

## *Magic Module Series*

## **RS-232 to RS-485 Data Converter**

***Allows a Computer to communicate with ELK Magic Modules***

### **APPLICATION**

The ELK-MB485 is used to communicate between a personal computer and an ELK Magic Module(ELK-MM443). The ELK-MB485 converts the computer's RS-232 Serial Data to RS-485 Data which is used by the ELK Magic Module series of products. This allows programs to be downloaded into the Magic Modules. Input and Output status can be displayed and controlled from the computer.

### **FEATURES**

- Converts RS-232 to RS-485 Data.
- Visual Power Indicator LED.
- 9 Pin Serial D-Connector.
- Terminals for 4-Wire Data Bus.
- Quick Connect 4-Wire Data Bus Cable.
- Lifetime Limited Warranty.

### **SPECIFICATIONS**

- Size: 4.4" x 3" x 1.2".
- Operating Voltage: 9-14 Volts D.C.
- Current Required: 40 mA.

Features and Specifications subject to change without notice.

### **INCLUDES**

- ELK-MB485 RS-232 to RS-485 Data Converter.
- Data Interconnect Cable (4 Pin) (W018A).
- Computer Serial Cable (9 Pin) (W019A).

### **REQUIRES (not included)**

- 12 Vdc Power Supply.
- PC with Microsoft Windows™.
- ELK Magic Module(ELK-MM443).
- ELK Magic Module PC Software.

#### **LIFETIME LIMITED WARRANTY**

Elk Products, Inc. ("Manufacturer") warrants to the original purchaser (the "Customer") that the products it manufactures ("Product") shall be free from defects in material and workmanship at time of shipment. Manufacturer's obligations under this Limited Warranty shall be limited to repairing or replacing, at its option, free of charge, any product returned to Manufacturer freight prepaid. Manufacturer shall have no obligation under this Limited Warranty or otherwise if (1) the Product has been damaged by negligence, accident, mishandling, lightning or flood, or other Acts of God, (2) the Product has not been operated in accordance with its operating instructions, (3) the Product has been altered or repaired by anyone outside Manufacturer's authorized facilities (4) adaptations or accessories have been made or attached to the Product which, in Manufacturer's sole determination, have adversely affected its performance, safety or reliability. Products such as batteries and fused transformers have their own warranties, and are not included in this Limited Warranty.

If a Product should malfunction or fail, contact Manufacturer or one of its authorized distributors for a Return Authorization (RA) number. Returned Products must include a complete description of the problem, along with the RA number clearly marked on outside of the package. Manufacturer will not be responsible for any unnecessary items included with any returned Product.

**THIS WARRANTY IS THE EXCLUSIVE WARRANTY FOR ANY PRODUCT. MANUFACTURER SPECIFICALLY DISCLAIMS ANY AND ALL OTHER WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE OR OF MERCHANTABILITY. MANUFACTURER SHALL NOT BE LIABLE IN TORT, INCLUDING NEGLIGENCE OR STRICT LIABILITY, AND SHALL HAVE NO LIABILITY AT ALL FOR INJURY TO PERSONS OR PROPERTY, MANUFACTURER'S LIABILITY FOR FAILURE TO FULFILL ITS OBLIGATION UNDER THIS LIMITED WARRANTY OR ANY OTHER LIABILITY IN CONNECTION WITH A PRODUCT SHALL BE LIMITED TO THE AMOUNT OF THE PURCHASE PRICE RECEIVED BY MANUFACTURER FOR THE PRODUCT. THE REMEDIES STATED IN THIS LIMITED WARRANTY ARE THE CUSTOMER'S EXCLUSIVE REMEDIES AGAINST MANUFACTURER REGARDING ANY PRODUCT. UNDER NO CIRCUMSTANCES SHALL MANUFACTURER BE LIABLE FOR ANY INDIRECT, INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES, INCLUDING LOST PROFITS AND REVENUES, INCONVENIENCE OR INTERRUPTIONS IN OPERATIONS, OR ANY OTHER COMMERCIAL OR ECONOMIC LOSSES OF ANY KIND. THESE LIMITATIONS AND DISCLAIMERS ARE NOT MADE BY MANUFACTURER WHERE PROHIBITED BY LAW. SOME STATES PROHIBIT LIMITATIONS OF WARRANTIES AND THE CUSTOMER MAY HAVE ADDITIONAL RIGHTS IN THOSE STATES.**

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- 1) Reorient or relocate the receiving antenna.
- 2) Increase the separation between the equipment and receiver.
- 3) Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- 4) Consult the dealer or an experienced radio/TV technician for help.

