



ARC Temperature Controller Quick Start Guide

Model v1.0
Software v51.0
Manual ID: PA-MAN-QSE1

Required Components

The ARC Temperature Controller system is comprised of four primary components:

1. ARC Temperature Controller box (Figure 1)
2. AC/DC power adapter (Figure 2)
3. Polyarc-to-Controller adapter cable (Figure 3)
4. Polyarc (Figure 4)



Figure 1. ARC Temperature Controller Box



Figure 2. AC/DC 48VDC Power Adapter

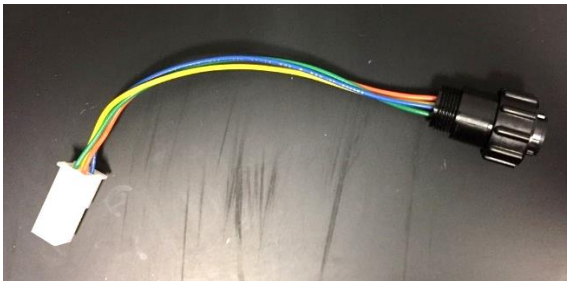


Figure 3. Polyarc-to-Controller Adapter Cable



Figure 4. Polyarc

Please check your shipping contents carefully to make sure you have all parts listed above. The ARC Temperature Controller box, AC/DC power adapter, and Polyarc-to-Controller adapter cable should all arrive in the same box. Contact us at contact@activatedresearch.com if you are missing a part indicated on the packing slip, or if you require assistance.

Part I – Polyarc[®] Preparation

Prior to connecting your Polyarc to the ARC Temperature Controller, please ensure that following criteria are met:

- 1) Carrier gas is flowing through the inlet capillary of the Polyarc. The inert coating on the inlet transfer line may be damaged if it is exposed to air and/or moisture while hot.
- 2) GC inlet pressure is greater than 3 psi in order to overcome the back-pressure in the reactor. Inlet pressures less than 3 psi may result in air and hydrogen backflow.
- 3) Air and hydrogen are flowing at the appropriate flow rates to the appropriate gas lines on the Polyarc.

For detailed information pertaining to Polyarc installation, please visit our website www.activatedresearch.com/documents.

Part II – Temperature Controller Start-Up Sequence

Before beginning the start-up sequence, ensure nothing is plugged into the back of the ARC Temperature Controller box.

- 1) Connect the Polyarc-to-Controller adapter cable to the 40VDC “Output” on the ARC Temperature Controller box. Turn the rotating portion of the adapter cable connector clockwise, approximately ½ turn or until securely fastened.



Figure 5. (A). Locating 40VDC “Output” on back of ARC Temperature Controller box.



Figure 5. (B). ARC Temperature Controller box with adapter cable connected to the 40VDC “Output”.

- 2) Attach the molex plug on the Polyarc heater cable to the Polyarc-to-Controller adapter cable.

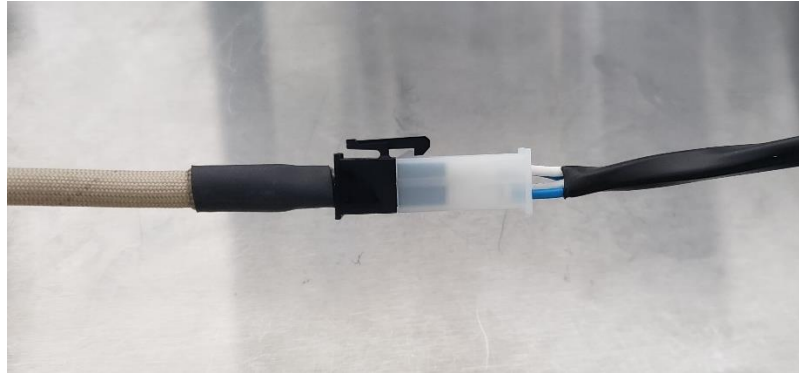


Figure 6. Polyarc heater cable connected to Polyarc-to-Controller adapter cable.

- 3) Plug the power supply power cord into a grounded supply electrical outlet (100V-240V).
- 4) Plug the power supply 48V output connector into the round “PWR” connector on the back of the ARC Temperature Controller box. Once the power supply and ARC Temperature Controller are connected, the power button located on top of the controller will illuminate blue and the Activated Research Company logo will appear on the LED screen.
 - a. There must always be a Polyarc plugged into the Temperature Controller, or the error message ****OVEN NOT FOUND**** will appear.



