

# OWNERS MANUAL

Revision 1.8  
09/01/2002

## AR-1202 UNIT DESCRIPTION

The AR-1202 consists of a processor and 12 dimmer channels of 2.4KW each. Each dimmer channel is protected by a 20 Amp circuit breaker. Heavy duty filtering chokes are used to reduce noise. Dimmer channel semiconductors exceed a 200% load carrying capacity overhead allowance. All components and sub systems are UL recognized components. All internal wiring conforms to UL standards as they apply to industrial controls. Dimensions and weight information is given at the end of this manual.

## REMOTE CONTROLS

The unit can communicate with remotely located control equipment in several ways. A USITT DMX-512 protocol lighting console is normally used for general control. Additionally, the unit may be controlled by several types of remotely mounted wall stations. The remote stations are used to activate scenes which have been prestored in the AR-1202. Multiple wall stations may be chained together.

## POWER REQUIREMENTS

The AR-1202 may be operated from 120/208VAC three phase power or from 120/240VAC single phase power. The unit normally operates from a power frequency of 60Hz. It can optionally be converted to operate using 50Hz. Input power to the unit must be capable of delivering 80 Amps per line if using three phase or 120 Amps per line if using single phase power. The cabinet contains standard size "knockout" type power access.

The AR-1202 will not operate correctly using only 2 phases of a 3 phase power service. This holds true regardless of whether the unit is set up for single or three phase power.

## INSTALLATION

### PHYSICAL LOCATION

The unit is intended for indoor operation and should not be subjected to excessive moisture or heat. The unit should be installed where a supply of circulating air is available. Provide spacing between the unit and other equipment to allow air flow around the unit (particularly around the finned heat sinks). See "Dimensions and Locations" in this manual for additional information concerning mounting of the unit.

### POWER CONNECTIONS

Make certain that all power is removed from the power feed circuits before beginning electrical hookup. Consult applicable electrical codes to determine the proper wire type and methods.

The AR-1202 will operate using either three phase 120/208 VAC or single phase 120/240 VAC power. The unit is shipped from the factory in the THREE PHASE configuration. Refer to the following instructions and to the "AR-1202 EXTERNAL CONNECTIONS" diagram for specific wire connections.

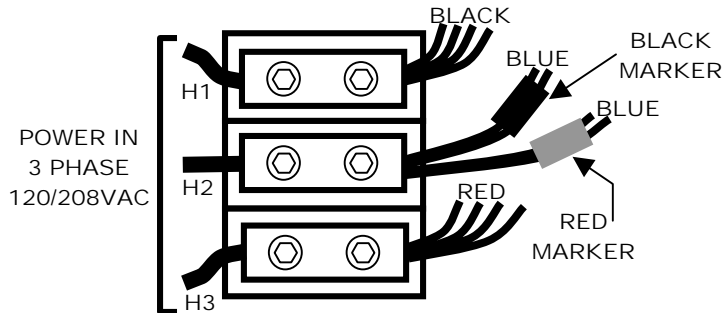
## AR – 1202 ARCHITECTURAL DIMMER

## TO OPERATE THE AR-1202 ON 120/208 THREE PHASE POWER

True 3 phase power must be supplied to operate the AR-1202 in the 3 phase configuration. This means that each of the three input power hot legs must have a 120 degree electrical phase offset from each other. The feed circuit must be able to supply 80 Amps for each hot leg.

There are 3 terminals on the input power block (H1, H2, H3). When operating the AR-1202 on three phase power, the unit expects a particular phase sequence for these 3 input power connections. It does not matter which phase is connected to the H1 terminal but H2 and H3 must be in the correct order. The unit will not be damaged if these two connections are reversed but dimming will not occur correctly and some channels will appear to be in a on/off mode. If this occurs - just reverse the input feed wires to terminals H2 and H3 to correct the situation. Do not move the input power connection to the H1 terminal.

There is a small black (or dark brown) jumper block on the circuit board. It is accessible when the AR-1202 door is opened. Move the jumper such that it covers the CENTER and UPPER pins (if it is not already set that way).

