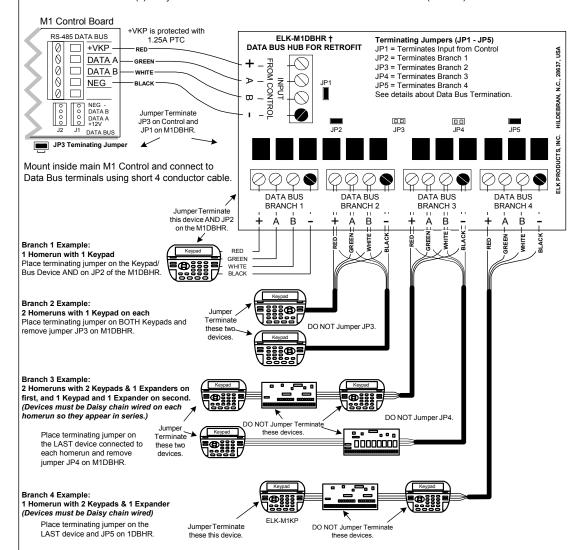The ELK-M1DBHR † Data Bus Hub Retrofit is intended for retrofit jobs where existing 4 conductor cables are the only wires available. It creates 4 managed RS-485 BRANCHES from the single M1 main RS-485 Bus. Like the main M1 Bus, each branch can only have 2 home run cables (4 branches x 2 ea. = 8 home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

M1 Control Board

RS-485 DATA BUS
- +VKP
- DATA A
- DATA B
- NEG

+VKP is protected with 1.25A PTC

RED
GREEN
WHITE
BLACK

NEG -
DATA B
DATA A
+12V
J2 J1 DATA BUS

JP3 Terminating Jumper

ELK-M1DBHR †
DATA BUS HUB FOR RETROFIT

FROM CONTROL / INPUT
- +
- A
- B
- –

JP1

Terminating Jumpers (JP1 - JP5)
JP1 = Terminates Input from Control
JP2 = Terminates Branch 1
JP3 = Terminates Branch 2
JP4 = Terminates Branch 3
JP5 = Terminates Branch 4
See details about Data Bus Termination.

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Jumper Terminate JP3 on Control and JP1 on M1DBHR.

Mount inside main M1 Control and connect to Data Bus terminals using short 4 conductor cable.

JP2   JP3   JP4   JP5

DATA BUS BRANCH 1
DATA BUS BRANCH 2
DATA BUS BRANCH 3
DATA BUS BRANCH 4

+ A B –   + A B –   + A B –   + A B –

RED GREEN WHITE BLACK (repeated for each branch)

Jumper Terminate this device AND JP2 on the M1DBHR.

Branch 1 Example:
1 Homerun with 1 Keypad
Place terminating jumper on the Keypad/Bus Device AND on JP2 of the M1DBHR.

Keypad
RED
GREEN
WHITE
BLACK

Branch 2 Example:
2 Homeruns with 1 Keypad on each
Place terminating jumper on BOTH Keypads and remove jumper JP3 on M1DBHR.

Jumper Terminate these two devices.

DO NOT Jumper JP3.

Branch 3 Example:
2 Homeruns with 2 Keypads & 1 Expanders on first, and 1 Keypad and 1 Expander on second.
(Devices must be Daisy chain wired on each homerun so they appear in series.)

Place terminating jumper on the LAST device connected to each homerun and remove jumper JP4 on M1DBHR.

Jumper Terminate these two devices.

DO NOT Jumper Terminate these devices.

DO NOT Jumper JP4.

Branch 4 Example:
1 Homerun with 2 Keypads & 1 Expander
(Devices must be Daisy chain wired)

Place terminating jumper on the LAST device and JP5 on 1DBHR.

Jumper Terminate these this device.

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DO NOT Jumper Terminate these devices.

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.

M1 Control Board

RS-485 DATA BUS
- +VKP
- DATA A
- DATA B
- NEG

GREEN
WHITE
BLACK

NEG -
DATA B
DATA A
+12V
J2 J1 DATA BUS

JP3 Terminating Jumper

Do Not Connect +VKP to the M1DBHR if it is being powered from an Aux. Power Supply.

ELK-M1DBHR
DATA BUS HUB
FOR RETROFIT

FROM CONTROL / INPUT
- +
- A
- B
- –

JP1

RED
BLACK

12 VDC Aux. Power Supply

+ –

AC XFMR

12V Battery

Connect all Negatives (-) together to form a "common" negative path.

NOTE: As additional data bus devices are added to the Control the total calculated current draw must be considered. If total current draw exceeds the limits of the control, add an auxiliary 12 VDC Power Supply.