# EST4 Advanced User Application Guide

P/N 3102797-EN • REV 002 • ISS 11OCT22

# Content

# EST4 part number frequently asked questions

The EST4 system includes many new parts and pieces. Some of these parts are equivalent to the EST3 parts, but with new features and capabilities. However, many of the parts change the operation from EST3 and may not be clearly and succinctly defined in catalog or marketing documentation.

This topic is intended to provide additional information on some basic parts, and also point out some new parts that do not have equivalents in other existing Edwards systems. This information is presented in question-and-answer format in a more conversational tone than formal documents.

**Question: Where can I find a guide with all the EST4 part numbers?**

Answer: Go to the My-Eddie web site, and then navigate to the Resources & Training / Submittal Guides and download the EST4 Submittal Guide. This guide is a great resource that includes all the primary EST4 system components with descriptions and photos in one document.

**Question: What are the different EST4 CPU models?**

Answer: There are five different CPU models for the EST4 system and each one counts as a CPU Node. All CPUs have different mounting requirements (refer to the applicable installation sheet for details).

- 4-CPU – Control unit CPU that mounts into a chassis in panel cabinets. The 4-CPU provides communication to the local rail modules in the chassis and has all of the audio messages stored for the audio amps in that chassis.
- 4-ANNCPU – Annunciator CPU used as the main CPU in all annunciators and also for controlling a supplemental firefighter telephone LCD in panel cabinets. When installed in a panel cabinet, this CPU connects to the main 4-CPU via the included USB cable for power and data.
- 4-NET-AD – Network Adder CPU whose sole function is to provide additional panel to panel network ports.
- 4-FWAL – Firewall CPU that provides a firewall protected Ethernet port out of the EST4 panel to panel network for the available Ethernet services. These include connections to FireWorks, Web Browsers, Email and Central or Remote Station signaling.
- 4-CPUGRPH – CPU used to communicate to Envoy driver boards typically used in custom graphic annunciators. The 4-CPUGRPH comes with a mounting plate for use in 3rd party annunciators.

**Question: Where can the 4-CPU be mounted?**

Answer: The EST4 4-CPU must be mounted in the first two slots of the 3-CHAS7, with 3-PPS/M main power supply behind it.

**Question: Is an additional CPU required to support a second LCD in a cabinet?**

Answer: Yes. A 4-ANNCPU is required to support the 4-LCDAUDTEL display that is used for firefighter phone operation. This LCD display can be programmed to show only the remote firefighter telephone call-ins and is capable of answering and disconnecting calls. One important thing to remember is that if a 4-FT or 4-MIC is mounted to the right of the 4-LCDAUDTEL, the 4-ANNAUDTELS card is required. This card plugs onto the 4-ANNCPU and converts the analog signal from the 4-FT or 4-MIC to digital, making it available to other CPUs and the audio network.

**Question: If a second or third CPU is required in a single cabinet, is an additional power supply required?**

Answer: No. You can have only one main CPU in a cabinet. Additional CPUs such as 4-ANNCPU do not require a separate power supply. The primary 4-CPU supplies communications and operating power through the USB cable connection to up to two subsequent CPUs.

**Question: What are the mounting options for the 4-ANNCPU, 4-NETAD, and 4-FWAL?**

Answer: There are three options for mounting these CPUs.

- The 4-BRKT-CB allows for CPU mounting to the back of a 3-CHAS7.
- The 4-MPLT is a 3-CHAS7 sized plate that provides mounting options for these CPUs and for other hardware as well.
- The 4-BRKT-CS mounts the CPU to the side of the 3-CHAS7.

**Question: What LCD options are available for the EST4?**

Answer: There are three LCD options for the EST4:

- The 4-LCD is the full function LCD with four common control switches for use as the primary displays on the panel and annunciator cabinets. This must mount directly in front of a CPU in the left two slots of a user interface row.
- The 4-LCDAUDTEL is the only LCD with no common control switches for use as a Firephone call-in selection screen and possibly other uses. This must also mount directly in front of a CPU in the left two slots of a user interface row.
- The 4-3LCD is the full function LCD with common control switches that is used in EST3 cabinets that use the EST3 style operator layer mounted to the LRMs. This configuration is not allowed if there are any 4-MIC (microphones) or 4-FT (Firefighter telephones) in the cabinet.

**Question: How does the 4-ANNCPU that's needed to support the 4-LCDAUDTEL get mounted?**

Answer: The 4-ANNCPU must mount behind the 4-LCDAUDTEL display for the ribbon cable interconnection to the inner door. If the cabinet has a chassis behind the 4-LCDAUDTEL, use the 4-BRKT-CB bracket to mount the 4-ANNCPU in the back of the chassis. If the cabinet does not have a chassis behind the 4-LCDAUDTEL, use the 4-MPLT mounting plate in the 3-CHAS7 mounting space or in the battery space. Note that using the battery space for the 4-MPLT requires moving the batteries to a separate cabinet.

**Question: What cables are required to connect to the inner doors?**

Answer: There are six cable options that are available depending on the specific configuration.

- 4-CABL0502 – In cabinets, this connects the chassis mounted 4-CPU to the LCD mounted directly in front of it on the inner door. In 16 and 24 slot annunciators, this connects the 4-ANNCPU to the LCD mounted directly in front of it on the inner door. This cable is included in the 4-LCDLE, 4-LCDAUDTELANN, and 4-LCDAUDTELCAB-CB part numbers.
- 4-CABL0504 – This cable connects from a 4-ANNCPU mounted in a 4-2ANN, 4-4ANN or 4-6ANN to the 4-LCD mounted in the inner door. This cable is included in the 4-LCDANN part number.
- 4-CABL0505 – This cable is only for use with 4-CAB16D, 4-CAB24D or 4 CAB24DL to connect a user interface row to a subsequent row that does not contain a 4-LCD or 4-LCDAUDTEL.This cable is not included with any other part numbers and must be ordered separately when needed.
- 4-CABL0507 – This cable connects the top user interface row of a 4-CAB8D inner door to the bottom row. This cable is not included with any other part numbers and must be ordered separately when needed.
- 4-CABL0509 – This cable is for use with a 4-ANNCPU mounted on a 4-MPLT in CAB7, 14 and 21 enclosures to connect to the 4-LCD or 4-LCDAUDTEL mounted to the inner door directly in front of it. This cable is included in the 4-LCDAUDTELCAB-MPLT part number.
- 4-CABL0541 – This is the cable from the 4-CPU to the 4-3LCD only. One is included with the 4-3LCD, so this is only needed as a replacement part. This cable is not included with any other part numbers and must be ordered separately when needed.

- 4-CABL0542 – This is the only 4-CABLx series flex cable that needs to be ordered separately. It is used to connect the 4-CPU or 4-ANNCPU to the UI (user interface) rail when no LCD option is installed. The cables to interconnect the UI rails on the 4-CAB16D and 4-CAB24D inner doors are included. This cable is not included with any other part numbers and must be ordered separately when needed.

**Question: What's the part number for the UL Listed USB cable to interconnect CPUs in a cabinet?**

Answer: There are two USB cables available for CPU-to-CPU power and communications within a cabinet.

- The 4-CABLUSBSM is 2.46 ft. (0.75 meters) long and is included with each 4-ANNCPU, 4-NET-AD, and 4-FWAL.
- The 4-CABLUSBLG is 4.27 ft. (1.3 meters) long and is available if the 4-ANNCPU, 4-NET-AD or 4-FWAL is mounted so that the 4-CABLUSBSM is too short. This cable is not included with any other module and must be ordered separately. Both of these may be used as download cables from a computer using the 4-CU.

**Question: How do I add the alarm, trouble, and supervisory relay contacts to the 4-CPU?**

Answer: The optional 4-COMREL must be ordered to provide these relay contacts and it mounts to the back of the 4-CPU.

**Question: What part numbers are actually kits that include multiple parts?**

Answer: There are several parts that include two or more items that are commonly used together:

| Part number | Cables included |
|---|---|
| 4-LCDANN | One 4-LCD and one 4-CABL0504 |
| 4-LCDLE | One 4-LCD and one 4-CABL0502 |
| 4-LCDAUDTELANN | One 4-LCDAUDTEL and one 4-CABL0502 |
| 4-2ANN | One 4-2ANND, one 4-LCD, one 4-CABL0504 and 4-ANNCPU (without the 4-CABLUSBSM) |
| 4-4ANN | One 4-4ANND and one 4-ANNCPU (without the 4-CABLUSBSM) |
| 4-6ANN | One 4-6ANND and one 4-ANNCPU (without the 4-CABLUSBSM) |
| 4-8ANN | One 4-CAB8D and one 4-ANNCPU (without the 4-CABLUSBSM) |
| 4-16ANN | One 4-CAB16D and one 4-ANNCPU (without the 4-CABLUSBSM) |
| 4-24ANN | One 4-CAB24D and one 4-ANNCPU (without the 4-CABLUSBSM) |
| 4-LCDAUDTELCAB-CB | One 4-LCDAUDTEL, one 4-BRKT-CB, and one 4-CABL0502 |
| 4-LCDAUDTELCAB-MPLT | One 4-LCDAUDTEL, one 4-MPLT, and one 4-CABL050 |

**Question: Is there a replacement door for an EST3 to EST4 upgrade?**

Answer: No, there is no need to replace the door if the EST3 operator layer is not being replaced. However, the 4-3LCD includes two labels that must be applied to the inside of the outer door to update the electrical characteristics of the EST4 system with an EST3 inner and outer door.

