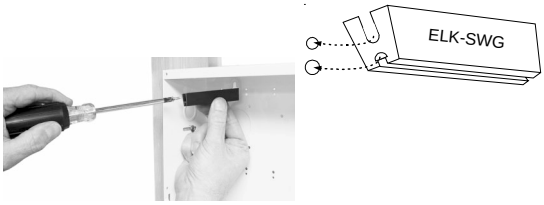
Installation

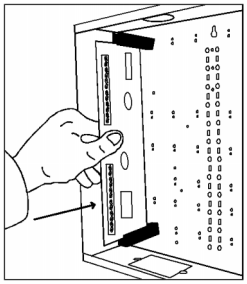
1. A single M1XIN Expander can be mounted inside the M1 enclosure on the left hand side of the M1 board using the supplied ELK-SWG Circuit Board Glides. If additional expanders are required, they can be mounted in either an ELK-SWB14 or ELK-SWB28 enclosure. Up to 8 expanders can be mounted in an SWB14 while up to 16 expanders can be mounted in an SWB28.

   The ELK-SWG Circuit Board Glides attach to the enclosure at strategically placed 2-hole punch patterns. Note that one hole in each pattern is slightly larger than the other. The small hole is for a 6/32 type "F" mounting screw and the large hole is for a half-moon shape locator tab on the bottom of each glide.



2. Starting at the top left corner, loosely start a 6/32" mounting screw in the small hole of the first 2-hole pattern. Place the slotted edge of a board glide under this screw, making sure that the half-moon tab fits into the larger hole and the grooved edge is facing down. Tighten the screw using a long shafted screwdriver. Install a second board glide in the 2-hole pattern 6" below. Attach the second board glide using the same procedures. The grooved edge of this glide should face up.

3. Slide the M1XIN board into the grooves provided by the glides. The circuit board should slide freely. If loose or too tight, simply loosen one of the mounting screws and adjust the glide to assure a good fit.



Wiring Connections

1. Turn Control Panel Master Power Switch Off.
2. Use a 4 wire cable to connect terminals +VKP, Data A, Data B, and Neg from Control to terminals 12V, A, B, and Neg on the M1XIN. NOTE: If the zone expander is remotely mounted, refer to information on the back and in the M1 Installation Manual for important information about data bus devices connected to multiple homerun cables.
4. Set Address Switches according to Table 1.
5. Power up the Control and the expander(s).
6. Use Keypad to access the Installer Programming Mode and go to Menu 01-Bus Module Enrollment. Press the right arrow key to start enrollment. To view the results, press the right arrow "edit" key.
6. Go to Menu 05-Zone Definitions and enable any of the new zones. Zone numbers printed on the boards are relative to that board only. The actual zone ID is based on the starting address setting.

NOTE: If it becomes necessary to replace an enrolled device, set the new unit to the same address and repeat the enrollment. If permanently removing a device, un-enroll it to prevent a trouble condition.

L527 10/05

16 Zone Expander ELK-M1XIN

APPLICATION:
The **ELK-M1XIN** adds 16 hardwired zones (EOL resistor supervised) to the M1 or M1G Control. It operates on the 4-wire data bus and features flash memory which allows field updating of its operating firmware. Up to 12 zone M1XIN boards may be connected, increasing total zones (inputs) to 208.

ELK PRODUCTS, INC.

16 Zone Expander ELK-M1XIN

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FEATURES:

- 16 EOL Resistor Supervised Hardwire Zones
- Operates on the 4-Wire Data Bus
- DIP Switch Address Settings
- Flash Memory for Firmware Updating
- Plug-In Terminal Strips
- Status and Diagnostic LED
- On-Board EOL Bus Termination Jumper
- Vertical Mounting using ELK-SWG Glides (included)

SPECIFICATIONS:

- Inputs: Plug-In Terminals with Elevator Style Wire Clamps and Screws
- Operating Power Range: 9 to 14 VDC
- Current Draw: 65 mA
- Size: 6" x 3.25" x .75" H

