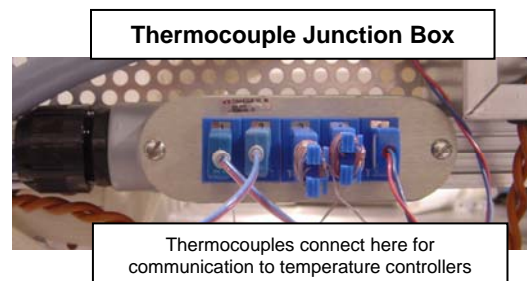
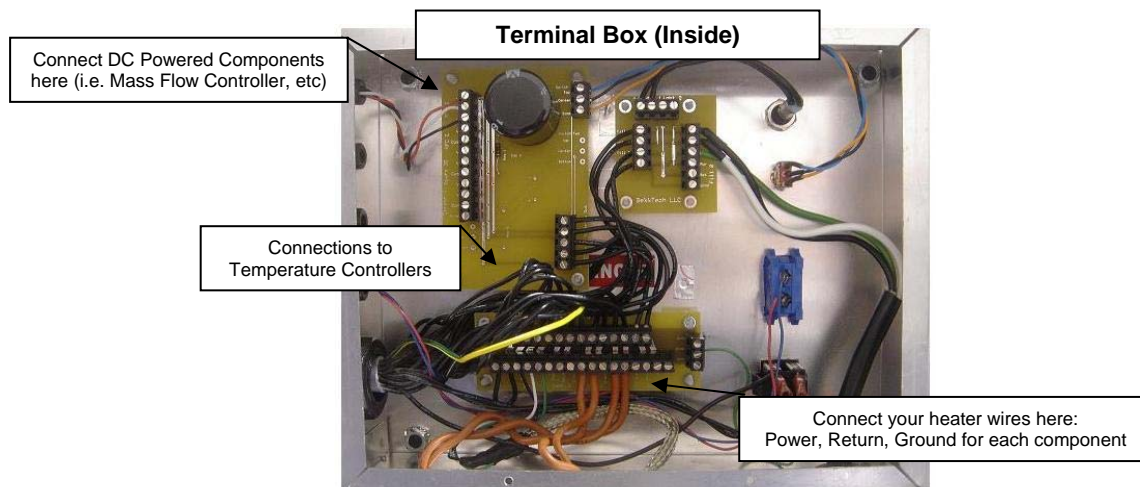
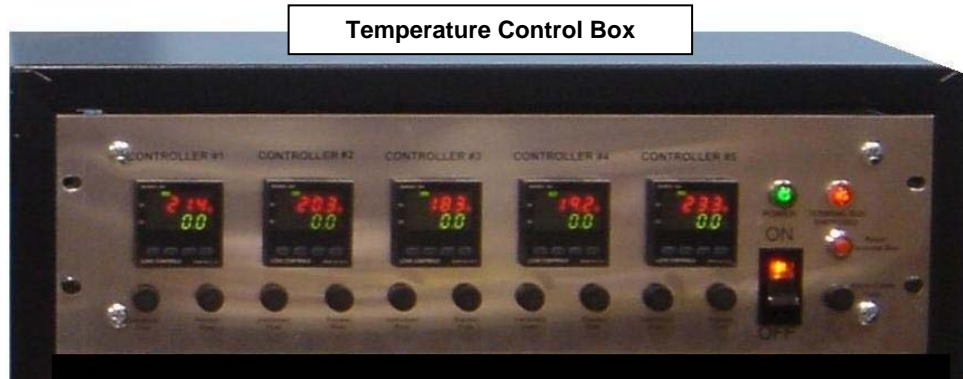


BT-201 Temperature Control System

The BekkTech Temperature Control System provides independent control of five different heated components. In membrane conductivity & fuel cell testing, the heated components are generally cell hardware, saturator(s), heated gas line(s), and / or back pressure regulator.

