



Digital Lighting Systems, Inc.

MF402

4 Channel “Mini-Fader/ Chaser ”
Cross Fader/ color mixing/ Animation chaser
MF402-12/MF402-24/MF402-120/MF402-220
MF402-12DC/ MF402-24DC

Animation

USER'S MANUAL



General Description

The **MF402** is a four-channel single-phase AC lighting controller (Cross-Fader/Lighting animation) capable of producing slow level changes(Color Mixing) as well as Quick ON/OFF (Animation)

A functional block diagram of the **MF402** is shown in Figure 1. **MF402** contains the equivalent of four solid-state relays (**SSR**) 4 dimmers, with one power line feed. Each dimmer is rated at a maximum output current of 2.5 Amperes. The **SSR** dimmers are controlled by low-voltage DC signals from the logic circuit on the board. These signals are electrically-isolated by Optical couplers from all line voltage elements. The **MF402** logic board contains a powerful microprocessor programmed to generate 16 user-selectable light sequences or patterns at an adjustable rate (the **MF402** is also available with a "SPELLER" pattern or custom patterns upon request). A rotary selector on is used to select the pattern and a second one is used to set the rate or speed. Patterns and speed can be monitored by four LED's that represent the outputs of the **MF402**. The **MF402** Requires Logic power from an external step down transformer **8 VAC to 12 VAC**

Please contact the factory for additional information by telephone 1-877-264-8391 or email info@digitallighting.com

Figure 1 - MF402 Functional Block Diagram

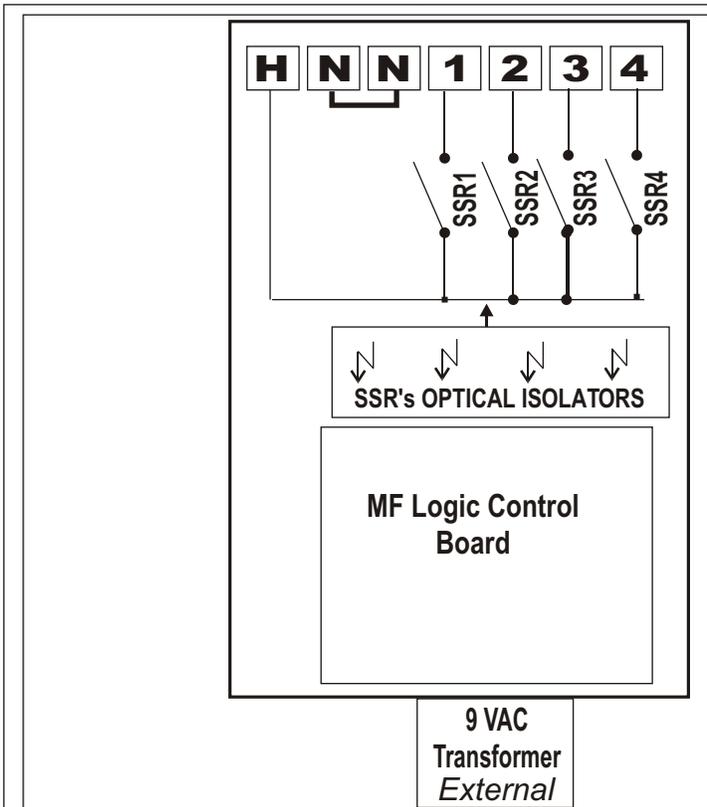


TABLE 1 - TERMINALS DEFINITION

NAME	DESCRIPTION
1	Output Of Solid-State Relay #1
2	Output Of Solid-State Relay #2
3	Output Of Solid-State Relay #3
4	Output Of Solid-State Relay #4
H	Hot Line Feed For Relays 1 , 2 , 3 & 4.
N	Neutral Bus Connections.

TABLE 2 - ABSOLUTE MAXIMUM ELECTRICAL RATINGS

Electrical Characteristic	Terminal	Maximum
Relay Load Current	1 to 4	2.5 Amps.
Input Current	H	10 Amps.
Input Voltage	H	120 VAC