For more information contact your local Distributor or: ELK Products, Inc. - PO Box 100 - 3266 US Hwy. 70 West - Hildebran, NC, - 28637 - USA - 828-397-4200

\*Windows 95/98 is a registered trademark of Microsoft Corp



**ELK**  
PRODUCTS, INC.

PO Box 100 • Hildebran, NC 28637 USA • 828-397-4200 Voice • 828-397-4415 Fax  
<http://www.elkproducts.com> • email: [info@elkproducts.com](mailto:info@elkproducts.com)

# ELK-MB485 HOOK-UP DIRECTIONS

1. Install ELK Magic Module Software on the PC to be used to communicate with the ELK Magic Module(ELK-MM443).
2. Connect a 9 Pin Serial Cable(not supplied) from the PC Serial Port to the ELK-MB485 9 pin connector (P1).
3. Connect the 4-Wire Ribbon Cable from the ELK-MB485 4 pin connector to the Magic Module 4 pin connector (J2) **or** connect the units using the + A B - terminals.
4. Connect a 12 Volt D.C. Power Supply to the Magic Module (this will also power the ELK-MB485).
5. Start the Magic Module Software program, Click the **Xmit** icon button, the Transmit window will appear. Click the **CommPort - Settings**, then select the **Com Port** that is connected to the ELK-MB485. (Refer to the Transmit Setup section in the Magic Module Software Program Instructions)
6. Power up the Magic Module, the ELK-MB485 Power LED will turn on.
7. Using the Transmit window, test communications by selecting **Type 3** and set **Address** to match your settings on the Magic Module. Click on the **Stop** button, the Stop command will be displayed in the Data Display window and the Acknowledge command from the Magic Module will be displayed in the Command Received window. If "No Response" is displayed, the Magic Module is not responding, verify the address settings, the 4-wire Data Bus, and Power connections.
8. The computer link should now be established allowing programs to be downloaded. The Magic Module Input, Output, and Memory locations can also be displayed.

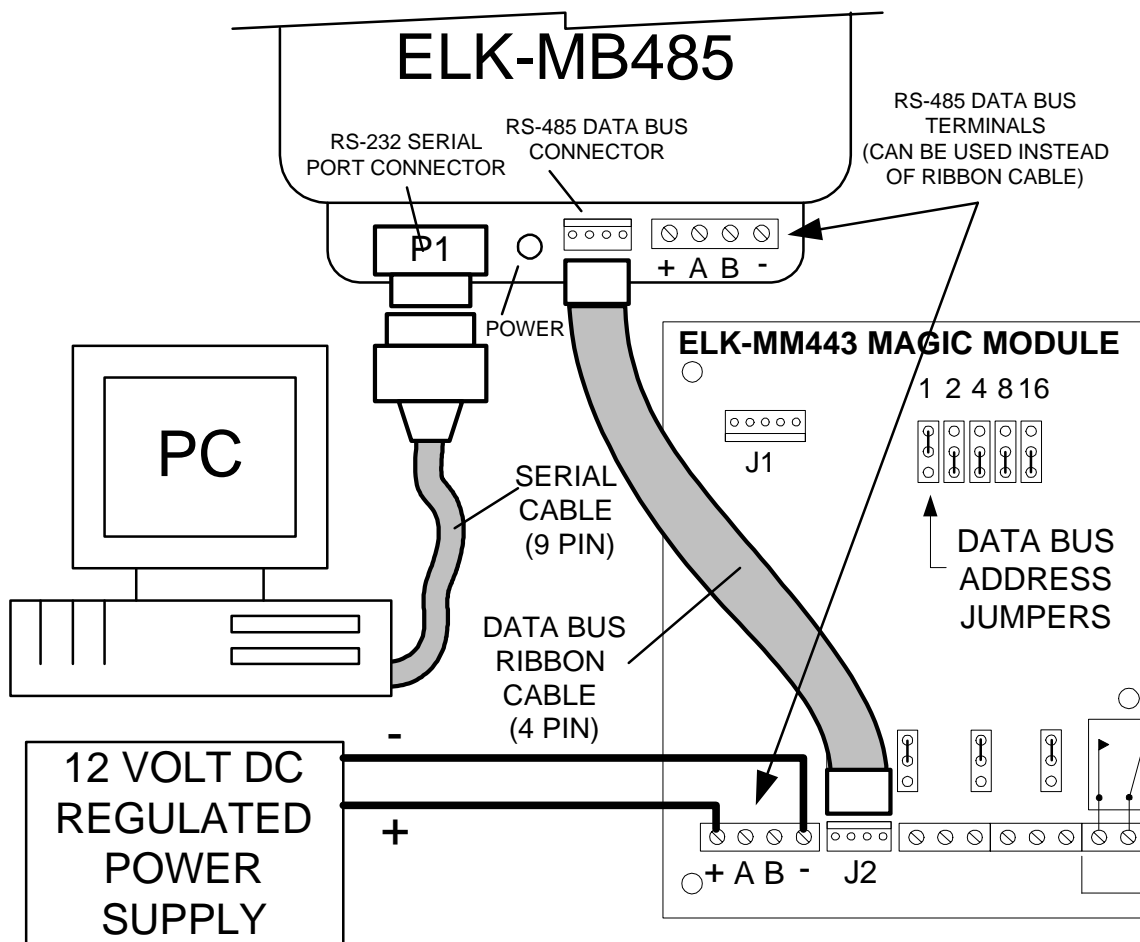


Figure 1