1. Make the panel cutout (see figure 1).

2. Remove the green screw terminal connectors from the controller.

3. Insert the case assembly into the panel cutout and slide the mounting collar over the back of the controller (see figure 2).

4. Push the collar to the panel and secure into position.

5. Place the blade of a screwdriver against each of the four corners of the mounting collar and apply pressure to achieve IP65 seal (see figure 3).

6. Reinstall the screw terminal connectors on the controller now or first connect field wiring as indicated in the steps that follow.

7. Connect your sensor as indicated in the corresponding diagram.

8. Connect your load as indicated in the diagram corresponding to your part number.

9. Connect the power source corresponding to your part number.

Notes:
- Relay: 5A @ 240 V(ac) or 30 V(dc)
- 0 to 20 mA: 800Ω max.
- 0 to 10V: 1kΩ min.
- Voltage: 0 to 50 mV or 0 to 10V @ 20kΩ
- Current: 0 to 20 mA @ 100Ω
- Relay: 5A @ 240 V(ac) or 30 V(dc)
- 0 to 2: 120 to 240 V(ac)
- 3 or 4: 24 V(ac or dc)

Caution: Reinstall screw terminal connectors in their original locations.

Caution: Do not connect high voltage to a controller that requires low voltage.
**Set-up Guide**

**User Interface**

**Arrow Keys:**
- Exits to previous menu or page
- Change settings
- Hold both for Operation or Setup page

**Advanced Key:**
- Displays next menu item

**Special Display Characters**
- h, H, k = W, w
- E, Li = V, v
- m, M = W, w
- t, T = Z, z, 2

For assistance contact Watlow: www.watlow.com
1-800-467-4565
watlowsupport@watlow.com

Scan for full manual.

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**6 Set-up Input**

Starting at the Home Page:

1. To enter the Setup Page press and hold and until DEp appears in the lower display.
2. Press to enter the Analog Input menu.
3. Press to view the Sensor Type setting.
4. To change the sensor type from thermocouple to another type, press until the desired type is displayed.
5. Press and continue with the instructions for that sensor type below.

**Thermocouple (E, C):**

- To change the sensor type from *E* to another type, press until the desired type is displayed.
- To exit the Analog Input menu, press twice to return to the Setup Page.

**Set Loop Control Mode**

Starting at the Home Page:

1. To enter the Operations Page press and hold and until P-R appears in the upper display.
2. To view the alarm menu, press and hold until "DEP" appears in lower display.
3. Press to enter the Analog menu.
4. Press to select the alarm and press to view the alarm type.
5. Press until "DEp" appears in the lower display.
6. Press to go to the desired set point.
7. To return to the top of the Alarm menu, press and hold it for the Home page.

**Note:**
- This takes about six seconds and you will see the operations page first. If you release the arrow keys too soon, press and then start again.
- Since alarm set points are set directly. The upper display flashes "DEP" to view the Sensor Type setting.
- For other sensor types see the user manual.

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**9 Set alarm set points**

Starting at the Home Page:

1. To enter the Operations Page press and hold and until P-R appears in upper display.
2. To view the alarm menu, press and hold until "DEP" appears in lower display.
3. Press to view the Sensor Type setting.
4. To change the sensor type from thermocouple to another type, press until the desired type is displayed.
5. Press and continue with the instructions for that sensor type below.

**Thermocouple (E, C):**

- To change the sensor type from *E* to another type, press until the desired type is displayed.
- To exit the Analog Input menu, press twice to return to the Setup Page.

**Set Loop Control Mode**

Starting at the Home Page:

1. To enter the Operations Page press and hold and until P-R appears in the upper display.
2. To view the alarm menu, press and hold until "DEP" appears in lower display.
3. Press to enter the Analog menu.
4. Press to select the alarm and press to view the alarm set point.
5. Press until "DEP" appears in the lower display.
6. Press to go to the desired set point.
7. To return to the top of the Alarm menu, press and hold it for the Home page.

**Alarm Types:**
- P-R/L: process alarm; alarm set points are set directly.
- DEP: deviation alarm; alarm set points are relative to the control loop's set point.
- off: alarm does not occur.

**Alarm Sides:**
- LWf: high: alarm only when process is above high alarm set point.
- LWd: low: alarm only when process is below low alarm set point.
- LW: both: high and low alarms are active.
- and/or:

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**10 Loop Control Mode/Loop set point**

Starting at the Home Page:

1. To view the control mode, press until "P-R" appears in the lower display.
2. Use and to change the control mode.

**Adjust Loop Set Point**

On the Home Page:

Use and to adjust the value in the lower display.

**Note:**
- The low set point for a deviation type alarm should be set as a negative number.

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**11 Autotune the Control Loop**

Starting at the Home Page:

1. Set the loop's control mode to auto and adjust the set point to the value at which you want the system tuned.
2. Press until "DEP" appears in the lower display.
3. Press to set the value to "YES" and start the auto-tuning function.
4. Press to return to the top of the Home Page.

**Control Modes:**
- z: automatic loop control output to make process match set point.
- off: manual: control loop output power is set by the user in percent power.
- **Note:** The system must be operational for autotuning to correctly select the PID settings.

**Hint:**
- Hold the arrow key to change a number such as the set point at an accelerating rate. Release the key before reaching the desired setting and fine tune the value to avoid overshooting.

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**Set up Outputs for heat, cool and alarm**

Starting at the Setup Page:

1. To view the output menu, press and until "DEP" appears in upper display.
2. To enter the Output menu press.
3. If the controller has more than one output, use and to select the output and press to view the output's function.
4. To set what the output does in the controller, use and to select the desired function.
5. For *H* or *C*, press and continue with the hardware specific options below (step 6).
6. For an RL, MM, and use and to select which alarm drives the output.

**Set Loop Control Mode**

Starting at the Setup Page:

1. To view the output menu, press and until "DEP" appears in upper display.
2. To enter the Output menu press.
3. If the controller has more than one output, use and to select the output and press to view the output's function.
4. To set what the output does in the controller, use and to select the desired function.
5. For *H* or *C*, press and continue with the hardware specific options below (step 6).
6. For an RL, MM, and use and to select which alarm drives the output.

**Switched DC or Open Collector:**

6. Use to set the method the controller uses to switch the output (Output Control).

**Output Control:**
- off: control loop outputs are off.
- variable time base: output switches up to 20 times per second.

For other sensor types see the user manual.

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**Output Functions:**
- H: heat output control
- C: cool output control
- E: event output a
- off: variable time base: output switches up to 20 times per second.