

INSTALLATION INSTRUCTION

Remote Power Supply (RPS)

A2D20, A2D40



SAFETY INSTRUCTION

IMPORTANT: NEVER attempt any work without shutting off the electricity.

- Read all instructions before installing.
- System is intended for installation by qualified personnel in accordance with the National Electrical Code and local regulations.
- Go to the main fuse box, or circuit breaker. Place the main power switch in the "OFF" position and unscrew the fuse(s) or switch "OFF" the circuit breaker switch(es) that control the power to the fixture or room that you are working on.
- Place the wall switch in the "OFF" position.

AVERTISSEMENT

IMPORTANT: Coupez l'électricité avant TOUTE manipulation.

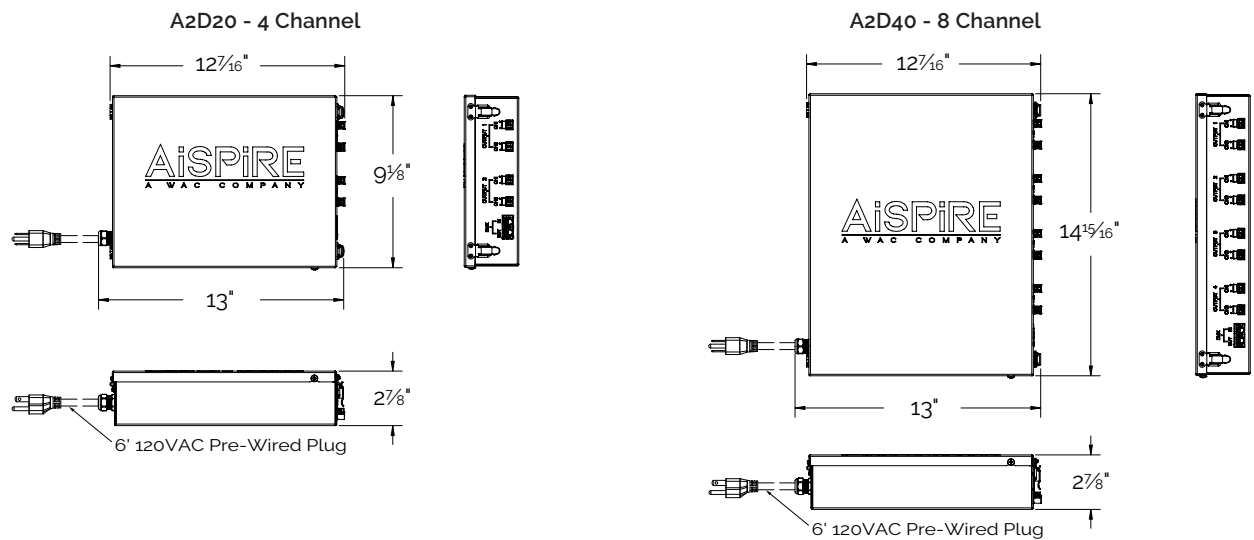
- Lisez toutes les instructions avant d'installer.
- Système est destiné à être installé par personnel qualifié en conformité avec le code national de l'électricité et les règlements locaux.
- Accédez au panneau central de disjoncteurs ou de fusibles de votre demeure et placez l'interrupteur principal en position d'arrêt (« OFF »).
- Placez l'interrupteur mural en position d'arrêt (« OFF »).

CAUTION:

- All parts must be used as indicated in these instructions. Do not modify or change the product in any way. Failure to do so will void the warranty and may result in serious injury and/or damage to the power supply.
- This power supply complies with the requirements of UL8750. This power supply should be installed in surfaced mounted application and in compliance with national and local electric codes. This unit is intended for use with low voltage lighting systems only.
- Connect this power supply directly to an outlet. For 120 Volt AC operation only.
- Do not use a fixture or a combination of fixtures where the total wattage exceeds the rating of the power supply.

OVERVIEW:

AiSPIRE Remote Power Supply (RPS) is a remote surface mounted LED DMX DC power unit with 120VAC plug pre-installed. Each output from the RPS features two channels for use. Refer to fixture specification sheets for compatibility and loading.



