

Quick-Start Guide—EZIO8T I/O Controller

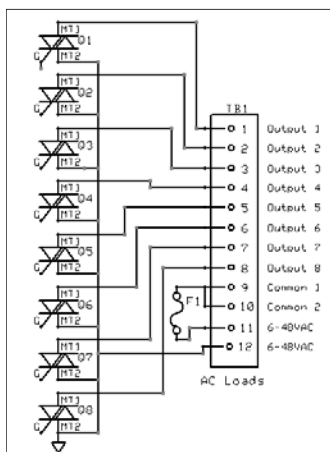
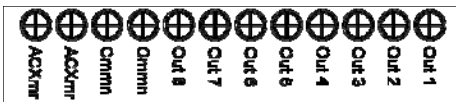
Your EZIO8T puts control of loads and monitoring of signals where needed, avoiding wiring complications. The unit has 8 Triac-based outputs to control small, low-voltage AC loads with INSTEON or X10 commands. Outputs can be linked simultaneously or individually to a group command from a controller such as a ControlLinc and timers can pulse each output from 1 second to 255 minutes. Up to 3 external signals such as contact closures can be made to trigger group commands on their opening or closing to cause INSTEON events. Behavior of the 3 inputs, including addition of a timer to delay the input OFF response, is programmable with a free MS-Windows utility. One input is configurable as a Dallas Semiconductor 1-Wire bus for supporting a temperature sensor.

EZIO8T has a built-in power line interface and its programming and control is done through the power line.



Installation

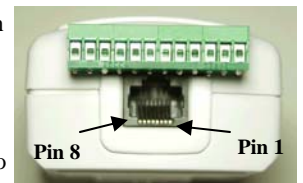
- Select a suitable power outlet that is close to the loads and sensors to be connected. Avoid exposure to moisture. If installing outdoors, use only an approved outdoor weather-proof enclosure.
- **Connection of the Outputs:** Follow the picture on the label and note the nomenclature on the terminal strip (shown above). Connect the low-voltage/low-current AC loads (e.g. sprinkler solenoid valves, relays, low voltage AC lights, etc.) referencing the label and the schematic below. Each load has two wires, one that connects to terminals Out 1—Out 8 corresponding to outputs 1-8, and another “common” wire that connects to either terminal 9 or 10. Join the common wires into one or two groups and connect them with a single wire to terminal 9 and/or 10. The common wires are usually joined together at the controlled loads and brought to the controller location by a single wire in a cable bundle.
- An AC transformer to power the loads may be connected to terminals 11 and 12. Please note that if the common terminals 9 and 10 are used, the total load current is limited to around 1 Ampere by a resettable fuse inside the EZIO8T. Terminal 11 can be used as the common if an external current limiter is used. The figure on the left fully illustrates how the outputs are arranged. Please feel free to wire these outputs per your particular needs being cautious not to exceed the output current (.5A) and voltage (48V) ratings.
- Connect the 110V to 6-48V AC transformer to terminals 11 and 12. Note that there is no polarity on these terminals. Size this transformer according to the loads you are controlling.



- **Connection of the Inputs:** The inputs to your EZIO8T are available through an 8-pin (RJ45) modular connector similar to that used for PC networks. A patch cable can be made by cutting a segment of a standard network cable. Follow the pin numbers on this connector and connect the sensor(s) to be monitored as shown on the diagram below. Normally a sensor is connected between a pin labeled “Input 1-3” and any of the available pins labeled “GND” or ground. The EZIO8T senses the voltage between a given input and a ground terminal to tell whether the

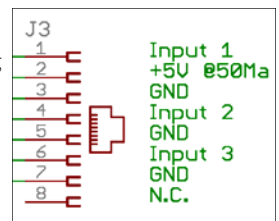
input is OFF or ON. An ON state would be detected when the input is at ground potential, or when a connected set of contacts is closed. Conversely an OFF state would be detected when the voltage on an input is between 3 and 5 volts DC. Since most contact closures such as magnetically activated sensors do not provide a voltage, it is important that the input be provided with a positive voltage through a “pull-up” resistor. **Input 2 is already provided with such pull-up internally, and may be used readily with a dry contact closure. If used for contact closures, inputs 1 and 3 require external pull-up resistors (10K 1/4W recommended).** Of course, any input can be connected directly to a voltage source between 0 and 5 Volts DC.

