

# FL-4020 FLUORESCENT BALLAST CONTROLLER

Version 1.0

OWNERS MANUAL

10/06/2005

## PRODUCT DESCRIPTION

The FL-4020 is a four channel controller add on product for the AR-1202 Architectural dimmer. It provides control of dimmable fluorescent lighting ballasts. The FL-4020 provides four 2400 Watt channels of fluorescent dimming which is interfaced to the AR-1202 control circuitry. The AR-1202 uses its four auxillary channels (13 – 16 ) to control the FL-4020. Dual SCR “zero crossing” switching is used to control the switched hot lines.

The FL-4020 is supplied in two versions:

FL-4020A: Controls ballasts which use a switched 120 VAC “hot” and a dimmed 120 VAC as a control signal.

FL-4020D: Controls ballasts which use a switched 120 VAC “hot” and a 0-10 VDC dimming control signal.

## INSTALLATION



### WARNING

MAKE CERTAIN POWER IS REMOVED FROM THE FEED CIRCUITS  
BEFORE YOU BEGIN INSTALLATION.



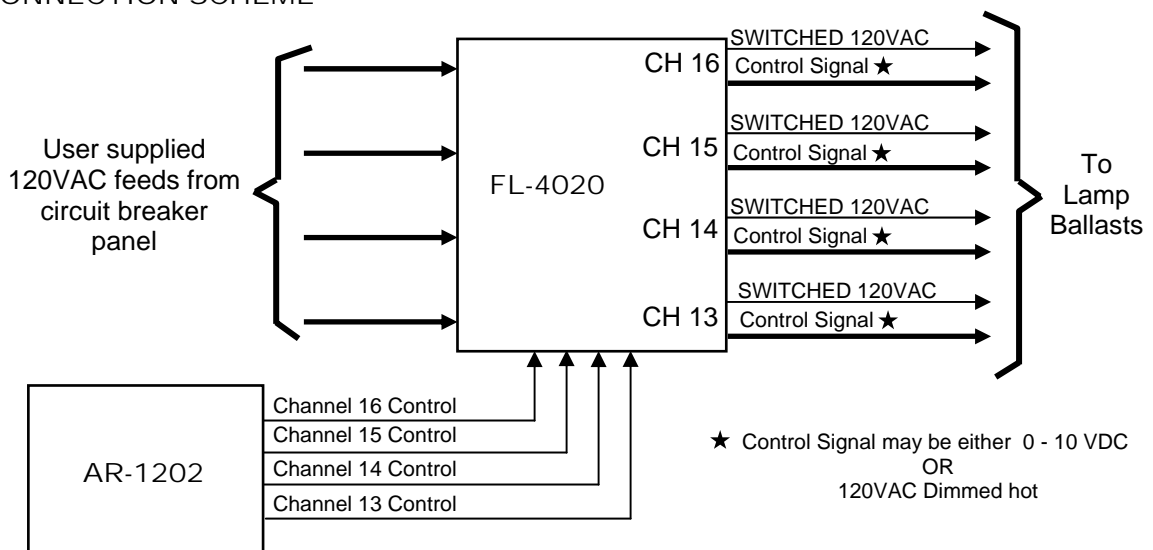
The unit should be wall mounted close to an AR-1202 dimmer. The unit may be "stood off" from the wall (aprox. 1") to assure clear airflow across the rear heat sink surface. A 120VAC 20 Amp power input must be provided for each dimming channel. Each channel may control multiple ballasts as long as the channel load does not exceed 2400 Watts. The internal low current electronic circuitry is powered, via a 1/2 Amp 250VAC fast blow fuse, by the H1 input power connection.