**Question: What optional parts are available for the EST4?**

Answer: There are many optional and service replacement parts available for EST4:

| Part number | Description |
|---|---|
| 4-LOCK2KEY | Replacement Door Lock with two keys |
| 4-ANNSK | Keyless Door Lock replacement for use with4-2ANND, 4-4ANNDand 4-6ANND. To be used in facilities inside of secure areas such as DoD LOC panels. |
| 4-TAMP | Tamper switch for use in 3-CAB7, 14 and 21 enclosures with 4-CABxxD series doors |
| 4-4X2ANNFA | Replacement plastic inner door frame for 4-8ANN annunciators and 4-CAB5Ddoor assemblies |
| 4-6ANNFA | Replacement plastic inner door frame for 4-6ANN annunciators |
| 4-8ANNFA | Replacement plastic inner door frame for 4-8ANN annunciators |
| 4-PL0457 | Replacement EST4 power limited label for EST3 upgrade that kept the EST3 door. This is included with the 4-3LCD and is intended as a replacement part. |

# Fan shutdown with override

In this application, any smoke detector with the qualifying label will activate the fan shutdown. Pressing the Override switch on the control unit will return the fan to the normal condition prior to resetting the system. The latch priority is used to clear all previous priority counters and return the fan to the standby state. If a subsequent alarm with the qualifying label becomes active, the fan will not shut down because the switch is still activated (indicated by the slow flashing LED). To restore this condition, simply restore the switch to its off state.

There is an On, Auto, and Off switch for each fan. The switches are grouped so they will act as one unit. There is an AUTO LED for the fan which was set to Steady in the startup rule.

**Example rule**

```
//PRESS FAN1 ON
@ Switch .Switch '[+]PRESS FAN1 ON SW'
   : On '[+]PRESS FAN1'
   , Off .Indicator '[.]PRESS FAN1 AUTO LED'
   , Steady .Indicator '[.]PRESS FAN1 ON LED'
   ;

//PRESS FAN1 OFF
@ Switch .Switch '[+]PRESS FAN1 OFF SW'
   : Off '[+]PRESS FAN1'
   , Off .Indicator '[.]PRESS FAN1 AUTO LED'
   , Steady .Indicator '[.]PRESS FAN1 OFF LED'
   ;
```

# Confirmation when a point is activated

Use the Confirmation event to program a response that activates when a point is activated.

Rules that use the Confirmation event with the following Node 0 pseudo points must go in the root branch:

- $UnconfiguredAlarm

You can also use the Confirmation event to verify the operation of the dry contact relay on SIGA-IO and SIGA-MIO modules that are being used as alarm, active latching, and nonlatching input circuits.

### Format

Confirmation input statements use this format:

```
@ Confirmation {.deviceType} {'lblObject'} (:)
```

where:

- The @ symbol marks the start of the input statement.
- .deviceType is the device type of the source device. See below for a list of valid device types.
- 'lblObject' is the label of the source device. The label can include the device's location, the device's name, or both.
- The colon ( : ) terminates the input statement and marks the start of the command statements.

### Valid device types

You can use the following device types in Confirmation input statements:

ACFail
Audible
AudioMessage
AudioRiser
AudioSource
CMSNonSupervisedOutput
CMSSupervisedOutput
COAlarm
CommonAlarmOutput
CommonMonitorOutput
CommonSupervisoryOutput
COMonitor
COSupervisory
DamperControl
DamperFeedback
DoorControl
DoorFeedback
FanControl
FanFeedback
FirePhone
GateValve
GenAlarm
Guard
Heat
Interlock
InterlockFeedback
LocalRelay
LogicalOutput
Monitor
NonSupervisedOutput
NSAudibleOutput
NSCommonAlarmOutput
NSCommonMonitorOutput
NSCommonSupervisoryOutput
NSCommonTroubleOutput
NSVisibleOutput
Power
Pull
Security
Smoke
SupervisedOutput
Supervisory
Tamper
Temperature
TwoStageSignal
Visible
Waterflow

### Example rule

```
//PRESS FAN1 CONFIRMATION LED
@ Confirmation '[+]PRESS FAN1'
   : SlowBlink '[+]PRESS FAN1 ACTIVATED*'
   ;
```

# Playing repeating messages

When an alarm comes in on any floor, play a message specific to that floor three times throughout the building. Queue up messages for up to 25 messages (i.e., floors). Each message shuts off after the 3 rounds.

Evacuation channel configuration: First-in-first-out; Queue depth 25

**Example rule**

```
{3 message rounds rule script}
@ Alarm '[:]*' :
   {Play the evacuation message for the floor of incident}
   MessageOn Repeat 3 '[.]Evacuation Message' ;

@ Confirmation '[:]Evacuation Message' :
   {Play the evacuation channel all floors}
   AudioOn '*' from '[PPA\Channels]Evacuation' ;
```

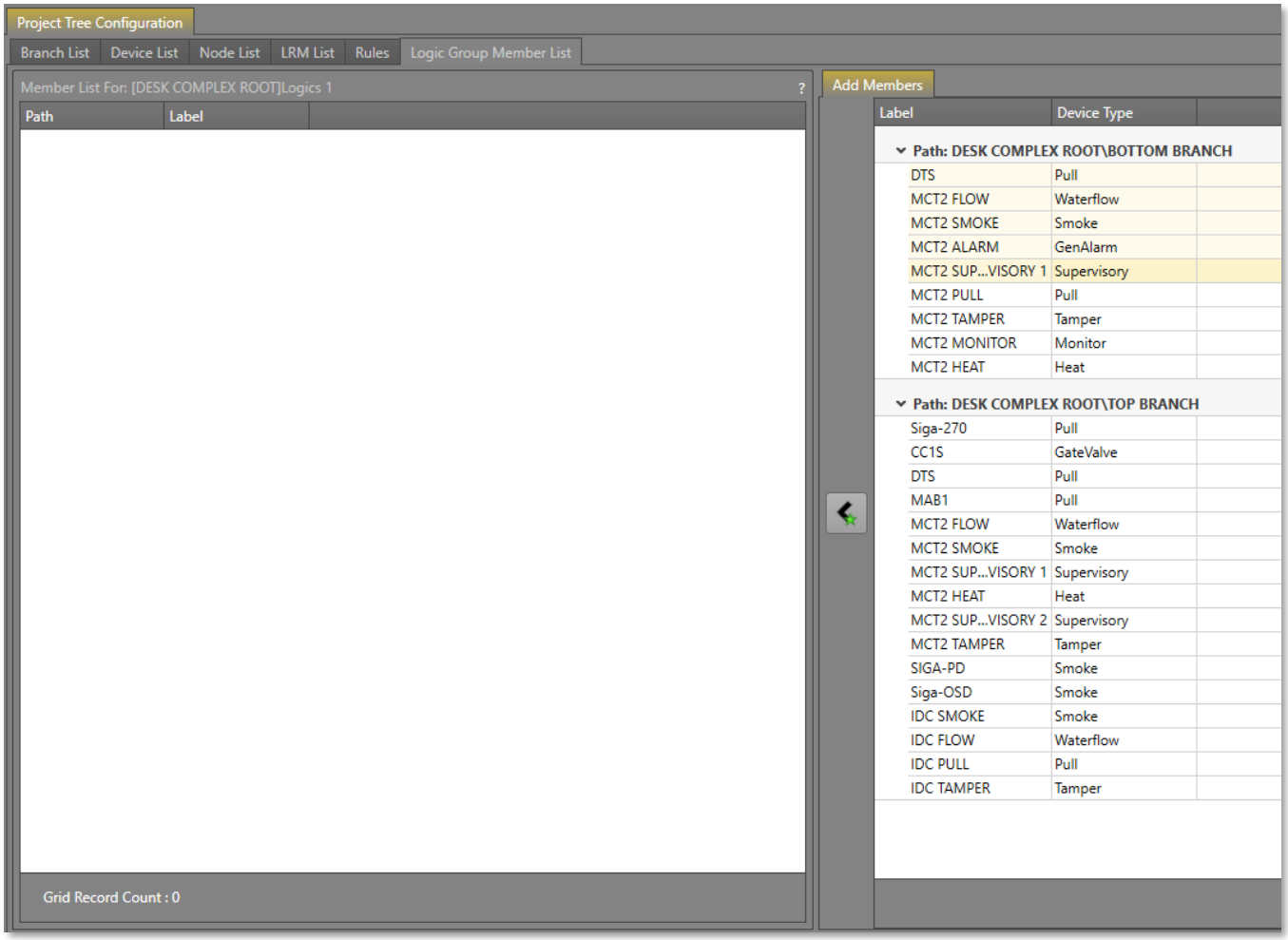
# Service Group

After creating the object of a ServiceGroup type, add members using the Logic Group Member List tab.

Write a rule (if needed) for the service group when a device is tested within the group.

**To add members to the list:**

1. On the Device List tab, select the logic device.
2. Click the Logic Group Member List tab.
3. On the Add Members tab, select the devices, and then click the Add button.




### Example rules

```
//SERVICE GROUPS FLOOR3-6
@ ServiceGroup '[FLOOR3:FLOOR6]SERVICE*' :
   On .Visible '[.]*' ,
   -Delay:10 ;

{Rule example to start a service group with a user switch}
//Start service group with user layer switch
@ Switch '[Location]Label' :
   Activate .ServiceGroup 'Label' ;
```

# Paging rules

This section provides rule examples for the following paging ~~modes~~ functions.

| Paging function | Channels |
|---|---|
| Page-to-All Call [1] | Paging + Evacuation + Alert + Auxiliary + General |
| Page-to-All Call Minus [1] | Paging + Auxiliary + General |
| Page-to-Evacuation | Paging + Evacuation |
| Page-to-Alert | Paging + Alert |
| Page-to-Emergency (Mass Notification) | Paging + Emergency |
| Page-to-Other | Paging + Other |

[1] This will activate idle audio amplifier and pre-amp circuits to the Paging channel.

The Page-to-All Call paging function is used to broadcast live-voice instructions to the entire facility at the same time. When the Page-to-All Call paging function is activated, the page signal is connected to every audio channel to ensure that the amplifier receives the signal regardless of which channel is selected. Note that all channels receive the same signal. Any amplifier on the system, regardless of the audio channel selected, will receive the page. All amplifiers that were previously idle will power up and receive the page.

