Tech Note 8.1 **July 28, 2008**

Integrating Alarm Panels with the IEI eMerge™

Overview

To fully integrate an alarm panel into the system requires:

Physically wire the alarm panel and security system together, and configure in the application the location of those wires.

1. Wiring the panel's Zone Status Output, and the Armed/Disarmed State Output to inputs in a system node.
2. Wiring the panel's Armed State Input to an output on the same system node.
3. Select **Setup : Alarms : Alarm Panels**. Name the alarm panel and select from the drop-downs to specify the Node, inputs, and output to which you wired the alarm panel. Click the **Help** balloon for details.

NOTE: See the section on the next page, ***"Wiring Connections and Relays"*** for details on physically wiring the eMerge with your alarm panel.

You may wish to specify:

A time specification to automatically arm the alarm panel at certain times, a warning device to inform people that the alarm panel is about to arm, a reader group that can be used to disarm the alarm panel, or a reader group that will be disabled whenever the alarm panel is armed.

1. Wire a panel arming warning device to an output on the same node.
2. Select **Setup : Time : Time Specs** and create the auto-arm time specification.
3. Select **Setup : Access Control : Reader Groups** and create the reader group for disarming the alarm panel and the reader group to be disabled when the alarm panel is armed.
4. Select **Setup : Alarms : Alarm Panels** and configure the arm/disarm behaviors. Click the **Help** balloon for details.

If you want the alarm panel to trigger events in the security system, then create an event to respond to zone faults from an armed alarm panel, and create an event to respond to the failure of the alarm panel to properly arm. Then enable and configure these events in the application.

1. Select **Setup : Alarms : Events**. Create the events. Click **Help** for specifics.
2. Select **Setup : Alarms : Alarm Panels**. Click the Enabled boxes and select from the drop-downs the events to execute in case of zone faults or arming failure. Click the **Help** balloon for details.

Wiring Connections and Relays

To integrate an alarm panel with the IEI eMerge you need three wired connections.

1. The panel Armed/Disarmed state output typically provides an output voltage to signify armed/disarmed state. Refer to the panel manufacturer documentation for whether voltage indicates an armed state or a disarmed state.
2. The panel Global or Zone Fault State output typically provides an output voltage to signify zone fault state. Refer to the panel manufacturer documentation for whether voltage indicates a zone in a fault state or all clear.
3. The panel Arm/Disarm switch input can typically be toggled by a momentary contact closure.

The eMerge reads input resistance values not voltages. For the eMerge to properly assess the alarm panel states, it is necessary to wire relays between the two alarm panel outputs and eMerge inputs. To enable the eMerge to arm the panel it is necessary to wire the panel input to an eMerge output.

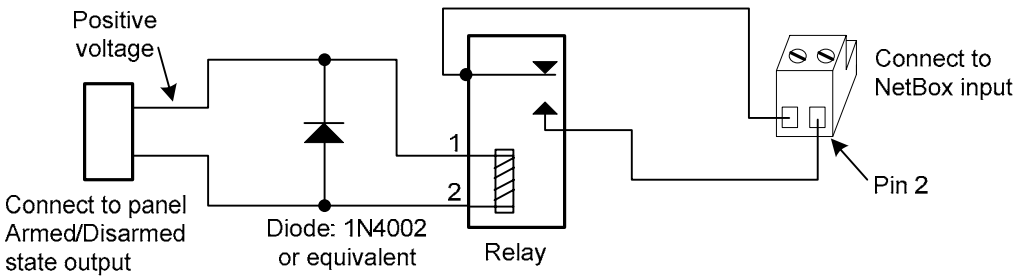
Many alarm panel manufacturers have a module for this. We recommend using these manufactured modules. However, if such a module is not available then you can build a circuit board with the appropriate relays.

To build a relay board for alarm panel integration:

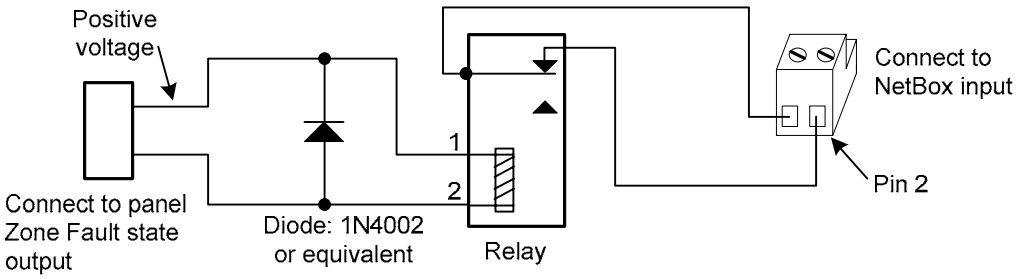
3. Connect the positive voltage and common wires of the alarm panel output (Armed/Disarmed state or Zone Fault state) to the relay coil.
4. Place a standard kickback diode (1N4002 or equivalent) across the relay coil with the cathode (bar end) connected to the positive voltage and the anode to the other connection.

NOTE: Ensure that the relay is appropriate to the voltage output of the alarm panel. Refer to the panel manufacturer documentation for voltage values.

5. Connect the relay COMMON line to pin 1 of the eMerge input connector.
6. For a normally open input, connect the CLOSED relay contact to pin 2 of the eMerge input connector. For a normally closed input, connect the OPEN relay contact to pin 2 of the eMerge. See the drawings below.
7. Plug the input connector into one of the inputs on an Access or Input blade.
8. When setting up the input in the security application select the appropriate (NC or NO) Unsupervised Input supervision type.

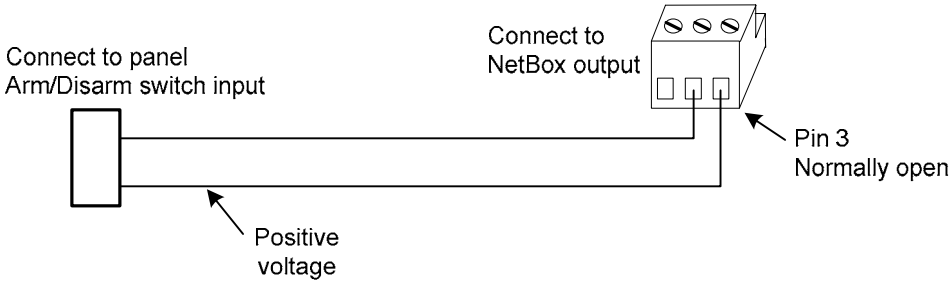


Relay wiring for a normally open unsupervised input from the panel Armed/Disarmed state output. In this case, voltage from the output would indicate the panel is armed.



Relay wiring for a normally closed unsupervised input from the panel Zone Fault state output. In this case voltage from the output would indicate a zone fault.

9. Connect the COMMON (pin 2) and NO (pin 3) connection from one of the output relays on an IEI eMerge Access or Output blade to the Arm/Disarm switch input of the alarm panel. See the drawing below.



Wiring for a normally open output to the panel Arm/Disarm switch.

NOTE: The ARM/DISARM function is assumed to be controlled by momentary contact closure.