### REQUIREMENTS FOR THREE PHASE OPERATION:

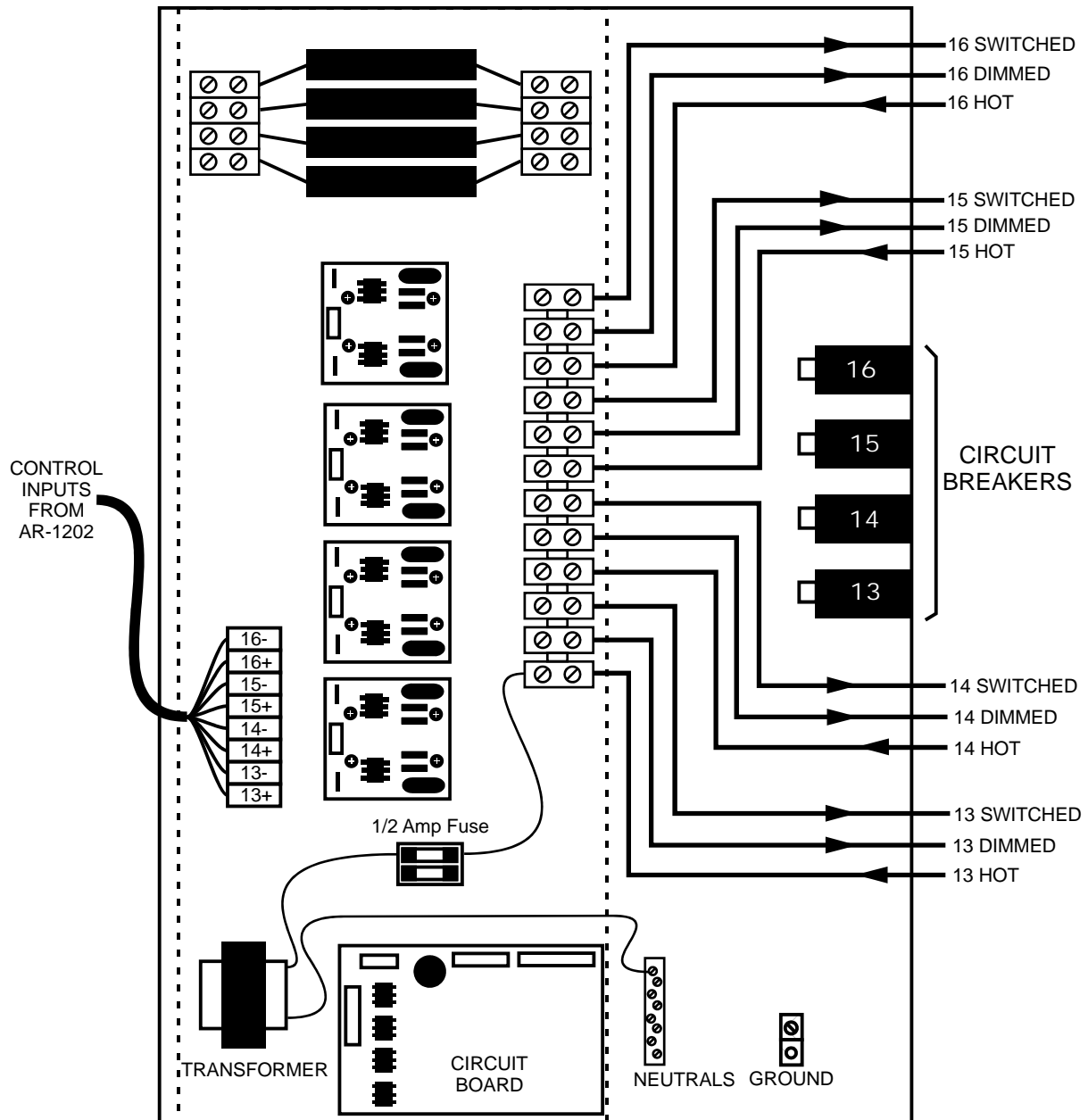
In order to provide zero crossing switching, the AR-1202 uses a specific phase sequence when operated with 3 phase power. The sequence convention must also be adhered to when connecting the FL-4020. The phase connected to the AR-1202 H1 power input terminal must also be used for channels 1 and 4 of the FL-4020. The AR-1202 H2 phase must be used for FL-4020 channel 2. The AR-1202 H3 phase must be used for FL-4020 channel 3. The table below summarizes this requirement.