SPECIFICATIONS						
Model	Installation	Output Voltage Range	Max. Drive Current	Power	Max # of Channels	Controls
A2D20-BK	Direct Surface Mount	6—48VDC	Up to 1500mA*	72W [†] x 2	4 Channels	RJ45 DMX512-A
A2D40-BK	Direct Surface Mount	6—48VDC	Up to 1500mA*	72W [†] x 4	8 Channels	RJ45 DMX512-A

* Selectable Currents of 250mA, 300mA, 350mA, 400mA, 450mA, 500mA, 600mA, 700mA, 800mA, 900mA, 1000mA, 1100mA, 1200mA, 1300mA, 1400mA, & 1500mA

† per 2-channel output. **Max of 72W per individual channel or combined channels.**

AiSPIRE retains the right to modify the design of our products at any time as part of the company's continuous improvement program.

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A W A C C O M P A N Y

ELECTRICAL REQUIREMENTS

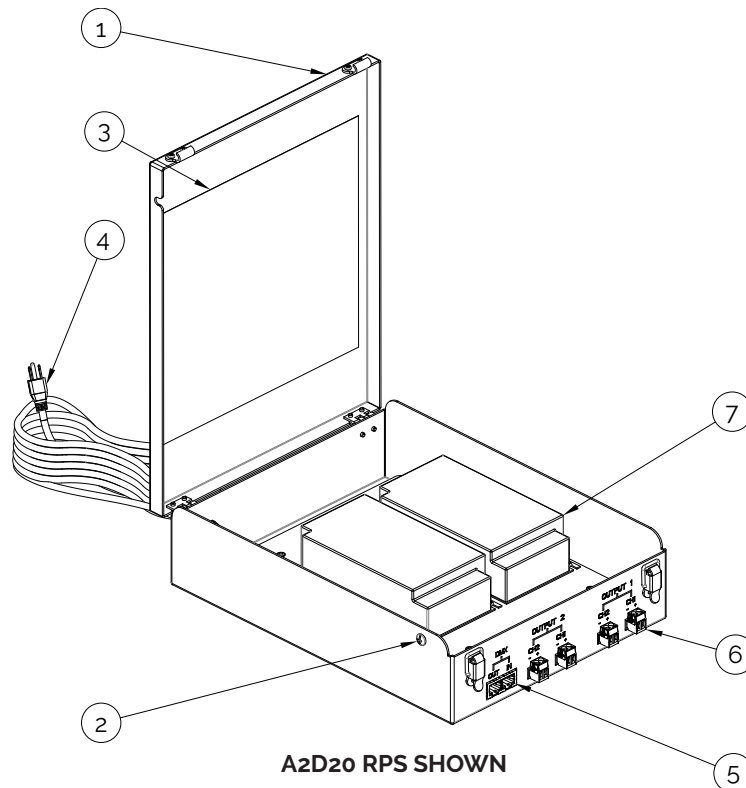
- This remote power supply is supplied with a power cord compatible with NEMA 5 (including NEMA 5-15R/5-20R) receptacles.
- All power supply outputs (circuits) are Safety Extra Low Voltage (SELV), and Class 2.

MECHANICAL REQUIREMENTS

- This power supply is limited to fixed non-plenum locations.
- This power supply is rated for damp locations.

WIRING REQUIREMENTS

- DO NOT connect the power supply input or associated receptacle to a phase cut dimmer or dimming modules.
- Output Class 2 circuit wiring must comply with NEC Article 725 or CEC section 16-210 wiring methods.
- Output cabling of 18AWG minimum is recommended. Overall shielded cables with twisted pair conductors are recommended to minimize Electromagnetic Interference (EMI) and inter-channel cross talk.
- Polarity indicated by "+" and "-" at the output terminals of the power supply must be observed to prevent damage to lighting loads.
- Refer to the AISPIRE Remote Power Supply (RPS) specification sheet for the recommended wiring distances from LED lighting loads.



