



# AUTOMATE MT03-0301-411005 DC Power Distribution Panel Instruction Manual

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AUTOMATE™

## MOTOR PROGRAMMING INSTRUCTIONS DC Power Distribution Panel



RELIABLE, COST  
EFFECTIVE POWER



LED STATUS



SECURE LOCK

DIF  
WIF

AUTOMATE | DC Power Distribution Panel provides power for up to 18 separate ARC DC motors. Higher 15V output allows for greater cable lengths from the motor to the power panel, freeing up routing options within an installation. Removes the need for multiple individual power adaptors for each DC motor in an installation, combining each power source into a single location. Channels may also be wired in parallel to provide additional power to larger motors. Additional information and updates are available at <https://www.rolleaseacmeda.com>

## FEATURES:

- Capacity for up to 18 ARC DC motors (25mm and 28mm motors)
- Ability to parallel connect motor supplies for higher current motors (35mm and 45mm motors)
- LED status indication for checking whether power is being applied to the panel
- LED status indication for each individual motor supply

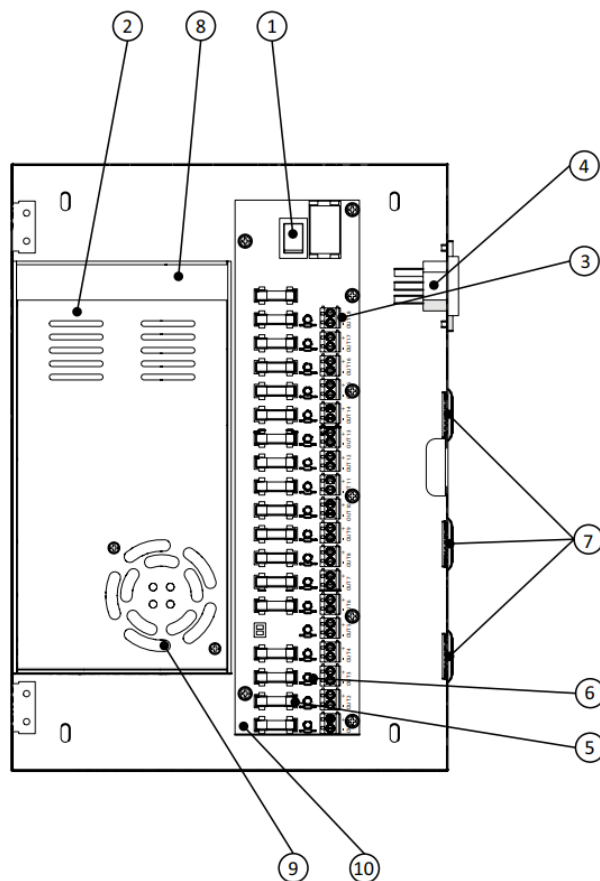
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## FEATURES

1. Internal power Switch
2. Mains Power supply (120V/240V)
3. 18 wire entries with clamp screws
4. IEC-C14 Connector for Mains Power Input
5. 18 Individual fuses for channel protection (Quick Blow Fuse 3.15A M205)
6. 18 Channel Status LEDs
7. Plastic Plugs (For cable routing)
8. Potentiometer for output voltage adjustment
9. Cooling fan
10. Terminal Block