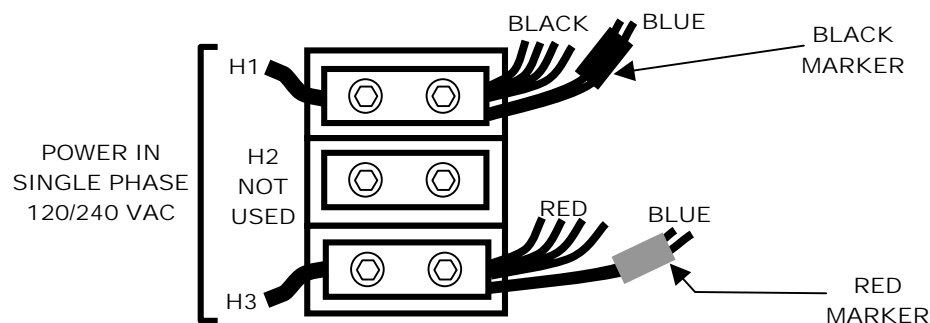


## TO OPERATE THE AR-1202 ON 120/240 SINGLE PHASE POWER

The unit should be run on 2 hot legs which are NOT the same phase. The 2 hot legs must be actual single phase power. This means that the two input power hot legs must have a 180 degree electrical phase offset from each other. **THE UNIT WILL NOT OPERATE IN A SINGLE PHASE CONFIGURATION FROM 2 LEGS OF A 3 PHASE SUPPLY CIRCUIT.** The feed circuit must be able to supply 120 Amps for each leg.

There are 3 terminals on the input power block (H1, H2, H3). When operating the AR-1202 on single phase power, the center (H2) terminal is not used. The wires connected to the right side of the H2 terminal contain color coded sleeves (RED and BLUE). These wires must be moved and distributed to the H1 and H3 terminals. Remove the wires on the H2 terminal and connect them to H1 and H3 such that the sleeve color matches the wire colors on H1 and H3. (H1 = RED, H3 = BLACK).

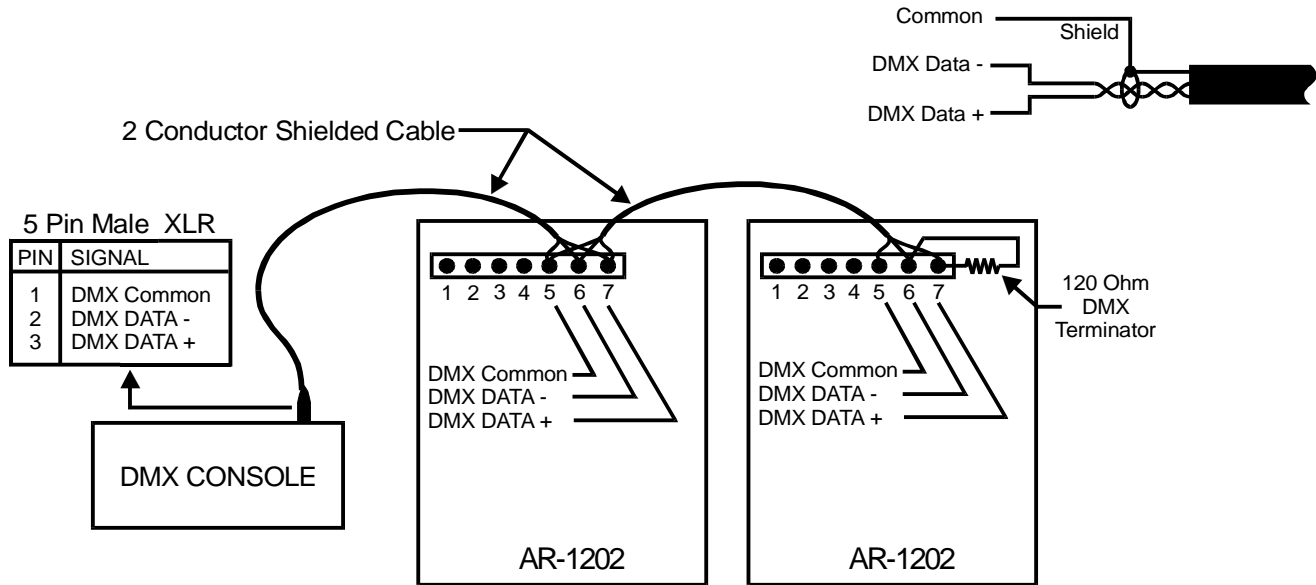
There is a small black (or dark brown) jumper block on the circuit board. It is accessible when the AR-1202 door is opened. Move the jumper such that it covers the CENTER and LOWER pins.