FEATURES AND CONTROLS

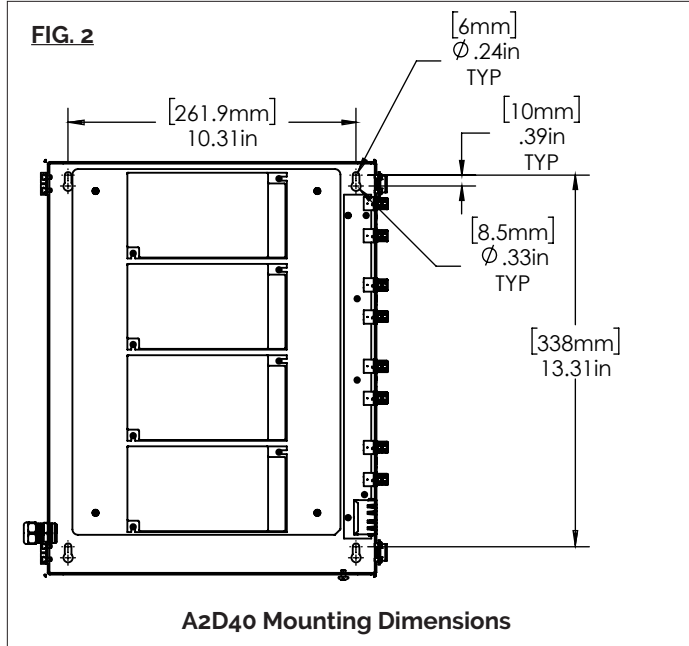
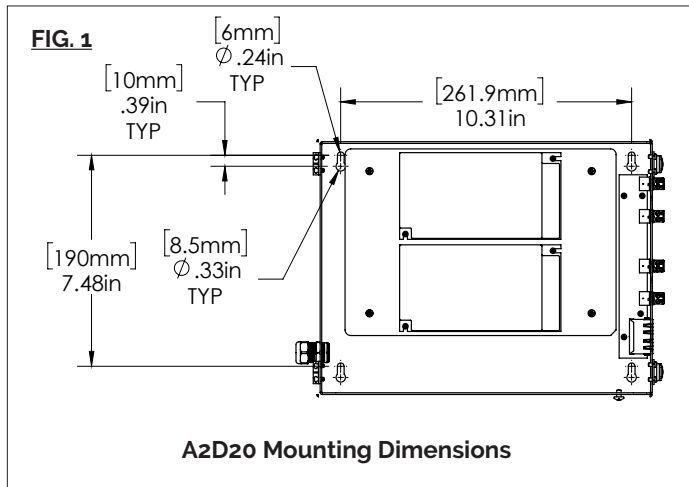
1. **Hinged Cover:** The cover may be opened by undoing the RPS enclosure latches and loosening to cover locking screw.
2. **Cover Locking Screw:** Pan head Philips screw used to lock the cover in place and prevent noise due to vibration.
3. **Operating Instructions:** Refer to these instructions for additional information on RPS specifications and configuration.
4. **120V Power Cord w/ Strain Relief:** 6 Foot 120VAC power cord with NEMA 5 plug. It features protective sleeving with strain relief to prevent wire damage.
5. **RJ45 DMX IN/OUT Ports:** DMX-512A RJ-45 ports for connection to other DMX end point devices and controller/gateway.
6. **Phoenix Terminal Block (2 Position):** Pluggable to RPS, with screw down connection for output wiring to low voltage fixtures. Accommodates 24 - 12 AWG wiring.
7. **2-Channel DMX Low Voltage Power Supply Unit:** Receives 120VAC power and DMX512 controls input, providing low voltage power output for up to 2 channels per driver.

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INSTALLATION - DIRECT MOUNTING:

1. Carefully locate the AISPIRE remote power supply (RPS) so that it is not in contact with insulation or combustible materials.

Note: The power supply is to be within proximity of receptacle such that this distance does not exceed the length of the power cord.

2. Open the cover of the RPS. With appropriate mounting hardware, secure the RPS to the structural support of the installation surface using the keyhole slots. (See **FIG. 1** and **FIG. 2**)

