PROGRESSIVE AUTOMATIONS
FORWARD THINKING

PA-CB31-1-12V24V

Single Channel High Power Control Box

1.1

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Safety Precautions

When installing and using your Progressive Automations Control Box, basic safety precautions should always be taken. Please read all safety precautions thoroughly and be familiar with all functions of the product before use. Apply all other relevant precautions when operating electrical devices.

⚠ DANGER

To mitigate the risk of damage and injuries:

- Do not attempt to modify or repair the Control Box.

- Avoid using the Control Box beyond its specified Ingress Protection rating.

- Avoid programing the Control Box (changing mode of operation or adding removing remotes) under load or connected to a load. Always disconnect it from any load before programming or changing settings.

⚠ WARNING

To reduce the risk of burns, fire, electrical shock, and injury to people:

- Ensure the applied power to the Control Box has correct polarity, meets the minimum requirements, and has a regulated output.

- Follow recommended load ratings and specifications for the Control Box.

- Avoid operating the Control Box where there may be high electromagnetic interference.

- Ensure that the Control Box and controlled device is visible to the user during operation, with no obstructions or potential for bodily harm.

- Progressive Automations does not assume any liability for preventing damage or bodily harm when using the Control Box. All necessary precautions must be taken by the user to ensure safe operation.

Operating Notes

Warranty

Any attempts to disassemble or tamper with the Control Box's internal components or operation outside of the advertised usage limitations will result in immediate voiding of the product's warranty. For more information on our warranty terms, visit: https://www.progressiveautomations.com/pages/warranty-terms.
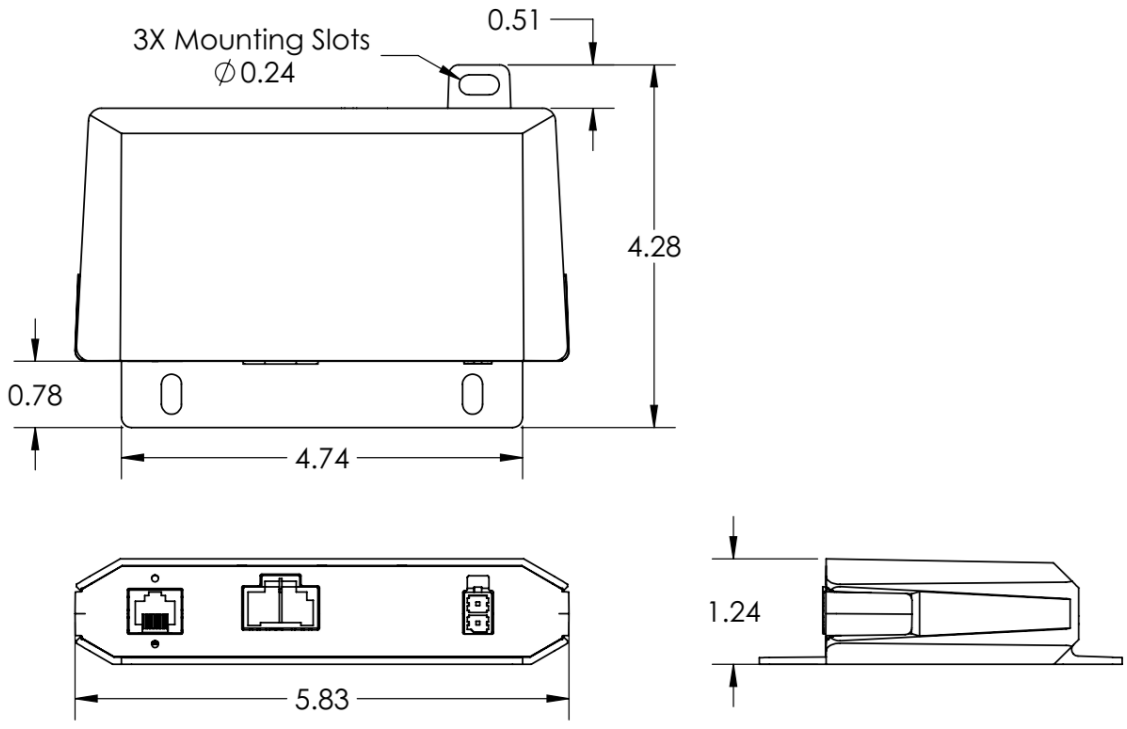
Specifications

