# ELK

## Model: ELKM1PCSPIM
### Powerline Interface Module
### ELKM1 Data Bus

## Installation Guide and Owner's Manual

## FUNCTION

The ELKM1 PCSPIM is a special Powerline Interface Module containing a built-in M1XSP Serial Port chip. This all-in-one device makes it easy to permanently connect the ELK M1 Control to a UPB network. Simply locate a convenient unused AC Power Outlet, connect a cable from the M1 data bus to the four (4) terminals on the ELKM1 PCSPIM, and perform an M1 data bus enrollment. The long distance capability of the M1 data bus makes it possible to locate the ELKM1 PCSPIM virtually anywhere, without a lot of complex or ugly cabling or connections. UPB utilizes the AC wiring circuit for transmission, without new or additional wiring, and without radio frequency signals. **Note: The ELKM1 PCSPIM will not work with UPStart configuration software.**

## IMPORTANT SAFETY INSTRUCTIONS

When using electrical products, basic safety precautions should always be followed, including the following:

1.  READ AND FOLLOW ALL SAFETY INSTRUCTIONS.
2.  Keep away from water. If the product is exposed to water or other liquid, turn off the circuit breaker and unplug the product immediately.
3.  Never use products that have been dropped or damaged.
4.  Do not use this product outdoors.
5.  Do not use this product for other than its intended purpose.
6.  To avoid any risk of fire, burns, personal injury or electric shock, install this product out of the reach of small children.
7.  Do not cover product with any material when in use.
8.  This product uses grounded plugs and sockets to reduce risk of electric shock. These plugs and sockets fit only one way. If they do not fit, consult an electrician.
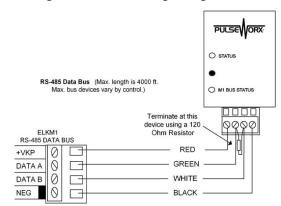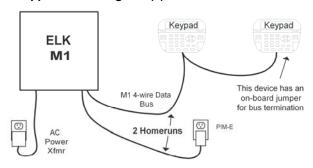
### SAVE THESE INSTRUCTIONS.

## INSTALLATION

This device is designed for indoor use only. Follow these steps to connect the ELKM1 PCSPIM module to the ELK M1 Control.

1.  Using one of the diagrams on the right, connect the M1 RS485 Data bus to the four (4) terminals on the bottom of the ELKM1 PCSPIM. Observe polarity and color codes from the diagrams.
2.  Plug ELKM1 PCSPIM into any grounded wall outlet. The Status LED should start blinking and then stay solid blue.

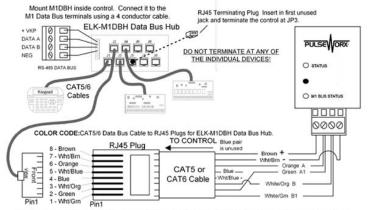**Connecting to M1 Control using a single homerun cable.**



**M1 application using two (2) data bus homerun cables**



Ideally the M1 should have no more than 2 Data Bus home runs. The end of each homerun should terminate with a 120 Ohm resistor. Many M1 devices have a jumper for this purpose. See other wiring diagrams.

**Connecting devices on an ELK-M1DBH Data Bus Hub**

An ELK-M1DBH Data Bus Hub (Optional) Can be used to connect data bus devices using Cat5/6 cables. Devices appear to be in daisy chain because 1 wire pair returns the data bus back where it's used to feed next device OR gets terminated by special RJ45 Plug. Only 6 of the 8 total conductors are used.



The Orange and Green wires carry the data bus A & B lines to the device. The White/Org and White/Grn wires "return" these lines back to the M1DBH Hub so they can be used to feed the port for the next device.

## CONFIGURATION

1. From M1 Keypad Programming (or ElkRP Software) perform a Data Bus Enrollment. Upon successful enrollment, the ELKM1 PCSPIM will show up as: SerialPExpdr T5 (M1XSP) located at Addr=07. **This address is factory set and cannot be changed.** If another M1XSP is installed on the M1 and assigned to Address #7 it will need to be changed and re-enrolled.