The Page-to-All Call Minus paging function is used to send a page to all areas not already receiving the evacuation or alert signals. In high rise applications, Page-to-All Call Minus is an effective way to quickly select stairwells. Activating the Page-to-All Call Minus switch causes the 4-AUDTELS to activate the Page-to-All Call Minus paging function. In this function, the 4-AUDTELS redirects the page signal source to the Auxiliary and General channels. The Page, Auxiliary and General audio channels all receive the page signal. Any amplifier connected to the Page, Auxiliary or General audio channels will receive the page. Any amplifiers that were previously idle will power up and receive the page. The Evacuate and Alert channels are connected to their respective signal sources, as in the normal mode.

The Page-to-Evacuation paging function is used to send a page to the areas automatically receiving the evacuation signal. Activating the Page-to-Evacuation switch causes the 4-AUDTELS/ANNAUDTEL to enter the Page-to-Evacuation paging function. In this function, the system redirects the page signal source to the Evacuation channel. The Page and Evacuation audio channels both receive the page signal. Any amplifier connected to either the Page or the Evacuation audio channels will receive the page, as controlled by the 4-CPU. The Alert, Auxiliary, and General channels are connected to their respective signal sources, as in the normal mode.

The Page-to-Alert paging function is used to send a page to the areas automatically receiving the alert signal. Activating the Page to Alert switch causes the 4-AUDTELS to enter the Page-to-Alert paging function. In this function, the 4-AUDTELS redirects the page signal source to the Alert channel. The Page and Alert audio channels both receive the page signal. Any amplifier connected to either the Page or Alert audio channels will receive the page. The Evacuate, Auxiliary, and General channels are connected to their respective signal sources, as in the normal mode.

The Page-to-Emergency paging function is used for Mass Notification systems. Activating the Page-to-Emergency switch causes the 4-AUDTELS to enter the Page-to-Emergency function. In this function, the 4-AUDTELS redirects the page signal source to the Emergency channel. Any amplifier connected to either the Page or Emergency audio channels will receive the page.

The Page-to-Other paging function is a quick way to reach people in stairwells and elevators. Activating the Page-to-Other switch causes the 4-AUDTELS to enter the Page-to-Other paging function. In this function, the 4-AUDTELS redirects the page signal source to the Other channel. Any amplifier connected to either the Page or Other audio channels will receive the page.

### Example rules

```
// PAGE TO ALERT
@ Switch 'page to alert sw' :
   +Start .RequestGrantDeny 'ADMIN RGD' ,
   Delay :000 ,
   +Start .NotificationControlArea '*' ,
   -Stop .RequestGrantDeny 'ADMIN RGD' ,
   Delay :000 ,
   -Stop .NotificationControlArea '*' ,
   Delay :00 ,
   On .AudioSource '[+]$PageToAlerted' ;

//ALL CALL MINUS
@ Switch 'all call minus' :
   +Start .RequestGrantDeny 'ADMIN RGD' ,
   Delay :000 ,
   +Start .NotificationControlArea '*' ,
   -Stop .RequestGrantDeny 'ADMIN RGD' ,
   Delay :000 ,
   -Stop .NotificationControlArea '*' ,
   Delay :00 ,
   On .AudioSource '[+]$AllCallMinusActive' ;

// PAGE TO EVAC
@ Switch 'page to evac sw' :
   +Start .RequestGrantDeny 'ADMIN RGD' ,
   Delay :000,
   +Start .NotificationControlArea '*' ,
   -Stop .RequestGrantDeny 'ADMIN RGD' ,
   Delay :000,
   -Stop .NotificationControlArea '*' ,
   Delay :00 ,
   On .AudioSource '[+]$PageToEvacuated' ;

// ALL CALL PAGE
@ Switch 'all call sw' :
   +Start .RequestGrantDeny 'ADMIN RGD' ,
   Delay :000 ,
   +Start .NotificationControlArea '*' ,
   -Stop .RequestGrantDeny 'ADMIN RGD' ,
   Delay :000 ,
   -Stop .NotificationControlArea '*' ,
   Delay :00 ,
   On .AudioSource '[+]$AllCallActive' ;

// PAGE TO EMERGENCY
@ Switch 'page to emergency sw' :
   +Start .RequestGrantDeny 'ADMIN RGD' ,
   Delay :000 ,
   +Start .NotificationControlArea '*' ,
   -Stop .RequestGrantDeny 'ADMIN RGD' ,
   Delay :000,
   -Stop .NotificationControlArea '*' ,
   Delay :00 ,
   On .AudioSource '[+]$PageToEmergency' ;
```

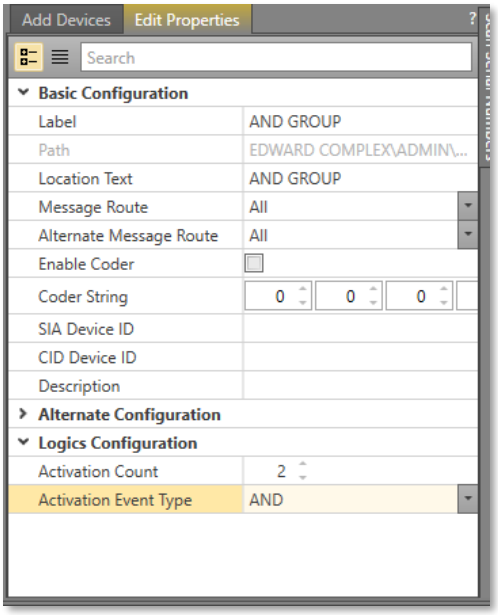
```
// PAGE TO OTHER
@ Switch 'page to other sw' :
   +Start .RequestGrantDeny 'ADMIN RGD' ,
   Delay :000 ,
   +Start .NotificationControlArea '*' ,
   -Stop .RequestGrantDeny 'ADMIN RGD' ,
   Delay :000 ,
   -Stop .NotificationControlArea '*' ,
   Delay :00 ,
   On .AudioSource '[+]$PageToOther' ;
```

# Counting zones

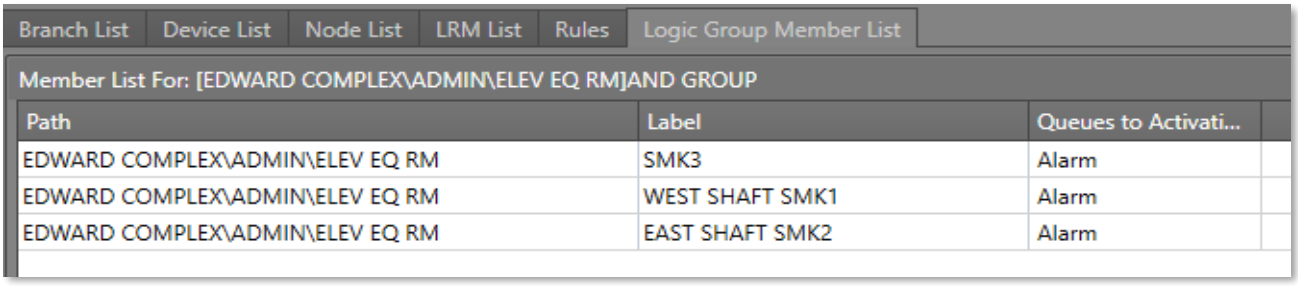
This operation requires two alarms to occur prior to activating the building audible and visual circuits. This is supported on EST4 with groups of AND logics and matrix logics.

### AND Logic for counting zone

Add an AND Logic device, configure activation count and Activation Event Type (for alarm events select AND).




Add devices to a Logic using the Logic Group Member List Tab.




Select each device and in Edit Properties, set Queues to Activate.

### Example rule

```
//ADMIN AND GROUP ALARM
@ Activation .And '[ELEV EQ RM]*AND GROUP*' :
   AudioOn '[ELEV EQ RM]Audio*' '[FLOOR6]Audio*' From 'ADMIN EVAC CH' ,
   MessageOn 'ADMIN EVAC MSG' ,
   On .Visible '[ELEV EQ RM]*' '[FLOOR6]*' ,
   MessageOn 'ADMIN ALERT MSG' ,
   AudioOn '[*]Audio*' from 'ADMIN ALERT CH' ,
   SlowBlink '[+]ADMIN AND GROUP ACTIVATED LED' ,
   On '[+]AUDIO SPKR CKT' ;
```

# Disabling devices using a switch

This application solution example is used when there are operator layer switches for the function bypass (disable) that require to be disabled at system startup, which is enabled by an operator layer control switch. The operator layer control switch can be replaced with an input module with an RKEY or equivalent mechanism to short the input module.

### 4-CU Project programming example with Operator Layer Type EST3 configured for the node

Note: This programming example is with configured devices in the root with a single node and a single detector. You project may benefit from rules located in the branches instead of the root.

AND Group Event properties:

Message Route = None
Activation Count = 1
Activation Event = LocalMonitor

AND Group Reset properties:

Message Route = None
Activation Count = 2
Activation Event = LocalMonitor

Disable All Detectors Switch properties:

Message Route = None
Switch Type = Momentary

Enable Switch To Disable All Detectors properties:

Message Route = None
Switch Type = Toggle

### Disable Switch Rules Script

```
{Disable Devices Using a Switch}
//Startup Rule
   @ Startup '[+]Startup' :
   +AutoDisable .Switch 'Disable All Detectors Switch' ;

//Enable Bypass Switch
@ Switch .Switch 'Enable Switch To Disable All Detectors' :
   AutoEnable .Switch 'Disable All Detectors Switch' ,
   Steady .Indicator 'Enable LED To Disable All Detectors' ;

//Bypass Switch Disable Events Display
@ Switch .Switch 'Disable All Detectors Switch' :
   +Activate .And 'AND Group Event' ,
   +Activate .And 'AND Group Reset' ;

//Bypass Switch Disable Events Display
@ Activation .And 'AND Group Event' :
   Disable .Smoke 'SIGAOSD1' ;

//Confirmation Devices are Disabled from Bypass Switch
@ Disabled .Smoke 'SIGAOSD1' :
   Steady .Indicator 'Disable All Detectors LED' ;
```

```
//Bypass Switch Restores Disable Events
@ Activation .And 'AND Group Reset' :
   +Restore .And 'AND Group Event',
   +Restore .And 'AND Group Event' ,
   +Restore .And 'AND Group Reset' ,
   +Restore .And 'AND Group Reset' ;
```

**4-CU Project programming example with Operator Layer Type EST4 configured for the node**

Note: The programming example is with configured devices in the Root with a single node and a single detector.