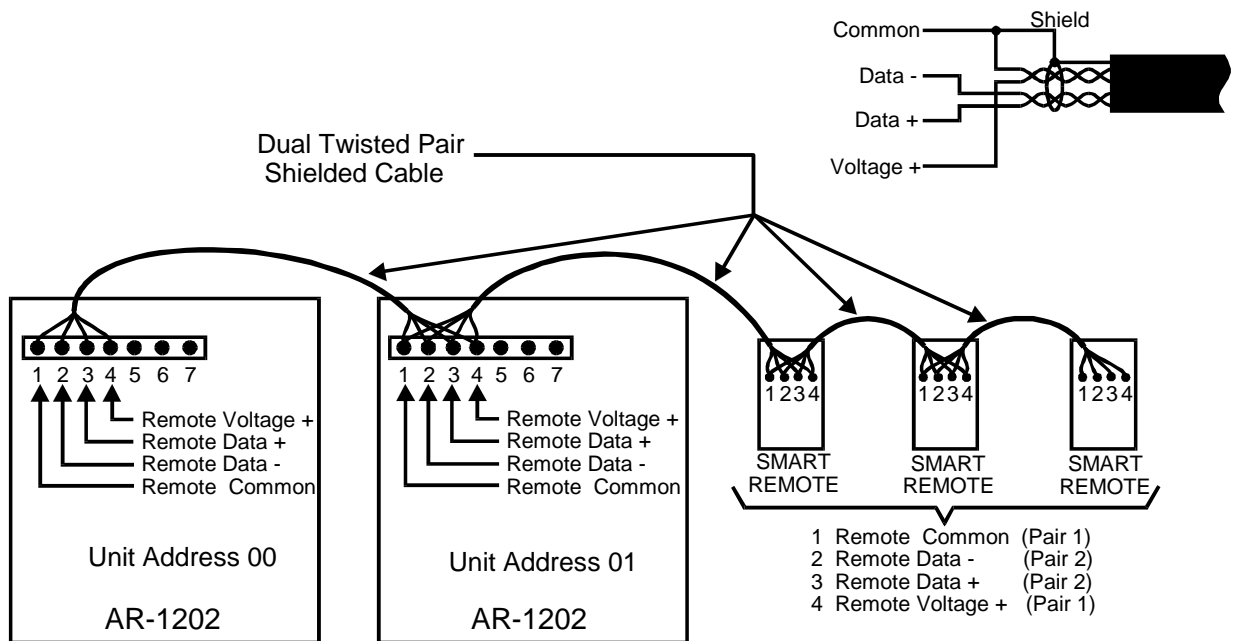
CONTROL SIGNAL CONNECTIONS

Terminal strips are provided for connection to DMX consoles, multi-scene remotes, and simple remote stations. Connection diagrams for DMX and multi scene remote units are shown below.

DMX CONNECTIONS



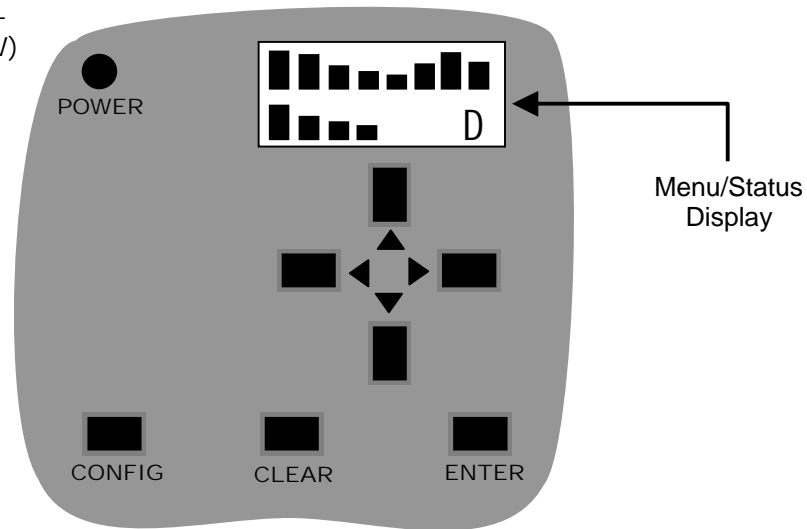
MULTI SCENE REMOTE CONNECTIONS



## AR - 1202 ARCHITECTURAL DIMMER

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FRONT PANEL  
(PARTIAL VIEW)

## AR - 1202 UNIT SETUP

The AR - 1202 must be set up (configured) as part of the installation process in any application. This set up process is done from the front panel of the unit. Unit setup should be done in a specific order. The unit address must be assigned first. Then the units output channels should be assigned (or patched) to the desired console control channels. The last setup step creates prestored scenes to be activated from the remote control stations. The channel assignments and/or scene setup may be changed at any later time.