MF402-120 DETAIL

FIGURE 1 - MF402-

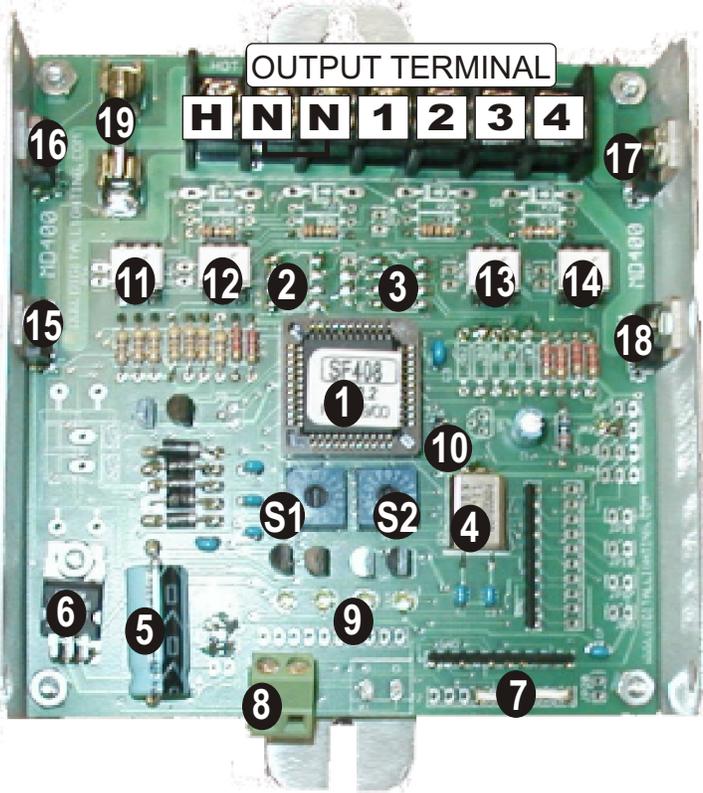


TABLE 1 - OUTPUT TERMINALS DEFINITION

NAME	DESCRIPTION
1	Output Of Solid-State Relay #1
2	Output Of Solid-State Relay #2
3	Output Of Solid-State Relay #3
4	Output Of Solid-State Relay #4
H	Hot Line Feed For Relays 1 , 2 , 3 & 4.
N	Neutral Bus Connections.

TABLE 2 - ABSOLUTE MAXIMUM ELECTRICAL RATINGS

Electrical Characteristic	Terminal	Maximum
Relay Load Current	1 to 4	2.5 Amps.
Input Current	H	10 Amps.
Input Voltage	H	120 VAC

TABLE 3 - MF402-120 CIRCUIT LEGEND

- 1 Microprocessor.
 - 2 Not Used
 - 3 Not Used
 - 4 Quartz Crystal.
 - 5 Power Supply Capacitor.
 - 6 Voltage Regulator.
 - 7 4 or 3 channel selection
 - 8 Logic power connector
 - 9 Output LED Monitors.
 - 10 Jumper for Chasing
 - 11,12,13,14 Optical Couplers # 1,2,3,4
 - 15,16,17,18 Triacs # 1,2,3,4 In VAC applications; MOSFETs in VDC applications
 - 19 Fuse 5mm
- S1 Speed selector 0 = Slowest ; F = fastest**
S2 Pattern Selector see table on page 9



Mechanical Installation

The **MF402** modules are designed to be mounted in NEMA enclosures(by others).

