

UTILIZING SYSTEM SENSOR COSMO DETECTORS ON E27

Introduction

This tech note provides step-by-step instructions on connecting and programming the System Sensor COSMO detectors to work with the ELK E27 Control Panel. The COSMO detectors are combination smoke and carbon monoxide detectors. This document will not cover the connection of the COSMO devices to the COSMOD; please refer to their specific instructions for additional details.

Details:

For the purpose of this document, I will indicate the inputs and outputs that I plan to utilize on the E27 Control Panel. You can utilize the inputs and outputs that best suit your installation needs.

- Inputs/Zones
 - Main Board Input 1 – Smoke Detector Zone
 - Main Board Input 2 – CO Detector Zone
 - Main Board Input 3 – Maintenance Zone (only for COSMOD2W)
- Outputs
 - Main Board Output 1 – Smoke Alarm Trigger
 - Main Board Output 2 – CO Alarm Trigger
 - Main Board SAUX – Switched 12v Power

Wiring the COSMOD to E27:

Power down the E27 Control Panel before starting the wiring process.

- Connect the COSMOD Module to the control panel using the following wiring scheme:
 - **COSMOD Power:** Connect the POWER IN + and the POWER IN – terminals to the SAUX + and NEG – on the E27 Control.
 - **SMOKE ALARM CONTACT:** Connect the SMK IDC + and SMK IDC – to the E27 Mainboard Z1 and Neg. No resistor on this connection, it is installed on the SMK EOL of the COSMOD.
 - **CO ALARM CONTACT:** Connect the CO IDC + and CO IDC – to the E27 Mainboard Z2 and Neg. No resistor on this connection, it is installed on the CO EOL of the COSMOD.
 - **MAINTENANCE TROUBLE RELAY:** Connect the MAINT + and MAINT – to the E27 Mainboard Z3 and Neg with a 2.2K resistor wired in Series or N/C. Please note this is only used on the COSMOD2W.
 - **SMOKE TRIGGER:** Connect the SMK TRIGGER IN to the E27 Mainboard Output 1. Set Dip Switch #1 on the COSMOD to ON.
 - **CO TRIGGER:** Connect the CO TRIGGER IN to the E27 Mainboard Output 2.

Configuring the Inputs and Outputs for the E27:

Power up the E27 Control Panel and connect to a network. Utilizing the ElkConnect app discover and connect as an installer.

- Navigate to Sensors/Zones:
 - **Zone 1 Smoke Alarm:** Select Zone 1, enter a Name, now select the assigned Area, and then configure the Definition as FIRE. Note any specific options you would like to utilize and click SAVE.
 - **Zone 2 CO Alarm:** Select Zone 2, enter a Name, now select the assigned Area, and then configure the Definition as Carbon Monoxide. Note any specific options you would like to utilize and click SAVE.
 - **Zone 3 Maintenance Trouble:** Select Zone 3, enter a Name, now select the assigned Area, and then configure the Definition as FIRE. Note any specific options you would like to utilize and click SAVE.
- Navigate to Output:
 - **Output 1 Smoke Trigger:** Select Output 1, enter a Name, Note any specific options you would like to utilize and click SAVE.
 - **Output 2 CO Trigger:** Select Output 2, enter a Name, Note any specific options you would like to utilize and click SAVE.
- Navigate to Main Board I/O:
 - **Input 1:** Select the Input 1 wiring configuration and select 4/W and click SAVE, Note that what you named Zone 1 is indicated as being associated with Input 1.
 - **Input 2:** Select the Input 2 wiring configuration and select 4/W and click SAVE, Note that what you named Zone 2 is indicated as being associated with Input 2.
 - **Input 3:** Select the Input 3 wiring configuration and select 4/W and click SAVE, Note that what you named Zone 3 is indicated as being associated with Input 3.

Notes:

- Please be aware the variables shown in the configuration are specific to my test set up, these will be dependent on your system configuration.
- The Maintenance Trouble zone will display a fire trouble in the event the COSMOD has an issue. Utilizing the Dip Switch #2 on the COSMOD, you can enable this to be for Troubles/Maintenance or just Maintenance.
- Dip Switch #1 on the COSMOD needs to be set to OFF for proper CO trigger & SMK Trigger operation with the E27 Outputs.
- When saving Main Board I/O settings, you are required to have the Zone Definition configured prior to assigning it to the input. Attempting to save a Non Fire or CO assigned zone to a 4/W input will result in an incompatible input error.
- Saving Main Board I/O settings sends all sixteen settings at once, it is possible to have an error on a different input than the one you are configuring if the assigned zone definition was changed but the input type was not updated. Not updating the input configuration at the time of a zone definition change may result in improper behavior from the zone.

