

## APPLICATION:

The ELK-M1DBHR is an "active" RS-485 data bus hub designed for jobs where an M1 Control is retrofitting an older panel that has multiple homerun 4 conductor keypad/data wires. It splits the main 485 data bus into 4 managed 485 branches. Each branch can have 2 parallel home run cables for a total of 8 home runs. The end of each cable is EOL terminated to insure proper operation and supervision.

## FEATURES:

- Splits The Controls' RS-485 Data Bus Output Into 4 Managed Branches
- Each Managed Branch Can Have 2 Parallel Home Run Cables (Total Of 8 Home Runs)
- EOL Termination Of Each Branch Insures Proper Operation And Supervision
- Works With Std. 4 Conductor Home Run Wire
- Includes Mounting Rails for ELK-SWB Boxes

## SPECIFICATIONS:

- Inputs: Elevator Screw Terminals, 4 Position
- Output: Elevator Screw Terminals, 4 Position
- Current Draw: 30mA nominal PLUS 20mA per RS485 active branch driver. Total combined with all 4 branches active would be ~110mA.

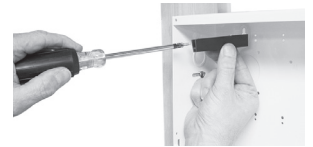
Note: This is in addition to the power requirements of any connected data bus devices (keypads, expanders, etc.)

- Circuit Board Dimensions: 4.9" x 2.75"

Features or Specifications subject to change without notice.

## Installation

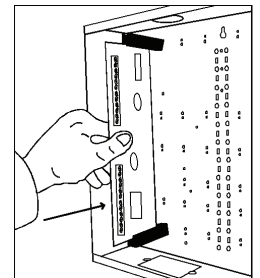
1. The M1DBHR can be mounted inside the M1 enclosure on the left or right hand side of the M1 board using the supplied ELK-SWG Circuit Board Glides. If all the mounting locations are consumed, an additional ELK-SWB14 or ELK-SWB28 enclosure may be installed.



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, 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 4" below. Attach the second board glide using the same procedures. The grooved edge of this glide should face up.
3. Slide the M1DBHR 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 the Controls' Data Bus terminals +VKP, Data A, Data B, and Neg from Control to terminals +, A, B, and - on the M1DBHR. NOTE: If existing wires are already attached to the Data Bus terminals, remove them and follow the detailed wiring diagram on the next page. One of the main purposes of the M1DBHR is to connect and distribute most devices and homeruns through it, as opposed to directly to the main control board.
3. Make all connections as per the diagram on the next page.
4. Power up the Control.