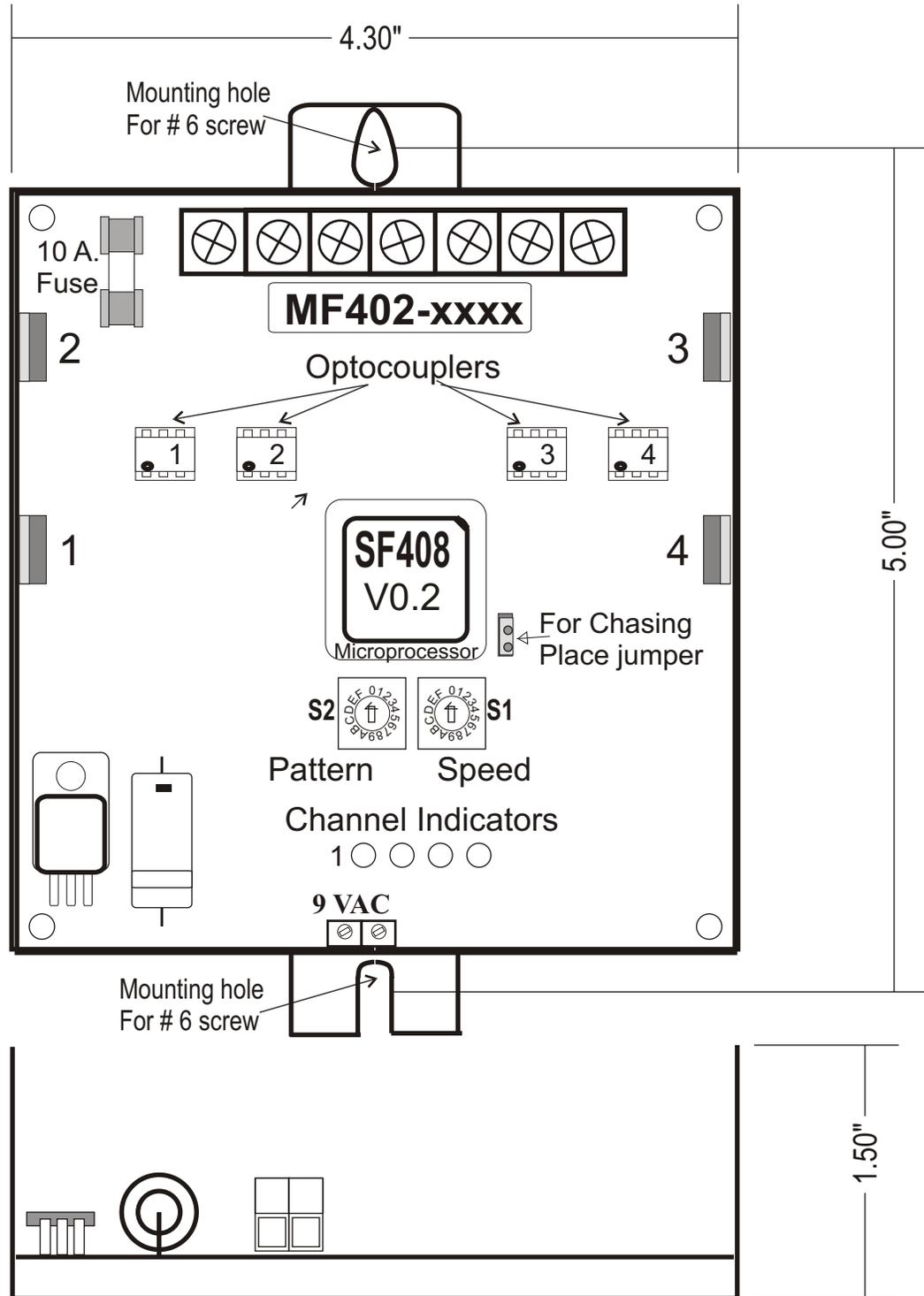


FIGURE 3 - MF402 DIMENSIONAL DIAGRAM

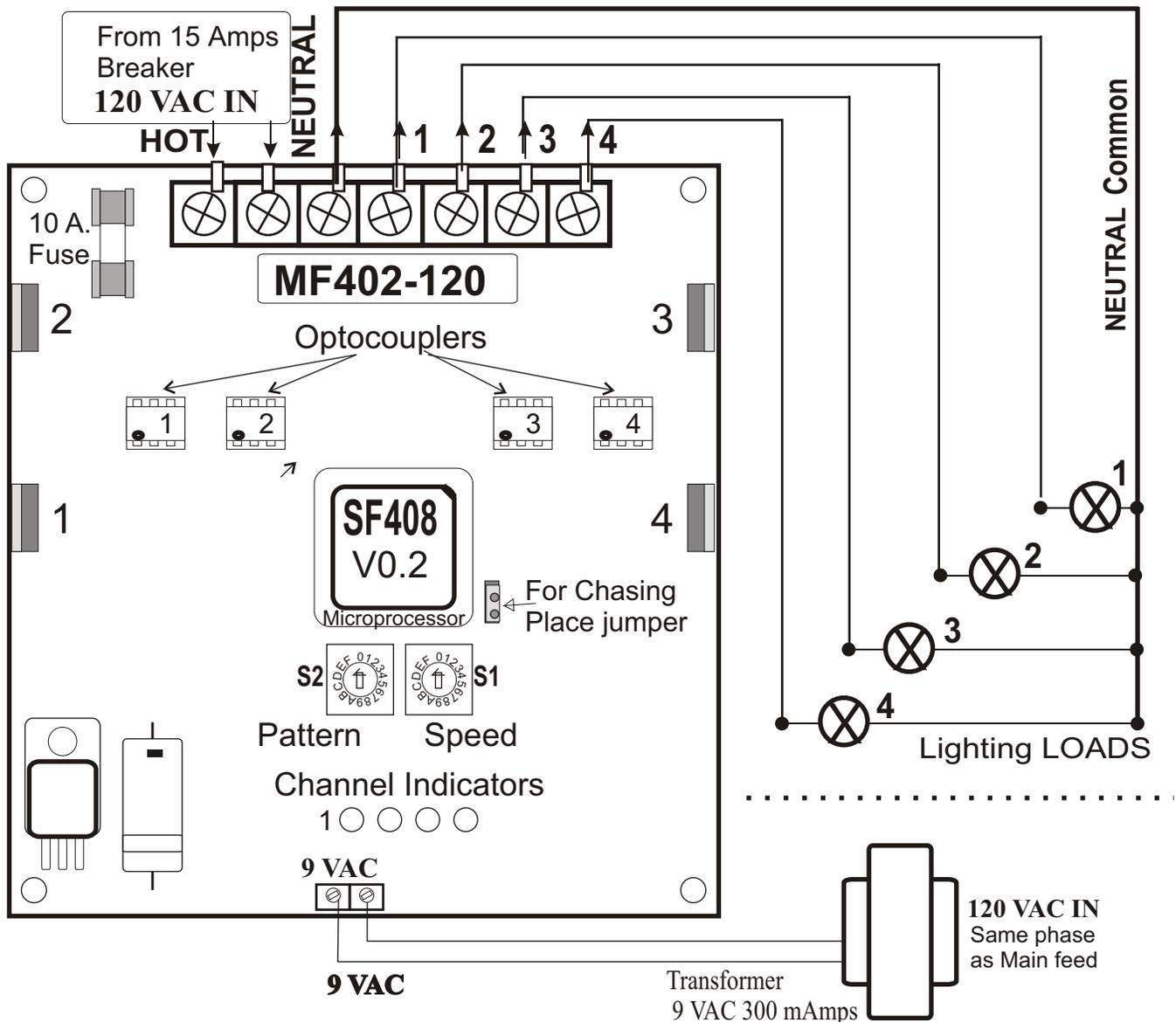


MF402-120 General Wiring Instructions for 120V version.

Wiring Notes

- **DO NOT EXCEED** 300 W (2.5 Amps.) per circuit output @ 120VAC.
- MF402 Fader packs may be fed by one 15 A (maximum) branch circuit and may have up to four separately dimmed loads.
- Loads connected to outputs must be dimmable.
- **CAUTION: DO NOT** attempt to parallel outputs to increase capacity.
- Installations must conform to local and/or NEC code requirements.
- Each load must have its own Neutral wire for full load operation.
- All line voltage wires must have copper conductors of adequate Gauge with 90° C wire insulation.
- **POWER EACH LOAD DIRECTLY BEFORE CONNECTING IT TO THE MF402, TO ENSURE PROPER WIRING.**

Figure 5 - MF402 Typical 120 VAC Wiring.