3. Close the RPS cover. Proceed to RPS configuration and connection steps.

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FIG. 3

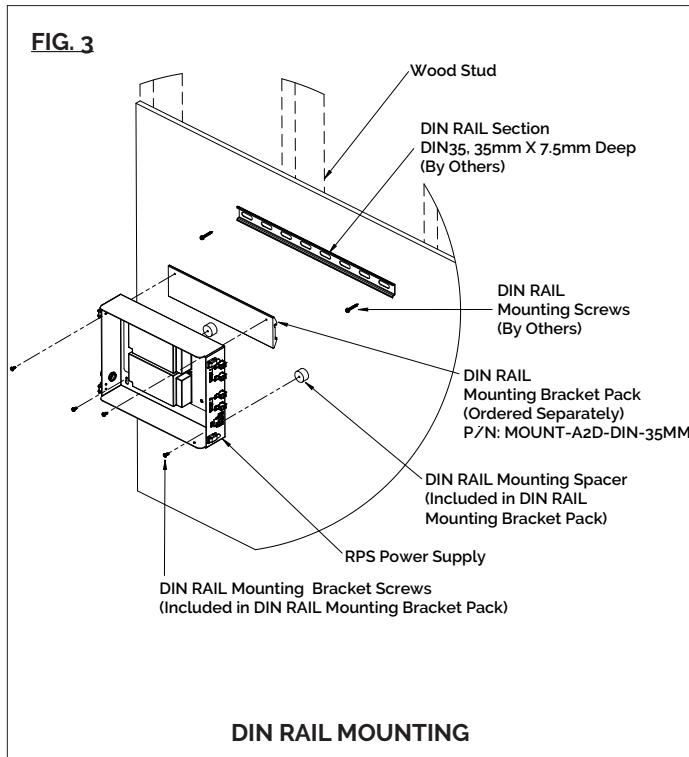
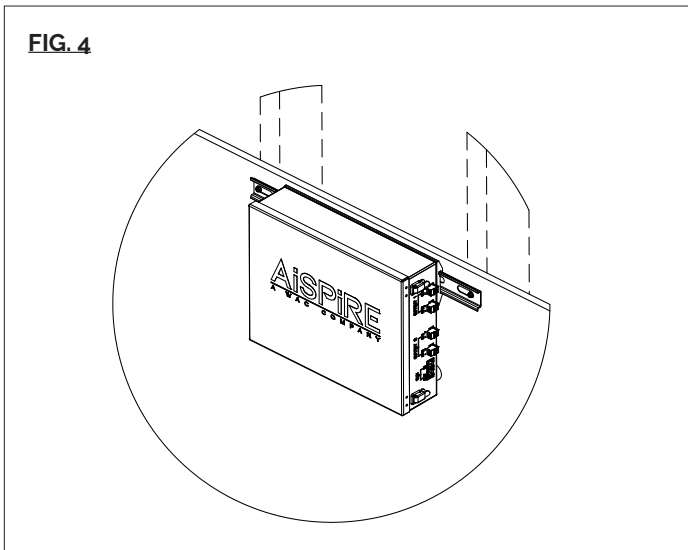


FIG. 4



INSTALLATION - DIN RAIL MOUNTING:

1. Carefully locate the AISPIRE remote power supply (RPS) so that it is not in contact with insulation or combustible materials.
2. The RPS is compatible with 35MM x 7.5MM DIN RAIL, using the RPS *DIN RAIL Mounting Bracket Pack*. Using appropriate hardware, mount the DIN RAIL section to the structural support of the installation surface.

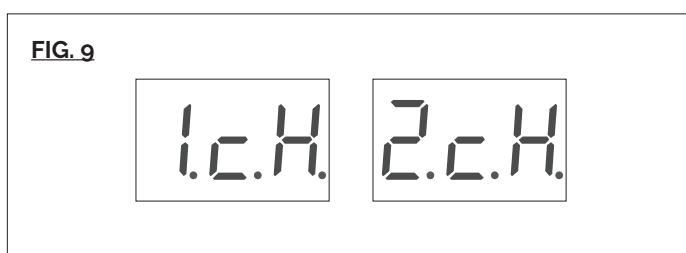
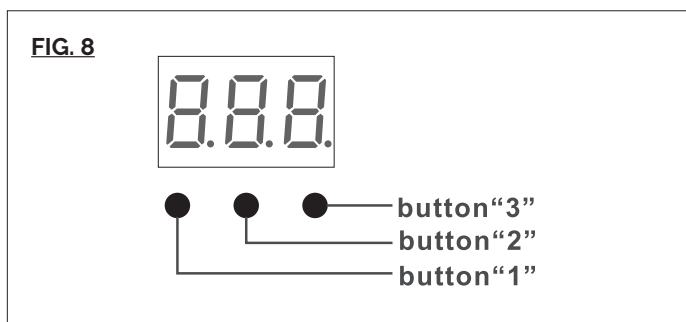
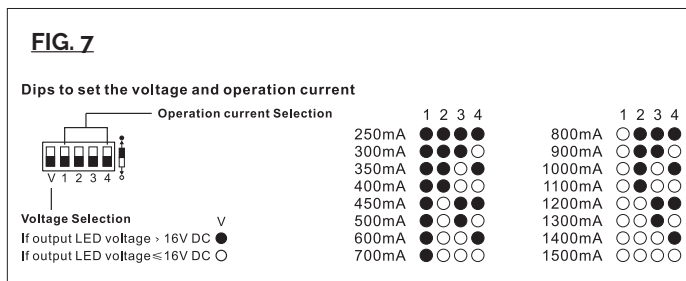
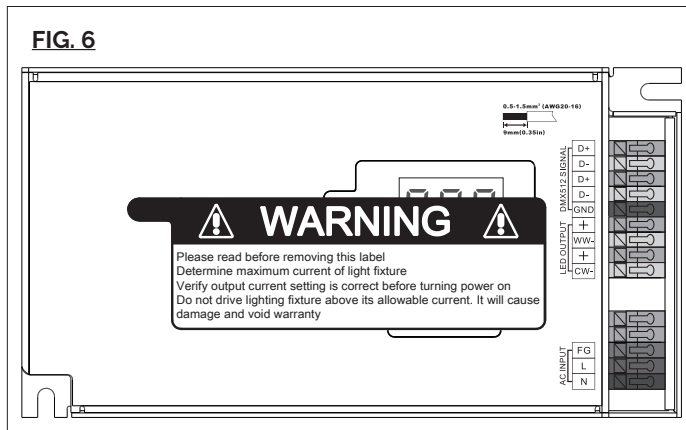
NOTE: The power supply is to be within proximity of receptacle such that this distance does not exceed the length of the power cord.

