



# ATOM

## Three Phase Digital 16 - 80 Amp

### QUICK START GUIDE



**WARNING:** Ensure all high voltage is off and disconnected before wiring the controller. Always wire in accordance with local codes.

#### OPERATING SEQUENCE

1. Install the controller in the desired location with appropriate clearance as shown in the *Panel Layout*.
2. Attach and wire the 6-pin connector as shown in the *Connector* section.
3. Wire Line and Load connections as shown in the *Wiring Diagram*.
4. Apply 24 Vdc power to the command connector pins 5 and 6 to initiate controller startup.  
*The Power (PWR) LED will be **red** when the unit is powered on and no AC line voltage is present.*
5. Apply Line Voltage.  
*The Power (PWR) LED will be **green** when the unit is powered on and AC line voltage is present.*
6. Place the controller in RUN state by setting Digital Run Enable [SP-25] to RUN (1)
7. Apply a Digital or Fieldbus Setpoint command greater than zero<sup>1</sup> to enable controller output.
8. Check controller LEDs for proper controller operation.  
*The Status (STAT) LED will be **green** when the unit is outputting. The brightness of the Status LED is proportional to the setpoint command.*

If the controller is not outputting as expected refer to the *LED Indicators* and *Troubleshooting* section for help.

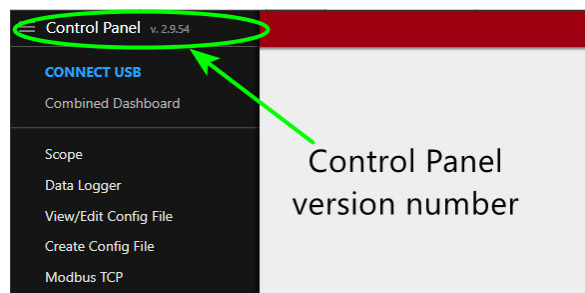
<sup>1</sup> When in SSR firing modes the setpoint command must be 100% to enable output.

#### CONTROL PANEL SOFTWARE

Use of the Control Concepts Control Panel Software requires version number 2.9.54 or greater. Use of an older version of Control Panel may be missing expected features.

Download the latest version here:

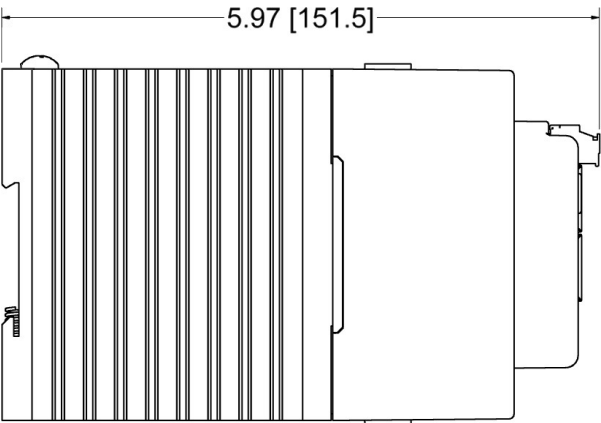
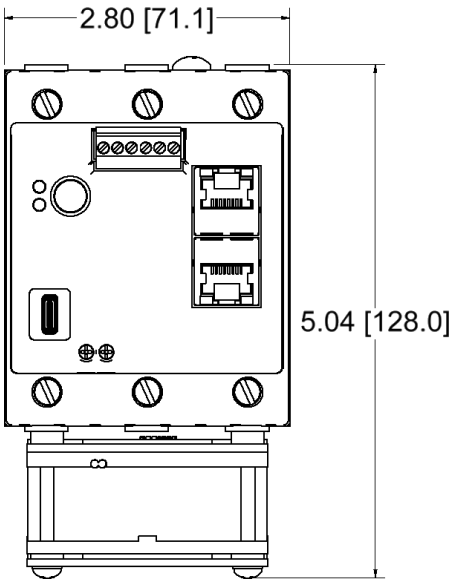
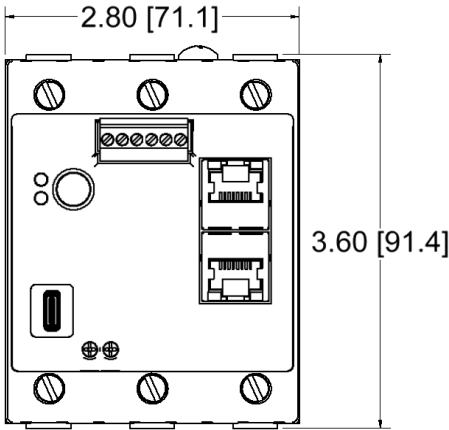
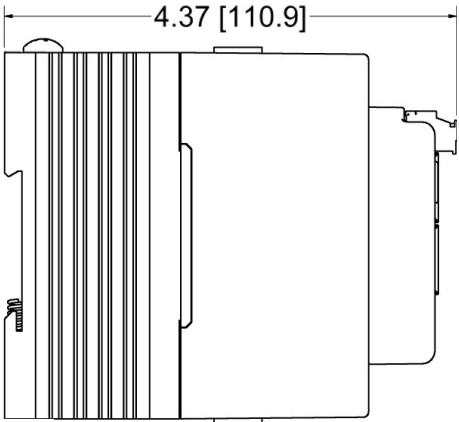
<https://ccipower.com/products/accessories/control-panel-software>