Disable All Detectors Switch properties:

Message Route = None
Switch Type = Toggle

Enable Switch To Disable All Detectors properties:

Message Route = None
Switch Type = Toggle

**Disable Switch Rules Script**

```
{Disable Devices Using a Switch}
//Starup Rule
@ Startup '[+]' :
   +AutoDisable .Switch 'Disable All Detectors Switch' ;

//Enable Bypass Switch
@ Switch .Switch 'Enable Switch To Disable All Detectors' :
   AutoEnable .Switch 'Disable All Detectors Switch' ,
   Steady .Indicator 'Enable LED To Disable All Detectors' ;

//Bypass Switch Disable Events Display
@ Switch .Switch 'Disable All Detectors Switch' :
   Disable .Smoke 'SIGAOSD1' ;

//Confirmation Devices are Disabled from Bypass Switch
@ Disabled .Smoke 'SIGAOSD1' :
   Steady .Indicator 'Disable All Detectors LED' ;
```

# Elevator recall

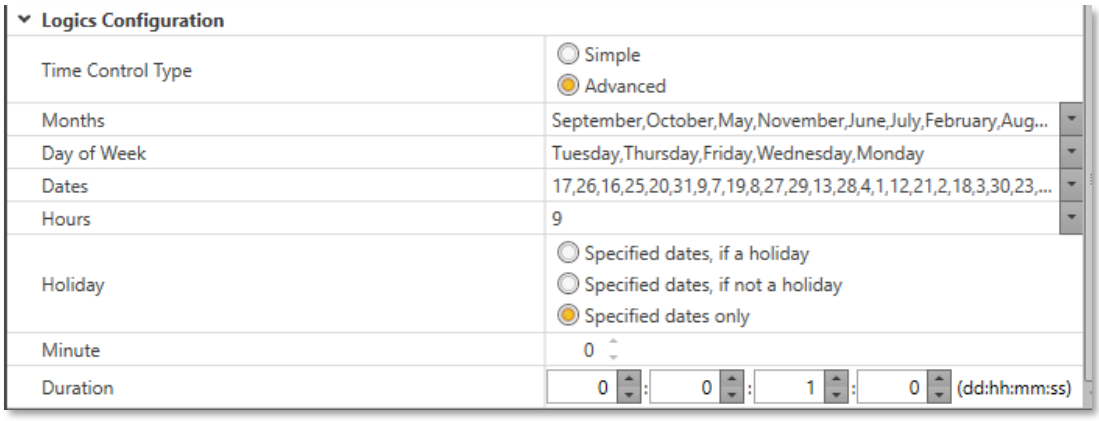
Common to sites with multiple floors that include elevators and elevator lobby smoke detectors, is the requirement to recall the elevators to a safe location in the event of a fire.

1. Create an ELEV RECALL PRI rule that recalls the elevator to the primary floor upon receiving an alarm from the basement and 2nd through 4th floors.
2. Create an ELEV RECALL ALT rule that recalls the elevators to the alternate floor upon receiving an alarm from the 1st floor.

```
//PRI ELEV RECALL
@ Alarm .Smoke '[+^GRND FLOOR]*ELEV*' :
   On .NonSupervisedOutput '[+]PRI ELEV RECALL' ;

//ALT ELEV RECALL
@ Alarm .Smoke '[GRND FLOOR]ELEV SMK' :
   On .NonSupervisedOutput '[+]ALT ELEV RECALL' ;
```

# Time control

TimeControl Logic device is used to activate a response based on a preselected time. You must write a rule to associate the TimeControl event activation with the response required. Refer to the 4-CU Help for more detail on TimeControl Event activation.




After adding a time control configure Months, Day of Week, Dates, Hours, Holiday (if needed), Minute and Duration, write a rule.

**Example rule**

```
//TIME CONTROL
@ TimeControl '[+]TIME CONTROL' :
   Off .NonSupervisedOutput '[+]SUPPLY FAN' ,
   On .NonSupervisedOutput '[+]PRESS FAN1' ,
   Delay :005 ,
   On .NonSupervisedOutput '[+]PRESS FAN2' ;
```

In some cases, a time control is used to activate Alternate Message Route. The following rule can be used for this function.

Note: Route 1 is the label of a Message route created in Message Annunciation Group in the 4-CU.

```
//Activate Alternate Message Route
@ TimeControl .TimeControl 'AltMessage' :
   +AlternateMessageOn 'Route 1' ,
   -AlternateMessageOff 'Route 1' ;
```

# Audio test message

Often there is a need for a message to be played from a manual switch either as an all call message or with selectable audio circuits.

**Example rule**

```
//SYSTEM TEST
@ Switch 'SYSTEM TEST SW' :
   AudioOn '[+]*AUDIO*' From 'SYSTEM TEST CH' ,
   MessageOn 'SYSTEM TEST MSG' ,
   On .Visible '[+]*STROBE' ,
   Steady 'SYSTEM TEST*' ,
   On '[+]AUDIO SPKR CKT' ;
```

# Accelerated gas response from the 4-LCD

The use of a switch can be used for gas response from the 4-LCD.

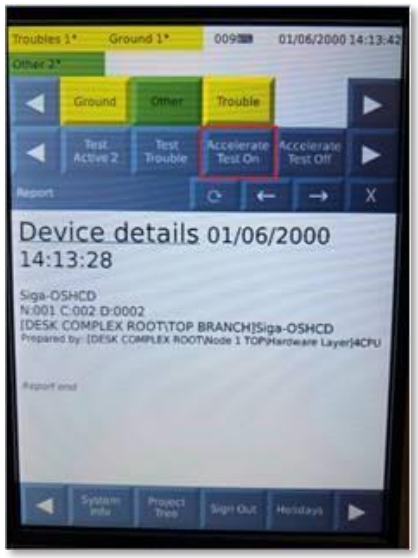
**Example rule**

```
//GAS ACCL RESPONSE
@ Switch 'GAS ACCEL RESPONSE SW' :
   +GasAcceleratedResponseOn '[+]*SMK*' ,
   -GasAcceleratedResponseOff '[+]*SMK*' ,
   Steady '[.]GAS ACCL RESP*' ;
```

**To activate a detector in gas acceleration mode:**

1. Log on to the panel.
2. Locate the detector in the project tree.


3. Select the Accelerate Test On button.




**Note:** Select the Accelerate Test Off to cancel the gas acceleration or the gas acceleration will auto cancel after four hours of activation.

# Panel admin password recovery

If you changed the panel administrator password and have since forgotten it, perform the following procedures to reset it.

**Note:** Technicians requesting password recovery must be certified in the product and they must contact Technical Support.

Contact Technical Support and they will check your credentials. The Technical Support agent will create a case for the request and a copy of the request will be sent to you. The case will be escalated to your District Manager requesting approval to provide you a temporary password.

Once approval is received from your District Manager, perform the following.

**To obtain a token:**

1. Open the 4-CU application.
2. Select the relevant project on the project grid.
3. Click Recover Password on the 4-CU ribbon (Figure 1).

   A dialog box will display with the Project Name and Token as shown in Figure 2.
4. Copy the token text.

**Figure 1: Recover Password**

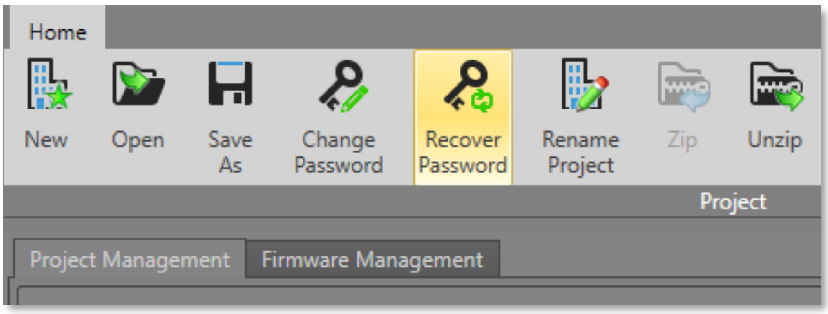
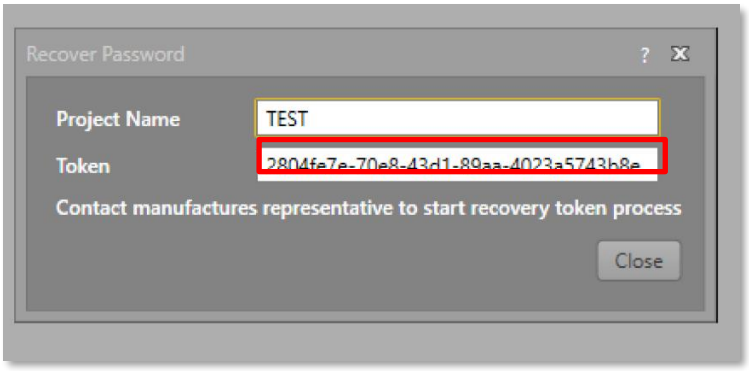



**Figure 2: Token**




5. Reply to the Technical Support case that was started for you and provide the Token copied in step 4 to the Technical Support agent.

Technical Support will return a token that is good for the relevant project and calendar day. (The password of the day is valid until 11:59:59 p.m. on the same day it is given to you.)

With the token provided by Technical Support, perform the following steps to reset the panel admin user (009) to default.

**To reset the panel admin user password:**

1. Open the 4-CU application.
2. Select the same project on grid that was used above to generate the Token and open it with the proper password.
3. Generate a panel access code from the EST4 panel.
4. Connect the panel to the 4-CU computer via USB.
5. Click on Enter Access Code on the 4-CU ribbon, and then enter the access code for verification.
6. Select the Reports tab, and then click Reset Panel admin password button on the 4-CU ribbon (Figure 3),
7. When prompted, enter the token you received from Technical Support as shown in Figure 4, and then click OK.

   The 4-CU will communicate with the EST4 to reset the admin user password and will then indicate “Resetting panel admin password successful” upon successful password reset (Figure 5).