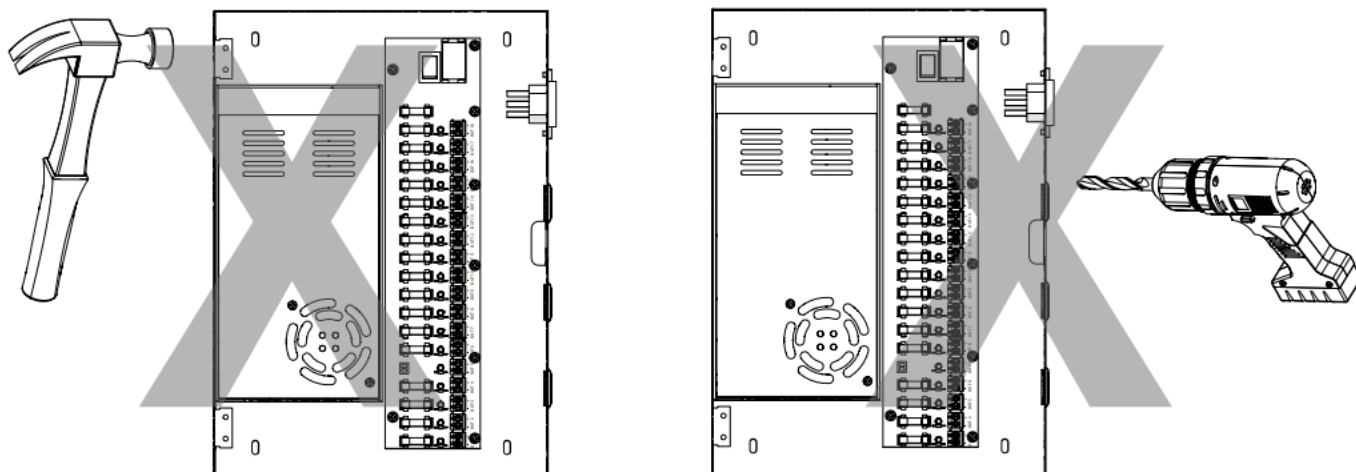
**Note:** Keys can't be replaced if lost.



## SAFETY INSTRUCTIONS

### **WARNING: Important safety instructions to be read before installation.**

Incorrect installation can lead to serious injury, which may result in death and will void the manufacturer's liability and warranty.



## CAUTION

- Do not expose to moisture or extreme environments.
- Do not allow children to play with this device.
- Use or modification outside the scope of this instruction manual will void the warranty.
- Installation and setup to be performed by a suitably qualified installer.
- For use with DC-powered motorized shading devices.
- Frequently inspect for improper operation. Do not use if repair or adjustment is necessary.

- Keep clear when in operation.
- For use with DC motors only (NOT suitable for charging Li-ion Battery-powered motors).
- Do not cut power cables
- Do not drill into the motor body or distribution panel.
- The routing of cable through walls shall be protected by isolating bushing or grommets.
- Ensure motor power cable and aerial are clear and protected from moving parts.
- If cable or power connector is damaged do not use it.

## SAFETY INSTRUCTIONS

### Important safety instructions to be read prior to operation.

- It is important for the safety of persons to follow the enclosed instructions.
- Persons (including children) with reduced physical, sensory or mental capabilities or lack of experience and knowledge should not be allowed to use this product.
- Frequently inspect for improper operation. Do not use if repair or adjustment is necessary.

### Save these instructions for future reference.



Do not dispose of the general waste.

Please recycle batteries and damaged electrical products appropriately.

## INSTALLATION

### 3.1 Cable Run Reference Table (Maximum Lengths)



#### IMPORTANT!

MOTOR POWER CABLE RUN LENGTHS MUST NOT EXCEED THE DISTANCES IN THE REFERENCE TABLE BELOW WHEN VOLTAGE HAS BEEN REDUCED FOR USE WITH AUTOMATED PULSE 2 HUB AND APPLICATION.

Failure to do so will result in loss of voltage along the cable run, subsequently resulting in insufficient voltage at the motor input terminals. Before connection of any motors to the power distribution panel, check cable lengths and wire gauge (AWG), against this table in order to ensure the system will operate to specification.