Figure 7. ARC Temperature Controller with power supply connected

- 5) Press the power button, which should be illuminated. The temperature controller will conduct a test to determine if the Polyarc is still appropriately connected. If the Polyarc has been connected correctly, the temperature control software will open, and you can begin to navigate the temperature settings.

Part III – Setpoint Temperature

The first screen to appear post heater test will ask if you would like to use the last setpoint of 450°C. This is the operating temperature of a PT100 RTD Polyarc. For all Polyarcs created on or after January 1st, 2019, a black molex connector indicates that the Polyarc has a PT100 RTD. A white molex connector indicates that the Polyarc utilizes a custom ARC RTD. Please see the Polyarc installation manual for more information about RTD types and operating temperatures.

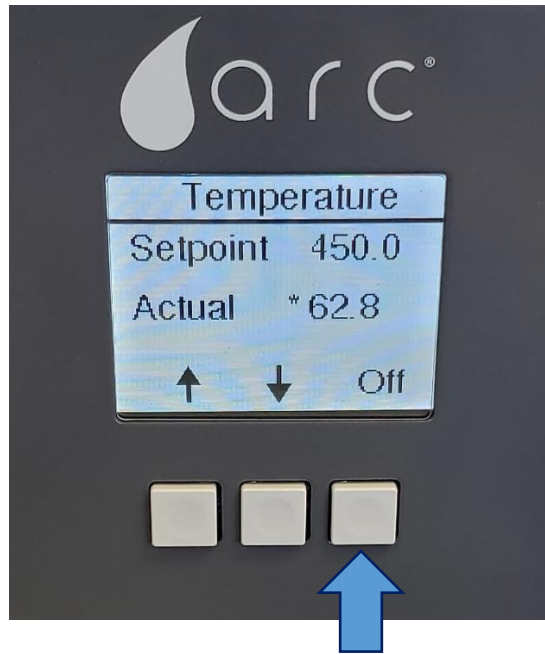
If you wish to heat the Polyarc to 450°C select “Yes” and the temperature controller will begin heating.



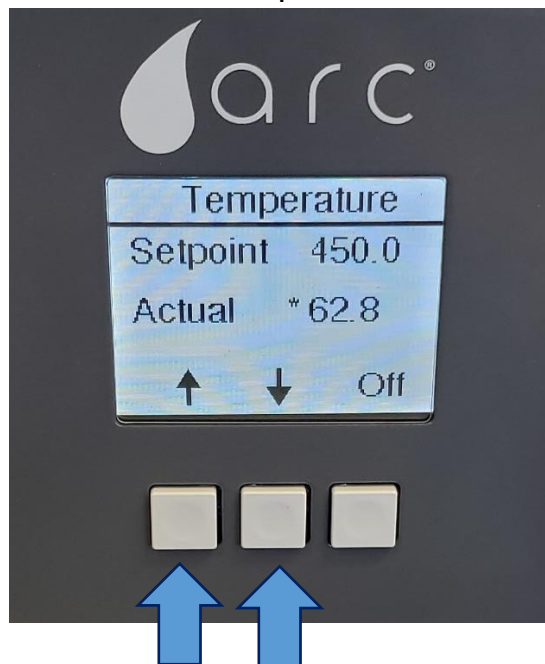
If you wish to heat the Polyarc to a different temperature, select “No”. Use the “Inc” and “Dec” buttons to set your desired temperature. Once the desired temperature has been set, click the “OK” button. The ARC Temperature Controller will begin to heat to the desired temperature.



One can stop heating at any time by selecting “Off” and can resume heating to the previously set temperature by selecting “On”.



One can also change the setpoint temperature at any time using the up and down arrows.



To power the ARC Temperature Controller off, push the power button on the top of the temperature controller box.

Part V – Warnings and Notices

The ARC Temperature Controller is intended to be used in conjunction with ARC's Polyarc detectors and is to be used within the following environmental conditions only:

- Max Ambient Temperature: 40°C
- Maximum Humidity: 85% Rh
- Maximum Altitude: 2,000 meters
- Equipment for Indoor Use Only

Note that the Polyarc must be cooled to room temperature before turning off the carrier gas supply. This includes maintenance actions such as replacing column, replacing an inlet liner or septum, disconnecting the zero dead volume union, and turning off the GC.