If the operation fails, the 4-CU will display Operation Failed. If this occurs, make sure that you entered the correct password of the day.

If the operation was successful, it is now possible to access the control unit menus on any node with User ID 009 and the default password (no panel reboot is necessary). User ID 009 allows updating of any and all users.

We recommend that you change the default password promptly for security reasons.

**Figure 3: Reset panel admin password**

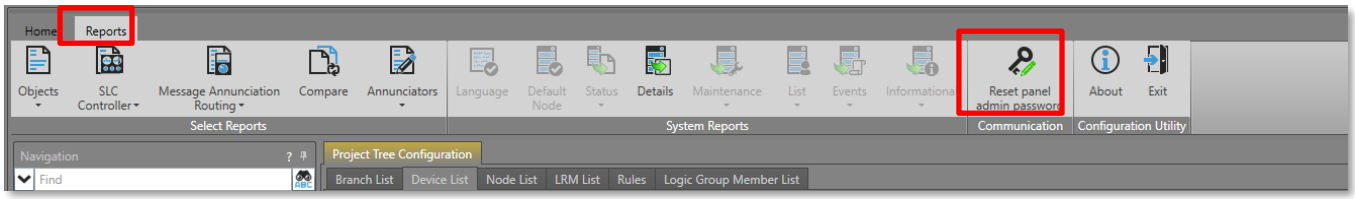



**Figure 4: Password of the day**

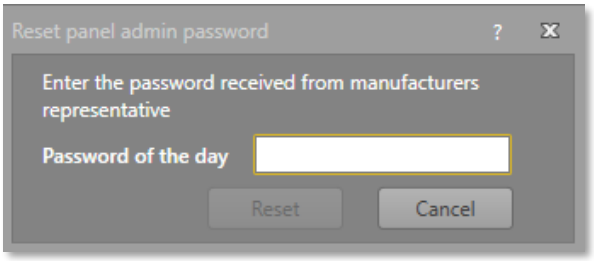
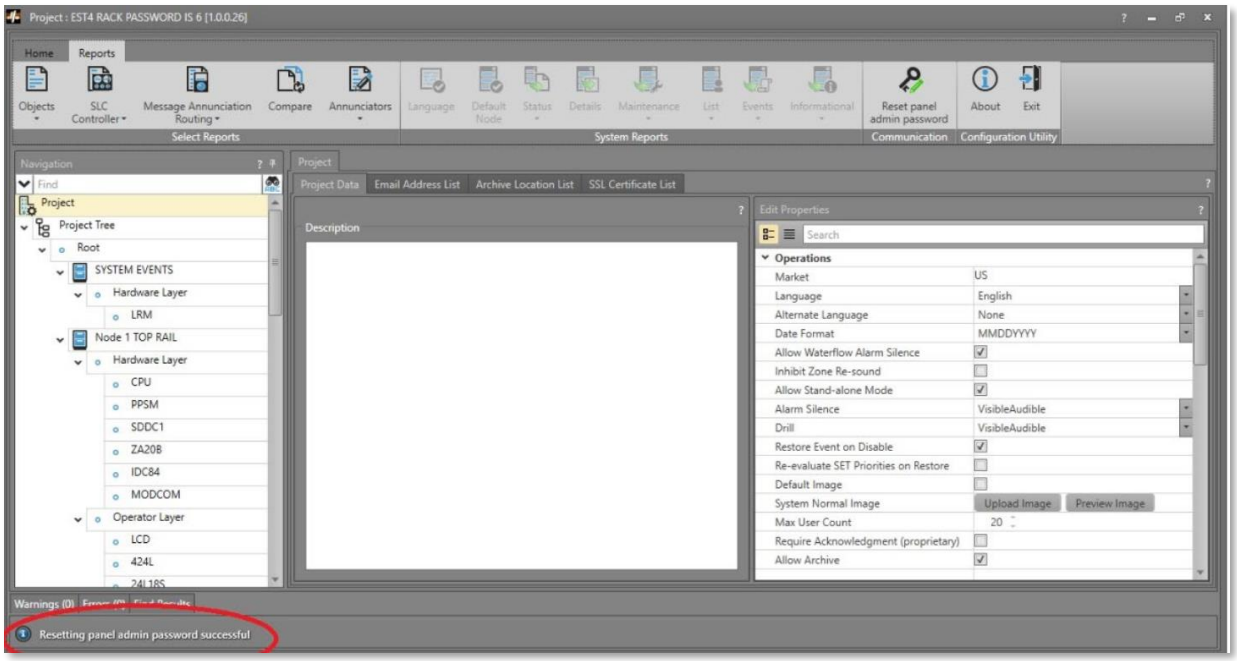


**Figure 5: Resetting panel admin password successful**



# 4-CU project password recovery

If you forgot your 4-CU project password, perform the following procedures to reset it.

**Note:** Technicians requesting password recovery must be certified in the product and they must contact Technical Support.

Contact Technical Support and they will check your credentials. The Technical Support agent will create a case for the request and a copy of the request will be sent to you. The case will be escalated to your District Manager requesting approval to provide you a temporary password.

Once approval is received from your District Manager, perform the following.

**To obtain a token:**

1. Open the 4-CU application.
2. Select the relevant project on the project grid.
3. Click Recover Password on the 4-CU ribbon (Figure 6).

   A dialog box will be displayed with Project Name and Token as shown in Figure 7.
4. Copy the token text.

**Figure 6: Recover Password**

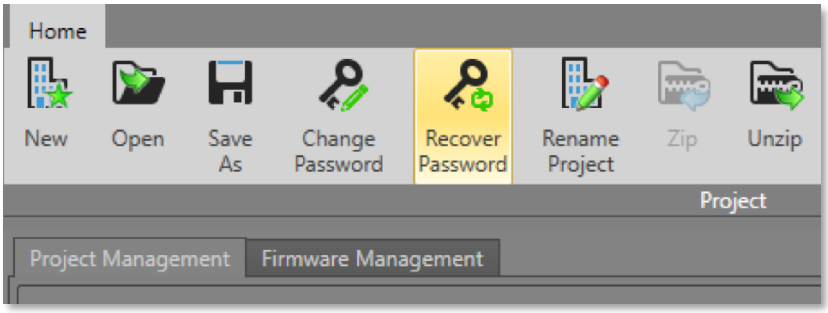
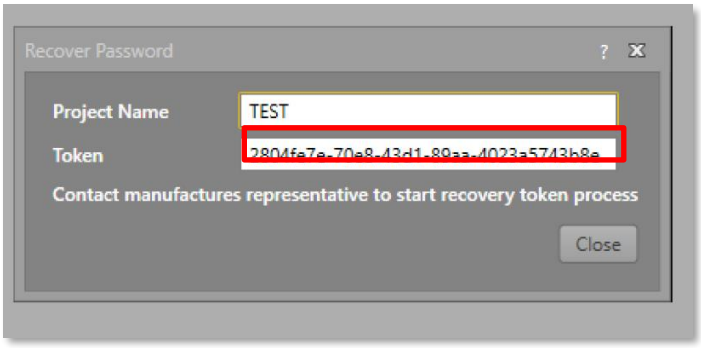



**Figure 7: Token**




5. Reply to the Technical Support case that was started for you and provide the Token copied in step 4 to the Technical Support agent.

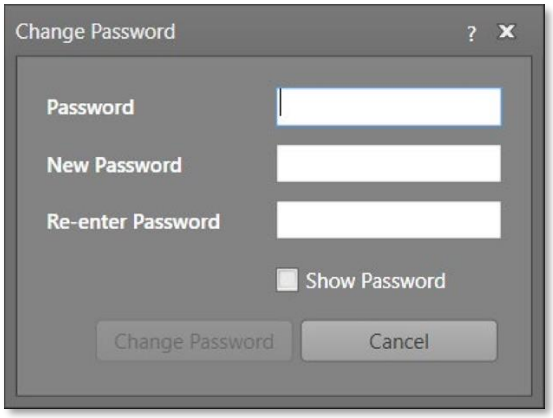
   Technical Support will return a token which is good for the relevant project and calendar day. (The password of the day is valid until 11:59:59 p.m. on the same day it is given to you.)

With the token provided by Technical Support, perform the following steps to reset the selected project password.

**To reset the project password:**

1. Open the 4-CU application.
2. Select the same project on grid that was used above to generate the Token and enter the password.
3. Click Change Password on the 4-CU ribbon.
4. Enter the token you received from Technical Support in the Password space on the Change Password dialog box (Figure 8).
5. Enter a password in New Password, and then re-enter it.
6. Click Change Password to set the new password for the selected project.

**Figure 8: Change password**



# Firephone switch control

First responders can use the 4-LCD to control and connect to calls from remote telephone risers on the Command Centers. This application provides another option where a user interface switch can be used to connect call ins from a remote Firephone.

**Example rule**

```
//CALLIN FIRPHONE
@ CallIn '[+]FPHONE' :
   FastBlink '[.]CALLIN ANSWER FPHONE LED' ;

//CONFIRM FIRPHONE
@ Confirmation '[+]FPHONE' :
   FastBlink '[.]CONFIRM FPHONE LED' ;

// FPHONE ANSWER
@ Switch '[+]CALLIN ANSWER FPHONE SW' :
   +Start .RequestGrantDeny '[\\]ADMIN RGD' ,
   Delay :000 ,
   +Start .NotificationControlArea '[\\]*' ,
   -Stop .RequestGrantDeny '[\\]ADMIN RGD' ,
   Delay :000 ,
   -Stop .NotificationControlArea '[\\]*' ,
   Delay :00 ,
   On '[.]FPHONE' ,
   Steady '[.]CALLIN ANSWER FPHONE LED' ;
```

# Positive alarm sequence

### Introduction

This topic describes how to add a positive alarm sequence feature to an EST4 control unit. It is intended for those who are trained and certified on EST4 operation and programming.