### ROLLEASE ACMEDA MOTORS

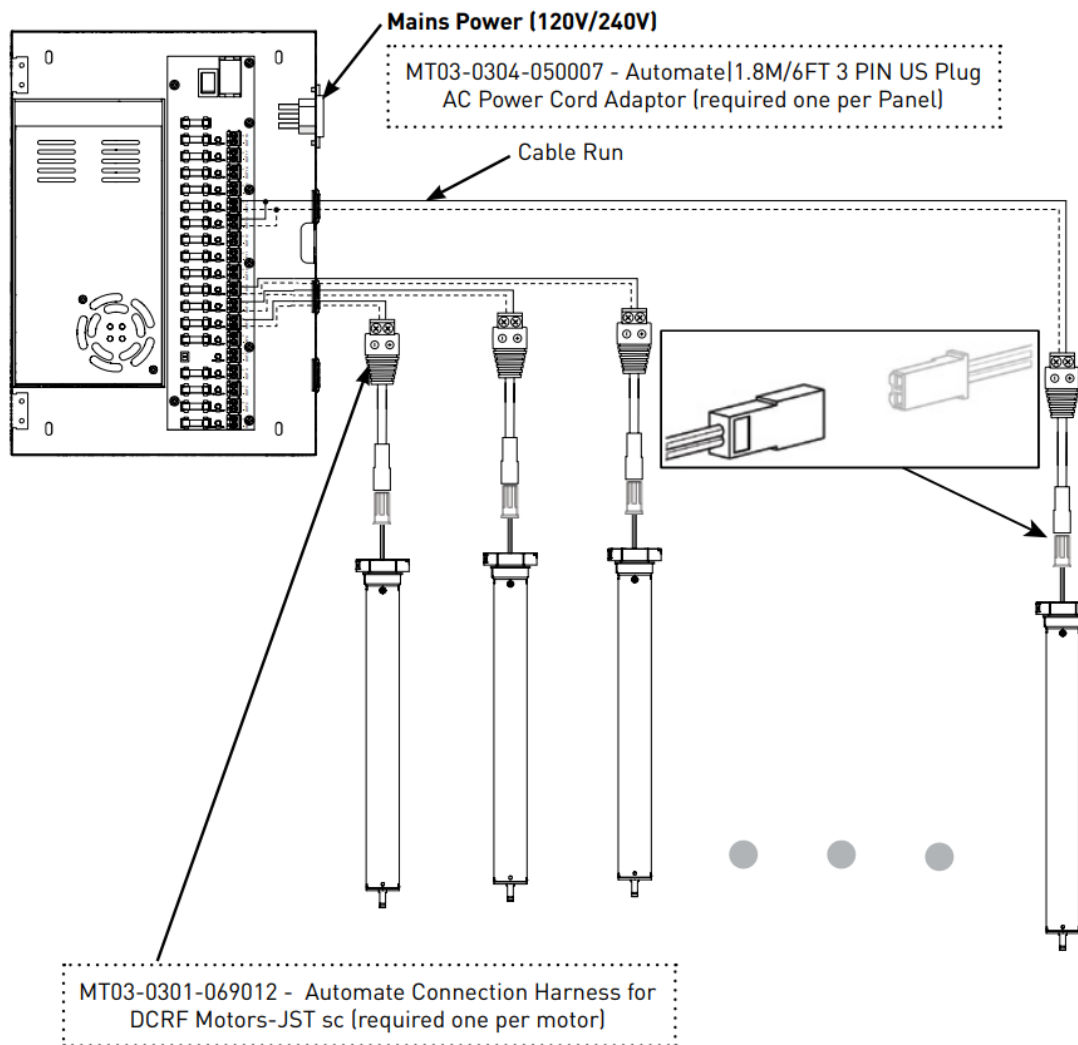
	MTDCRF25-1.1	MTDCRF28-2		MT DC RF 04 5-3		MTDCRF-CL-0.6-50	MT01-3001-069001	MTDCRF-1. TILT-1
	14V	14V		12 V		12V	14V	
El 5m	24 AWG	24 AWG		20 A W G		20 AWG	20 AWG	

