

Section 3

Installation

This section provides instructions for connecting cables, mounting and testing the Sigma A-XT Releasing Fire Control Panel for installation.

Install this product in accordance with NFPA 72, the National Electrical Code and all local codes.

General Installation Checklist

To complete the installation:

- 1 Create a plan for the fire alarm system and provide a checklist for installing the fire control panel.
- 2 Identify the operating constraints of the fire alarm system and then determine the battery capacity of the fire control panel.
- 3 Check the contents of the shipping package containing the Sigma A-XT Releasing Fire Control Panel.
- 4 Remove the cabinet-door of the Sigma A-XT Releasing Fire Control Panel.
- 5 Remove the fascia from the cabinet-box of the Sigma A-XT Releasing Fire Control Panel.
- 6 Remove the standby-batteries from the base of the cabinet-box.
- 7 Mark the location for anchoring the cabinet-box to the premises-wall.
- 8 Mount the cabinet-box of the fire control panel to the premises-wall.
- 9 Feed, secure and connect cabling for AC power and field terminals.
- 10 Replace the standby-batteries in the base of the cabinet-box.
- 11 Reattach the fascia to the cabinet-box of the Sigma A-XT Releasing Fire Control Panel.
- 12 Reattach the cabinet-door to the cabinet-box.
- 13 Connect the standby-batteries to the Sigma A-XT Releasing Fire Control Panel.
- 14 Apply AC power from the main AC power source.
- 15 Test the Sigma A-XT Releasing Fire Control Panel installation.

Before You Begin

Before you begin the installation, take a few minutes to review the installation information, gather the required items, and complete the tasks listed below to make the installation as quick and easy as possible.

- 1 Create a plan and checklist before beginning the installation process. Planning can reduce the number of problems that can occur during installation.
- 2 Select a mounting site that is a suitable operating environment for the Sigma A-XT Releasing Fire Control Panel. The mounting site chosen should be clean, dry and not subject to shock or vibration.
- 3 Remove the Sigma A-XT Releasing Fire Control Panel from the shipping package and check the contents to determine if the order has been satisfied.
Contact Kentec technical support if material is missing from the shipping package.

CAUTION!



Electronic components within the Sigma A-XT Releasing Fire Control Panel are vulnerable to damage caused by electrostatic discharge. Ground straps must be worn by installers before handling electronic components to prevent this damage.

- 4 Acquire the following items that are not included with the Sigma A-XT Releasing Fire Control Panel, but may be required for the installation:

Item	Quantity	Description
Mounting Hardware	1	The mounting hardware that secures the Sigma A-XT Releasing Fire Control Panel to the premises-wall is not provided in the packaging.
Ground Strap	1	A ground strap is required for handling electronic components of the Sigma A-XT Releasing Fire Control Panel. The ground strap is not provided in packaging of the Sigma A-XT Releasing Fire Control Panel.

CAUTION!



Disconnect power before removing circuit boards of the Sigma A-XT Releasing Fire Control Panel. Never insert or remove circuit boards while powering the fire control panel. Electronic components can be permanently damaged when circuit boards of the Sigma A-XT Releasing Fire Control Panel are removed while receiving power.

Determining System Current Draw

Determine the current draw of the fire alarm system for alarm and standby conditions. Use these maximum current values to obtain the operating constraints of the fire alarm system and the battery capacity of the fire control panel.

Standby-Battery Capacity

Perform the installation only after calculations have been completed for a suitable battery size. Battery standby-hours are dependant on battery capacity and load of the fire alarm system.

Reference Appendix C, Calculations to determine the standby-battery capacity of the system.

Operating Constraints

Operating constraints must be included in the planning of the fire control panel to maintain reliable *standby* and *alarm* operation. Operating constraints are based on the current-loading of the fire control system and the current-driving capability of the fire control panel. Current-loading in a fire control system can be caused by individual or multiple combinations of zone circuits, signaling line circuits, notification appliances, initiating devices and cabling. Select circuit devices and cabling for the fire control system that does not exceed the current driving capability of the Sigma A-XT Releasing Fire Control Panel.

Reference Appendix A, Specifications and Appendix C, Calculations to determine specific operating constraints for devices and cabling connected to the Sigma A-XT Releasing Fire Control Panel.

Mounting the Fire Control Panel

This section describes preparing, removing the fascia and mounting the Sigma A-XT Releasing Fire Control Panel.

Preparing

Complete the following steps to prepare the fire control panel for mounting:

- 1 Open the cabinet-door of the fire control panel using the door-lock-key.
- 2 Disconnect the green ground cable from the cabinet-door.
- 3 Remove the cabinet-door from the cabinet-box of the Sigma A-XT Releasing Fire Control Panel.
- 4 Remove the fascia from the cabinet-box.
- 5 Remove the standby-batteries from the base of the cabinet-box.
- 6 Mark the location for mounting the cabinet-box to the premises-wall.