The following components and software are included with the BT-201:

- 1) Temperature Control Box – Includes Temperature Controllers, Power Supply, and connections to Terminal Box, Thermocouple Junction Box, USB Director and Alarm Cable.
- 2) Terminal Box – Includes AC powered terminals for connection to your heated components and DC powered terminals for components such as mass flow controllers.
- 3) Thermocouple Junction Box – Attach thermocouples here for communication to temperature controllers.
- 4) BekkTech Temperature Control Software – Provides automated control of temperature controllers.



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BT-201 Temperature Control System

BT-201 BekkTech Temperature Control System
Temperature Control Box (19" rack mount box), includes:
Five 2-Amp temperature controllers provide independent control of five different temperature control loops
Separates electronic components from gas delivery and water delivery components
Separate high temperature alarm for each component
Controller #5 is designed to be connected to the Cell Hardware
<ul style="list-style-type: none">▪ Controller #5 includes a system shut-down alarm▪ If the temperature measured by Controller #5 exceeds the Alarm-High setting, the power to the Terminal Box will terminate to prevent damage caused by potential hydrogen crossover in the Cell Hardware
Includes a DC Power Supply (+ / - 15 VDC)
Includes a USB Director which converts the USB connection on your computer to:
<ul style="list-style-type: none">▪ RS-485 for communication to the Temperature Controllers and MKS Mass Flow Controllers (Note: Mass Flow Controllers are not included with the BT-201)▪ RS-232 for communication to Keithley 2400 Sourcemeter and similar components (Note: Keithley 2400 Sourcemeter is not included with the BT-201)
Includes an Alarm Cable for integration into your external safety system
<ul style="list-style-type: none">▪ Connect the 8-foot alarm cable to your external safety component such as a hydrogen detector or smoke alarm.▪ When properly connected, power to temperature controllers and DC power connections will terminate in a safety alarm condition.
Terminal Box (8" x 10" x 2.5" covered box)
10-foot electrical cable runs from Temperature Control Box to Terminal Box
Allows you to assemble the Terminal Box near the heated components
Separates arcing / sparking components from gas delivery components
Clearly labeled power connections (Controller #1, Controller #2, etc)
Clearly labeled thermocouple connections (Controller #1, Controller #2, etc)
Includes Saturator Fill Circuit with On / Off / Auto control
Includes DC Power Connections for connection to components such as Mass Flow Controllers
Thermocouple Junction Box with five receptacles for Type T thermocouples
Five thermocouples are included
Each thermocouple is pre-wired into the appropriate connection in the Terminal Box
BekkTech Temperature Control Software
Requires LabView 8.2 or higher
Monitors and controls temperatures on each temperature controller
Script-driven (for automated control of temperatures) or Operator-driven (for manual control of temperatures)

The components listed below are not included with the BT-201. You will need to provide the following to perform your fuel cell or membrane conductivity research with the BT-201 Temperature Control System:

- Gas Delivery System – Plumbing, Mass Flow Controller, Gauges, Back Pressure Regulator, etc.
 - The BT-201 includes a DC Connection in the Terminal Box which can be used to power a Mass Flow Controller
- Saturator(s) / Humidifier(s)
 - Select a Temperature Controller to associate with each Saturator
 - Connect the Saturator Heater's power to the appropriately labeled connection in the Terminal Box
 - Connect the appropriate thermocouple to the Saturator
- Heated Gas Line(s)
 - Select a Temperature Controller to associate with each Heated Gas Line
 - Connect the Gas Line Heater's power to the appropriately labeled connection in the Terminal Box
 - Connect the appropriate thermocouple to the Heated Gas Line
- Cell Hardware
 - Controller #5 is designed specifically for the Cell Hardware
 - If the temperature measured by Controller #5 exceeds the Alarm-High setting, the power to the Terminal Box will terminate to prevent damage caused by potential hydrogen crossover in the Cell Hardware

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