

Magic Module™ Series

- ELK-MM220 Module, 2 Input, 2 Output, Programmable
- ELK-MM443 Module, 4 Input, 4 Output, Programmable
- ELK-MV480 Voice Module, 400 Recordable Channels
- ELK-MK400 Starter Kit, Includes ELK-MM443 & ELK-MB485
- ELK-MK485 Programmers Kit, ELK-MB485, Cables, Software
- ELK-MK420 iButton™ Access Kit w/ MM443, MA100, MA101
- ELK-MA100 iButton™ "Touchkey" Reader & Interface Pack
- ELK-MA101 iButton™ "Touchkeys", 10 pcs w/keyring holders
- ELK-MA290 Proximity / Wiegand Data Interface to MM443
- ELK-MC100 Clock / Calendar Module for ELK-MM443
- ELK-MT100 Temperature Sensor Module for ELK-MM443
- ELK-MK410 X-10® Transceiver Kit, Programmed ELK-MM443

Magic Module Series

Two Input, Two Output Programmable Module

ELK-MM220

4K Programmable Memory

APPLICATION:

The **ELK-MM220** is an economical stand alone field programmable controller. It can be programmed and used in a vast array of applications. It features two digital inputs, two form C relay outputs.



Magic Module Series

ELK-MM220

Two Input, Two Output Programmable Module



Notice: It is recommended that the entire system be completely tested on a regular basis. However, despite frequent testing, and due to, but not limited to, criminal tampering or electrical disruption, it is possible for this product to fail to perform as expected.

Any system of any type may be compromised deliberately or may fail to operate as expected for a variety of reasons.

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 828-397-4200 FAX 828-397-4415
<http://www.elkproducts.com> Email: info@elkproducts.com
06/03

Programs can be written and stored in non-volatile EEPROM memory using the ELK-MK400 Development Kit. Typical Applications include: Programmable Delay Timer, Alarm Memory, Single Zone Security System, Cross Zoning, Access Control, Pulse Stretcher, Pulse Counter, Swinger Shutdown.

FEATURES:

- Two Digital Inputs.
- Two Form C Relay Outputs.
- Four Timers, 1/10th Sec. - 255 hours.
- Four General Purpose Counters, 0 - 255.
- Non-volatile EEPROM Memory.
- LED Output Indicators.

SPECIFICATIONS:

- Compact Enclosure Size: 4.5" x 3" x 1.2".
- Operating Voltage: 9.6-15 Volts D.C.
- Current Required: 70 mA.
- Relays, 10 Amps @ 120VAC, 7 Amps @ 28VDC.

REQUIRES:

- 12 Volts D.C. Power Supply.
- Optional: Starter Development Kit (ELK-MK400).

Features and Specifications subject to change without notice.



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Instructions Printed On Inside

ELK-MM220 HOOK-UP DIRECTIONS

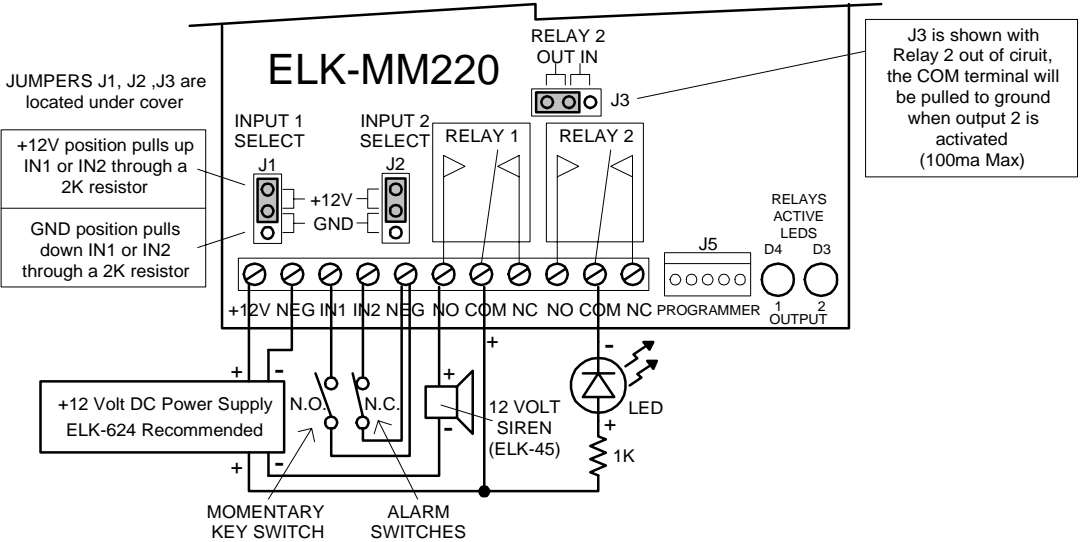
The ELK-MM220 has been factory programmed with a sample application as labeled on the unit, for other applications it must be reprogrammed before installation. The Program Development Kit (ELK-MK400) is required to re-program the ELK-MM220 if desired. The Development Kit contains software and programming instructions needed to program the ELK-MM220. The program is written using the Elk Magic Module Software and debugged by using the ELK-MM443 Magic Module that is included in the development kit. The program is then download into the ELK-MM220 through a 5 conductor ribbon cable connected between the ELK-MM443 J1 connector and the ELK-MM220 J5 connector. **Note:** If using the Clock/Calendar Module(ELK-MC100), temporarily remove it to gain access to the ELK-MM443 J1 connector.

The ELK-MM220 has two digital inputs that switch from Low to High at approximately 2 Volts. Each input is jumper selectable at J1 & J2 for an onboard 2K input resistor either pulled up to +12 Volts, or pulled down to Ground. The ELK-MM220 has two form C relay outputs. Relay 2 is jumper selectable using J3 to switch the output through a transistor (100mA max). Placing J3 to the OUT position will disable Relay 2 and allow the Relay 2 COM terminal to be pulled to ground through a transistor when activated. This setting handles up to 100mA of current and is intended for applications like flashing an LED. If more current or dry contacts are required then set J3 to IN and use the Relay 2 contacts, the transistor will be disabled.

Test the ELK-MM220 after downloading the program to ensure that it functions as desired. The ELK-MM220 can be reprogrammed multiple times.

Example Hookup: ELK-MM220 used as a Single Zone Security System

IN1 is a Momentary Key Switch, IN2 is a Normally Closed Burglar Loop, Relay 1 is the Alarm Output, Relay 2 is the Status LED



Input Hookup Types for IN1 and IN2