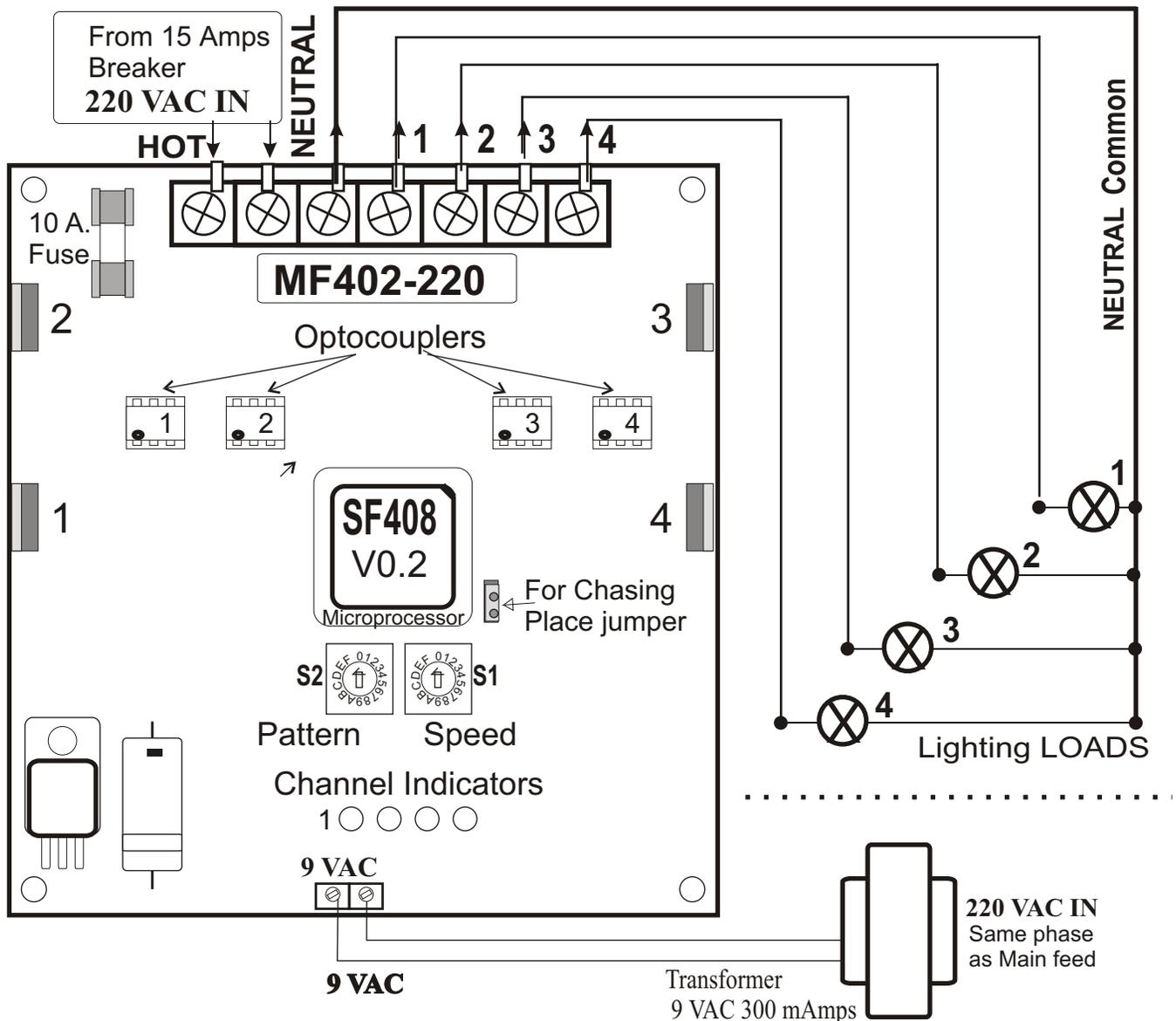


MF402-220 General Wiring Instructions for 220-240V version.

Wiring Notes

- **DO NOT EXCEED** 600 W (2.5 Amps.) per circuit output @ 240VAC.
- MF402 Fader packs may be fed by one 15 (maximum) branch circuits and may have up to four separately switched loads.
- Loads connected to outputs must be dimmable.
- **CAUTION: DO NOT** attempt to parallel outputs to increase capacity.