Removing the Fascia

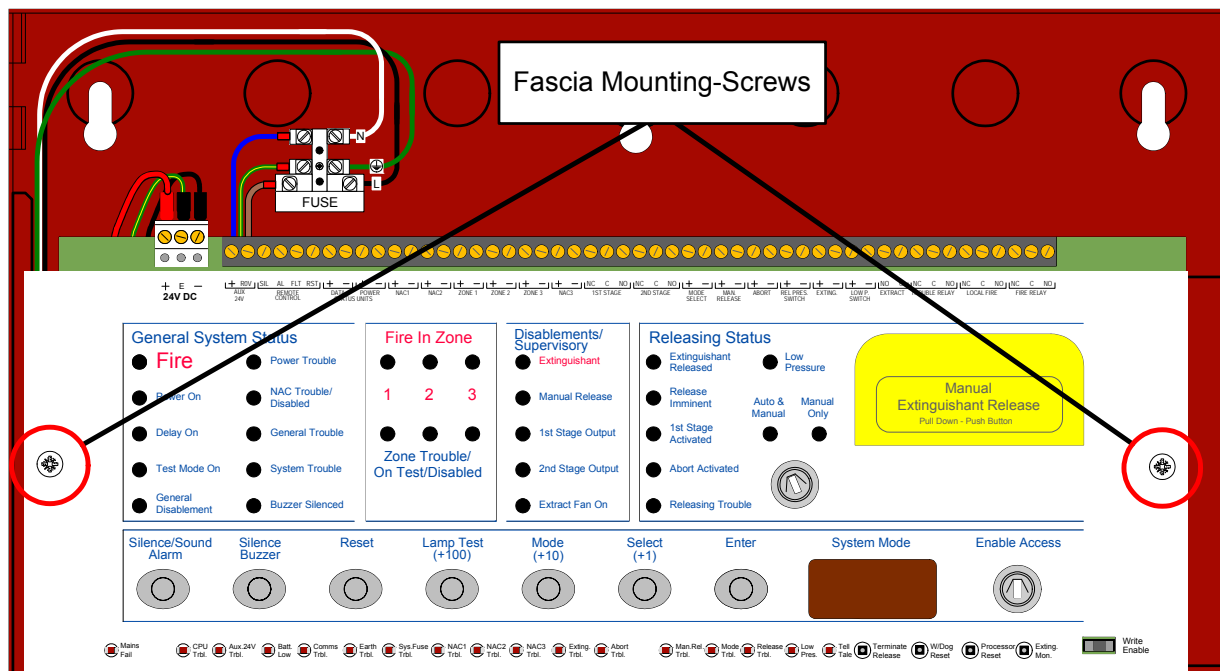
Remove the fascia of the Sigma A-XT Releasing Fire Control Panel prior to the mounting process to prevent damage to circuit board components.

To remove the fascia from the cabinet-box of the Sigma A-XT Releasing Fire Control Panel:

- 1 Remove the two mounting-screws on the fascia that secure it to the cabinet-box.
- 2 Remove the ground connection from the fascia.
- 3 Remove the fascia from the cabinet-box and place it in a safe location while mounting the cabinet-box.

The figure below illustrates the location of the fascia mounting-screws:

Figure 3-1
Fascia Mounting-Screws

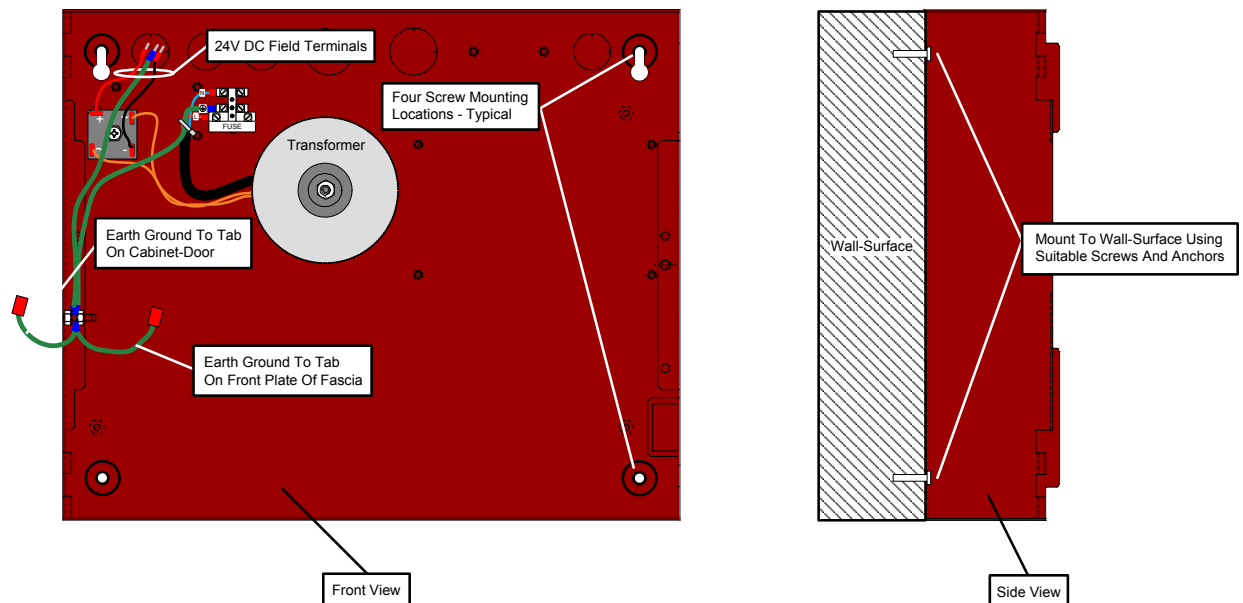


Mounting

Drill holes in the premises-wall to mount the cabinet-box of the Sigma A-XT Releasing Fire Control Panel using mounting-hardware to secure it. Screws or bolts providing a minimum diameter of 0.2" (5 mm) must be used to mount the cabinet-box in three mounting positions. Remove debris from the base of the cabinet-box that accumulates during the mounting process.

The figure below illustrates mounting the cabinet-box of the Sigma A-XT Releasing Fire Control Panel:

Figure 3-2
Mounting the Cabinet-Box



CAUTION!



Maintain care when anchoring the Sigma A-XT Releasing Fire Control Panel to the premises wall. Electronic components within the fire control panel are vulnerable to physical damage from shock and vibration. Remove the fascia of the Sigma A-XT Releasing Fire Control Panel when installations cannot guarantee a level of care during the wall-anchoring process.