20m	24 AWG	24 AWG	20 AWG	20 AWG	20 AWG	18 AWG
25m	24 AWG	22 AWG	20 AWG	20 AWG	20 AWG	18 AWG
30m	24 AWG	22 AWG	18 AWG	20 AWG	20 AWG	18 AWG
35m	22 AWG	20 AWG	18 AWG	20 AWG	20 AWG	18 AWG
40m	22 AWG	20 AWG	18 AWG	20 AWG	20 AWG	18 AWG
45m	22 AWG	20 AWG	18 AWG	20 AWG	20 AWG	18 AWG
50m – 60m	20 AWG	18 AWG	16 AWG	20 AWG	20 AWG	16 AWG
65m	20 AWG	18 AWG	16 AWG	18 AWG	20 AWG	16 AWG
70m	20 AWG	18 AWG	16 AWG	18 AWG	20 AWG	16 AWG
75m	20 AWG	18 AWG	N/A	18 AWG	20 AWG	N/A
80m	18 AWG	16 AWG	N/A	18 AWG	18 AWG	N/A
85m	18 AWG	16 AWG	N/A	18 AWG	18 AWG	N/A
90m	18 AWG	16 AWG	N/A	18 AWG	18 AWG	N/A
95m	18 AWG	16 AWG	N/A	18 AWG	18 AWG	N/A
100m	18 AWG	16 AWG	N/A	16 AWG	18 AWG	N/A
105m	18 AWG	16 AWG	N/A	16 AWG	18 AWG	N/A
110m	18 AWG	16 AWG	N/A	16 AWG	18 AWG	N/A
115m	18 AWG	16 AWG	N/A	16 AWG	18 AWG	N/A
120m – 160m	16 AWG	N/A	N/A	16 AWG	16 AWG	N/A
165m	16 AWG	N/A	N/A	N/A	16 AWG	N/A
170m	16 AWG	N/A	N/A	N/A	16 AWG	N/A
175m	16 AWG	N/A	N/A	N/A	16 AWG	N/A
180m	16 AWG	N/A	N/A	N/A	16 AWG	N/A
185m – 210m	N/A	N/A	N/A	N/A	16 AWG	N/A
215m	N/A	N/A	N/A	N/A	N/A	N/A

### 3.2 Motor Power Distribution Setup

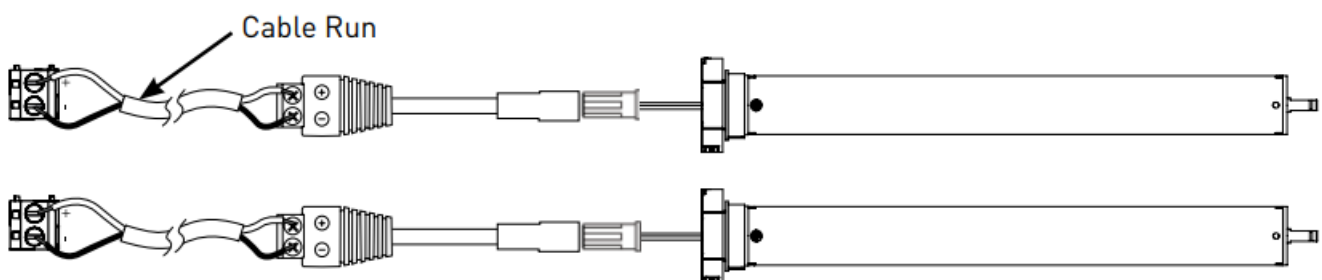
#### OVERVIEW

- One wire entry is connected to one of the MTDCRF28/25 motors.
- Two-wire entries are connected to one of the MTDCRF45/35 motors.
- All motor connections must be made before power applies to the distribution panel.
- The use of two parallel connections ensures the power supply is not overloaded during larger motor operations.



### 3.3 Wiring Diagram – Individual Connection (MTDCRF28/25)

Low power motors may be connected individually to one wire entry of the terminal block, with care being taken to ensure the polarity is correct (see page 4). Incorrect polarity will stop the motor from functioning.