Configuring the Rules needed for the E27:

Power up the E27 Control Panel and connect to a network with internet. Login in to your ElkConnect.com Dealer account. Navigate the Rules Editor for the E27 Control.

- **Create Smoke Alarm Output Activation Rule:**
 - WHENEVER *Area 1* FIRE ALARM *Smoke Alarm (Zone)* IS ACTIVATED THEN TURN ON *Smoke Trigger* Output
- **Create CO Alarm Output Activation Rule:**
 - WHENEVER *Area 1* CO ALARM *CO Alarm (Zone)* IS ACTIVATED THEN TURN ON *CO Trigger* Output
- **Create CO & Smoke Alarm Output Deactivation Rule:**
 - WHENEVER *Area 1* ALARM IS ACKNOWLEDGED BY *Any User* THEN TURN OFF *Smoke Trigger* Output
 - AND THEN TURN OFF *CO Trigger* Output
- **Create Smoke Alarm Time Out Output Deactivation Rule:**
 - WHENEVER FIRE ALARM CUTOFF OCCURS THEN TURN OFF *Smoke Trigger* Output
- **Create CO Alarm Time Out Output Deactivation Rule:**
 - WHENEVER CO ALARM CUTOFF OCCURS THEN TURN OFF *CO Trigger* Output

Notes:

- Please be aware the highlighted variables shown in the rules are specific to my test set up, these will be displayed depending on your system configuration.
- Smoke Alarm & CO Alarm Output activation rules are created with Events from the Area Dropdown and utilizes Actions from the Output Dropdown.
- Smoke Alarm & CO Alarm Output deactivation rules are created with Events from the Area Dropdown and utilizes Actions from the Output Dropdown.
- Smoke Alarm & CO Alarm Output Time Out deactivation rules are created with Events from the System Dropdown and utilizes Actions from the Output Dropdown.

Testing and Operating the E27 using these features:

It is important to always test the system when configurations are made.

Smoke Alarm Testing

Let's start by testing the Smoke Alarm activation, activate the COSMO smoke alarm via the test switch or with canned smoke. This will activate a Fire alarm on the E27 and a temporal 3 sounder on the COSMO Detector. Enter a valid user code into the keypad or ElkConnect app to silence the alarm. Entering the code a second time will acknowledge and clear the alarm.

This will generate a Fire Trouble condition due to the COSMO detector being latched in Alarm. To reset the detector, press the ELK key on the keypad and scroll up or down to the Smoke Reset option. Select and activate a smoke reset. This will drop power to the COSMOD unit for five seconds. A smoke reset can also be achieved via the APP by clicking the reset icon on the top of sensors page.

CO Alarm Testing

Now let's test CO Alarm Activation, activate the COSMO CO alarm via the test switch or with canned CO. This will activate a CO alarm on the E27 and a temporal 4 sounder on the COSMO Detector. Enter a valid user code into the keypad or ElkConnect app to silence the alarm. Entering the code a second time will acknowledge and clear the alarm.

This will generate a Fire Trouble condition due to the COSMO detector being latched in Alarm. To reset the detector, press the ELK key on the keypad and scroll up or down to the Smoke Reset option. Select and activate a smoke reset. This will drop power to the COSMOD unit for five seconds. A smoke reset can also be achieved via the APP by clicking the reset icon on the top of sensors page.

Maintenance Trouble Testing

I found that the simplest way to test the maintenance trouble is to remove power from the COSMOD by taking POWER IN + out of the terminal and waiting a few seconds for the fire trouble. Please note that Dip Switch #2 needs to be on for this test to work.

This will generate a fire trouble on the Maintenance Zone. To silence enter a valid user pin. Now restore power to the COSMOD and the trouble will clear after 30 seconds. Note that you are not required to silence the trouble condition, if the trouble condition restores on its own it will clear the trouble on the keypad.

For additional information please visit www.elkproducts.com. If you have any questions please feel free to contact us at 800-797-9355 or email us at techsupport@elkproducts.com.