3. Open the cover of the RPS. Install the DIN RAIL Mounting Bracket to the RPS, using its supplied hardware via RPS keyhole slots. Ensure the gasket of DIN RAIL Mounting Bracket is oriented to attach to the top side of the DIN RAIL.

The DIN RAIL Mounting Spacers may be installed to the RPS, using the supplied hardware to maintain offset distance between the RPS and installation surface. (See **FIG. 3**)

4. Close the cover of the RPS. Attach the RPS with DIN RAIL Mounting Brackets to the DIN RAIL by hooking the top and compressing the gasket material. (See **FIG. 4**)

5. Proceed to RPS configuration and connection steps.



DMX POWER SUPPLY UNIT CONFIGURATION:

Once mounted, open the hinged cover of the RPS to gain access to the power supply unit(s) for configuration.

IMPORTANT: Read and follow instructions listed on the WARNING label attached to each power supply unit. After confirming lighting load requirements, remove the WARNING label and proceed with power supply unit configuration. (See **FIG. 6**)

POWER SUPPLY UNIT - OUTPUT CURRENT SELECTION

10. Select the correct output current by DIP switches before wiring to LED lighting loads. Please make sure the power to the power supply unit is disconnected before selection of the output current. (See **FIG. 7**)

After the appropriate output current is selected, the power supply unit may be powered for configuration - see Steps 1.1 - 3.3 of this section.

POWER SUPPLY UNIT - SET DMX ADDRESS MANUALLY VIA BUTTONS

11. Press and hold down button "1" until numeric digital display flashes, then release the button. (See **FIG. 8**)
12. Click any of the 3 buttons once to select a digit, click again to change the digit until the desired DMX address appears. Click button "1" to set "hundreds" position, button "2" to set "tens" position and button "3" to set "units" position.
13. Then press and hold down any of the 3 buttons until the numeric digital display button "1" stops flashing to confirm the setting.

POWER SUPPLY UNIT - SET DMX CHANNEL QUANTITY

- 2.1. Press and hold down both button "2" and button "3" until the digital display flashes with "cH", then release both buttons. (See **FIG. 9**)
- 2.2. Click button "1" to choose 1 or 2, which means total 1 channel or 2 channels output. Then press and hold down any of the 3 buttons until digital display stops flashing to confirm the setting. **Factory default setting is 2 channels output.**

NOTE: For example, when we set address as 001. When select 1cH, all 2 channels will be the same address 001. When select 2cH, channel 1 will be address 001, channel 2 will be address 002.