POWER PHASE	AR-1202 CHANNEL	FL-4020 CHANNEL
H1	13	13
H2	14	14
H3	15	15
H1	16	16

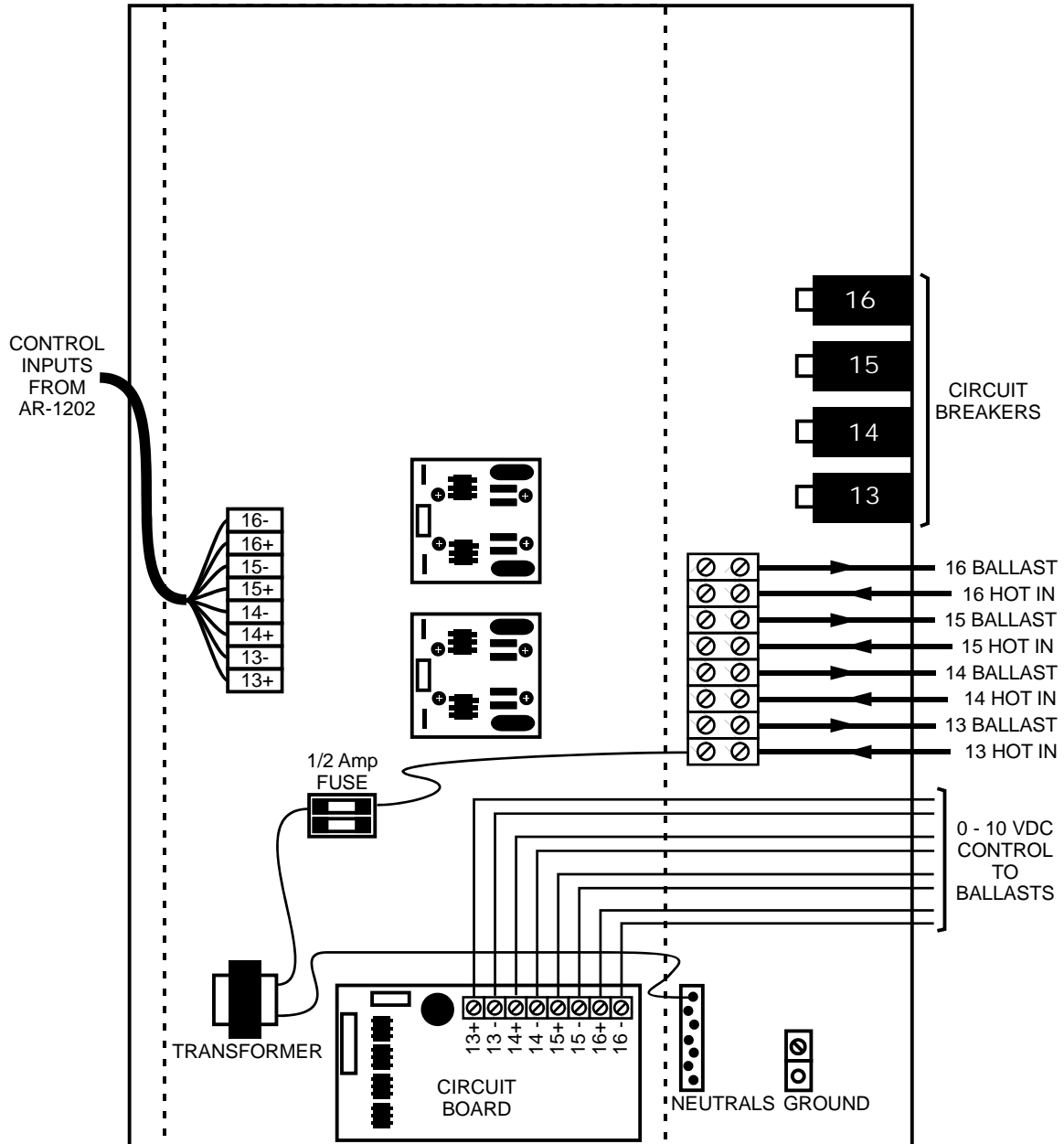
## TYPICAL CONNECTION SCHEME



FL-4020A CONNECTIONS



FL-4020D CONNECTIONS



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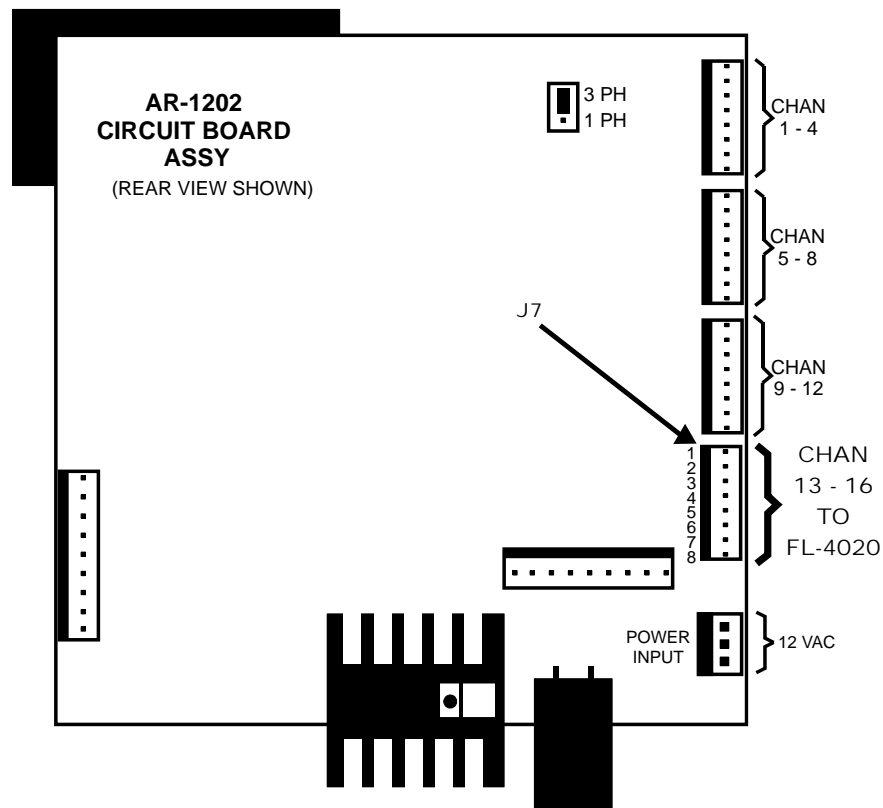
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## INSTALLATION NOTES

1. Chassis is 18"H x 15"W x 4.25" D. Multiple knockouts are provided at top and bottom for wiring access.
2. The unit weighs approx. 10 pounds.
3. Mounting holes are provided at rear of box. Box should be spaced approx. 1" from wall.
4. A 12 ft wiring harness (with connector) is provided to connect to an AR-1202 dimmer.

## FL-4020 CONTROL SIGNAL CONNECTIONS AT AR-1202

The 8 conductor cable which supplies the control inputs to the FL-4020 is supplied with a connector at the AR-1202 end. This cable connects directly to J7 on the circuit board located on the AR-1202 door. The location of J7 is shown in the diagram below.



## OWNER MAINTENANCE

There is a 1/2 Amp., 250 Volt, fast acting fuse in the unit to protect the internal electronic circuits from an overvoltage condition. The fuse may be replaced **ONLY** by a fuse of the same size and type.

The best way to prolong the life of your unit is to keep it cool, clean, and dry. It is important that the cooling intake and exit vent holes are clean and unobstructed.

Service by other than Lightronics authorized agents may void your warranty.

## OPERATING AND MAINTENANCE ASSISTANCE

If service is required, contact the dealer from whom you purchased the equipment or contact Lightronics, Service Department, 509 Central Drive, Virginia Beach, VA 23454 TEL 757 486 3588



All Lightronics products are warranted for a period of TWO/FIVE YEARS from the date of purchase against defects in materials and workmanship.

