Frequently Asked Questions

What is a smart power controller?

A smart power controller receives a set point from a device such as a temperature controller. It measures the line voltage and the current through the load and adjusts on-time to deliver the desired average power.

What is a key advantage of a smart power controller?

A key advantage of a smart power controller is being able to control the output based on the measurement of power delivered to the load. This improves temperature control performance because it compensates for line voltage fluctuations or even partial load failures faster. As a result, there is significantly less deviation from the temperature set point than would occur with the same temperature controller paired with a traditional solid-state power switching product.

What applications benefit from a smart power controller?

Applications that benefit from a smart power controller include applications that demand precise temperature control, applications where system monitoring is important to reduce scrap and applications where there is a high likelilhood the line voltage variation will affect temperature control.

Does the ASPYRE AT have built-in fuses?

To allow flexibility in the type of fusing and where the fuses are placed within a system, the ASPYRE AT power controller does not include fuses. External branch circuit fuses and high-speed fuses can be placed as needed for the system.

How does the ASPYRE AT integrate with my system?

The ASPYRE AT can connect with a PM PLUS® or other Watlow® controller via the intermodule bus to receive its set point signal. It is also possible to send the set point signal via a communications protocol such as Modbus® RTU. The ASPYRE AT is also available with analog and digital inputs that allow it to receive a signal from other controllers.

How do I know what firing mode, feedback type and other settings to use for my application?

Depending on the type of heater to be switched and how it is wired, you can use the guided setup feature in COMPOSER® to help you configure the ASPYRE AT.

What is the purpose of the current limiting capability?

Certain types of heaters have very low resistance when initially powered up at room temperature. Current limiting can be used to prevent overstressing electrical circuits including fuses, wires, etc.

How does heater bakeout work?

Heaters with certain types of insulation can absorb water when they are not used for a period of time and are subjected to high relative humidity. This can cause dielectric breakdown or "shorting" when the heater is subsequently powered up. The heater bakeout feature drives moisture out of the heater by ramping up the voltage over time allowing the moisture to escape without damaging the heater.

How accurate are the power, current and voltage measurements?

For zero cross firing the ASPYRE AT measures power, current and voltage to within two percent of the rated range.

How much power can the ASPYRE AT switch?

The ASPYRE AT is available in nominal rated sizes of 12A, 24A and 48A.

Powered by Possibility

Do I still need a temperature controller?

The ASPYRE AT does not control temperature. It performs closed-loop control on current, voltage and power, which can improve temperature control by quickly responding to voltage sags or other load issues. For temperature control applications, using ASPYRE AT smart power controller can improve thermal performance.

Why is the ASPYRE AT set point in amperes, volts or watts? What does that mean?

The ASPYRE AT controls electrical energy by controlling either current, voltage or power. While a temperature controller has a set point in degrees Fahrenheit or Celsius, the ASPYRE AT accepts a set point in amperes, volts or watts (power) depending on how you set it up.

How does the ASPYRE AT receive the power set point?

The ASPYRE AT can receive its set point from a PM PLUS or other Watlow controller via the inter-module bus. It is also possible send the set point signal via a communications protocol such as Modbus® RTU. The ASPYRE AT is also available with analog and digital inputs that allow it to receive a signal from other controllers.

How can I view power, voltage, current and load resistance measured by the ASPYRE AT?

Use COMPOSER to view these parameters or use a Silver Series OIT to display data from the ASPYRE AT (requires Modbus® RTU).

How do I connect my EZ-ZONE® RM to my ASPYRE AT?

The EZ-ZONE RM is straight forward because it has dedicated inter-module bus terminals on the bottom of each module that are labeled the same way the ASPYRE AT terminals are labeled (CY, CX and CZ).

How do I connect my PM PLUS to my ASPYRE AT?

The terminals are labeled for standard bus (CE, CD, CF), connect them as shown below to the inter-module bus connections on the ASPYRE AT. Also, change the software setting for the protocol to make them work for the inter-module bus instead).

Setup >
  Communications >
   Protocol >
    Backplane Bus