# PANEL LAYOUT

50 - 80A ATOM Controllers are equipped with a cooling fan for additional heat dissipation.

**Dimensions:  
Inches [mm]**



## DIN Rail Mounting

\*\*\* IMPORTANT \*\*\*

Do not remove DIN spring screw.  
To remove or install on a DIN rail, push the controller up and tilt out.  
Do not install the included mounting tabs if using a DIN rail.

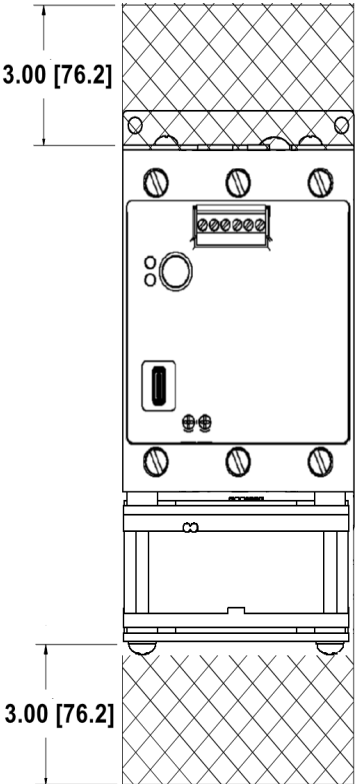
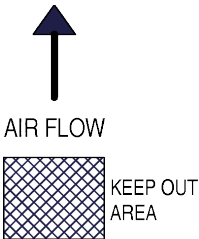
## Mounting Clearances

### Mount controllers vertically

The top and bottom of the controller must have a minimum of 3.0" [76.2mm] free of obstruction as measured from the edge of the heatsink (or fan if equipped).

**32 amp controllers require a minimum side clearance of 0.5" [12.7mm] between controllers. A clearance spacer is provided in the hardware kit shipped with this frame size.**

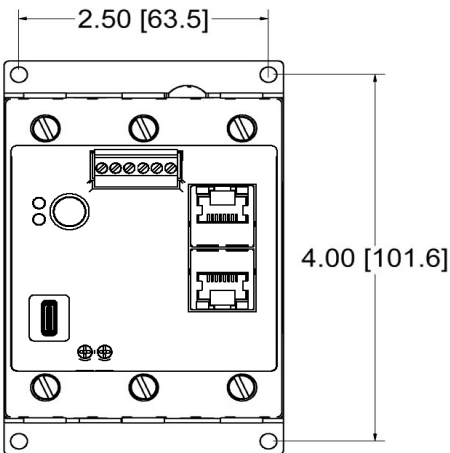
Cross-hatched areas designate clearances for proper air circulation and cooling.



## Panel Mounting

When installing without a DIN rail, install the included mounting tabs on the controller heatsink and use #6 or M3.5 screws with star washers to attach to the panel.