## USING THE MENU SYSTEM

The **CONFIG** button steps through the display menus. There are currently 3 menus available. They are: "SCENE SETUP", "DIMMER SETUP", and "SET UNIT ADDRESS". When one of these messages is displayed you can push the **ENTER** button to access that function. The **CLEAR** button will return the unit to its normal operating mode and cause the MENU/STATUS display to show the channel level bar graph. The **CLEAR** button DOES NOT clear entered values. The arrow buttons are used to set values for various menu selections. A diagram of the unit control panel is included with this manual.

## UNIT ADDRESS ASSIGNMENT

At the AR-1202 front panel - push **CONFIG** until "SET UNIT ADDRESS" appears on the Menu/Status display.

SET UNIT  
ADDRESS

Push **ENTER**. The display shows the current unit address. Set the desired address by pushing the ↑ and ↓ buttons.

SET UNIT  
ID    ↑    ↓    00

Push **ENTER**.

Push **CLEAR** to return to the normal operating mode.

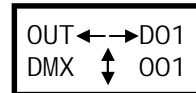
**NOTE:** When using a single AR-1202 unit system, the unit address MUST BE SET TO 00. One of the units in a multiple unit system must be set to address 00. Other units should be assigned in a consecutive order.

## DIMMER CHANNEL ASSIGNMENT

At the AR-1202 front panel - push **CONFIG** until “DIMMER SETUP” appears on the Menu/Status display.



Push **ENTER**. The display shows the dimmer output on the top line prefixed by “OUT” and a “D” or “R” which indicates that the channel is in the either relay or dimming mode. The currently assigned console channel is shown on the lower line prefixed by “DMX”.



Set each dimmer output to the desired console channel using the → ← ↓ ↑ buttons. Push **ENTER** after each channel assignment.

Push **CLEAR** to return to the normal operating mode.

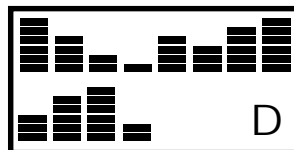
Pushing **CONFIG** while assigning a channel will switch the channel between dimming and relay operation. The upper right corner of the display will be prefixed with “D” or “R” accordingly.

You can set a dimmer channel output to ignore DMX signal inputs from a control console by assigning it to DMX channel 0. This feature is normally used in a situation where “house lights” or other special lighting is used with the AR-1202. A channel assigned in this manner will still respond to scene commands from the remote stations but is “locked out” from the control console.

## MANUAL OPERATION

Individual dimmer channels may be operated from the AR-1202 front panel. This is useful during testing and setup operations. Use the → and ← buttons to select a channel. The associated channel on the bar graph display will begin flashing. Use the ↓ and ↑ buttons to raise/lower the channel intensity.

Manual operation combines with DMX signal and remote stations settings but does not lock them out.



## CREATING AND EDITING SCENES

At the AR-1202 front panel - push **CONFIG** until "SCENE SETUP" appears on the Menu/Status display.

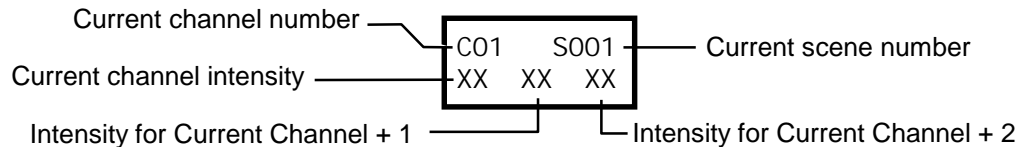
SCENE  
SETUP

Push **ENTER**. The display shows the current scene number.

SCENE  
←000→

Use the ← and → buttons to select the scene you want to set up. Scene 00 controls blackout fade time. Scene 01 is the first actual scene.

Push **ENTER**. The display shows the scene setup menu.



The current channel number is shown on the display upper left. The current scene number (which was selected in the previous step) is shown on the display upper right. The settings for three channels are shown on the lower display row. The LEFT channel is the current channel (the channel which you will set the output level for).

Use the ↓ and ↑ buttons to set the channel output intensity. The display shows the intensity setting as a number between 0% and 100%. A 100% setting is indicated by "FL". A "XX" setting means that the channel will be ignored for the current scene. Push **ENTER** after the channel level is set.

Use the ← and → buttons to proceed to the next channel to be set up. The lower row of the display will shift to the left. Repeat the channel intensity selection for that channel.

Push **CLEAR** when all the channels for the selected scene are set.

To setup another scene - repeat the process above using a different scene selection.