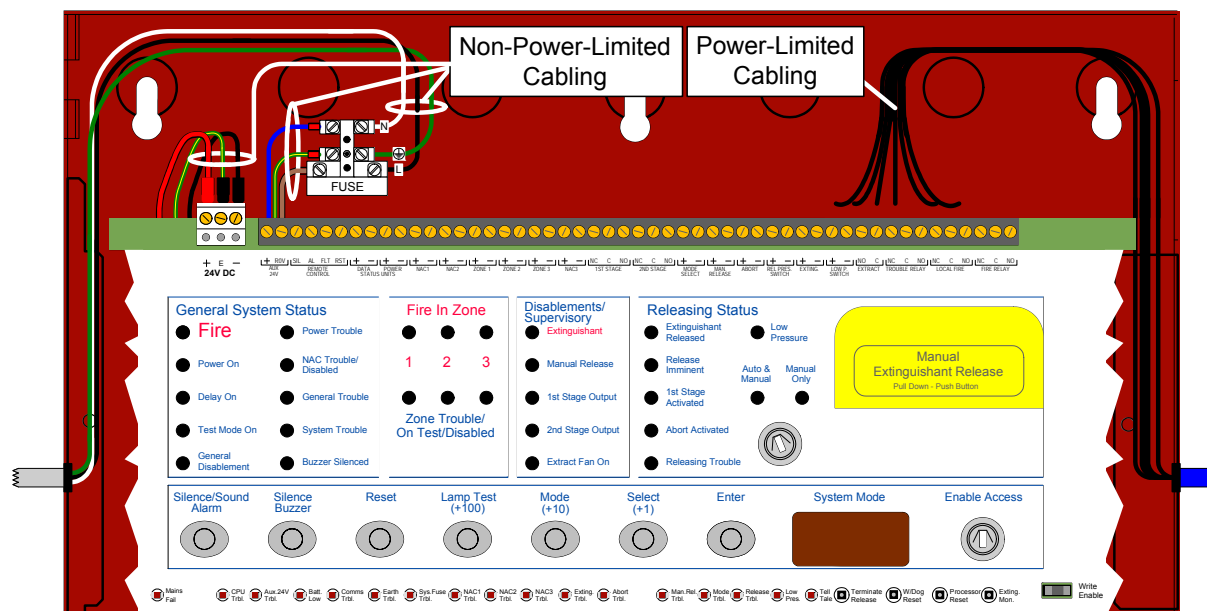
Separation of Circuits

Cabling from the main power source is non-power limited and must be separated from all other cabling by a minimum ¼ inch spacing. When the product design requires or permits power limited circuit conductors to occupy the same enclosure as non-power limited conductors, specific wire routing configurations must be detailed to ensure a minimum ¼ inch spacing between non-power and power limited circuit conductors. All circuits of the Sigma A-XT Releasing Fire Control Panel are power limited accept AC input, AC output, battery, transformer input, transformer output, bridge rectifier input and bridge rectifier output.

Reference UL 864 12.3.1.

The figure below illustrates separation of non-power limited and power limited circuit-cabling.

Figure 3-3
Separation of Non-Power Limited and Power Limited Circuit-Cabling



AC Cabling

Power cabling from the mains to the Sigma A-XT Releasing Fire Control Panel must provide connections to branch circuits containing a 15 Amp fuse. Specify 14 AWG wiring for this connection. Power cabling must enter the at the back, top or left-side of the fire control panel cabinet through the cabinet-knockouts.

Feed AC cabling in the cabinet of the Sigma A-XT Releasing Fire Control Panel.

To feed cabling into the cabinet:

- 1 Remove knockout tabs from the right and left-side of the cabinet.
- 2 Feed AC cabling in the left-side knockout-tab-hole.
- 3 Feed all other cabling in the right-side knockout-tab-hole. Remove additional knockout-holes on the right-side of the cabinet to provide more cabling as required.

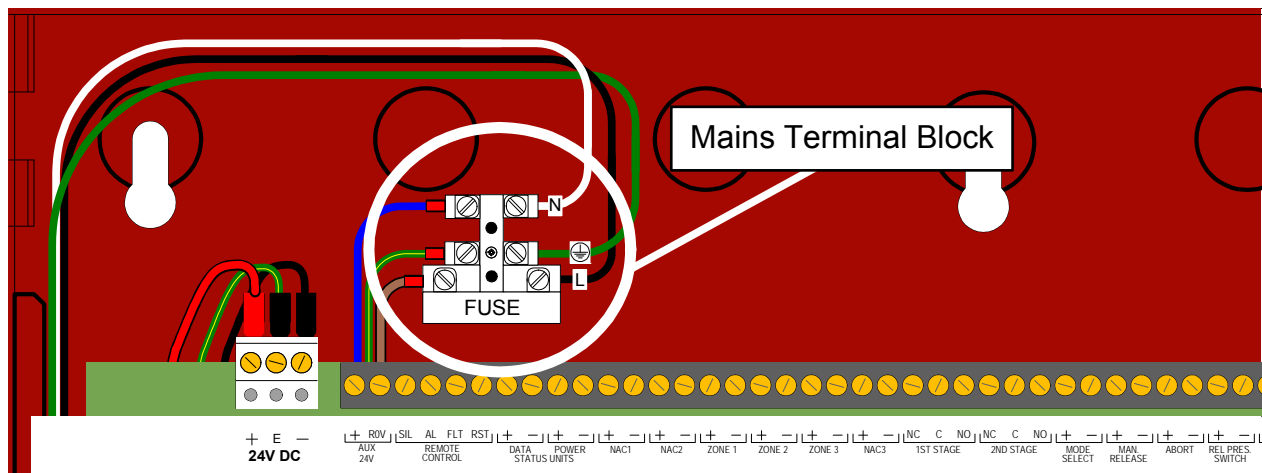
The fire control panel requires an input of 115 VAC @ 50 / 60Hz or an input of 230 VAC @ 50 / 60Hz. The fused terminal block contains a 1.6 A fuse rated at 250 VAC.

Connect AC cabling from the power source to the main terminal block. The main terminal block is located on the top-left of the Sigma A-XT Releasing Fire Control Panel. Mains wiring must include a secure earth ground connection from the building ground to the fire control panel and must enter the fire control panel cabinet as close as possible to the mains terminal block.

Limit the length of mains wiring from the cabinet opening to the mains terminal block of the fire control panel and dress mains wiring with cable ties.

The figure below illustrates supervised connections at the mains terminal block for the Line (L), Neutral (N) and Ground of the AC power source.

Figure 3-4
Supervised Connections At The Mains Terminal Block



Reference Appendix A, Specifications for the wire-gage requirements of these connections.