\* Panel screws and washers not included



## WIRING DIAGRAM

For line and load connections, use copper conductors rated 75° C minimum.

A ground wire is required for proper operation.

Only 1 conductor allowed per terminal.

Bare wire or ferrules may be used for all connections.

### A.1, A.2

- Use #2 - 14 AWG wire
- Bare wire strip length: 0.65" minimum

### B.1

- Use #14 - 22 AWG wire
- Bare wire strip length: 0.23" minimum
- Maximum current of 0.2 mA at 480 VAC through the B1 reference connection.

### PE Gnd

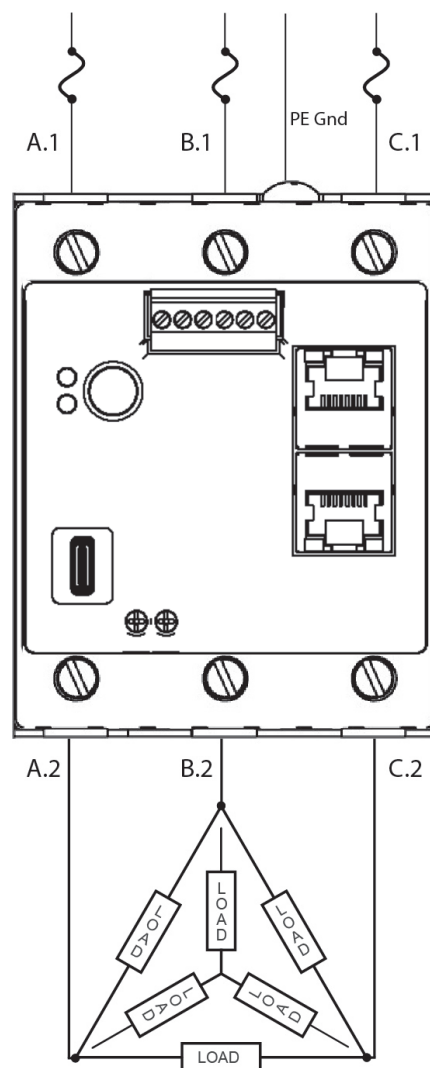
- Wire in accordance to local electrical codes

**Tightening Torque - A1 / A2 / B1**

|                          | Wire Size (AWG) | Torque               |
|--------------------------|-----------------|----------------------|
| A1, A2, A3<br>B1, B2, B3 | 10 - 14         | 35 Inch lbs [3.9 Nm] |
|                          | 8               | 40 Inch lbs [4.5 Nm] |
|                          | 4 - 6           | 45 Inch lbs [5.0 Nm] |
|                          | 2 - 3           | 50 Inch lbs [5.6 Nm] |



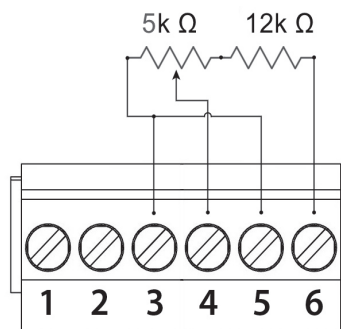
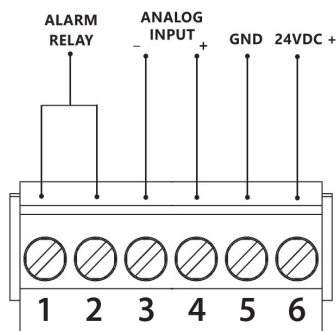
Wire controller to conform with the National Electric Code (NEC) and/or all local wiring codes.



## CONNECTOR

**Command Connector**

| Pin  |                |
|------|----------------|
| 1, 2 | Alarm Relay    |
| 3    | Analog Input - |
| 4    | Analog Input + |
| 5    | Common/GND     |
| 6    | 24VDC +        |



**POT Kit:** (purchased accessory)

The POT kit (SPKA-5K) adds the ability to wire an analog setpoint input to terminals 3 and 4.