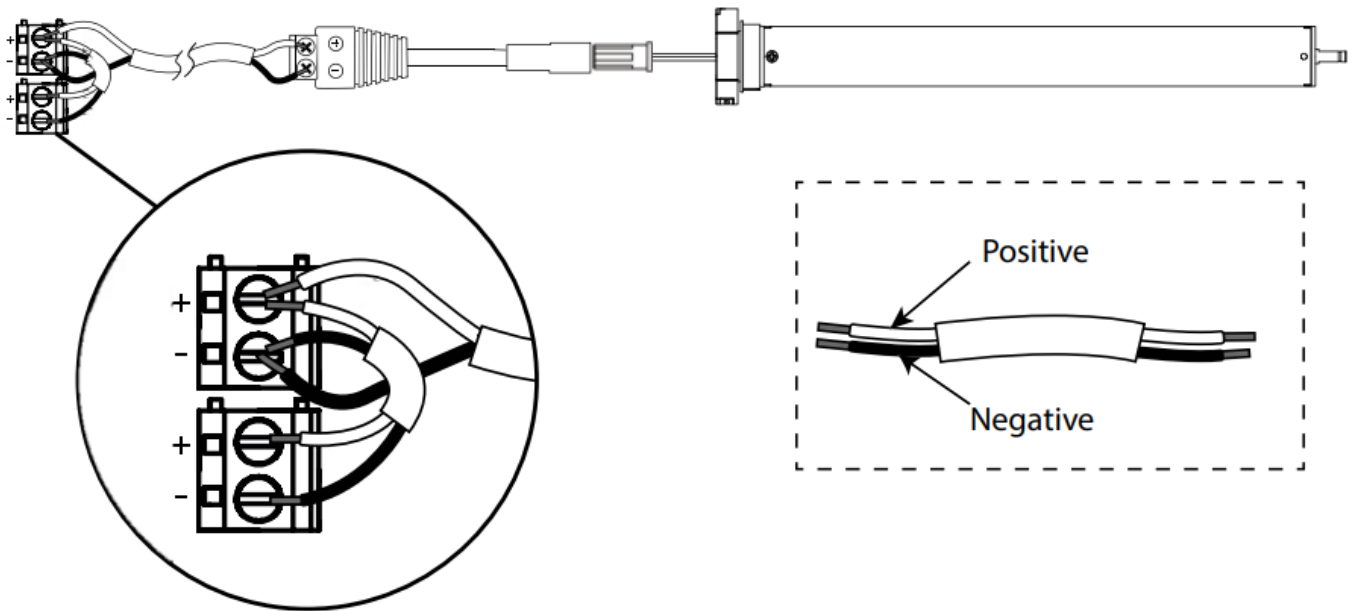
This connection may only be used when wiring 28mm & 25mm motors to the distribution panel, as these motors do not exceed the 1.33 A current limit per channel.

### 3.4 Wiring Diagram – Two Wire Entry Connections in Parallel (MTDCRF45/35)



#### IMPORTANT!

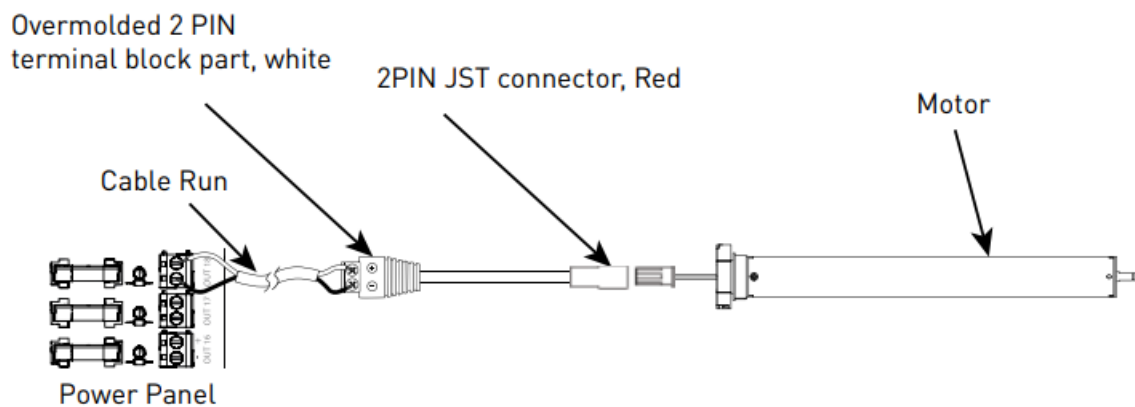
**WARNING:** Important instructions to read before commencing wiring of 45mm and 35mm motors. Due to higher power demands, these motors must be wired in a parallel configuration (shown below) utilizing two-wire entries in order to avoid overloading the power circuit and blowing the protection fuses.