This Control Box must be used within the specified power, voltage and current input and current output ratings outlined in this documentation. Load must be evenly distributed within an application. Exceeding the recommended ratings may result in failure of the Control Box or permanent damage. Providing reverse voltage input to the Control Box may damage the product and void the warranty.

Specifications

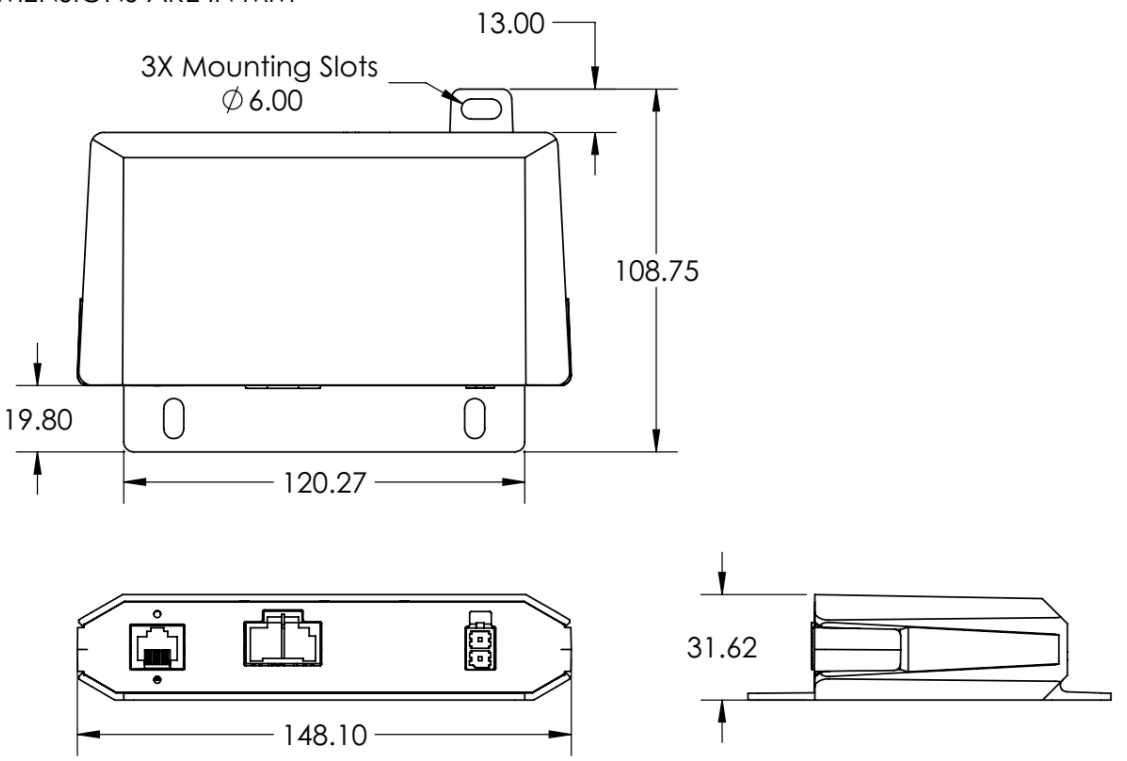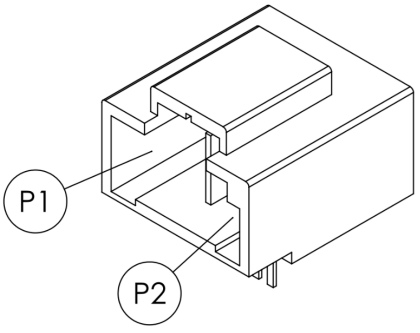|	
Number of Channels	1
Input Voltage	12/24VDC (10VDC - 26VDC)
Output Voltage	12/24VDC (10VDC - 26VDC)
Current	25A @12VDC 12.5A @24VDC
Efficiency	99%
Ambient Current Draw	2.6mA
Standby Response Time	60mS
Sleep Mode Response Time	100mS
Duty Cycle	25%% (Max 5 minutes continuous)
Operational Temperature	-10°C to 50°C (14°F to 122°F)
Housing Color	Black / Blue
Housing Material	ABS Plastic
Kit Includes	1x Control Box, 1x Wireless Remote (with Battery)
Wireless Frequency	433.92 MHz
Wireless Range	Minimum 100 Feet
Wireless Remote Functions	Up, Down, Programming Modes, Stop
Remote Battery Type	12V 27A Alkaline (included)
Dimensions (WxDxH)	5.83" x 4.28" x 1.25" (148.10x108.75x31.62 mm)
Unit Weight	0.31 lbs (140g)
Features	• 300-Watt High Power Output • Automatic Power Saving Mode • Instant Wake Up (Single press, 100mS response time) • Wireless Remote Mode Selection • Wireless Remote Pairing • Pair Up to 4 Remotes • Smooth Motion Mode • Momentary and Non-momentary Control • 2x LED Indicator and Push Button
Safety Features	• Output Short Circuit • Out of Range Input Voltage • Reverse Input Voltage
Warranty	18 Months