Standby-Battery Cabling

Perform the installation only after calculations have been completed for selecting a suitable battery size. Battery standby-hours are dependant on battery capacity and loading of the FACP system.

To install the replacement standby-batteries:

- 1 Place standby-batteries at the bottom of the Sigma A-XT Releasing Fire Control Panel cabinet.
- 2 Connect the black battery-lead to the negative terminal of Battery 2.
- 3 Connect the red battery-lead to the positive terminal of Battery 1.
- 4 Connect the jumper-lead from the negative terminal of Battery 1 to the positive terminal of Battery 2.
- 5 Mark a "placed into service" date" on Battery 1 and Battery 2.

Do not connect the two batteries in parallel. A parallel connection will not provide the 24 volts required for operating the Sigma A-XT Releasing Fire Control Panel in a standby condition.

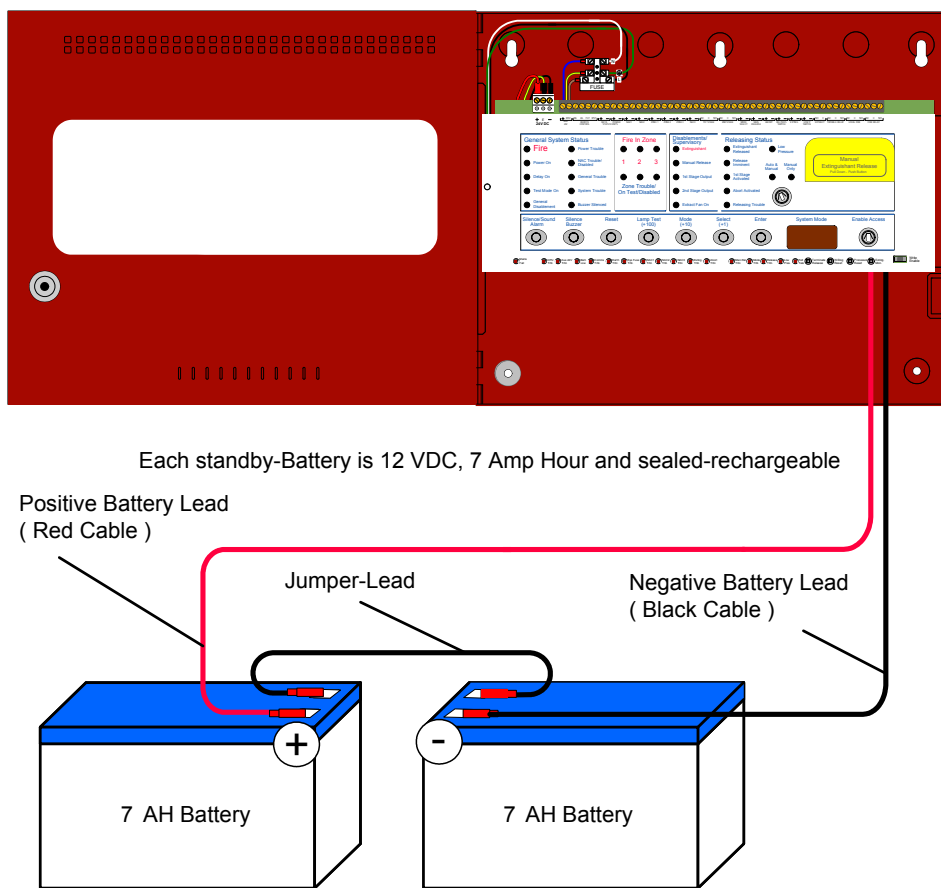
The recharging circuit of the power supply charges batteries to a maximum voltage of 27.6 VDC @ 700 mA. The fire control panel accepts sealed-lead-acid rechargeable-batteries with a maximum capacity of 7 AH. The maximum current drawn from the batteries is 2 Amps when the main power source is disconnected.

Observe polarity when connecting the leads of the standby-batteries to the fire control panel. Improper connections to the standby-batteries could damage the fire control panel and severely limit overall fire control panel operation. Connect two standby-batteries to the power supply in series.

Reference Section 5, Maintenance for replacing the standby-batteries.

The figure below illustrates standby-battery connections in the Sigma A-XT Releasing Fire Control Panel:

**Figure 3-5
Standby-Battery Connections**



The series connection above provides a standby voltage of 24 VDC required by the Sigma A-XT Releasing Fire Control Panel.

Caution

**RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.
DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS**

Field Cabling

Field cabling of the Sigma A-XT Releasing Fire Control Panel includes terminal connections for detection zones, supervised inputs, Notification Appliance Circuits (NACs), releasing device circuits, relay outputs, AUX 24V power and Status Units. Connect all field wiring to the single row of terminals along the top of the fire control panel. Terminals accept wiring from 14 to 18 AWG. Wiring outside of the fire control panel must not be routed across the front surface of the fire control panel.

Detection Zones

This section describes connections for detection zones of the Sigma A-XT Releasing Fire Control Panel. Detection zones are Initiating Device Circuits (IDC). Initiating Device Circuits of the Sigma A-XT Releasing Fire Control Panel are power limited and include:

Detection Zones	Include connections for ZONE 1, ZONE 2 and ZONE 3
Supervised Inputs	Include connections for MAN RELEASE, ABORT, REL. PRES. SWITCH and the LOW P. SWITCH
Remote Control Inputs	Remote Control connections ROV, & FLT, are used on the Sigma A-XT Releasing Fire Control Panel as a trigger for the manual extinguishant disablement function.
Mode Select	Mode Select connections are unused on the Sigma A-XT Releasing Fire Control Panel and are designated as No Connect (NC) terminals.

Detection zones of the Sigma A-XT Releasing Fire Control Panel provide a nominal 24 VDC for powering conventional detectors and pull stations. Detectors must be wired in a daisy-chain without T-Top connections. Detection zones are supervised for open-circuit, short-circuit and ground-fault conditions with the installation of the 6.8K Ohm EOL resistor, S2027. Place the 6.8K Ohm EOL resistor across the last device in the detection zone circuit to provide this supervision.