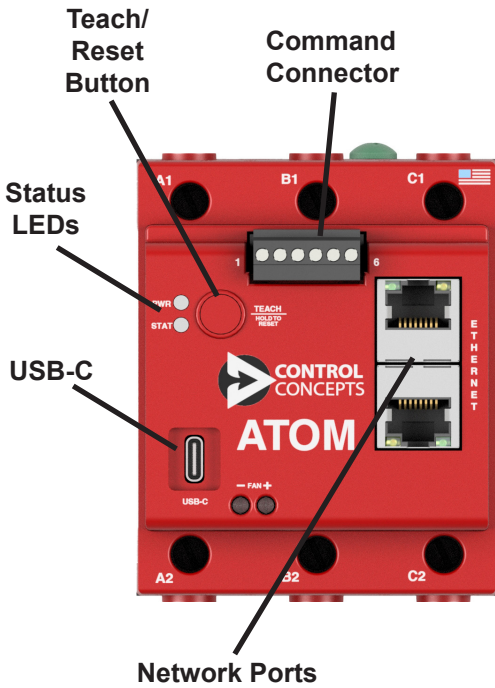
Wire the kit as shown above.

Connector wiring 16-26 AWG min/max.  
3.0 Inch lbs [0.34 Nm] maximum torque.

## LED INDICATORS

| PWR LED (AC Line Power) |                                                                                           |
|-------------------------|-------------------------------------------------------------------------------------------|
| Off                     | No 24 VDC to controller                                                                   |
| Green                   | AC Line Lock, in sync                                                                     |
| Orange                  | Phase Loss, AC Line Voltage present but too low, or trying to achieve AC Line Lock status |
| Red                     | Line Loss, No AC Line Voltage detected                                                    |

| STAT LED (Status)     |                                                                       |
|-----------------------|-----------------------------------------------------------------------|
| Off                   | None of the states below are active                                   |
| Green                 | In RUN State, Intensity indication of output duty cycle % > 0         |
| Red                   | FAULT State (Inhibit Alarm is active)                                 |
| Orange                | Active Warning Alarm or Controller is in Power-up Initialization.     |
| Flashing Orange       | Partial Load Fault Alarm                                              |
| Flashing Red          | Error during Initialization, Controller in 'Waiting for Enter' state. |
| Alternating Red/Green | In Flash Programming mode                                             |



## FEATURES

### Command Connector

24VDC power input and Alarm Relay connections.

### USB-C Connector

Wired connection to a PC or Android device running the Control Panel software.

### Reset Button

Dual purpose button used to relearn load resistance or reset the controller.

### Teach / Reset Button Operation

**Teach:**  
Press and release the button, Stat LED will be flashing alternate Green/Orange when in Teach mode.  
Press and release the Teach button a second time to learn the connected load resistance

**Reset:**  
Press and hold the button for at least 3 seconds to reset the controller.

## TROUBLESHOOTING

If you purchased your controller from an OEM Supplier, contact the supplier for additional assistance in the event your question may call for information or components not available to our factory.

- Check the LED indicators for controller state. *See the LED Indicators section.*
- Inspect all wiring and connections. Ensure a steady 24Vdc power source is wired to the controller. Check AC line input. *The Power supply must be able to source a minimum of 500mA of current to the controller. AC line voltage operating range is 24 to 600 Vac.*
- Repeat the *Operating Sequence* steps outlined on the first page of this document.
- Connect to the controller with the Control Panel software to view any active alarms or faults. *The Control Panel Diagnostic tab provides additional fault and history information, check for any active inhibit alarms.*
- In Control Panel verify the controller is in RUN state and a setpoint command greater than 0 is being commanded. *On Analog controllers if using the analog input, verify the wiring and source, and ensure the command signal inputs are mapped in the Control Panel on the Setpoints tab of the software.*
- If unable to connect with the Control Panel Software with a “No Control Concepts devices are available” message; re-check the USB cable connections and/or try a different USB cable.  
Common communication issues have been found to be caused by poor quality USB cables.



Sales and Technical Support is available Monday thru Friday 8:00 AM to 5:00 PM US Central Time  
Contact us directly using Live Chat or email on our website at [www.ccipower.com](http://www.ccipower.com)  
or by calling 1-(800)-765-2799 or 1-(952)-474-6200.