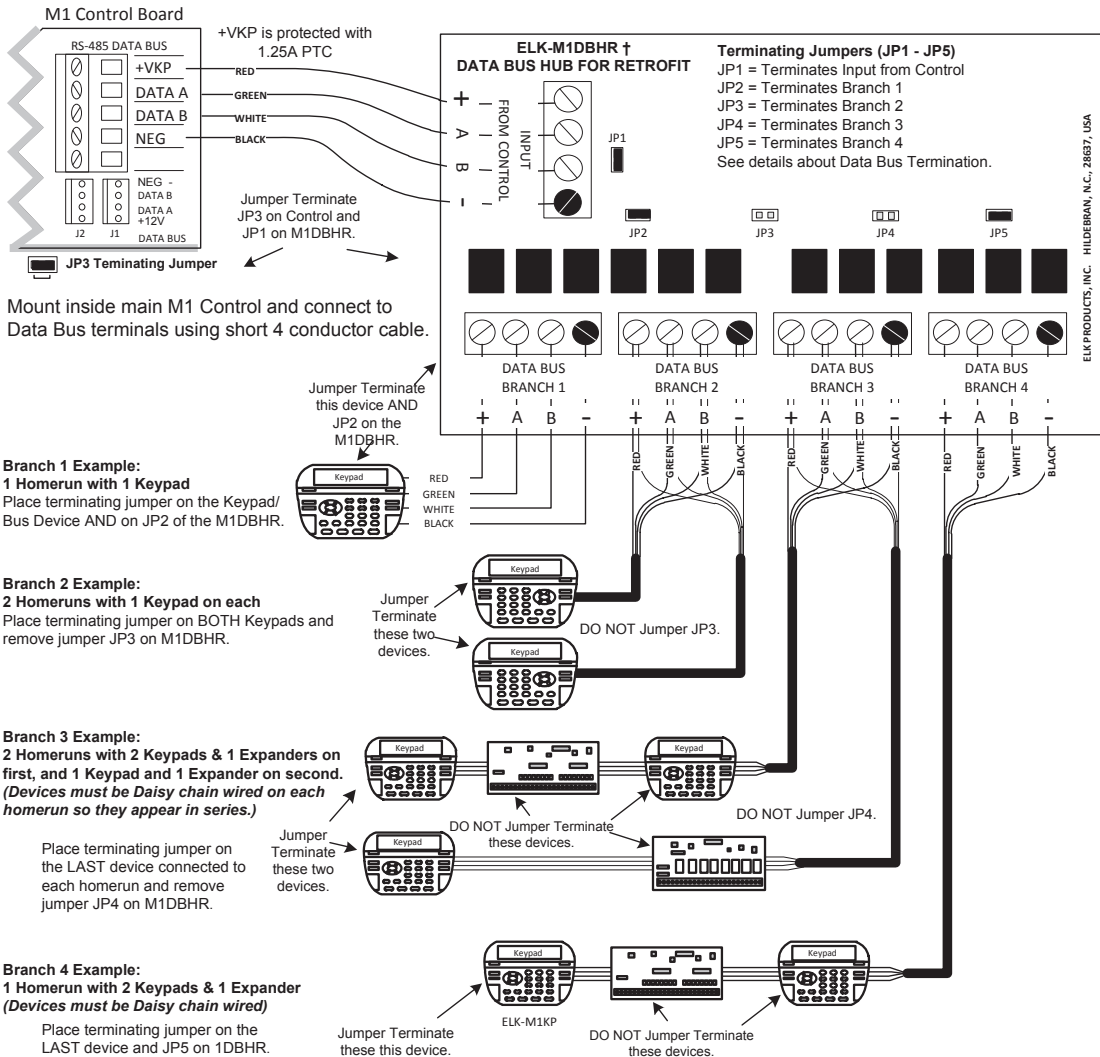
REMEMBER: Any data bus devices that are added to the Control MUST have the address switches properly set and they must be enrolled using the Bus Module Enrollment process under the Installer Level Programming.

The ELK-M1DBHR † Data Bus Hub Retrofit is intended for retrofit jobs where existing 4 conductor cables are the only wires available. It creates 4 managed RS-485 BRANCHES from the single M1 main RS-485 Bus. Like the main M1 Bus, each branch can only have 2 home run cables (4 branches x 2 ea. = 8 home runs).

DO NOT connect more than two (2) M1DBHR Hubs to a single M1 Control.

DO NOT connect an M1DBHR on a branch of another M1DBHR! The M1DBHR CANNOT be used as an extender or remote repeater.

DO NOT remote M1DBHR(s) away from the M1. Mount within main M1 Control. Terminate last (end line) device on each home run.



The above examples are intended to show the flexibility provided by the 4 data bus branches of an M1DBHR. The number and types of devices used on each branch is up to the Installer.

**END-OF-LINE DATA BUS TERMINATION IS VERY IMPORTANT !**

All bus devices (keypad, expanders, etc.) have terminating jumpers. Placing a shorting header on the jumper engages a 120 Ohm resistor across data A & B lines. Refer to the individual instruction manuals and Control hardware pack for shorting headers.

If using 1 M1DBHR place jumper on JP1 of the M1DBHR and JP3 of the M1 Control.  
 With 2 M1DBHR boards place jumper on JP1 of both M1DBHR boards and remove jumper JP3 on the M1 Control.  
**DO NOT EXCEED two (2) terminating jumpers on any of the 4 branches of the M1DBHR or the main M1 bus.**

Like the Main M1 Bus, the Maximum wire length of any of the 4 branches on the M1DBHR is 4000 ft.

Min. wire gauge: 24 AWG 18 to 22 AWG is best for long distances.

