the batteries.

"This equipment should be installed in accordance with the National Fire Protection Association's Standard 72 (NFPA, Batterymarch Park, Quincy, MA 02269). Printed information describing proper installation, operation, testing, maintenance, evacuation planning and repair service is to be provided with this equipment."

WARNING:

Owner's instruction notice: "Not to be removed by anyone except occupant."

FOR SERVICE CONTACT: _____

FCC Compliance

Part 68 Notification

This equipment complies with Part 68 of the Federal Communications Commissions (FCC) rules. All connections to the telephone network must be made through standard telephone company plugs and jacks, RJ-31X or equivalent, in such a manner as to allow for easy and immediate disconnection of the equipment. If the connecting cord is unplugged from the jack there shall be no interference to the telephone equipment still connected to the telephone network.

The FCC registration number and Ringer Equivalence Number (REN) can be found printed on the wiring connection label located inside the Control Box Enclosure. If requested, provide this information to your telephone company. The REN is useful to determine the quantity of devices that may be connected to your telephone line and still have all of those devices ring when your number is called. In most, but not all areas, the sum of the RENs of all devices should not exceed five (5.0).

In the unlikely event that the equipment should ever fail to operate properly, it should be disconnected from the telephone jack to determine if the problem is with the telephone network or with the equipment. If a problem is found with the equipment, leave disconnected until it is repaired or replaced.

In the unlikely event that the equipment should ever cause harm to the telephone network, the telephone company may temporarily discontinue your service. If possible, they will notify you in advance. However, if advance notice isn't practical, the telephone company may temporarily discontinue service without prior notification. In the case of temporary discontinuance, the telephone company shall promptly notify the telephone subscriber who will be given the opportunity to correct the situation. The customer also has the right to bring a complaint to the FCC if he feels the disconnection is not warranted.

Your telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the proper operation of your equipment. If they do, you will be given advance notice so as to give you an opportunity to maintain uninterrupted service.

You should notify the telephone company if this equipment is removed from the premises and the telephone jack is no longer needed.

Part 15 Notification

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or locate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experience radio/TV technician for help.

CAUTION: Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

Canadian Notice

The Canadian Department of Communications label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational and safety requirements. The Department does not guarantee the equipment will operate to the user's satisfaction. Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications com

pany. The equipment must also be installed using an acceptable method of connection. In some cases, the company's inside wiring associated with a single line individual service may be extended by means of a certified connector assembly (telephone extension cord). The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations. Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment. Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

CAUTION: Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

The **LOAD NUMBER (LN)** assigned to each terminal device denotes the percentage of the total load to be connected to a telephone loop which is used by the device, to prevent overloading. The termination on a loop may consist of any combination of devices subject only to the requirement that the total of the Load Numbers of all the devices does not exceed 100. The **LOAD NUMBER** for the system is 2.

This equipment is a Class B Digital apparatus which complies with the radio interference regulations, CRC c. 1374.

Limitations

The ZX440F is part of a system designed to warn against unauthorized entry or of other situations. However, it is not a guarantee of protection against the occurrence of those events. Any alarm system is subject to compromise or failure to warn for various reasons. Unauthorized access can be gained through unprotected points or by disarming or bypassing protected points. Sensing devices are power driven and will not operate without power. Telephone lines over which alarm signals are transmitted may be out of service or rendered inoperable by an intruder. Smoke detectors have limitations and cannot detect all types of fires, or sense smoke which is out of the effective range of the detector.

All Rights Reserved

No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form, or by any means – electronic, mechanical, photocopying, recording, or otherwise without the prior written permission of the manufacturer. The material in this publication is for information purposes and subject to change without notice. The manufacturer assumes no responsibility for any errors which may appear in this publication. Printed in USA

ff **SPECIAL NOTE** referencing use of the word "Fire" in this manual.

Use of this control for fire detection and/or annunciation may not be permitted by certain states, counties, municipalities, or local jurisdiction. It is the responsibility of the installing alarm company to check with their local AHJ (Authority Having Jurisdiction) or State Fire Marshal's office prior to using this control for fire detection.

This Product is Listed by
UNDERWRITERS LABORATORIES INC.
and Bears the Mark:



See Page 36 for listing information



SENTROL

SENTROL CONTROLS GROUP

PO Box 2904, 1510 Tate Blvd. SE

Hickory, NC 28603

Tel.: 503.692.4052 Fax: 503.691.7566

U.S. & Canada: 800.547.2556

Technical Service: 800.800.2027

FaxBack: 800.483.2495

Sentrol reserves the right
to change specifications
without notice.

©1998 Sentrol

64812853C