- If monitoring temperature with a Dallas Semiconductor 1-Wire 18B20 digital thermometer, connect it to Input 2, again as shown in the RJ45 connector layout. Note that the setup utility will be needed in order to configure this input for 1-Wire bus use. The utility will allow the configuration of alarms to send Insteon group messages as the sensor value passes through programmed temperature thresholds.
- Plug your EZIO8T into an AC outlet. The LED on its side will flash on and off rapidly a few times, then turn on and off for about 1 second, and finally glow steadily.



Controlling One or Multiple INSTEON Devices with Signals on the Inputs

- 1) Put the EZIO8T in linking mode by pressing its pushbutton and releasing it after 10-12 seconds. The EZIO8T will turn off its LED indicating it is waiting to be told which input is to be used for this link.
- 2) Tap the pushbutton on the EZIO8T a number of times corresponding to the input to be used for control (e.g. once for input 1, twice for input 2, etc.) After the last tap, press the pushbutton on the EZIO8T and release it after 3-4 seconds. Its LED will begin to flash about once per second indicating it is listening for an INSTEON device to link with.
- 3) On the INSTEON device to be controlled, press its pushbutton and release it after 3-4 seconds (or use method specific to device.) A successful link will be indicated by a flash of the LED on the controlled device (device specific) and by the LED on the EZIO8T flashing, then continuing to blink about once per second.
- 4) Continue to link additional INSTEON devices using step 3 above, or end the linking session by holding the pushbutton on



the EZIO8T for 3-4 seconds.

Stopping (Unlinking) an INSTEON Responder Device from being controlled by the EZIO8T

- 1) Put the EZIO8T in unlinking mode by pressing its pushbutton and releasing it after 10-12 seconds. The EZIO8T will turn off its LED indicating it is waiting to be told which input the INSTEON device is to be unlinked from.
- 2) Tap the pushbutton on the EZIO8T a number of times corresponding to the input to be unlinked (e.g. once for input 1, twice for input 2, etc.) After the last tap, press the pushbutton on the EZIO8T and release it after 18-20 seconds. Its LED will begin to flash about once per second indicating it is listening for an INSTEON device to unlink from.
- 3) On the INSTEON device to be unlinked, press its pushbutton and release it after 3-4 seconds (or use method specific to device.) A successful unlink will be indicated by a flash of the LED on the controlled device (device specific) and by the LED on the EZIO8T turning on solidly.

Triggering EZIO8T Inputs from another INSTEON Controller

- 1) Put controller in linking mode by holding the button to be used for controlling until it indicates linking mode (4-10 seconds depending on controller.) Usually its LED will blink or a light connected to it will flash.
- 2) Hold the pushbutton on the EZIO8T and release it after 3-4 seconds. The LED on the EZIO8T will turn off when the link is established with the controller. The controller will also give an indication of a successful link by flashing its LED or a load connected to it.
- 3) The EZIO8T must be told which input to link by tapping the pushbutton on the EZIO8T a number of times corresponding to the input number (e.g. once for input 1, twice for input 2, etc.) After the last tap, press the pushbutton on the EZIO8T and release it after 10-12 seconds. Its LED will turn on solidly indicating the end of the linking process.