- Installations must conform to local and/or NEC code requirements.
- Each load must have its own Neutral wire for full load operation.
- All line voltage wires must have copper conductors of adequate Gauge with 90° C wire insulation.
- **POWER EACH LOAD DIRECTLY BEFORE CONNECTING IT TO THE MF402, TO ENSURE PROPER WIRING.**

Figure 5 - MF402 Typical 220 VAC Wiring.





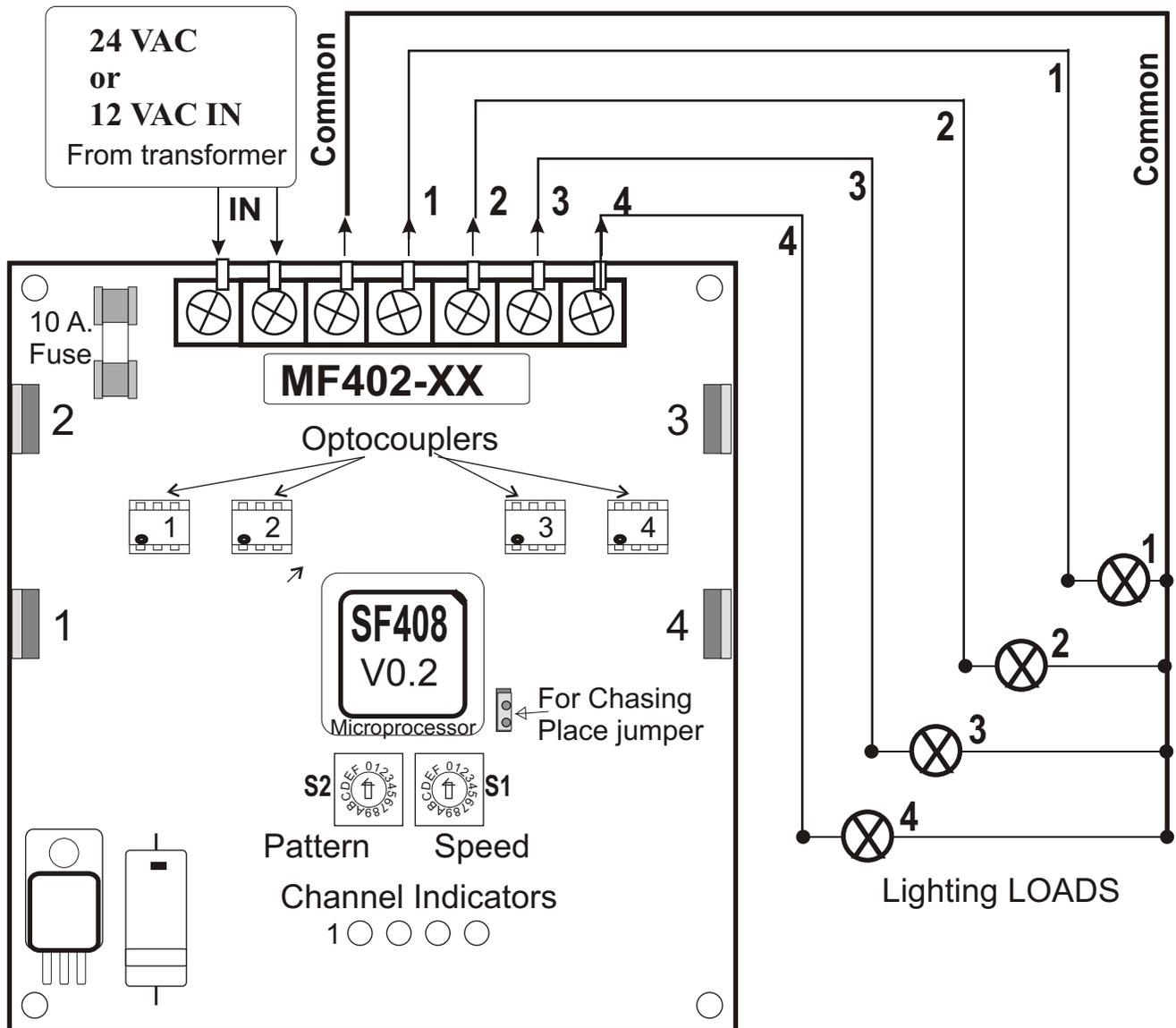
MF402-24 Or MF402-12 General Wiring Instructions 24VAC /12VAC