Pull stations authorized for use with the Sigma A-XT Releasing Fire Control Panel are non-addressable and UL listed.

Zones of the Sigma A-XT Releasing Fire Control Panel operate NFPA 72 Class B, Style C or NFPA 72, Class B, Style B. Style C devices provide trouble conditions for direct shorts and opens on zone loops. Style B devices provide alarm conditions for direct shorts and trouble conditions for opens on zone loops.

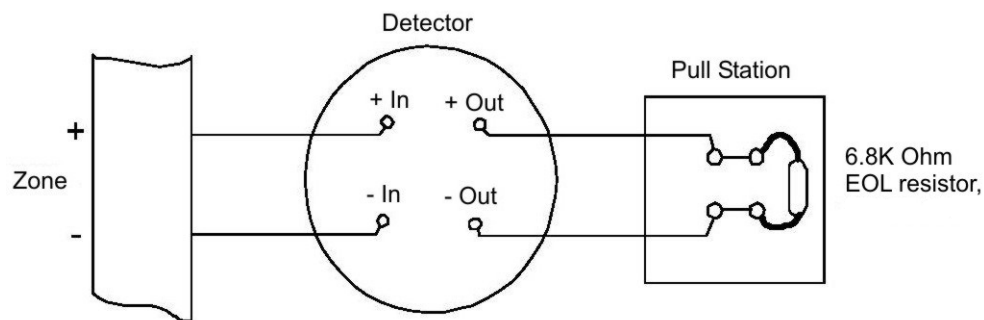
Change the default operation of Style C to Style B by using the appropriate configuration code. Set the following configuration code on the fire control panel to provide a Class B alarm when a short circuit condition occurs in Zone 1, 2 or 3:

- Set C71 to alarm when a short circuit condition occurs in Zone 1.
- Set C72 to alarm when a short circuit condition occurs in Zone 2.
- Set C73 to alarm when a short circuit condition occurs in Zone 3.

The maximum number of detectors per zone is device and manufacturer dependent.

The figure below illustrates a single detector connection on the zone terminals of the Sigma A-XT Releasing Fire Control Panel:

Figure 3-6
Single Detector Connection



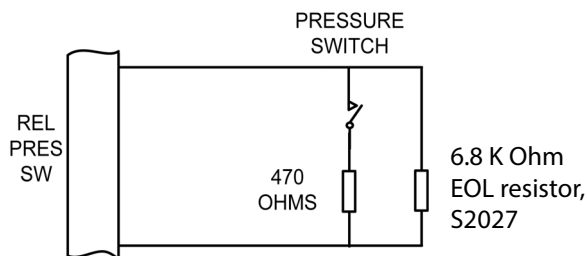
Supervised Inputs

Supervised inputs of the Sigma A-XT Releasing Fire Control Panel are Class B, Style C Initiating Device Circuits (IDC). Supervised inputs include the field terminals of MAN RELEASE, ABORT, REL. PRES. SWITCH and LOW P. SWITCH.

These inputs are supervised for open-circuit, short-circuit and ground-fault conditions. Circuits operating on these terminals require a 6.8K Ohm EOL resistor, S2027 and a nominal, 470 Ohm trigger resistor, S2051.

The figure below illustrates a typical supervised input connection on terminals of the Sigma A-XT Releasing Fire Control Panel.

Figure 3-7
Supervised Inputs



Remote Control Inputs

Remote Control Inputs on the terminal-strip of the fire control panel:

Terminal	Function
ROV	Voltage trigger
SIL	NC
AL	NC
FLT	Manual Extinguishant Disablement function
RST	NC

Notification Appliance Circuit (NAC)

Notification Appliance Circuit (NAC) outputs of NAC 1, NAC 2 and NAC 3 are rated for special application and regulated outputs. The NAC channels are rated for special application conditions when each output operates at or below 500 mA. A maximum load of 1.5 A is available for powering the NAC outputs when a maximum load of 500 mA is operating on any one of the NAC outputs. The NAC channels are rated for regulated conditions when each output operates at or below 50 mA.

NAC circuits are supervised for ground-faults, open and short circuit conditions by placing a 10K EOL resistor, S2028 across the last device on the circuit. NAC circuits must be wired as a single circuit to enable the supervising circuit to operate. NAC circuits must also be wired in a daisy-chain without T-Top connections.

NAC outputs of the Sigma A-XT Releasing Fire Control Panel accept devices that are polarized only. A trouble condition is reported when non-polarized NAC devices are connected to these NAC outputs.

NAC 1 and 2

NAC 1 and 2 of the Sigma A-XT Releasing Fire Control Panel provide single and dual circuit synchronization for Zones 1 and 2 when operating with authorized synchronization modules. Single circuit synchronization provides synchronized NAC outputs on one channel of the Sigma A-XT Releasing Fire Control Panel. Dual circuit synchronization provides synchronized NAC outputs on two channels of the Sigma A-XT Releasing Fire Control Panel.

The output of NAC 1 and NAC 2 is special application and provides a continuous DC voltage.

Reference Appendix A, Specifications to identify characteristics of the NAC 1 and NAC 2 special application outputs. Reference Appendix B, Equipment List for a list of compatible NAC devices.

NAC Extenders

Listed NAC Extenders that perform in the range of 18 to 28 VDC and draw less than 500 mA are authorized to operate on the outputs of NAC 1 and NAC 2.

Reference manufacturer instructions for specific NAC Extender connections and requirements.