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FIG. 10

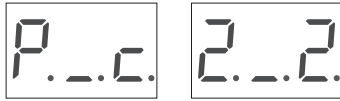


FIG. 11

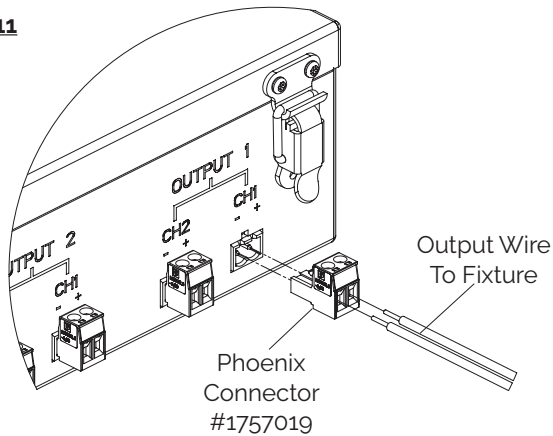


FIG. 12

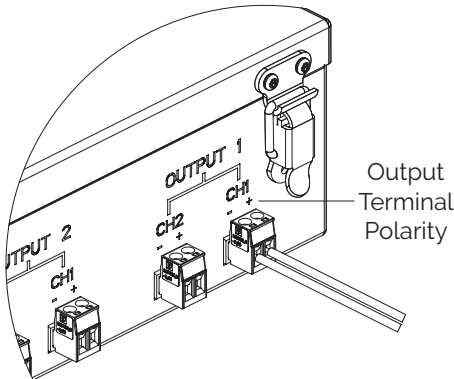
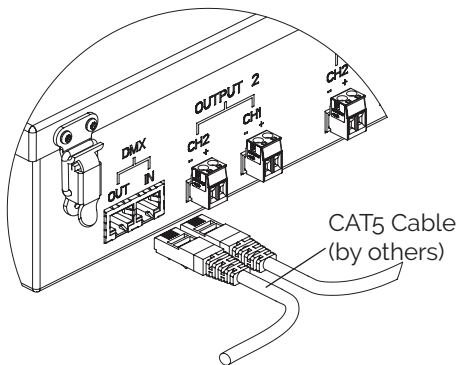


FIG. 13



POWER SUPPLY UNIT - OUTPUT PWM FREQUENCY

- 3.1. Press and hold down both button "1" and button "3" until digital display flashes with "P_c", release the buttons. (See **FIG. 10**)
- 3.2. "P" means PWM frequency, 2 PWM frequencies are available. Click button "1" to choose "1" or "2" – "1" stands for 1500Hz and "2" stands for 200Hz.
- 3.3. "c" allows for selecting the dimming curve type, 2 options are available. Click button "3" to choose "1" or "2" – "1" stands for logarithmic dimming and "2" stands for linear dimming. Press and hold down any of the 3 buttons until digital display stops flashing to confirm setting.

NOTE: Factory default setting is 1-2 which means 1500Hz PWM frequency with linear dimming.

RPS CABLING & CONNECTIONS:

- 1.0 After power supply unit configuration, connections may be made from the RPS to LED lighting loads. (See **FIG. 11**)

RPS OUTPUT CONNECTIONS

- 1.1. This RPS uses 2 position Phoenix MSTB connectors for direct connection to low voltage LED lighting loads.

Wire Gauge: 24 - 12AWG (Insulated)
[WAC Recommends 18AWG Minimum]
Stripped Wire Length: 0.28in. [7MM]

- 1.2. By hand, remove the Phoenix connector from the RPS. Loosen the wire terminal lock on the connector using a 2MM or equivalent flat screw.
- 1.3. Note the polarity of the connection as indicated on the label of the RPS. Insert the stripped wire into the Phoenix connector. Install the Phoenix connector by hand to the appropriate output and channel of the RPS. (See **FIG. 12**)

Refer to the installation instructions of the LED lighting load to confirm its wiring method.

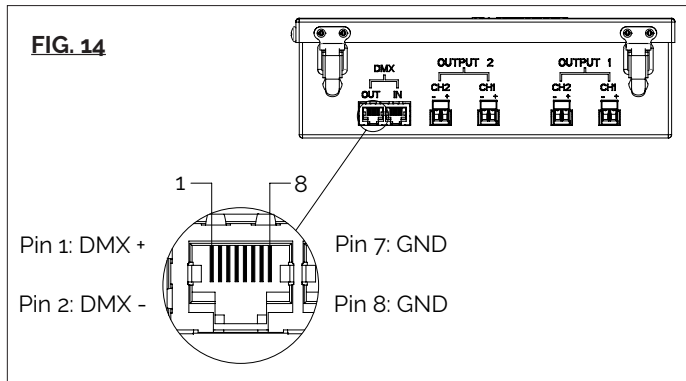
RJ45 DMX-512A CONNECTIONS & REQUIREMENTS

- 2.1. This RPS features RJ45 DMX-512A IN and OUT ports. WAC recommends UTP CAT5 cable (by others). (See **FIG. 13**)