Dimensional Drawing (Imperial)

ALL DIMENSIONS ARE IN INCHES

3X Mounting Slots
⌀0.24

0.51

4.28

0.78

4.74

5.83

1.24

Dimensional Drawing (Metric)

ALL DIMENSIONS ARE IN MM

3X Mounting Slots
⌀6.00

13.00

108.75

19.80

120.27

148.10

31.62
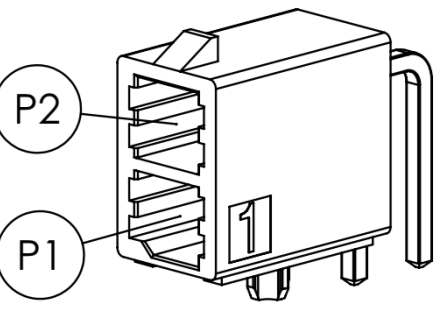
Connectors

Power Input

Pin Location	Function	Wire Color	Wire Gauge
P1	Power Input COM / Negative (-)	Black	10 AWG
P2	Power Input VCC / Positive (+)	Red	10 AWG

Parts List

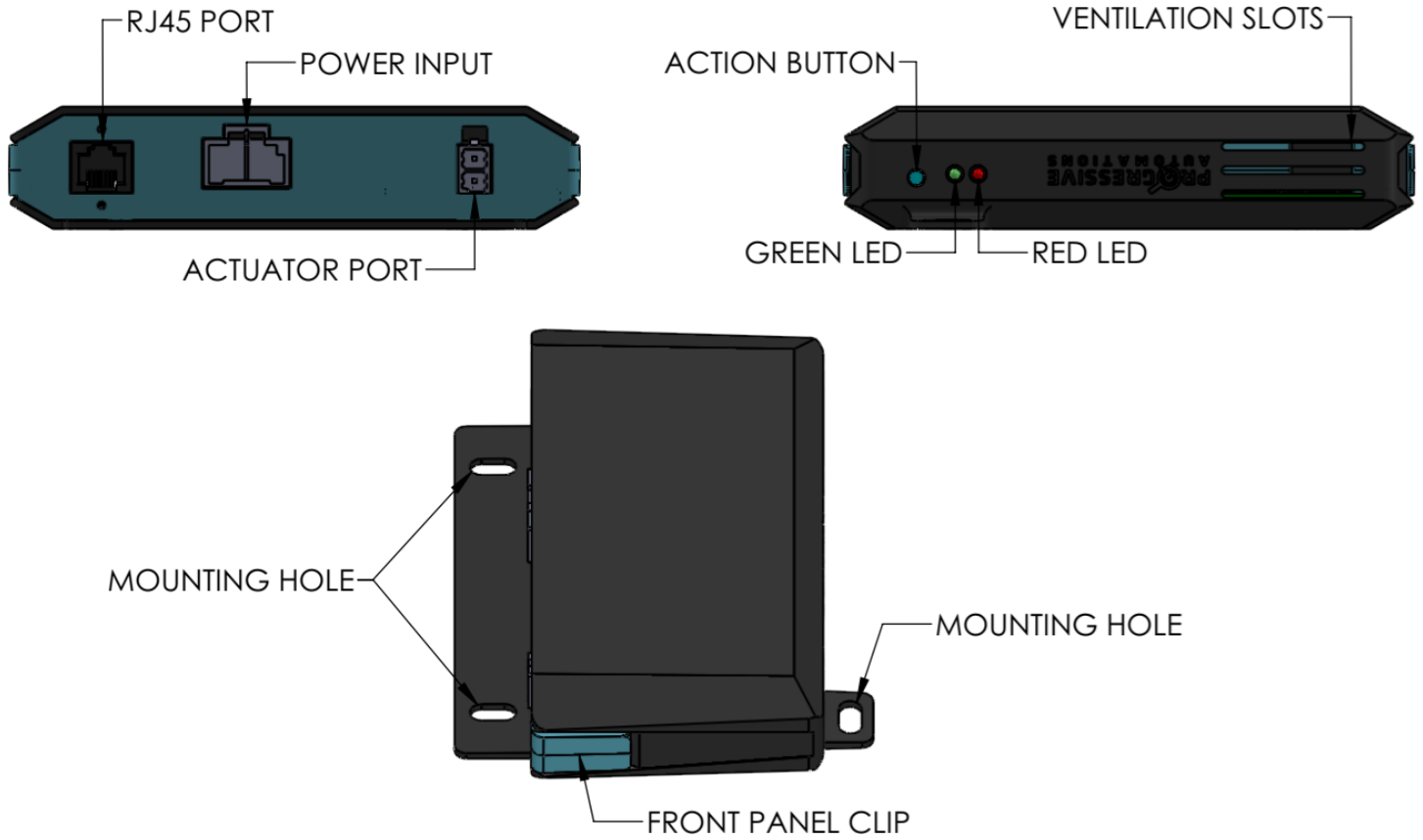|	Part Name	Part Number	Mating Part Number
Power Input Housing	Hirose Connector Header, Through Hole, Right Angle, 2 Position	DF60-2P-10.16DS(27)	DF60A-2S-10.16C
Power Input Terminals			DF60-1012SCA

Actuator Port

Pin Location	Function	Wire Color	Wire Gauge
P2	M+ / Extend actuator when (+) voltage applied	Red	10 AWG
P1	M- / Retract actuator when (+) voltage applied	Black	10 AWG

Parts List

	Part Name	Part Number	Mating Part Number
Power Input Housing	Molex Mega-Fit Connector Header Through Hole, Right Angle 2 position	768250002	1716920102
Power Input Terminals			768230345

Instructions

Control Box

RJ45 PORT
POWER INPUT
VENTILATION SLOTS
ACTION BUTTON
ACTUATOR PORT
GREEN LED
RED LED
MOUNTING HOLE
MOUNTING HOLE
FRONT PANEL CLIP

Wireless Remote

UP
DN
M
S

Normal Mode

Normal Model allows the user to control the connected linear actuator. Ensure Control Box is connected to a power source that is capable of the linear actuator's full load voltage and current requirements. Ensure the linear actuators are free from obstruction before operation.

- UP: Extend actuator
- DN: Retract actuator
- M: Programming Mode
- S: Stop actuator
- Pressing any button while an actuator is extending or retracting will stop the actuator.

Programming Mode

Programming Mode allows the user to program the Control Box settings.