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This warranty is subject to the following restrictions and conditions:

- A) If service is required, you may be asked to provide proof of purchase from an authorized Lightronics dealer.
- B) The FIVE YEAR WARRANTY is only valid if the warranty card is returned to Lightronics accompanied with a copy of the original receipt of purchase within 30 DAYS of the purchase date, if not then the TWO YEAR WARRANTY applies. Warranty is valid only for the original purchaser of the unit.
- C) This warranty does not apply to damage resulting from abuse, misuse, accidents, shipping, and repairs or modifications by anyone other than an authorized Lightronics service representative.
- D) This warranty is void if the serial number is removed, altered or defaced.
- E) This warranty does not cover loss or damage, direct or indirect arising from the use or inability to use this product.
- F) Lightronics reserves the right to make any changes, modifications, or updates as deemed appropriate by Lightronics to products returned for service. Such changes may be made without prior notification to the user and without incurring any responsibility or liability for modifications or changes to equipment previously supplied. Lightronics is not responsible for supplying new equipment in accordance with any earlier specifications.
- G) This warranty is the only warranty either expressed, implied, or statutory, upon which the equipment is purchased. No representatives, dealers or any of their agents are authorized to make any warranties, guarantees, or representations other than expressly stated herein.
- H) This warranty does not cover the cost of shipping products to or from Lightronics for service.
- I) Lightronics Inc. reserves the right to make changes as deemed necessary to this warranty without prior notification.