### Requirements

1. Automatically sound all fire evacuation signals immediately after any fire alarm input is activated, except the smoke detectors in the positive alarm sequence zone.
2. Automatically sound all fire evacuation signals immediately after any two smoke detectors in the positive alarm sequence zone are activated.
3. Automatically sound all fire evacuation signals if the fire alarm signal from a smoke detector in the positive alarm sequence zone is not manually acknowledged within 15 seconds after activating.
4. Automatically sound all fire evacuation signals if the fire alarm system is not manually reset within 180 seconds after acknowledging the fire alarm signal from an active smoke detector in the positive alarm sequence zone.
5. Provide a means to bypass the positive alarm sequence and indicate when bypass is active.
6. Indicate when positive alarm sequence is in the acknowledge phase (fast blink), is in the investigative phase (slow blink), and when the positive alarm sequence finishes without interruption (steady).

### What you will need

For this application, you will need the following equipment:

A 4-24L24S annunciator module, or equivalent

You should also have a good understanding of:

- Logical outputs
- AND logic devices
- Priority counters

### Project configuration

Organize the project tree as shown below.

- Project
  - Project Tree
    - Root
      - Node 0
        - Hardware Layer
          - LRM
      - Building 1
        - Floor 4
        - Floor 3
        - Floor 2
        - Floor 1

- PAS Zone 1
- FACU
  - Hardware Layer
    - CPU
    - Power Supply
    - SDDC1
  - Operator Layer
    - LCD
    - 24L24S

Add the required alarm input and signaling devices to each floor branch. Only add the smoke detector devices that are used to activate the positive alarm sequence to the positive alarm sequence zone branch (path: Root\Building 1\PAS Zone 1).

Add the following logic device to the building branch (path: Root\Building 1).

| Device | Configuration |
|---|---|
| LogicalOutput | Label: loutGeneralAlarmResponse |

Add the following logic devices to the positive alarm sequence zone branch (path: Root\Building 1\PAS Zone 1).

| Device | Configuration |
|---|---|
| LogicalOutput | Label: loutPASAlarmResponse |
| LogicalOutput | Label: loutPASAlarmAcknowledge |
| AND | Label: agrpPASAlarmActive<br>Location Text: PAS Zone 1<br>Message Route: All<br>Alternate Message Route: All<br>Activation Count: 2<br>Activation Event Type: AND<br>Logic Group Member List:<br>Members: All of the smoke detector devices in the PAS zone<br>Queues to Activation Counter: Alarm |
| AND | Label: agrpPASAcknowledgeReset<br>Location Text: PAS Zone 1<br>Message Route: All<br>Alternate Message Route: All<br>Activation Count: 2<br>Activation Event Type: LocalMonitor<br>Logic Group Member List:<br>Members: None |

Add the following switch and indicator devices to the positive alarm sequence zone branch (path: Root\Building 1\PAS Zone 1).

| Device | Configuration |
|---|---|
| LogicalOutput | Label: loutGeneralAlarmResponse |
| Switch | Label: swPASAcknowledge |
| Switch | Switch Type: Momentary |
| Indicator | Label: swPASBypass |
| Indicator | Switch Type: Toggle |
| Indicator | Label: indPASAcknowledgeActive |

### Programming

Input events:

This application uses the following input events:

- Activation
- Alarm
- Confirmation
- Resetting
- Startup
- Switch

Output commands:

This application uses the following output commands:

- Activate
- AutoDisable
- AutoEnable
- Delay
- FastBlink
- Off
- On
- SlowBlink

### Rulescripts

To program this application:

1. Add the rules below to a rulescript in the root branch (path: Root).

```
@ Startup .Startup '[+]$Startup' :
   AutoDisable .Switch '[Building 1\PAS Zone 1]swPASAcknowledge' ;

@ Resetting .Reset '[+]$Resetting' :
   Activate .And '[Building 1\PAS Zone 1]agrpPASAcknowledgeReset' ;
```

2. Add the rules below to a rulescript in the building branch (path: Root\Building 1). These rules turn on all of the audible and visual notification appliances in the building when an alarm occurs anywhere other than in the positive alarm sequence zone.

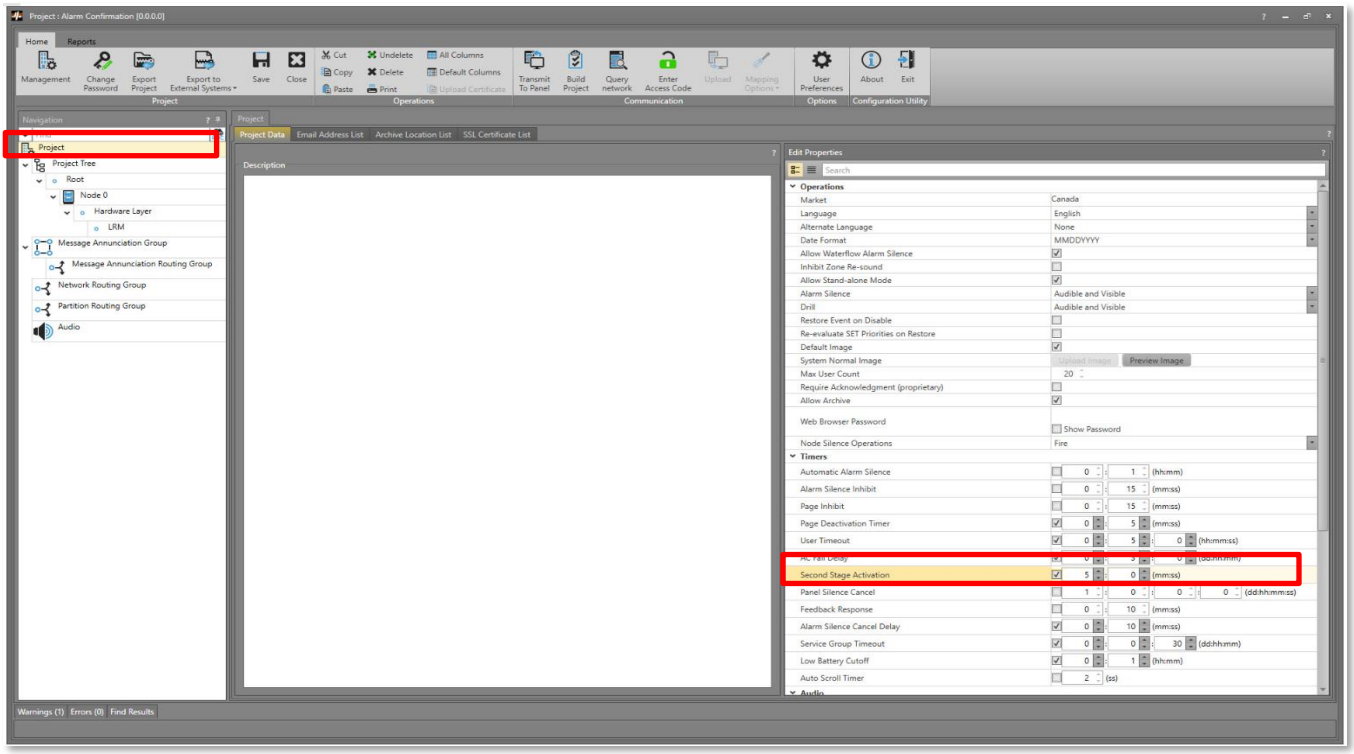
```
@ Alarm '[Floor 1:Floor 4]' :
   On .LogicalOutput 'loutGeneralAlarmResponse' ;

@ Confirmation .LogicalOutput 'loutGeneralAlarmResponse' :
   On .Audible '[Floor 1:Floor 4]' ,
   On .Visible '[Floor 1:Floor 4]' ;
```

3. Add the rules below to a rulescript in the positive alarm sequence zone branch (path: Root\Building 1\PAS Zone 1). These rules determine positive alarm sequence operation.

```
@ Alarm .Smoke :
   AutoEnable .Switch 'swPASAcknowledge' ,
   FastBlink .Indicator 'indPASAlarmActive' ,
   +Delay 00:15 ,
   On .LogicalOutput 'loutPASAlarmResponse' ;

@ Confirmation .LogicalOutput 'loutPASAlarmResponse' :
   AutoDisable .Switch 'swPASAcknowledge' ,
   On .Indicator 'indPASAlarmActive' ,
   On .LogicalOutput '[..]loutGeneralAlarmResponse' ;

@ Switch .Switch 'swPASAcknowledge' :
   +On Low .LogicalOutput 'loutPASAlarmAcknowledge' ;

@ Confirmation .LogicalOutput 'loutPASAlarmAcknowledge' :
   Off .LogicalOutput 'loutPASAlarmResponse' ,
   On .Indicator 'indPASAcknowledgeActive' ,
   Activate .And 'agrpPASAcknowledgeReset' ,
   SlowBlink .Indicator 'indPASAlarmActive' ,
   +Delay 03:00 ,
   On .LogicalOutput 'loutPASAlarmResponse' ;

@ Activation .And 'agrpPASAcknowledgeReset' :
   Off .LogicalOutput 'loutPASAlarmResponse' ,
   +Off .LogicalOutput 'loutPASAlarmAcknowledge' ,
   -Delay 00:20 ;

@ Activation .And 'agrpPASAlarmActive' :
   On .LogicalOutput 'loutPASAlarmResponse' ;

@ Switch .Switch 'swPASBypass' :
   On .Indicator 'indPASBypassActive' ,
   Activate .And 'agrpPASAlarmActive' ;
```