Controlling the Relays with an INSTEON Controller

- 1) Put controller in linking mode by holding the button to be used for controlling until it indicates linking mode (4-10 seconds depending on controller.) Usually its LED will blink or a light connected to it will flash.
- 2) Hold the pushbutton on the EZIO8T and release it after 3-4 seconds. The LED on the EZIO8T will turn off when the link is established with the controller. The controller will also give an indication of a successful link by flashing its LED or a load connected to it.
- 3) To link the current status of all the relays (status snapshot) to be recalled by a command from the controller, hold the pushbutton on the EZIO8T and release it after 3-4 seconds. The LED on the EZIO8T will turn on solidly indicating the end of the linking process.
- 4) Alternatively to step 3 above, an individual relay is linked by tapping the pushbutton on the EZIO8T a number of times corresponding to the relay number (e.g. once for relay 1, twice for relay 2, etc.) After the last tap, press the pushbutton on the EZIO8T and release it after 3-4 seconds. Its LED will turn on solidly indicating the end of the linking process.

Unlinking the Relays from an INSTEON Controller

- 1) Follow the instructions specific to the INSTEON controller in use to place it in unlinking mode.
- 2) On the EZIO, press its pushbutton and release it after 3-4 seconds. Its LED will flash briefly and then go solid indicating a successful unlink. The LED on the controller will also go solid.

About the Links Database

The EZIO8T maintains an internal table of up to 30 links where the information on each linked device is stored. The database can be ac-

cessed and altered with the use of our PC utility such that links can be entered, modified or deleted without having to use the “press and hold” method described earlier.

Controlling the Relays with X10 Controllers

Although only 4 X10 units are used, EZIO8T allocates all 16 units of a house code. Relays 1 and 2 respond to commands on X10 units 1 and 2. To setup the unit to respond to X10 commands follow these steps:

- 1) Press and hold the set-button and release it after about 4 seconds—the LED will now blink at a low rate;
 - 2) Enter an ON (or OFF for disabling) command from your X10 controller—the LED will stop flashing indicating X10 enabling or disabling was successful. The outputs will now respond to X10 ON and OFF commands.
- To **disable X10 control**, substitute an OFF command in step 2 above.

Restoring All Parameters to Default (Factory Reset)

To restore all settings to their original factory values, unplug your EZIO8T for about 10 seconds. Then, plug it back in WHILE HOLDING THE PUSH BUTTON for about 10 seconds. Upon release of the push button, the unit will go through the normal power on sequence, and all parameters will be reset.

Example Application: Door Open/Close Sensor

In this example the EZIO8T is used to send an Insteon OFF command to a group of devices when a door is open, and an ON command upon door closure. A readily available magnetically activated sensor (reed switch type) is used. This switch simply closes when next to a magnet, and opens when away from the magnet. The EZIO8T is used as supplied by the factory. Simply follow the steps below:

- Prepare a patch cord similar to the one pictured on the right, that connects to the RJ45 modular connector on the EZIO8T. Note the numbers on the connector and the wires they correspond to from the diagram in the first page.
 - The picture below shows a typical magnetically activated switch. Some may come with wires already terminated, and some, as the one pictured, come with screw terminals.
- Connect pin 4 (Input 2) to one of the wires on the sensor. Connect the other wire of the sensor to pin 5 (GND).
- In this step the unused inputs are placed in the ON condition by connecting them to ground. Connect pin 1 (Input 1) to pin 3 (GND) and pin 6 (Input 3) to pin 7 (GND).



- **Linking to Insteon responders:** Keep in mind, that for a successful link, The EZIO8T must be told via a number of taps of the set-button which input will be linked (in this case Input 2.) Proceed as described previously:
 1. Press and hold the set-button on the EZIO8T for about 10 seconds, then release it. The LED will go off.
 2. Tap the set-button twice, then press and hold it for about 4 seconds and release it. The LED will begin to flash rapidly.
 3. On the INSTEON responder device, press and hold its set-button until its LED flashes or a light connected to it turns on. The LED on the EZIO8T will continue to blink, ready to link with additional INSTEON devices.
 4. Upon adding the last device, press and hold the set-button on the EZIO8T for about 4 seconds. The LED on the EZIO8T will now glow steadily indicating the linking process is complete.