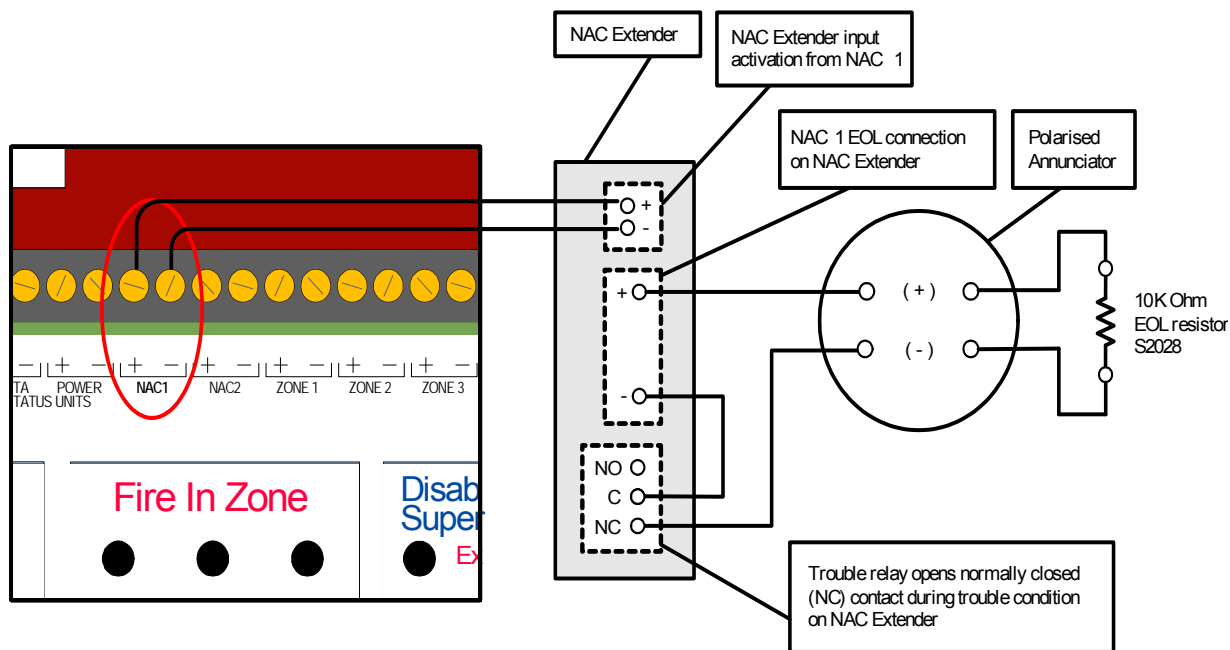
Example EOL and Trouble Relay Connection

Provide a series connection from the NAC output to the End of Line (EOL) and the trouble relay of the NAC Extender.

During a trouble condition the normally closed (NC) contacts of the trouble relay open on the NAC Extender providing a trouble condition on the Sigma A-XT Releasing Fire Control Panel.

The figure below illustrates an example NAC Extender containing an EOL and trouble relay connection:

**Figure 3-8
Example EOL and Trouble Relay Connection**

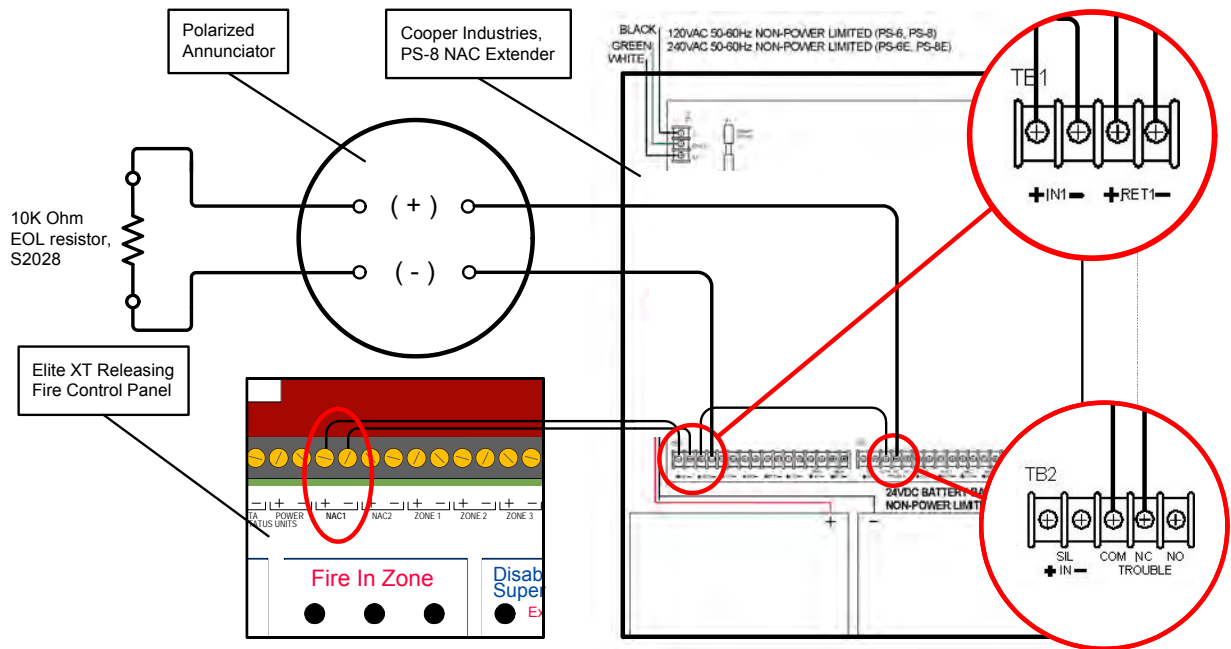


Example Cooper Industries Connection

Provide a connection from the NAC output to the NAC Extender PS-8 of Cooper Industries. During a trouble condition inputs open on the 1N1 terminals of the NAC Extender PS-8 providing a trouble condition on the Sigma A-XT Releasing Fire Control Panel.

The figure below illustrates an example NAC Extender PS-8 connection:

Figure 3-9
Example PS-8 NAC Extender Connection




NAC 3

NAC 3 is designed to operate the releasing notification appliances of the Sigma A-XT Releasing Fire Control Panel only.

NAC 3 provides a special application output that is pulsed and continuous. The pulsed output of NAC 3 prevents it from operating strobe devices or synchronizing with devices on NAC 1 and NAC 2.