## SCENE FADE TIME

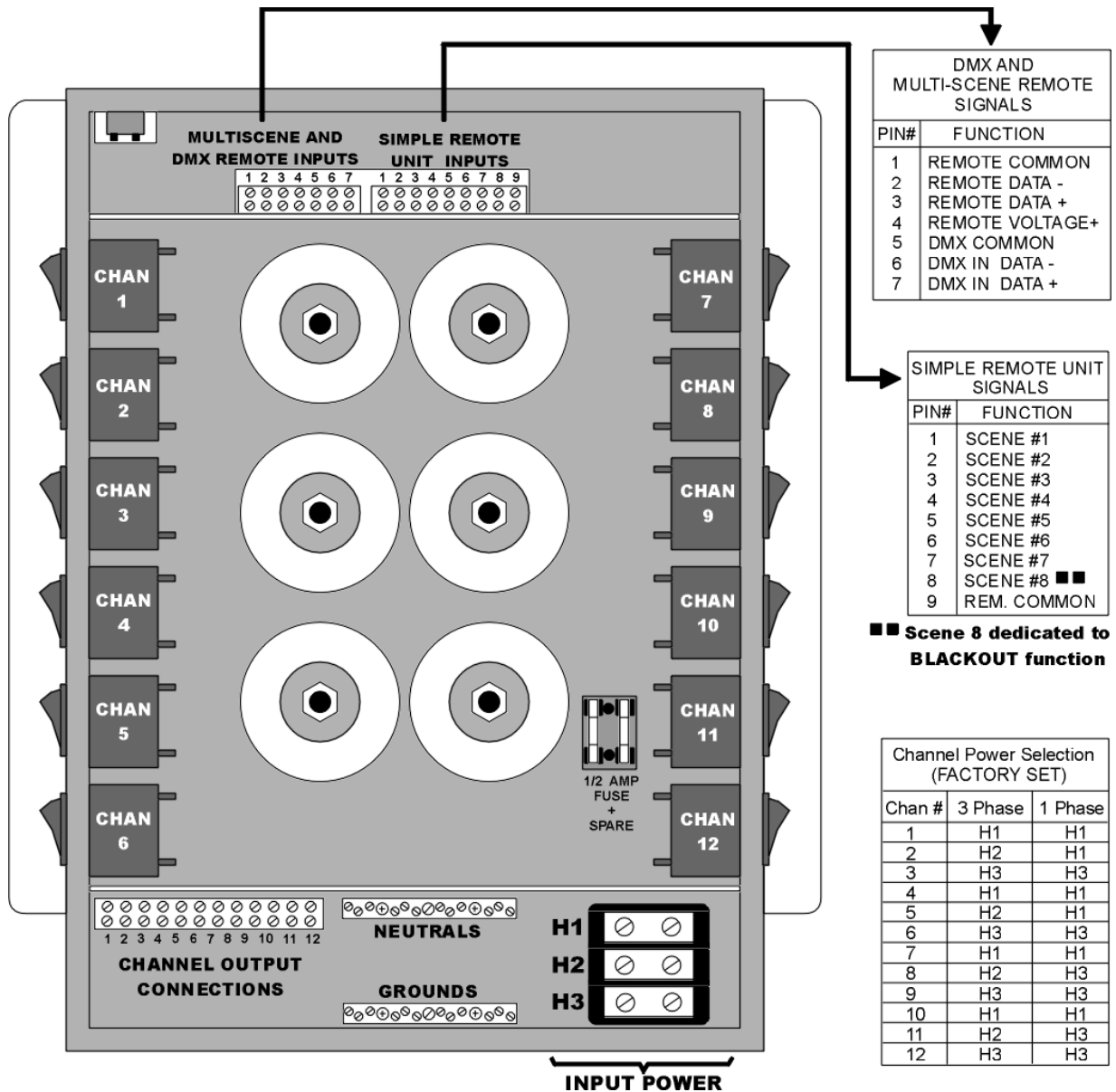
A fade time may be set individually for each scene. This is the time elapsed between a scene fully active and the next scene fully active. The factory default fade time is 3 seconds. Fade time may be set between .5 and 99.5 seconds and is set from the SCENE SETUP menu (normally as you set channel intensities for the scene).

- 1 To access the SCENE SETUP Menu - push the CONFIG button once. Then push ENTER.
- 2 Use the → and ← buttons to select the desired scene. Then push the ENTER button. The display will show the current settings for the scene.
- 3 Use the → and ← buttons to proceed BEYOND the last channel (channel 16) for the scene. The display will indicate the current fade time for the scene.
- 4 Use the ↑ and ↓ buttons to set the desired fade time. Then push the ENTER button.
- 5 Push The CLEAR button to return the AR-1202 to its normal status display.