Due to the 1.33A limit per channel, the working current can be doubled to 2.66A with parallel configuration, as shown above, allowing a connection of 45mm and 35mm motors.

**CAUTION: Before plugging in this equipment to mains power;**

- Ensure the internal power switch (1)(page 2) is in the OFF position.
- Check the mains input (2)(page 2) DC output for any loose wires, ensuring the plastic safety covers are covering the main power supply.
- Check motor connection terminal blocks (10)(page 2) for loose wires, as well as polarity check each connection (See below)



**WIRING POLARITY FROM PANEL TO MOTOR**

Female (Power Output)	Grey Dashes (Positive)
Male (Motor Input)	Solid White (Positive)

**3.5 JST Connector Recommendations for Custom Cable Adaptors**

Rollease Acmeda recommends the following JST connectors for DC power connections:

**RECOMMENDED JST CONNECTORS**

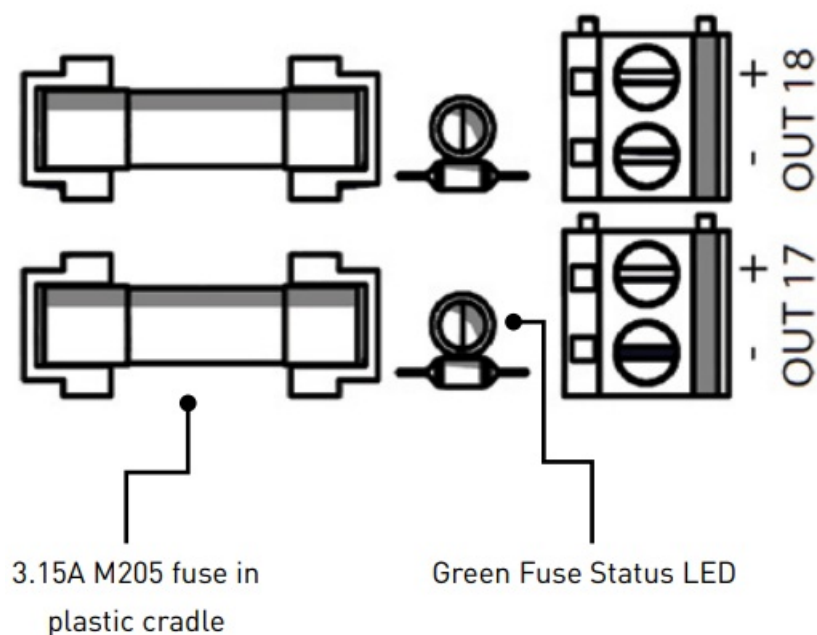
DESCRIPTION	PART NO.	MANUFACTURER	Digikey.com PART NO.
Male Connector (White)	SYR-02TV	JST SALES AMERICA INC.	455-2655-ND
Male Connector (Red)	SYR-02T	JST SALES AMERICA INC.	455-2653-ND
Male Pin Contact	SYM-001T-P0.6(N)	JST SALES AMERICA INC.	455-1909-1-ND

### 3.6 Status LED Indication



#### IMPORTANT!

Status LEDs for each motor channel indicate the condition of the inline fuse. If the status LED is not lit up when power is supplied to the panel, then the inline fuse for that channel has blown. Disconnect all power to the Panel and inspect the individual motor and supply cable to the motor in order to determine why the fault occurred. Once the fault has been determined, make the appropriate repairs and replace the fuse with a 3.15A M205 quick blow fuse.