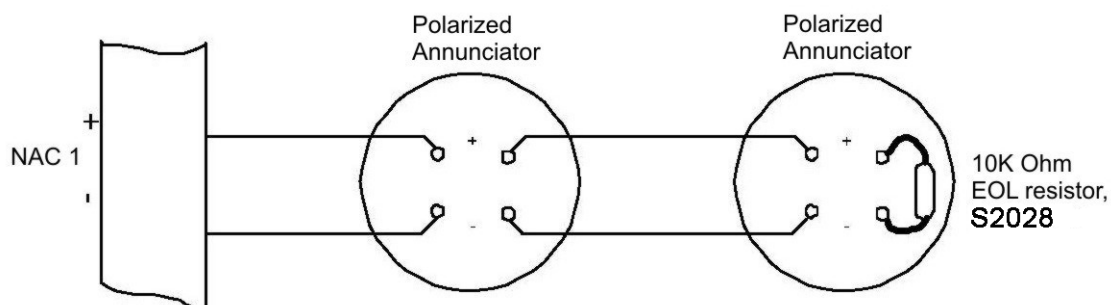
CAUTION!



NAC synchronization operates on NAC 1 and NAC 2 only. Do not connect NAC 3 for synchronization. NAC synchronization cannot be performed between multiple Sigma A-XT Releasing Fire Control Panels.

The figure below illustrates NAC1 wiring on the Sigma A-XT Releasing Fire Control Panel:

Figure 3-10
NAC1 Wiring



To install Notification Appliance Circuits (NACs) on the Sigma A-XT Releasing Fire Control Panel:

- 1 Connect Notification Appliances and End-Of-Line-Devices to the NAC channel.
Notification Appliances must be wired in a daisy-chain without T-Top connections. End-Of-Line-Devices must be connected to the last Notification Appliance in the daisy-chain.
- 2 Maintain the limit for maximum wire length of the circuit.
- 3 Maintain maximum current limits and loading.

Releasing Circuit

This section describes how to install releasing devices on the EXTING terminals of the Sigma A-XT Releasing Fire Control Panel. The Sigma A-XT Releasing Fire Control Panel operates releasing devices in compliance with Fire Protection Service Valves under UL 260, UL 429 and UL 429A.

The Sigma A-XT Releasing Fire Control Panel provides releasing operation on the EXTING terminals.

To maintain UL compliance during installation:

- Connect releasing devices to the EXTING terminals
- Connect releasing devices with the correct wire gage and length
- Connect only authorized Kentec releasing devices for Fire Protection Service Valve operation
- Connect EOL diode 1N504-G, S2029 to the releasing solenoid

Solenoid Wiring

Solenoids must have a resistance of greater than 30 Ohms to ensure that the maximum current rating of the releasing output is not exceeded. Shunt releasing solenoids with the End of Line Diode (EOLD) 1N504-G, S2029. The EOLD S2029 provides supervision for releasing circuits and prevents solenoid EMF spikes from interfering with the operation of the fire control panel.

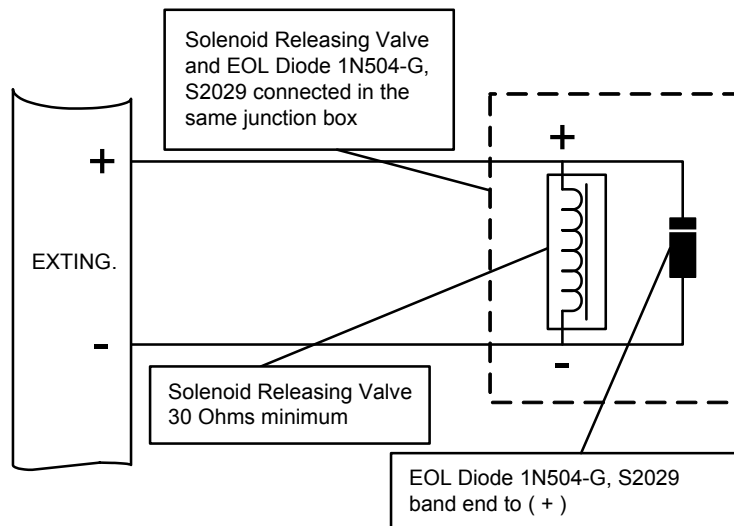
Connect the EOLD 1N504-G, S2029 in the same junction box as the Releasing Solenoid.

The Sigma A-XT Releasing Fire Control Panel operates only Kentec authorized solenoid releasing valves.

Reference Appendix B, Equipment List for a list of Authorized Releasing Valves.

The figure below illustrates an example of the wiring for the releasing solenoid:

Figure 3-11
Releasing Solenoid Wiring



Monitoring Circuit

All control panels are supplied with end of line diodes for the connection of solenoids. It should not be necessary to adjust the trouble monitoring circuit in this configuration, unless the panel fails to report a short circuit trouble when tested by shorting the end of line device.

Halon 1301

If the system is intended for Halon 1301 the user must install a mechanical manual release.

Manual Release

- If abort is activated first, the manual release overrides the abort function.
- If manual release is activated first, the abort function overrides the manual release.

The Manual Release Switch shall be marked "Manual Release" or "Manual Dump" at its installed location. The Manual Release can override an activated Abort condition.

Relay Outputs

Volt free changeover relay contacts are provided for local control and signalling. These contacts are rated for switching signalling circuits and must be operated within specified ratings.

Reference Appendix A, Specifications for relay ratings of Sigma A-XT Releasing Fire Control Panel.

Typically, the Aux 24V output of the fire control panel is switched through these relays and used to control other systems.

Aux 24V

The AUX 24V connection is a common special application output. The output is supervised for short-circuits and ground faults. The output is not supervised for open circuit conditions. Terminals of the Aux 24V supply are labelled (+) and ROV. The ROV terminal is the negative terminal.

Operating Limits

The AUX 24V supply is protected by an electronic, self resetting fuse rated at 1.1 A. Devices connected to this output must not draw current in excess of 500 mA. Operate expansion-boards, Status Units and Ancillary Boards on this special application output.