Wiring Notes

- **DO NOT EXCEED** 60 W (2.5 Amps.) per circuit output @ 24VAC. Or 30 W @ 12 VAC
- MF402 Fader packs may be fed by one 15 (maximum) branch circuits and may have up to four separately switched loads.

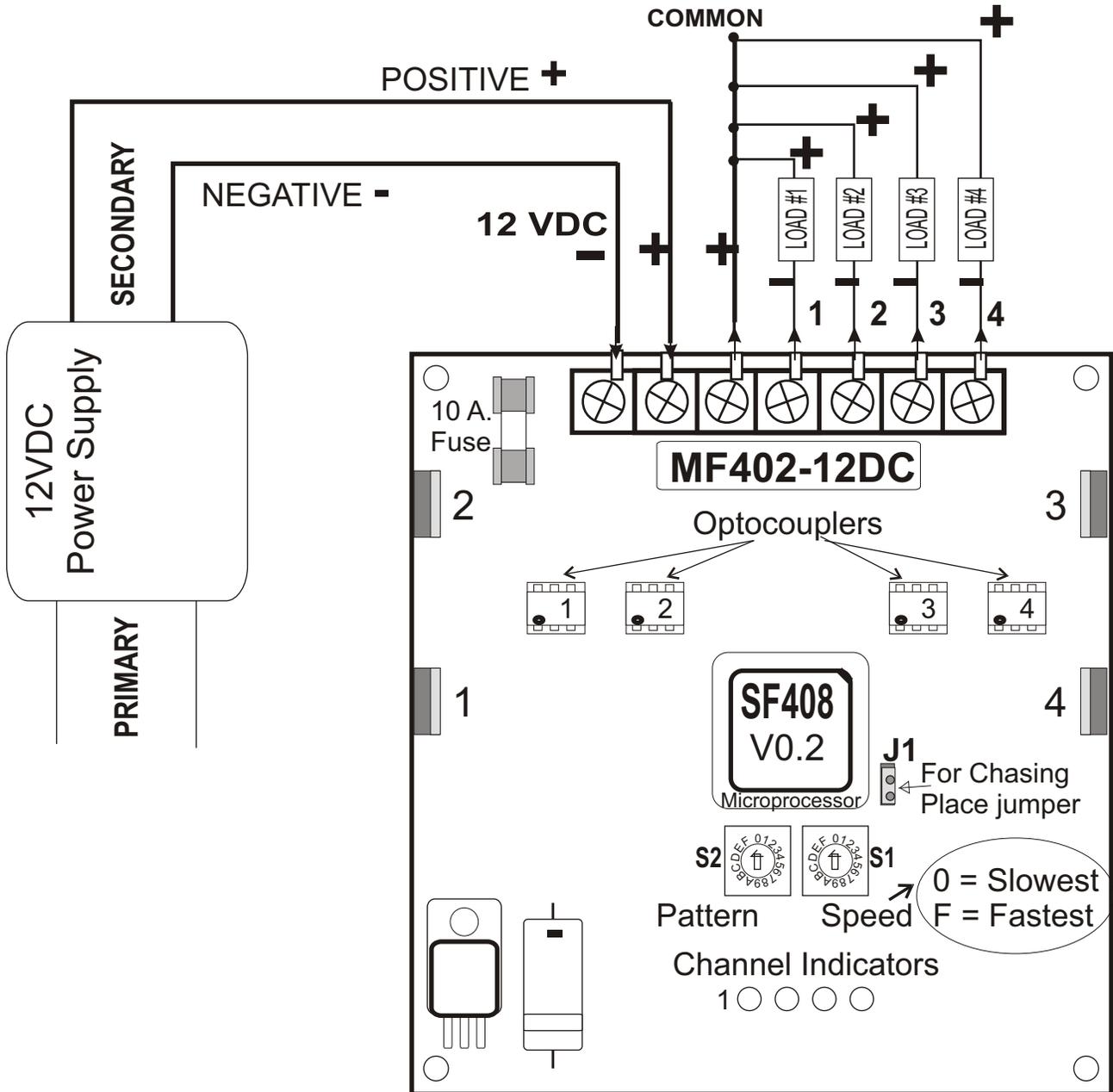
With MF402-24 you may use a single 24 VAC-250 VA or better transformer
.With MF402-12 you may use a single 12 VAC-150 VA or better transformer.
Follow transformer's installation & wiring instructions from manufacturer.