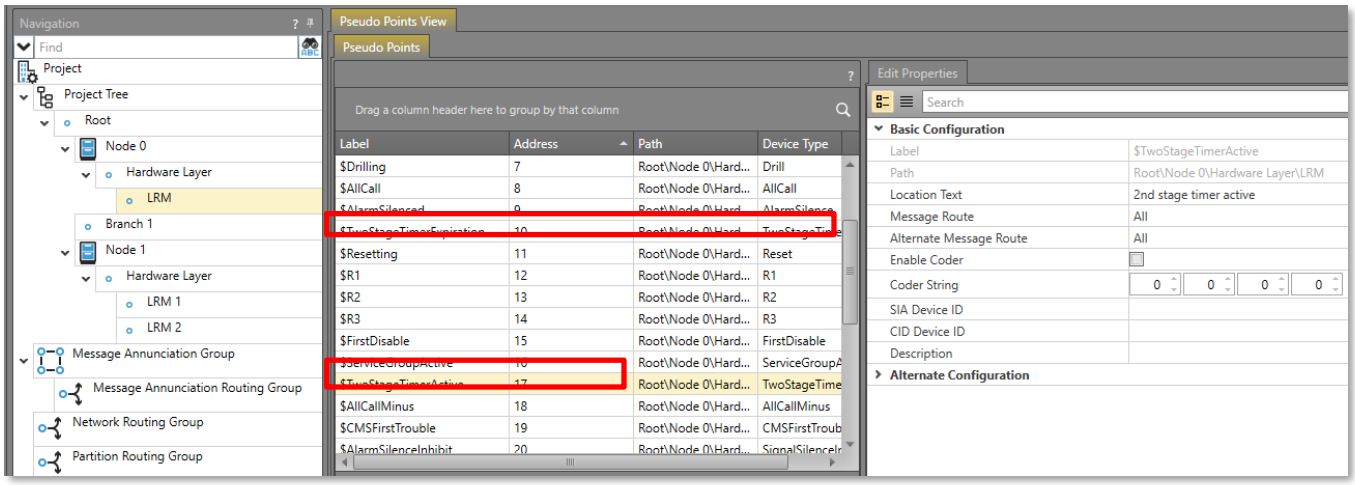
# Second stage activation (ULC applications)

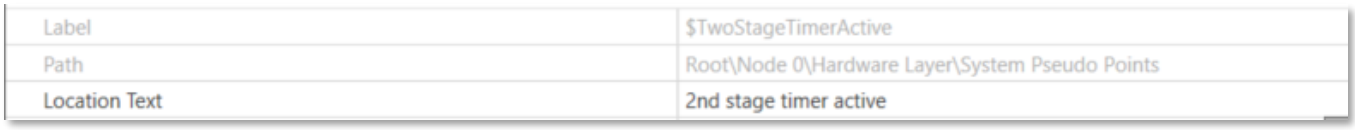
The Second Stage Activation property specifies how long the system waits before automatically advancing to the second stage. The Second Stage Activation is enabled, and the time delay is set in the Project Properties under Timers as shown below.




This is a Global Project Function that turns on two-stage operation for all alarm inputs. When an alarm enters the system, the panel activates the $TwoStageTimerActive pseudo point and starts the Second Stage Activation timer. When the timer expires, the system activates the $TwoStageTimerExpiration pseudo point. If a second alarm enters the system, the timer expires immediately and the $TwoStageTimerExpiration pseudo point activates. A switch should be programmed and labeled as “Automatic Alarm Signal Cancel” to cancel/reset the timer, any subsequent alarm restarts the timer, and the process starts over again. For this function you can use the GeneralAlarmInhibitOn command followed by the Network Route to receive the command (example rules below).

The $TwoStageTimerActive and $TwoStageTimerExpiration pseudo points are Node 0 Pseudo Points. You will need to write the rules in the root for Node 0.




**System is in Alarm, LCD shows Alarm Queue, LED is flashing so the personnel on duty can verify the alarm event**

```
@ TwoStageTimerActive '[Node 0\Hardware Layer\System Pseudo
Points]$TwoStageTimerActive' :
   FastBlink .Indicator 'LED TWO STAGE ACTIVE' ;
```

**Timer expired, 2nd Alarm entered system, or Stage 2 of a pull device is activated. All visible and audibles are activated**

```
@ TwoStageTimerExpiration '[Node 0\Hardware Layer\System Pseudo
Points]$TwoStageTimerExpiration' :
   FastBlink .Indicator 'LED TWO STAGE EXPIRED' ,
   On .Visible '[*+]*' ,
   On .Audible '[*+]*' ;
```

**Writing a rule to cancel the second stage operation**

The system will stay in alarm, but the visible and audible devices will not activate. A reset is required to clear the alarm state.

The All refers to the Network Route. For this rule it would send to All Nodes.

```
@ Switch .Switch 'Automatic Alarm Signal Cancel' :
   +GeneralAlarmInhibitOn 'All' ;
```

# EST4 Mass Notification Application

The below rule examples are for programming switches to play Tornado and Explosive Mass Notification messages.

**Note**

- If Mass Notification needs to be higher priority than fire, this can be changed in the Project branch, edit properties menu channel priority option.
- Use the AutoDisable command instead of the Disable command with command lists so you don't put the system in trouble.

1. For each Mass Notification function, you will need one momentary switch and one indicator.

   Tornado Switch Label: TORNADO SW
   Tornado LED Label: TORNADO LED

   Explosive Switch Label: EXPLOSIVE SW
   Explosive LED Label: EXPLOSIVE LED

2. Create two command lists for each function. One CL ON. One CL OFF. (Route to no cabinets)

   Tornado CL Labels: CL TORNADO ON, CL TORNADO OFF

   Explosive CL Labels: CL EXPLOSIVE ON CL EXPLOSIVE OFF

3. Create one AND group for each function.  Activation Count of 1 (Route to no cabinets if desired). Device type used for this example is Local Monitor)

   Tornado AND Group Label: AND MNEC TORNADO

   Explosive AND Group Label: AND MNEC EXPLOSIVE

4. Create an Emergency channel. Assign the channel to the NCA and Nodes.

   Emergency Channel Label: EMERGENCY CH

**Rules Programming**

```
//STARTUP MNEC (AutoDisables MNEC OFF command lists)
@ Startup .Startup '[+]$Startup' :
   +AutoDisable .CommandList '[PATH]CL TORNADO OFF' ,
   +AutoDisable .CommandList '[PATH]CL EXPLOSIVE OFF' ;

//RESET (Restores all active MNEC switches, use if desired)
@ Resetting .Reset '[+]$Resetting' :
   +Activate .CommandList '[PATH]CL TORNADO OFF' ,
   +Activate .CommandList '[PATH]CL EXPLOSIVE OFF' ;
```

**Tornado message rules**

```
//TORNADO ON SWITCH (Activates Tornado ON and OFF command lists)
@ Switch .Switch '[PATH]TORNADO SW' :
   +Activate .CommandList '[PATH]CL TORNADO ON' ,
   +Activate .CommandList '[PATH]CL TORNADO OFF' ;
```

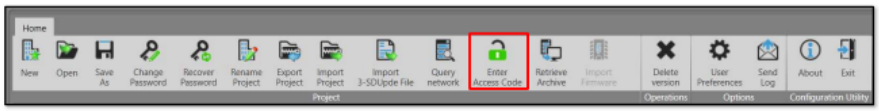
```
//MNEC TORNADO ON CMDLIST (Tornado ON command list activation)
@ Activation .CommandList '[PATH]CL TORNADO ON' :
   +AutoDisable .CommandList '[PATH]CL TORNADO ON' ,
   +AutoDisable .CommandList '[PATH]CL EXPLOSIVE ON' ,
   +Delay :000 ,
   +Activate .And '[+]AND MNEC TORNADO' ,
   +Steady .Indicator '[PATH]TORNADO LED' ,
   +AutoEnable .CommandList '[PATH]CL TORNADO OFF' ;


//MNEC TORNADO AND GROUP (Turns ON audio, message and all visibles)
@ Activation .And '[PATH]AND MNEC TORNADO' :
   AudioOn '[PATH]AUDIO CKT' From 'EMERGENCY CH' ,
   MessageOn '[PATH]TORNADO MSG' ,
   On .Visible '[PATH]VISIBLE LABEL' ;

//MNEC TORNADO OFF CMDLIST (Restores the active Tornado switch)
@ Activation .CommandList '[PATH]CL TORNADO OFF' :
   +Restore .And '[PATH]AND MNEC TORNADO' ,
   +AutoEnable .CommandList '[PATH]CL TORNADO ON' ,
   +AutoEnable .CommandList '[PATH]CL EXPLOSIVE ON' ,
   +AutoDisable .CommandList '[PATH]CL TORNADO OFF' ,
   +Off .Indicator '[PATH]TORNADO LED' ;
```

### Explosive message rules

```
//EXPLOSIVE ON SWITCH (Activates Explosive ON and OFF command lists)
@ Switch '[PATH]EXPLOSIVE SW' :
   +Activate .CommandList '[PATH]CL EXPLOSIVE ON' ,
   +Activate .CommandList '[PATH]CL EXPLOSIVE OFF' ;

//MNEC EXPLOSIVE ON CMDLIST (Explosive ON command list activation)
@ Activation .CommandList '[PATH]CL EXPLOSIVE ON' :
   +AutoDisable .CommandList '[PATH]CL TORNADO ON' ,
   +AutoDisable .CommandList '[PATH]CL EXPLOSIVE ON' ,
   +Delay :000 ,
   +Activate .And '[PATH]AND MNEC EXPLOSIVE' ,
   +Steady .Indicator '[PATH]EXPLOSIVE LED' ,
   +AutoEnable .CommandList '[PATH]CL EXPLOSIVE OFF' ;

//MNEC EXPLOSIVE AND GROUP (Turns ON audio, message and all visibles)
@ Activation .And '[PATH ]AND MNEC EXPLOSIVE' :
   AudioOn '[PATH]AUDIO CKT' From 'EMERGENCY CH' ,
   MessageOn '[PATH]EXPLOSIVE MSG' ,
   On .Visible '[PATH]VISIBLE LABEL' ;

//MNEC EXPLOSIVE OFF CMDLIST (Restores the active Explosive switch)
@ Activation .CommandList '[PATH]CL EXPLOSIVE OFF' :
   +Restore .And '[PATH]AND MNEC EXPLOSIVE' ,
   +AutoEnable .CommandList '[PATH]CL EXPLOSIVE ON' ,
   +AutoEnable .CommandList '[PATH]CL TORNADO ON' ,
   +AutoDisable .CommandList '[PATH]CL EXPLOSIVE OFF' ,
   +Off .Indicator '[PATH]EXPLOSIVE LED' ;
```