Fire Control Panel - Status Unit Terminals

This section describes the Status Unit terminals of the Sigma A-XT Releasing Fire Control Panel. Status Unit terminals of the Sigma A-XT Releasing Fire Control Panel contain connections for Data and Power.

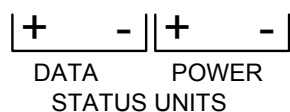
The Data terminals provide RS485 communication. The Power output of these terminals is designed to operate the Status Unit and the Ancillary Board only.

The Power output of the Status Units terminals is special application and supervised.

A common earth ground is required between all Status Units and each fire control panel.

The figure below illustrates the STATUS UNIT terminals of the Sigma A-XT Releasing Fire Control Panel:

Figure 3-12
STATUS UNIT Terminals



Testing the Installation

Disconnect the releasing solenoid from the fire control panel circuit before applying power. This step physically isolate the releasing solenoid from the fire control panel and prevents an accidental discharge of releasing agent.

To test the installation of the Sigma A-XT releasing Fire Control Panel:

- 1 Disconnect wiring from the EXTING. terminals to the releasing solenoid before applying power from the source.

Do not disconnect the EOL diode from the releasing solenoid.

- 2 Apply power to the fire control panel from the source.
- 3 Confirm that the Power On lamp on the fascia is illuminated.
- 4 Confirm that the fire control panel is not reporting trouble conditions.

Correct conflicts before proceeding with the testing if trouble conditions are reported by the fire control panel. Once the fire control panel is trouble free, it can be configured and tested to ensure that it operates as configured.

- 5 Reconnect the releasing solenoid to the EXTING. terminals of the fire control panel after the completion of successful testing.

Troubleshooting

Troubleshoot the Sigma A-XT Releasing Fire Control Panel when conflicts exist after installing or configuring. Monitor the lower fascia indicators of the fire control panel to determine the cause of the trouble condition.

The lower indicators of the fascia are visible after opening the cabinet-door of the Sigma A-XT Releasing Fire Control Panel.

The figure below illustrates lower fascia indicators of the Sigma A-XT Releasing Fire Control Panel:

Figure 3-13
Troubleshooting with Lower Fascia Indicators



Indicator	Description
Mains Fail	The AC supply is not present and the system is running on standby batteries. If there is not a power cut, check the fuse of the main terminal block if there has not been a loss of source power.
Batt Fail	The standby battery has become disconnected or that the charging circuit of the fire control panel has failed. Check that both batteries are connected and linked together. Test battery. Disconnect battery and ensure that 28 Volts can be measured on battery charger leads.
CPU Trbl	The central processor unit has failed to execute code and has been re-started by the system watchdog. The watchdog reset switch must be pressed to clear the CPU trouble condition. Press watchdog reset. If system does not return to normal then the panel is probably damaged and needs the circuit board replaced.
Aux 24V Trbl	The Aux 24V and R0V terminals provide a 500 milliamp, 24V DC power supply for power fire alarm ancillary equipment. This LED indicates that fuse protecting the R0V output has operated and the rating of this output has been exceeded. The fuse is a self resetting type and the supply will resume when the trouble condition is removed.
Batt Low	Illuminates when the system is running on batteries and the battery voltage is between 21.5 V and 20.5 V (the minimum battery voltage).
Comms Trbl	Communication has been lost with a remote annunciator or Ancillary board. Check for comms trouble at all remote annunciators and ancillary boards to identify the source of the problem. The comms trouble LED will be accompanied by the front panel Flooding zone trouble LED to indicate a common trouble condition within the releasing agent section of the fire control panel.

Indicator	Description
Earth Trbl	Part of the system wiring is connected to earth. Remove all system wiring and re-connect cables one at a time until the earth trouble returns. This will indicate which cable the earth trouble is present on.
Sys Fuse Trbl	The power rating of the power supply has been exceeded and the system fuse has operated. Remove and review all loads and re-connect one at a time until over rated circuit trips fuse to identify faulty circuit.
S1, S2 and S3 Trbl	A short or open circuit exists on NAC outputs. Remove wiring and reconnect EOL resistors. Check NAC circuit wiring. The S3 LED will be accompanied by the front panel Flooding zone trouble LED to indicate a common trouble condition within the releasing agent section of the fire control panel.
Exting Trbl	A short or open circuit exists on the releasing agent output. Remove wiring and reconnect EOL resistors. Check releasing agent circuit wiring. The Exting trouble LED will be accompanied by the front panel Flooding zone trouble LED to indicate a common trouble condition within the releasing agent section of the fire control panel.
Abort Trbl	A short or open circuit exists on the abort switch input. Remove wiring and reconnect the EOL. Check abort circuit wiring. The Abort Trbl LED will be accompanied by the front panel Flooding zone trouble LED to indicate a common trouble condition within the releasing agent section of the fire control panel.
Manual Release Trbl	A short or open circuit on the manual release switch input. Remove wiring and reconnect EOL. Check manual release circuit wiring. The Manual release trouble LED will be accompanied by the front panel Flooding zone trouble LED to indicate a common trouble condition within the releasing agent section of the fire control panel.

Indicator	Description
Mode Trbl	A short or open circuit exists on the mode switch input. Remove wiring and reconnect the EOL. Check mode circuit wiring. The Mode Trbl LED will be accompanied by the front panel Flooding zone trouble LED to indicate a common trouble condition within the releasing agent section of the fire control panel.
Release Trbl	A short or open circuit exists on the released pressure switch input. Remove wiring and reconnect end of line. Check released pressure switch circuit wiring. The Released Trbl LED will be accompanied by the front panel Flooding zone trouble LED to indicate a common trouble condition within the releasing agent section of the fire control panel.
Low Pres Trbl	A short or open circuit exists on the low pressure switch input. Remove wiring and re-connect the EOL. Check low pressure switch circuit wiring. The Low pres trouble LED will be accompanied by the front panel Flooding zone trouble LED to indicate a common trouble condition within the releasing agent section of the control panel.
Tell Tale	The panel mounted or remote manual release button has been pressed. Can only be reset by pressing processor reset and W/DOG reset or powering down the fire control panel.