Figure 5 - MF402 Typical 24 VAC or 12 VAC Wiring.





Common POSITIVE (Anode) / Switched Negative



USE SAME WIRING SCHEME FOR MF402-24DC; 24 VDC



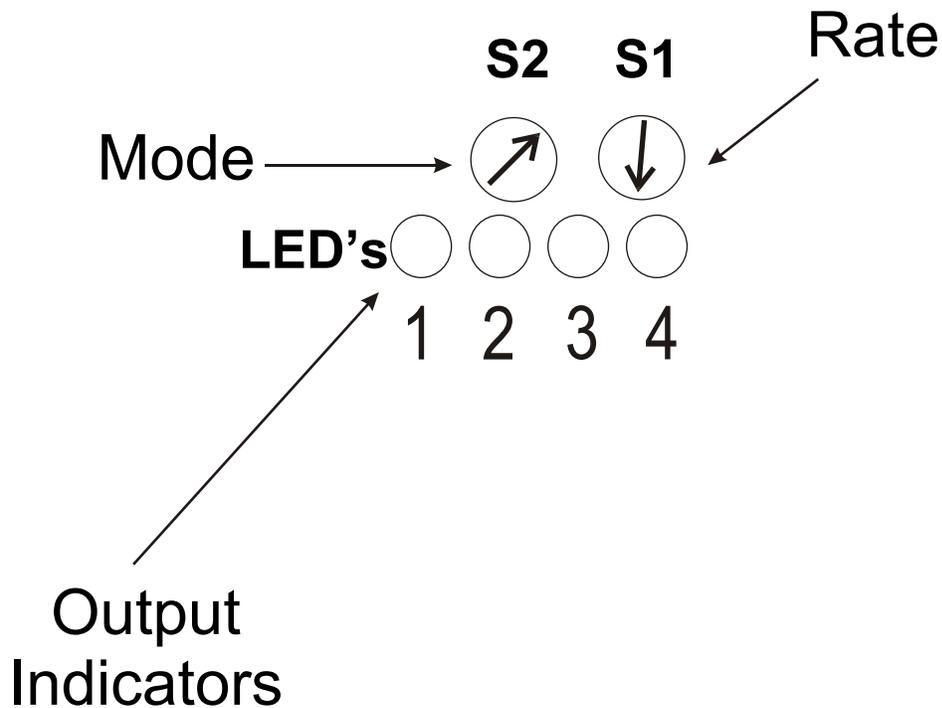
Controls

The controls consist of two rotary 16-position (**0-9** and **A-F**) selectors. **S2 (PATTERN)** is used for selecting the desired Fade pattern. Positions **0** will scroll through the patterns automatically to provide an ever changing light show. The **MF402** outputs can be turned to static **ON** by selecting **F**. When **0** is selected, the **MF402** goes into an automatic pattern change mode. All other positions cause the **MF402** to play a single pattern indefinitely. **S1** is used to select one of 16 individual Fade rates (**Rate**). Minimum speed is achieved by selecting position 0. Speed doubles with each subsequent selector position.