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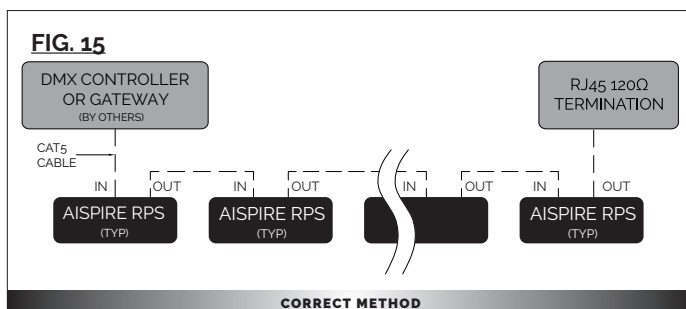
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Refer to **FIG. 14** and the chart below for RJ45 pin outs.

AISPIRE RPS RJ45 Pin Out Chart		
RPS RJ45 Port	Std. RJ45 DMX Cable	3 Pin XLR
Pin 1 (DMX+)	Pin 1	Pin 3
Pin 2 (DMX-)	Pin 2	Pin 2
Pin 7 (GND)	Pin 7	Pin 1
Pin 8 (GND)	Pin 8	N/C
(All Other Pins)	N/C	N/C



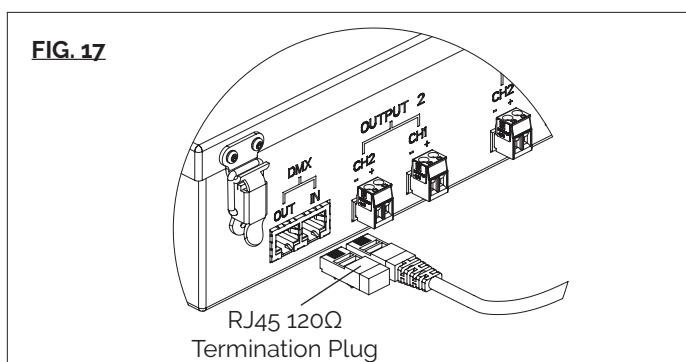
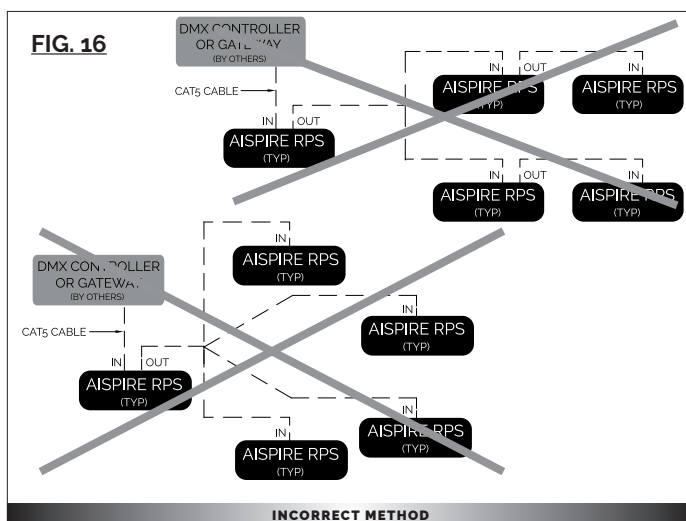
- 2.2. Based on DMX best practices, WAC recommends Daisy Chain DMX wiring between devices for DMX runs. (See **FIG. 15**)

"TREE" or "STAR" wiring topology may result in unprescribed performance and is NOT recommended. (See **FIG. 16**)

- 2.3. The total length of DMX wiring between the DMX controller/gateway and last device is NOT to exceed 1000ft (approx. 300M).

- 2.4. Up to 32 power supply units (located inside the RPS) may be connected on a single DMX line. After 32 power supply units, a DMX repeater/booster (by others) is required.

NOTE: A RPS may contain more than 1 power supply unit. In DMX application, each power supply unit is counted as single DMX unit load.