1. Apply power to Control Box.
2. Entering Programming Mode: Press and hold the M button for 7 seconds, then release the button.
3. Programming Mode: Pressing a button will initiate a specific programming mode, see Operating Instructions.
4. Exiting Programming Mode:
    a. Pressing M button once will return to Normal Mode.
    b. Normal Mode will resume after 15 seconds if no buttons are pressed while in Programming Mode.

Wireless Remote Pairing Mode

The Control Box is paired with the 1x Wireless Remote included and can be paired with up to 4 Wireless Remotes in total.

Deleting Paired Wireless Remote
- If more than 4 Wireless Remotes are paired, the oldest paired Wireless Remote will be deleted.
- A single Wireless Remote can be paired up to four times to delete all other paired Wireless Remotes.

Pairing Using a Paired Wireless Remote
1. On the paired Wireless Remote:
    a. Enter Programming Mode (see Operating Instructions).
    b. Press the DN button once.
    c. You have now entered Pairing Mode.
        i. Normal Mode will resume after 15 seconds if no buttons are pressed.
2. On the new Wireless Remote that is being paired:
    a. Press any button once.
    b. The new Wireless Remote has been paired.
    c. Normal Mode will resume automatically.

Pairing Using the Control Box Action Button
1. Press the Action Button for at least 1 second, then release.
    a. You have now entered Pairing Mode.
        i. Normal Mode will resume after 15 seconds if no buttons are pressed.
2. On the new Wireless Remote that is being paired:
    a. Press any button once.
    b. The new Wireless Remote has been paired.
    c. Normal Mode will resume automatically.

Momentary / Non-Momentary Control

Non-Momentary Control (Default)
Press UP or DN once. The actuator will keep moving until a button is pressed again or the actuator reaches its travel limit. When the actuator reaches its travel limit, the Control Box will power it off automatically.

Momentary Control

Hold UP or DN to operate the actuator. Movement stops when you release the button or reach the travel limit.

Changing Control Setting
1. Enter Programming Mode (see Operating Instructions).
2. Press the UP button once to switch between Momentary and Non-Momentary control.
3. Normal Mode automatically resumes.

Smooth Motion Control (OFF by default)

Smooth Motion gradually ramps the actuator's speed when it starts or stops, ensuring smoother operation. By default, Smooth Motion is OFF for immediate starts and stops, which is useful for precise positioning.

Changing Control Setting
1. Enter Programming Mode (see Operating Instructions).
2. Press the S button once to toggle Smooth Motion ON or OFF.
3. Normal Mode automatically resumes after pressing the button.

Reset Procedure

If the Control Box is not functioning as expected, it can be reset using one of the following methods:

Action Button Reset
1. Press and hold the Action Button for at least 12 seconds.
2. Release the button when the GREEN and RED LEDs flash simultaneously.
3. The Control Box will reset.

Power Input Reset
1. Disconnect the power supply from the Control Box.
2. Wait at least 10 seconds.
3. Reconnect the power to complete the reset.

Control Box Status and Errors

Status	Green LED Action	Red LED Action	Other Action	Troubleshooting Steps
Initial Power-Up	Blinks once	Blinks once		
Motor Output ON	ON	-		
Wireless Pairing Mode	Slow blinking	-		
Mode Change Confirmation	Momentary fast blinking	-		
Error Detected:				
• Output Short Circuit: Output current exceeds 50A	Fast blinking	-	Motor Output OFF	• Disconnect power • Check for wiring faults (e.g. broken or shorted wires) • Confirm actuator load is within rated limits • Verify actuator inrush current is below 50A o Try enabling Smooth Motion Mode • Reapply power to the Control Box
• Out of Range Input Voltage: Input voltage is above 29.5 VDC or below 10 VDC.	Fast blinking	-	Motor Output OFF	• Disconnect power • Verify input voltage is within 10 VDC – 29.5 VDC • Reapply power to the Control Box
• Reverse Input Voltage: Power Input polarity is incorrect	OFF	OFF	Motor Output and Control Box OFF	• Disconnect power • Verify Power Input polarity is correct • Reapply power to the Control Box