Indicators

LED indicators 1 to 4 indicate the status (On-Dimmed-Off) of their corresponding

Figure 9 - Mf402 Indicators and Control Selectors



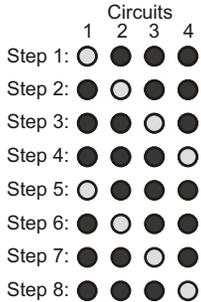
CAUTION

Use a small Screw driver for adjusting selector positions in order to avoid damaging the Selectors slots.

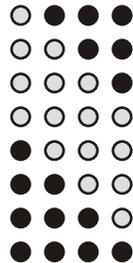


Patterns for MF402

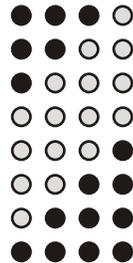
1
Light Fade



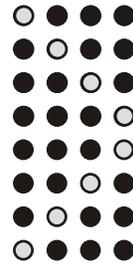
2
Fill & Swipe Forward



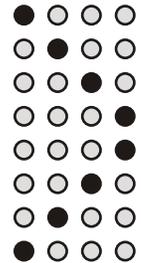
3
Fill & Swipe Back



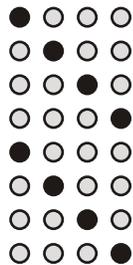
4
Light Bounce



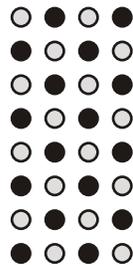
5
Dark Bounce



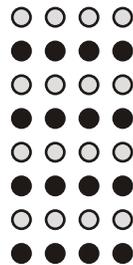
6
Dark Fade



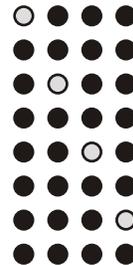
7
Flip-Flop



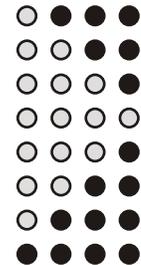
8
Flash All



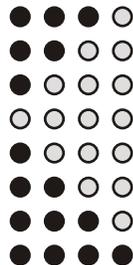
9
Flash Light Fade



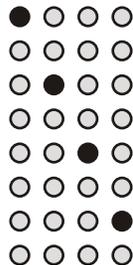
A
Spring Forward



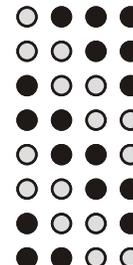
B
Spring Back



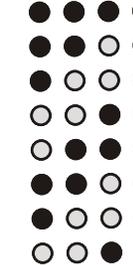
C
Flash Dark Fade



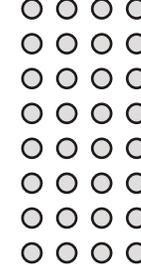
D
Crawl Forward



E
Crawl Back



F
All On



0

Auto Cycle
Patterns 1-F
4 x each
then repeat

KEY: ○ ON
● OFF



LIMITED WARRANTY

Digital Lighting Systems, warrants to the purchaser that its products have been carefully manufactured and inspected and are warranted to be free from defects of workmanship and materials when used as intended. Any abuse or misuse contrary to normal operation shall void this warranty.

Digital Lighting Systems' obligation under this warranty shall be limited to replacement or repair of any units as shall within one year of date of invoice from **Digital Lighting Systems**, prove defective; and **Digital Lighting Systems** shall not be liable for any other damages, whether direct or consequential. **The implied warranties of merchantability and fitness for a particular purpose are limited to the duration of the expressed warranty.** Some states do not allow the exclusion of the limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, you may also have other legal rights which vary from state to state.

Defective merchandise may be returned to **Digital Lighting Systems**, prepaid, after prior notification has been given and approval obtained for the return. To obtain prior approval for the return of the defective items, contact your local Digital Lighting Systems distributor, representative, or:

Digital Lighting Systems, Inc.

Attn: Customer Service Department
7588 NW 8th Street
Miami, FL 33126
(305) 264-8391

Upon request, replacement unit(s) will be shipped as soon as available. Unless immediate shipment of replacement merchandise is requested, **Digital Lighting Systems** will not ship replacement merchandise until defective merchandise is received, inspected, and determined to be defective.

No labor charges in connection with warranty problems will be reimbursed by Digital Lighting Systems without prior written approval from the factory.

Digital Lighting Systems distributors and representatives have no authority to change this warranty without written permission.

Digital Lighting Systems reserves the right to determine the best method of correcting warranty problems.





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