- 2.5. To minimize data reflections of the DMX signal, cable termination is required. If using UTP CAT5 cable, a 120Ω RJ45 termination plug is to be installed the DMX OUT port on the final RPS of the DMX run. (See **FIG. 17**)

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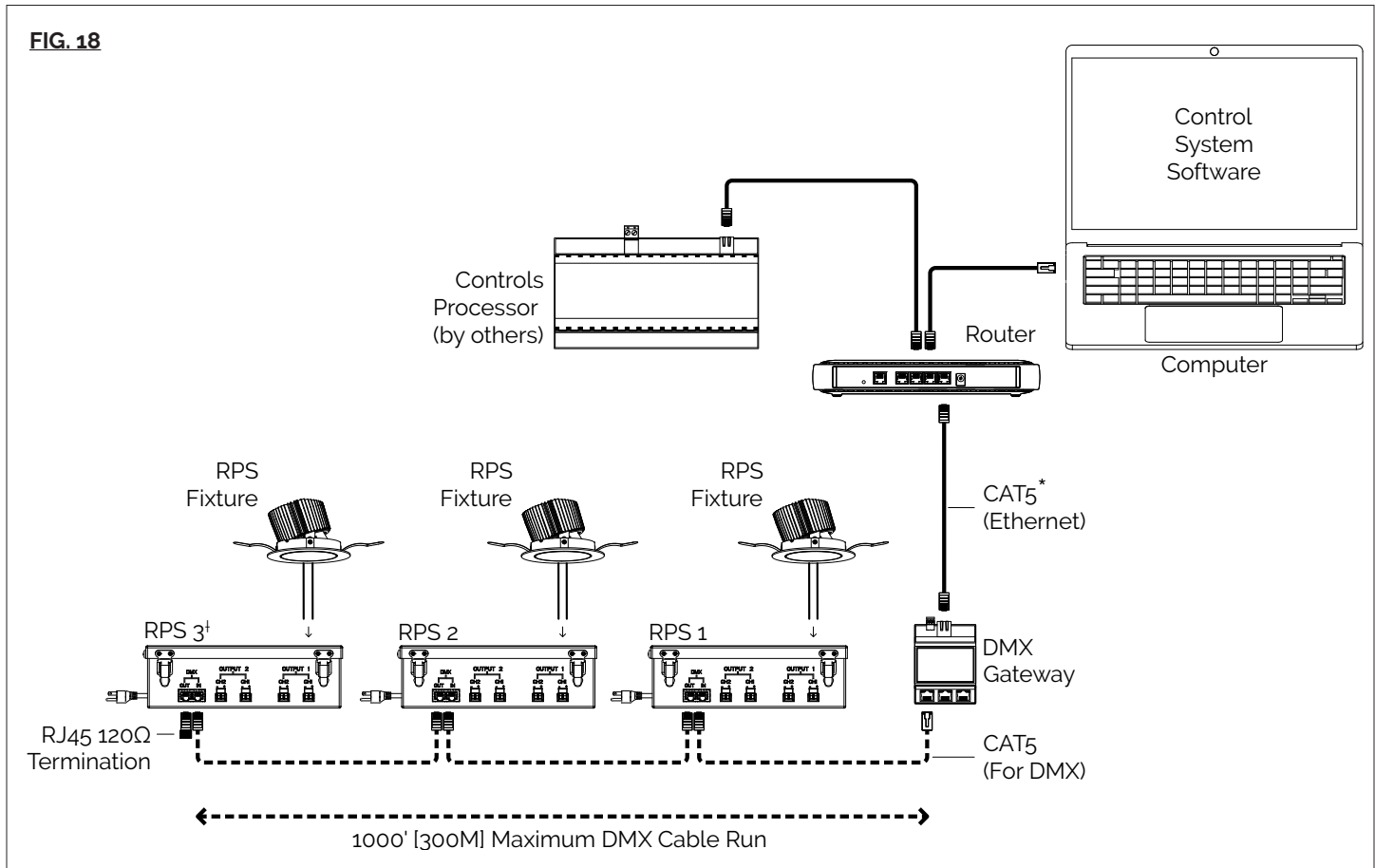
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INTEGRATION WITH 3RD PARTY CONTROLS:

The AISPIRE RPS may be integrated with 3rd party control systems via DMX gateway (by others). Refer to AISPIRE lighting fixture specifications and instructions for DMX channel configuration requirements. Consult control systems vendors for additional information regarding DMX gateway and software configuration. (See **FIG. 18**)

FIG. 18



Relevant Notes:

* For IP based network connectivity, distances of up to 328ft [approx. 100M] may be achieved using CAT5 cable, before an active network extender is required.

† Up to 32 power supply units (located inside the RPS) may be connected on a single DMX line. After 32 power supply units, a DMX repeater/booster (by others) is required.