## SCENE BLACKOUT FADE TIME

Fade time for the remote stations blackout function is set as an independent function. The procedure is similar to that given above except the BLACKOUT function is accessed by selecting SCENE 0 from the SCENE SETUP menu. Factory default fade time is 3 seconds. Blackout fade time may be set between .5 and 99.5 seconds. The current fade time is displayed when you activate the SCENE SETUP menu and select SCENE 0. Use the ↑ and ↓ buttons to set the fade time. Push ENTER after the fade time is set.

EXTERNAL CONNECTIONS



INPUT POWER CONNECTIONS:

The AR-1202 is intended to be used with power feeds in a WYE configuration. A NEUTRAL is required.

NEUTRAL CONNECTION: Connect a power Neutral to the NEUTRAL bus bar.

SINGLE PHASE 120/240V OPERATION Connect power to the H1 and H3 terminals. The H2 terminal is not used for single phase operation.

THREE PHASE 120/208V OPERATION Connect power to the H1, H2, and H3 terminals. See the INSTALLATION section of this manual for phase sequence information.

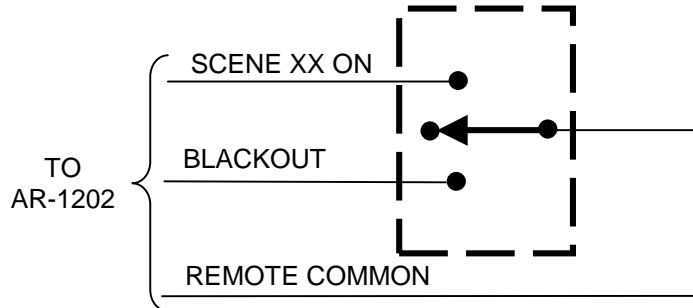
Set the jumper block (on the back of the control circuit board) to correspond to 1 phase or 3 phase operation.



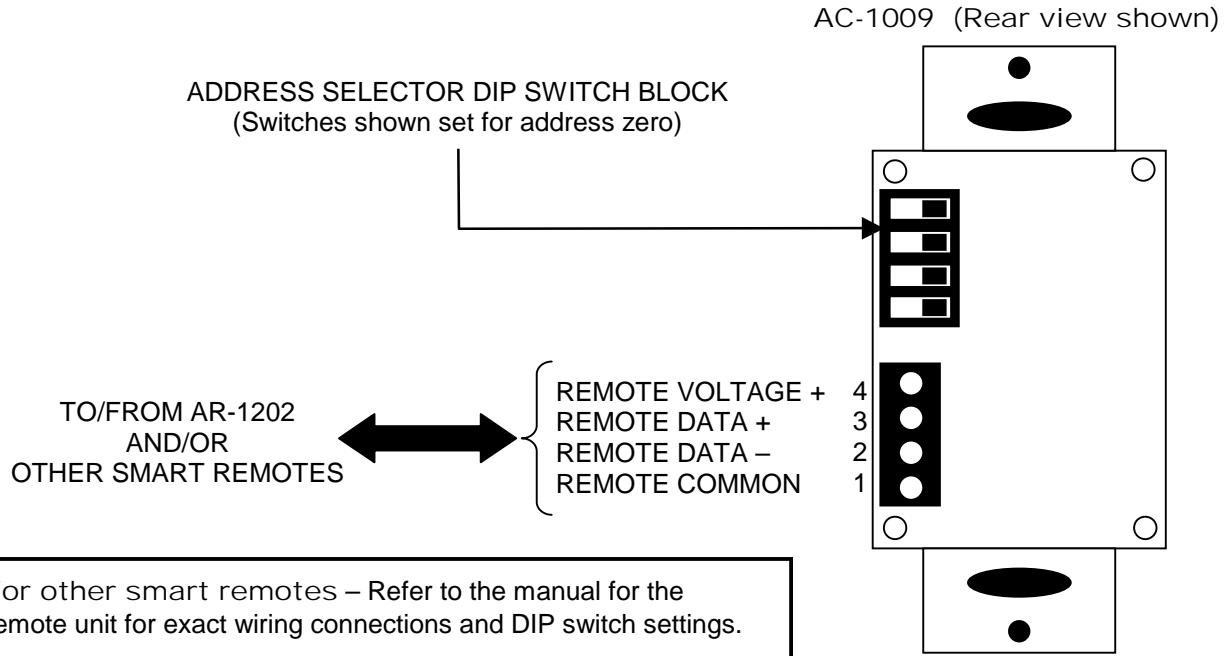
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CONNECTIONS FOR A ONE SWITCH SIMPLE REMOTE

Typical configuration using a single pole, double throw, center off, momentary, wall switch.