ELK PRODUCTS, INC.
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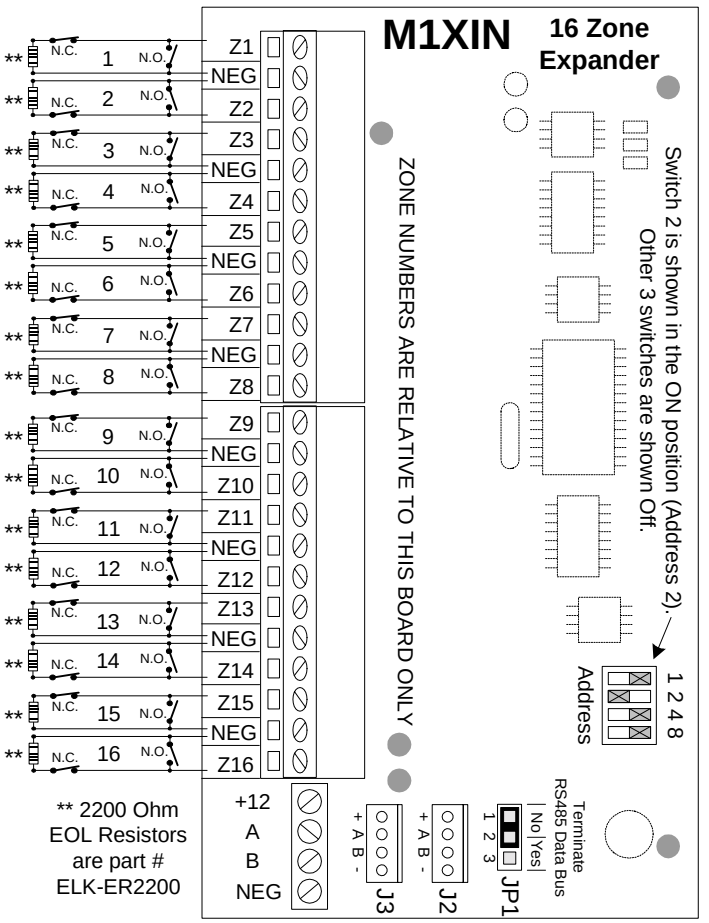
Instructions Printed On Inside



The Data Bus Address is set by the group of 4 miniature slide switches. Starting from the end, each switch has a position of 0 or 1 (OFF/ON) and a decimal equivalent of (1, 2, 4, or 8). The total decimal value of the switches turned "ON" equals the address setting. The address setting in turn defines which input zones (in banks of 16) are assigned to the expander. Inputs Expanders are factory set to address setting 2 (Zones "Inputs" 17 to 32).

Data Bus Address	Switch Settings			
	S1	S2	S3	S4
1	ON	Off	Off	Off
2	Off	ON	Off	Off
3	ON	ON	Off	Off
4	Off	Off	ON	Off
5	ON	Off	ON	Off
6	Off	ON	ON	Off
7	ON	ON	ON	Off
8	Off	Off	Off	ON
9	ON	Off	Off	ON
10	Off	ON	Off	ON
11	ON	ON	Off	ON
12	Off	Off	ON	ON
13	ON	Off	ON	ON
14	Off	ON	ON	ON
15	ON	ON	ON	ON

Table 1: Data Bus Address Switches

Data Bus Address	Zones assigned to this expander
1	N/A (main board)
2	Zones 17 - 32
3	Zones 33 - 48
4	Zones 49 - 64
5	Zones 65 - 80
6	Zones 81 - 96
7	Zones 97 - 112
8	Zones 113 - 128
9	Zones 129 - 144
10	Zones 145 - 160
11	Zones 161 - 176
12	Zones 177 - 192
13	Zones 193 - 208
14	N/A
15	N/A

Table 2: Zone "Bank" Assignments

NOTE: Jumper JP1 is used to engage an on-board 120 Ohm resistor for terminating the RS-485 Data Bus. See Data bus wiring instructions before use.

Utilizing an M1DBH Data Bus Hub

Since the M1XIN connects to the M1's RS-485 Data Bus, it can be installed inside the Control or virtually anywhere along the data bus. The Data Bus requires only 4 wires, 2 for power + 2 for data. However, due to the relatively high speed of the data bus, special wiring connections are necessary to avoid data reflection errors on long cables OR multiple cable "homeruns". **See the M1 Installation Manual for important information about Data Bus termination, including methods and recommendations for avoiding data bus problems.** The primary goal is to have no more than 2 data bus branches (cables) running from the control, with each being terminated at its end using a 120 Ohm end of line resistor. There are two ways to accomplish this goal. 1) Using 4-wire cable, run no more than 2 cables and connect all devices paralleled (daisy chained) along this cable path. OR 2) Using 6 or 8 wire cables (CAT5 or CAT6 is ideal), run as many cables as you want so long as the data A & B wires are connected to a spare pair of wires so that they double back (return) to the control and are connected in series to the outgoing data A & B lines of the next cable. By keeping the data lines in a series circuit it will appear to be one long cable. This virtually eliminates data reflection errors. This is easily done using an ELK-M1DBH Data Bus Hub.