In order to replace the fuse, carefully pry the fuse out of the plastic cradle using a small tool (such as a small screwdriver or pen). To replace, gently press the new fuse into the cradle. To test LED, apply power to the distribution panel, and observe whether the channel LED is glowing.

## SPECIFICATIONS

### TECHNICAL SPECIFICATIONS



PARAMETERS	VALUE
Input Voltage Range	100 VAC – 240 VAC
Output Voltage Range	11.4 – 15 VDC
Maximum Output Current (all 18 channels)	24 A
Power Output Rating	360 W
Single Channel Absolute Maximum Current Output	1.33 A
Ingress Protection	IP20

## TROUBLESHOOTING



### IMPORTANT!

**WARNING:** The distribution panel is connected to (120V/240V) mains power. Do not attempt to troubleshoot the panel without first disconnecting all power and waiting a period of 5 minutes.

PROBLEM	CAUSE	REMEDY
No Motors are responding	A/C power supply not plugged in	Check exterior LED
		Check Panel to power connection and IEC connector and AC plug
	Internal power switch turned off	Power is supplied to the panel, but The exterior LED is not lit. Open panel and switch the internal power switch to ON position
	A/C terminal block wiring is incorrect	<b>CAUTION:</b> Do NOT attempt to rewire the main power terminal block. Only to be performed by a suitably qualified installer
Individual Motor is not responding	Motor channel fuse has blown	Check individual LED's
		Replace fuse as necessary (refer to section 1.5)
	Motor wiring is incorrect	Refer to the wiring diagram on page 6
	The motor is in sleep mode	Refer to motor's programming instructions in order to change motor sleep status

## WIRE GAUGE DIMENSIONS

### AMERICAN WIRE GAUGE DIMENSIONS

WIRE GAUGE	DIAMETER	CROSS-SECTIONAL AREA
24 AWG	0.51054 mm (0.0201 in)	0.205 mm <sup>2</sup> (0.00032 in <sup>2</sup> )
22 AWG	0.64516 mm (0.0254 in)	0.326 mm <sup>2</sup> (0.00051 in <sup>2</sup> )
20 AWG	0.8128 mm (0.032 in)	0.518 mm <sup>2</sup> (0.00080 in <sup>2</sup> )
18 AWG	1.02362 mm (0.0403 in)	0.823 mm <sup>2</sup> (0.00128 in <sup>2</sup> )
16 AWG	1.29032 mm (0.0508 in)	1.31 mm <sup>2</sup> (0.00203 in <sup>2</sup> )

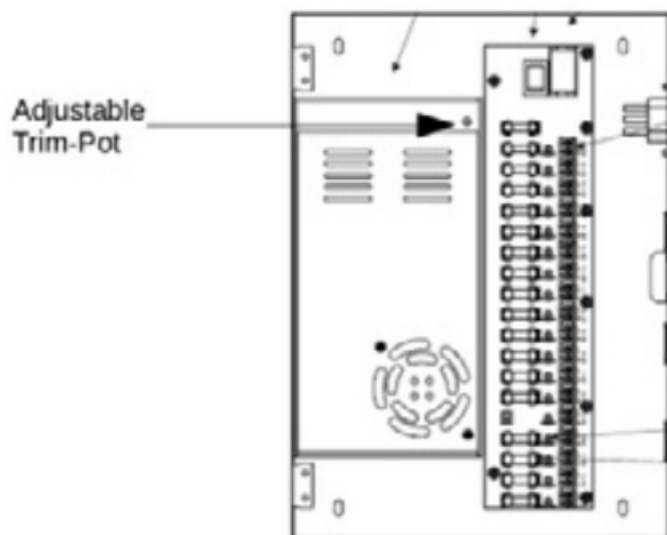
## APPENDIX 1 | DC POWER DIST. PANEL + PULSE 2.0 HUB & APP.