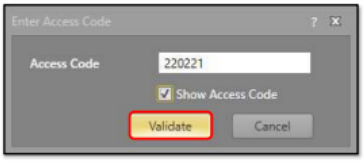
# Retrieving project archive using the 4-CU

## Enter Access Code

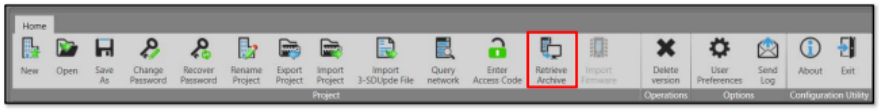


On the 4-CU Ribbon Bar:

- Click **Enter Access Code**
- Enter the **Access Code** (1-Hour Access or 8-Hour Access retrieved from the EST4 panel)
- Click **Validate**

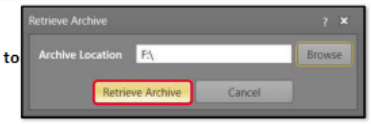



## Retrieve Archive

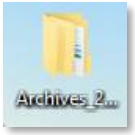


To Retrieve Archive:

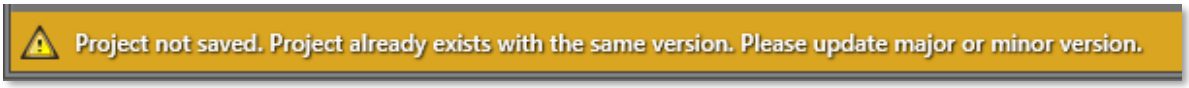
- Click **Browse** to locate the folder you want the archive sent to
- Select **file**
- Click **OK**
- Click **Retrieve Archive**




Once the archive is retrieved a time stamped folder named Archives will be created in the selected destination archive location.




From that folder you can import the project archive file. If the below warning occurs, this means that there is a project with the same name and version in the 4-CU. Either delete the existing project or change its version number and then import the archive project file.




Source: EST4 Training Student Workbook

# EST4 perform disable function from multiple nodes using a switch

The rule examples below are for programming switches to disable and enable objects from two separate nodes. More nodes can be added as desired following the concept below. This application can also be used as a concept for system functions other than disable.

1. For each node you need the function to work, you will need one momentary switch and one indicator.

   Node1 Disable Switch Label: N1 DISABLE SW

   Node1 Disable LED Label: N1 DISABLE LED

   Node2 Disable Switch Label: N2 DISABLE SW

   Node2 Disable LED Label: N2 DISABLE LED

2. Create two command lists for each function. One CL Disable ON. One CL Disable OFF. (Route to no cabinets)

   Command List Labels

   CL DISABLE ON

   CL DISABLE OFF

3. Create one AND group. Activation Count of 1 (Route to no cabinets if desired. Device type used for this example is Local Monitor)

   Disable AND Group Label: AND DISABLE

**Rules Programming**

**Note:** Use the AutoDisable command instead of the Disable command with command lists so you don't put the system in trouble.

```
//STARTUP (AutoDisables CL DISABLE OFF command list)
@ Startup .Startup '[+]$Startup' :
   +AutoDisable .CommandList '[PATH]CL DISABLE OFF' ;

//DISABLE SWITCH (Activates DISABLE ON and OFF command lists)
@ Switch .Switch '[+]N* DISABLE SW' :
   +Activate .CommandList '[PATH]CL DISABLE ON' ,
   +Activate .CommandList '[PATH]CL DISABLE OFF';

//CL DISABLE ON (CL DISABLE ON command list activation)
@ Activation .CommandList '[+]CL DISABLE ON' :
   +Activate .And '[PATH]AND DISABLE’ ,
   +Steady .Indicator '[PATH]N* DISABLE LED' ,
   +AutoEnable .CommandList '[PATH]CL DISABLE OFF' ,
   +AutoDisable .CommandList '[PATH]CL DISABLE ON' ;

//AND DISABLE GROUP ACTIVATION (DISABLES OBJECTS)
@ Activation .And '[+]AND DISABLE’ :
   Disable '[PATH]ENTER OBJECTS TO BE DISABLED’ ;
```

```
//CL DISABLE OFF CMDLIST (Restores the active AND DISABLE)
@ Activation .CommandList '[+]CL DISABLE OFF' :
   +Restore  .And '[PATH]AND DISABLE’ ,
   +AutoEnable .CommandList '[PATH]CL DISABLE ON' ,
   +AutoDisable .CommandList '[PATH]CL DISABLE OFF' ,
   +Off .Indicator '[PATH]N* DISABLE LED' ;
```

**For this to operate in FireWorks:**

1. Create two commands.

   One command to activate CL DISABLE ON and one command to activate CL DISABLE OFF

2. Create one command TSA. Drop both commands that were created onto the command TSA.

# 4-AUDTELS Notes for Audio Inputs, Audio Outputs, and Fire Phones

### Audio input, 1 VRMS

If a 4-AUDTELS card is installed, the user has the option to use four external audio in/out circuits. Only one node with a 4-AUDTELs card can be configured with external 1 VRMS audio inputs in an NCA. Only one 1 VRMS input can be actively playing within an NCA.

Audio Input Priority: External source circuit (Audio input) is all the same. The first audio input turned ON will stay ON until it is turned OFF and the next audio input is turned ON.

External audio input available from 1 VRMS input can page to:

- $ExternalToPage – Play on the page channel
- $ExternalToEvacuated – Play on all evacuation channels
- $ExternalToAlerted – Play on all alert channels
- $ExternalToEmergency – Used for Mass notification and plays on all emergency channels
- $ExternalToAuxillary – Play on all auxiliary channels
- $ExternalToOther – Play on all general channels
- $ExternalToAllCall – Activate idle amplifiers and preamp circuits to play on the page channel – includes Paging/Evac/Alert/Aux/General channels
- $ExternalToAllCallMinus – Activates idle amplifiers and preamp circuits to play on the page channel – includes Paging/Aux/General Channels

### Example

If $ExternaltoEvacuated is turned on, the audio input source will broadcast to all evacuation channels. This goes for all channel types listed above.

### Audio output, 1 VRMS

The 4-AUDTELS provides up to four 1 VRMS outputs per node. The control unit distributes the audio to the 1 VRMS outputs based on rules and the 4-AUDTELS configuration. There is no limitation on the number of 1 VRMS audio outputs in an NCA. The user can choose to supervise the audio output in the 4-CPU properties.

### Audio Output Rule Examples

Switch to play a message out of an OUT or SUPERVISEDOUT

```
//Switch to play a message out of Preamplifier 4
@ Switch '[PATH]Switch Label' :
   AudioOn '[Node Label\Hardware Layer\4CPU]$Preamplifier4' From '[PATH]Channel
Label' ,
   //Turning on the OUT or Supervisedout to the specified channel
   MessageOn '[PATH]Message Label' ;
   //Turning on the specified message
```

Page from a 4-MIC out of an OUT or SUPERVISEDOUT

```
//Page from 4-MIC out of Preamplifier 4
   @ Switch '[PATH]Switch Label' :
   +Start .RequestGrantDeny '[PATH]RGD LABEL',
   Delay :000,
```

```
   +Start .NotificationControlArea '[PATH]NCA LABEL',
   -Stop .RequestGrantDeny '[PATH]RGD LABEL',
   Delay :000,
   -Stop .NotificationControlArea '[PATH]NCA LABEL',
   Delay :000,
   AudioOn '[Node Label\Hardware Layer\4CPU]$Preamplifier4' From '[PATH]Page Ch
Label' ;
   // Turning on the OUT or Supervisedout to the Page Channel
```

### Fire phones

4-FT: The 4-FT firefighter telephone handset provides the capability of making phone connections between a remote phone handset on a riser (typically uses SIGA-CC1(S) modules) and firefighter's telephones 4-FT. An EST4 node and an NCA can be connected to a single telephone riser. The maximum simultaneous phone connections is six, five remote plus one master. Live paging can be done using the 4-FT firefighter telephone. See the 4-FT installation sheet for more information.

**Note:** There can only be one fire telephone riser per NCA.

### Connecting to a fire phone by activating a user switch

There may be situations where there is no LCD on the node the master firefighter's telephone is installed on, or a quick connect switch is requested so the user does not need to manually start the Request Grant Deny (RGD) and manually connect to the fire phone (CC1) in the field. Below are rule examples for a user to activate/restore a user switch to connect to/disconnect from a specific fire phone (CC1) in the field.

The example below requires one switch and two indicators per CC1.

```
//FIRE PHONE CALL IN (LED to alert the operator there is an active call-in)
@ CallIn '[PATH]FPHONE CC1 LABEL' :
   FastBlink '[PATH]FPHONE CALLIN LED LABEL' ;

//FIRE PHONE CONNECT SWITCH (Switch to connect to the active callin)
@ Switch '[PATH]FPHONE CONNECT SW LABEL' :
   +Start .RequestGrantDeny '[PATH]RGD LABEL' ,
   -Stop .RequestGrantDeny '[PATH]RGD LABEL' ,
   On '[PATH]FPHONE CC1 LABEL' ;

//FIRE PHONE CONNECT CONFIRM LED (LED to confirm the connection)
@ Confirmation '[PATH]FPHONE CC1 LABEL' :
   Steady '[PATH]FPHONE CONFIRM LED LABEL';
```

### Starting the RGD with the call in and connecting using the 4-LCD

```
//FIRE PHONE CALL IN (LED to alert the operator there is an active callin)
@ CallIn '[PATH]FPHONE CC1 LABEL' :
   FastBlink '[PATH]FPHONE CALLIN LED LABEL' ,
   +Start .RequestGrantDeny '[PATH]RGD LABEL' ,
   -Stop .RequestGrantDeny '[PATH]RGD LABEL' ;

//FIRE PHONE CONNECT CONFIRM LED (LED to confirm the connection)
@ Confirmation '[PATH]FPHONE CC1 LABEL' :
   Steady '[PATH]FPHONE CONFIRM LED LABEL' ;
```

Source: 3102306-EN R003 EST4 Audio and Network Application Guide