2. Using ElkRP Software, select the "Globals" Menu and tab "G29-G42 (Special)". Locate and program the UPB Lighting Network Addr (1-255) to match the address chosen for the UPB network being configured.

3. Make certain to program the format for each ElkM1 Lighting device as "Serial Expander".

### UPStart Configuration

PCS developed free software (UPStart) and a Powerline Interface Module PIM-R (9-pin serial) or a PIM-U (USB serial), for computer setup and programming of a UPB network. These PIM's can be carried with the technician's PC and used on future jobs. Please note that the ELKM1 PCSPIM cannot be used for the PC setup programming, it can only be used with the ElkM1. The UPStart User's Guide (available on the PulseWorx web site: www.PulseWorx.com) explains how to configure your system using the UPStart.

Follow the steps described below to configure ELKM1 PCSPIM:

### SETUP Mode

When configuring a UPB system and specifically the ELKM1 PCSPIM it will be necessary to place it into SETUP mode. To do this, press the Program Button **5** times rapidly. The Status LED will continuously blink Blue while the device is in SETUP mode. To exit SETUP mode, press the Program Button **once** or wait five minutes for it to time out.

### Step 1: Add the ELKM1 PCSPIM to the UPB Network
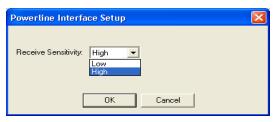Select the **Device→Add** menu item in the UPStart Setup Software. Provided the ELKM1 PCSPIM is in the Setup Mode UPStart should find it and produce a screen allowing you to assign it a name and choose what room it is located in.

### Step 2: Start ELKM1 PCSPIM Configuration
Double-click on the ELKM1 PCSPIM icon to begin configuration. Select the **Advanced** tab to set the receive sensitivity.

The ELKM1 PCSPIM has an adjustment for UPB receive sensitivity. The factory default for this setting is "High". If the ELKM1 PCSPIM is used in severe powerline noise, you may find that it operates better in the "Low" receive sensitivity setting.

To adjust the receive sensitivity press the "Advanced" button on the UPB Interface Setup dialog. Select the desired receive sensitivity and press the "OK" button.



### Step 3: Program the ELKM1 PCSPIM
Once the desired configuration is completed, press the Program Device button to program the information into the ELKM1 PCSPIM.

### Factory Defaulting (if ever necessary)
In addition to Setup Mode the push-button on the front of the case can be used to restore the device to factory default settings. To set the factory defaults first press the pushbutton **5** times rapidly. The Status LED will blink blue. Now press the pushbutton **10** times. The Status LED will blink red. Finally, press the pushbutton **2** times. The Status LED will stop blinking. The device is now restored to the following factory default settings:

| | |
|---|---|
| Network ID: | 255 |
| Unit ID: | 45 |
| Network Password: | 1234 |

## OPERATION

Once installed and configured your ELKM1 PCSPIM will operate without further user intervention. All programmed data is protected by nonvolatile memory and can only be changed or deleted by reprogramming, regardless of power outage durations.

### Status LED Indications
The PIM-E contains two bi-color (blue/red) Status LEDS that give a visual indication of what UPB information is currently on the powerline and communication with the M1 Bus.

UPB STATUS

| | |
|---|---|
| Blue: | No UPB Signal |
| Magenta: | Received a UPB Message |
| Red: | Transmitted a UPB Message |

M1BUS STATUS

| | |
|---|---|
| Periodic Slow Blink: | Normal Communication with M1 |
| Fast Flicker: | Command sent or received by M1 |
| No Blink/Off: | Communication lost with M1 |

# ELK

UPB®
UNIVERSAL POWERLINE BUS

©2010 ELK Products Inc. All Rights Reserved.

PO Box 100
Hildebran, NC 28637
P: 800-797-9355
www.elkproducts.com