### A.1 PULSE 2.0 HUB – ADDITIONAL INSTALLATION/SET UP INSTRUCTIONS



**IMPORTANT!**



If motors powered by the DC Power Distribution Panel are to be used with the Automate Pulse 2 Hub and Application, the output voltage of the Distribution Panel **MUST** be adjusted to allow for proper communication between the Hub and Motor. Output Voltage (11.4VDC to 15VDC) of the DC Power Distribution Panel can be adjusted via the Trim-Pot located on the converter within the Distribution Panel.

**NOTE:** Adjusted Output voltage is applicable to all 18 Channels.

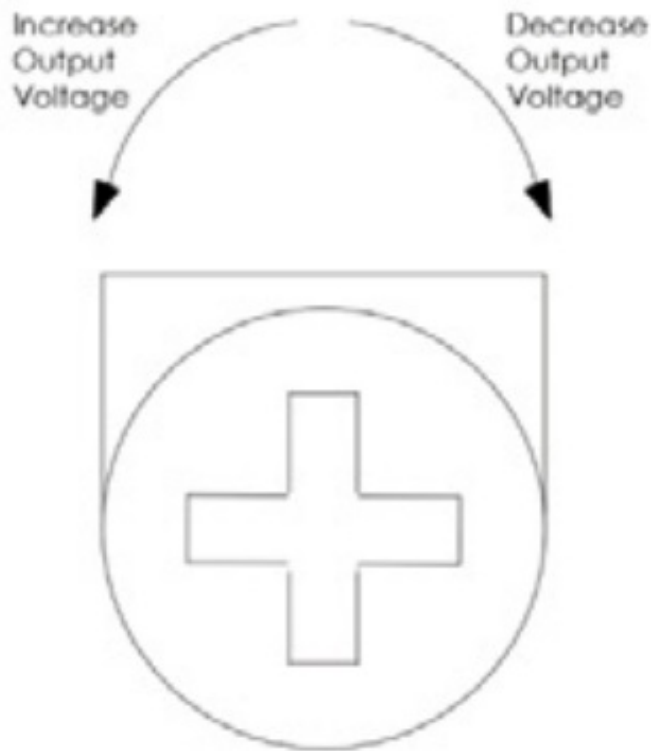
## A.2 ADJUSTMENT PROCEDURE

**WARNING:** DANGEROUS LIVE VOLTAGE. DO NOT ATTEMPT UNLESS QUALIFIED TO OPERATE AC MAINS VOLTAGE DEVICES.

Output Voltage of the Distribution Panel must be monitored as it is adjusted. This involves probing the output of the Panel while it is life. Monitor output voltage using a multimeter, and adjust potentiometer using an appropriately sized Philips Head screwdriver. When motors are to be controlled via the Automate Pulse 2 Hub, the maximum

allowable voltages for each motor is as shown:

	MOTOR
12V	MTDCRF35-3
	MTDCRFQ45-3
	MTDCRF45-10
	MTDCRF-CL-0.6-50
	MTDCRF-TILT-1
14V	MTDCRF25-1.1
	MTDCRF28-2
	MT01-3001-069001



## TROUBLESHOOTING



### IMPORTANT!

**WARNING:** The distribution panel is connected to (120V/240V) mains power. Do not attempt to troubleshoot the panel without first disconnecting all power and waiting a period of 5 minutes.

PROBLEM	CAUSE	
The motor is not responding to the App/ updating App animation and motor position	Panel Output Voltage is too low	Adjust Trim tage
Motor showing as offline	The voltage at the motor terminal is too high/too low	Adjust Trim the output voltage

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**Documents / Resources**