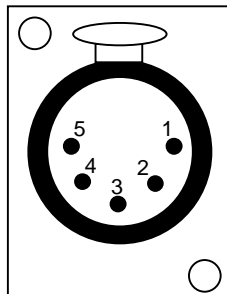


EXAMPLE CONNECTIONS FOR A MULTI-SCENE REMOTE



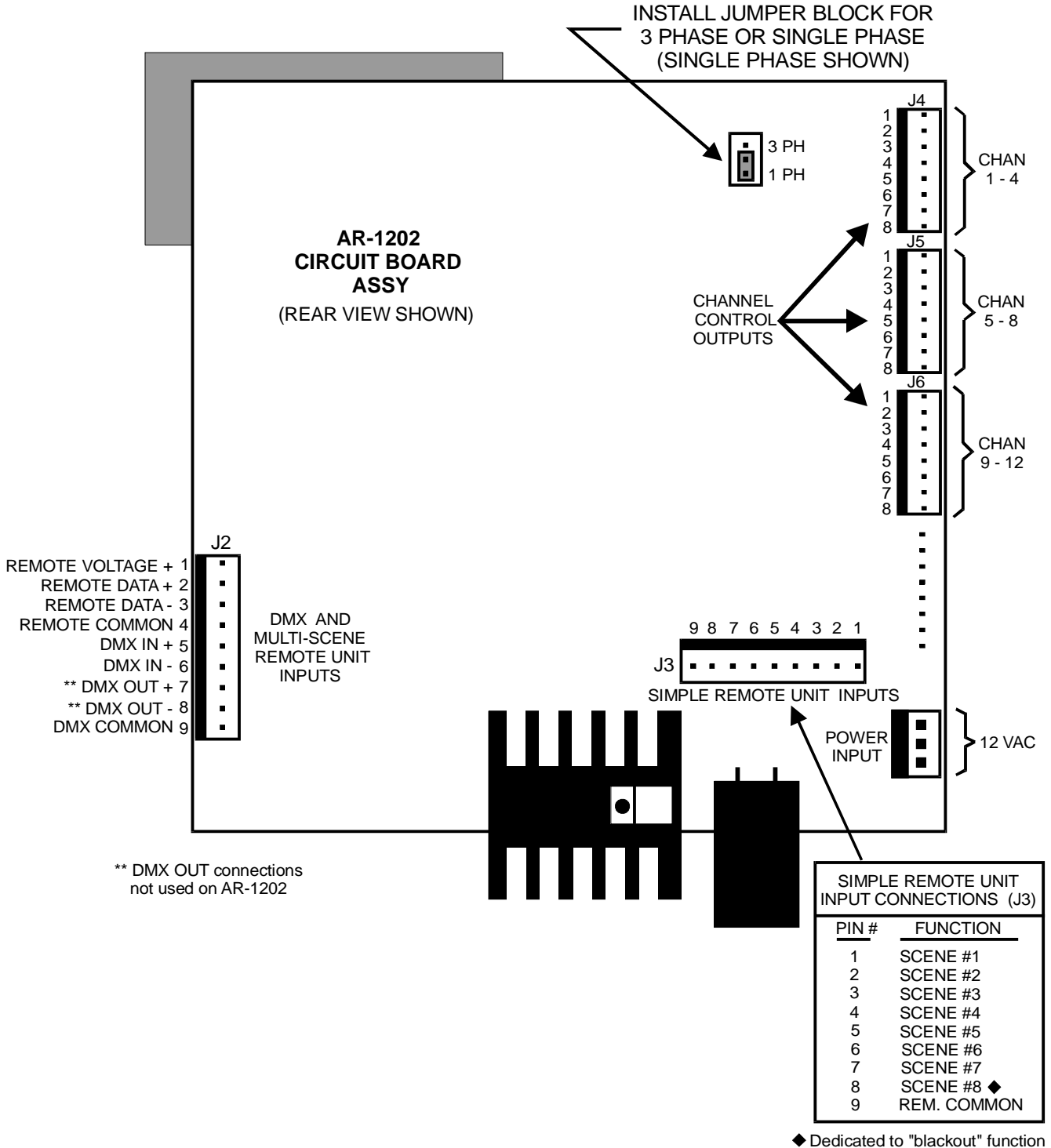
REMOTE CONSOLE CONNECTIONS

5 PIN FEMALE XLR connector shown is used on Lightronics consoles for USITT DMX-512 signal transmission.



PIN #	FUNCTION
1	DMX COMMON
2	DMX DATA -
3	DMX DATA +
4	NOT USED
5	NOT USED

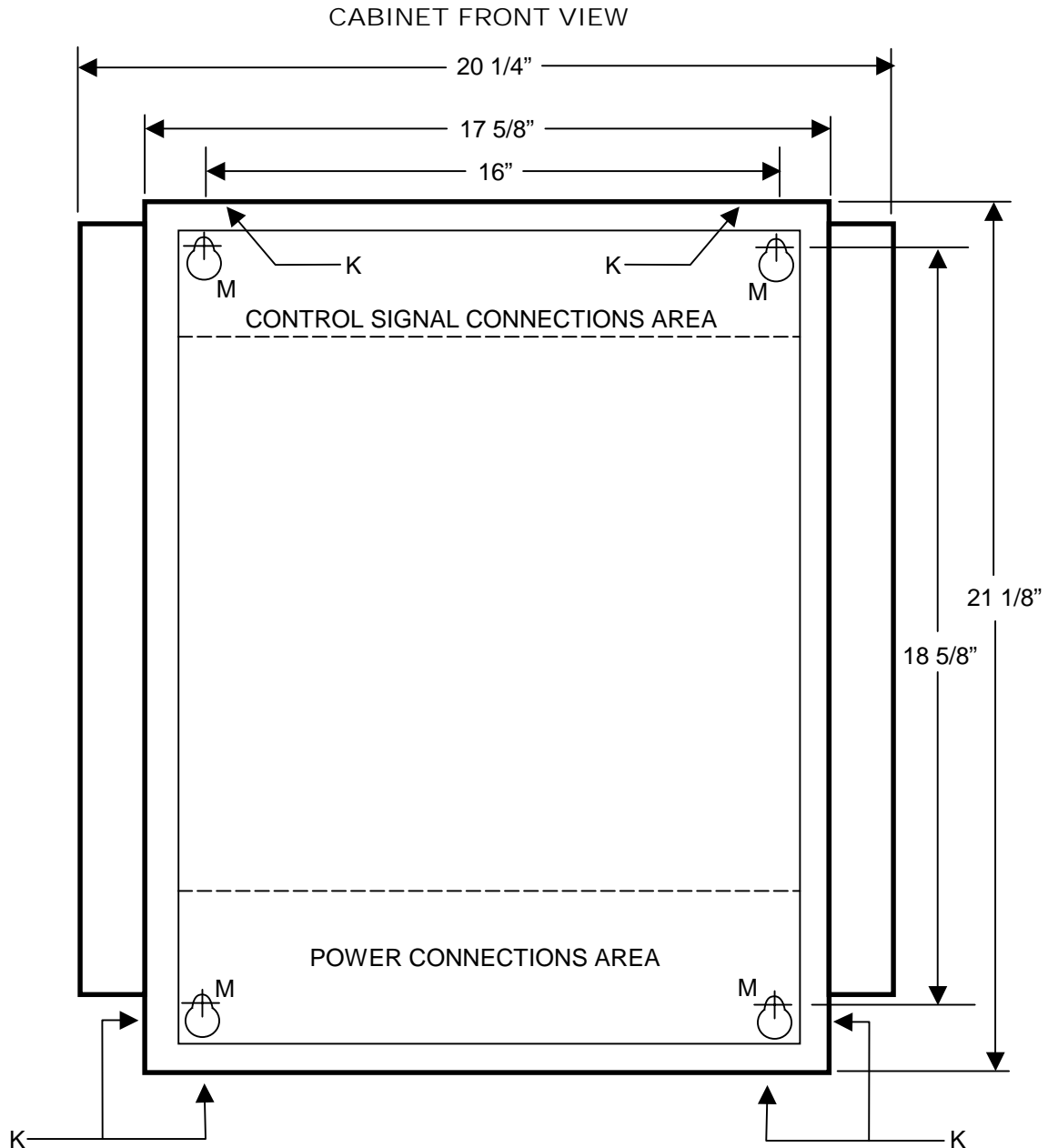
CONTROL CIRCUIT BOARD CONNECTIONS



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## NOTES:

1. Dimensions are +/- 1/16". This drawing is not to scale.
2. Mounting holes indicated by "M" will accommodate 1/4" bolt.
3. Double 1/2, 3/4" knockout holes provided at locations indicated by "K".
4. Unit weight is approx. 61 pounds (70 pounds shipping weight).

## Suggested Mounting Procedure:

1. Drill top holes level, 16" apart at desired height.
2. Partially install bolts (enough to hold cabinet weight).
3. Hang cabinet from top bolts.
4. Drill lower holes and install lower bolts – tighten all bolts.



All Lightronics products are warranted for a period of TWO 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) This 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.