

Instruction Manual

RDK-300B Controller for Hot Runner Coil Heater

Version 1.1 (April, 2022)

Caution

- Check pin assignment before connecting a coil to the controller (see section 3.4). The pin assignment on RDK-300 is different from RDK-100.
- The default set temperature on RDK-300B is 300°F. The controller will start to heat the coil immediately after it is power up if coil is connected. Please make sure the coil is placed in a secure place before power up.
- The coil heater should NOT be heated above 1000°F. By default, the auto-shutoff temperature and time are set to 900°F and 60 minutes.
- When controller is turned off, the coil will stay at very high temperature for at least 20 minutes. DO NOT TOUCH the coil until controller stops flashing “Hot”. The heated coil is very dangerous. It will cause severe burn if touched.
- One (1) year warranty for the controller; six (6) months for the coil heater*

Note: * Our warranty for coil heater only covers manufacturing defects; it does NOT cover damages caused by high temperature (≥ 1000°F) use.

1. Specification

Controller	
Operating voltage	120 V / 240 V AC
Maximum current	5 Amp
Input power connection	IEC 320 C14
Coil connection	XLR 5 Pin
Dimension	3.5 x 1.7 x 4.7 inch, (90 x 47 x 120 mm)
Temperature control range	200°F to 1000 °F

2. Front Panel



Figure 1. Front Panel.

- ① Current temperature
- ② Output status indicator
- ③ Set temperature
- ④ Power button with stand-by status indicator
- ⑤ Control knob. Access menu and change parameters

3. Getting Started

3.1 Confirm the Pin Assignment on the Heater Coil

Before you plugging any coil to this controller, please confirm that the coil has the same pin assignment (see Table 1) as the RDK-300B.

Table 1. Pin Assignment of the XLR connector on RDK-300B.

1	AC Power to Heater
2	AC Power to Heater
3	Thermocouple +
4	Thermocouple -
5	Ground

3.2 Connecting the Coil Heater

To connect the coil heater, align the slot on the XLR connector on the coil cable with the tab on the female XLR connector on the controller, and then push it in. To disconnect it, press the “PUSH” tab on the female connector and pull the connector out.

Warning: With a coil connected, **the controller will start to heat the coil immediately** after it is power up. Please make sure that the coil is placed in a secure place before power up. When controller is turned off, the coil will stay at a very high temperature for at least 20 min. Controller will flash “hot” and coil temperature at top display, and it will show “off” at bottom display. DO NOT TOUCH the coil until the controller stop flashing “hot”. The heated coil is very dangerous. It will cause severe burn if touched. **It is strongly recommended that the power cord should be unplugged after use.**

3.3 Power On/Off the Controller

Connecting the power cord to the controller and to the wall outlet, then the power button should light up in red, which means the controller is in standby status. The displays should still be dark and there should be no power output to the coil heater. Press down the power button briefly, the display should turn on and the power button will lit in white. The bottom of the display window will show the set temperature value, and the top display window will show the current coil temperature. Controller will start heating up the coil to the set temperature. If no coil is plugged in, the top display will show “-H-”.

To power off the controller, press down the power button briefly. Controller will cut off power to the coil, keep displaying the coil temperature till it is cooled below a safe cool temperature.

3.4 Basic Operations

This controller has two operating mode, **standard mode** and **boost mode** (which is newly added to RDK-300B). By default, the controller will first power up in standard mode.

3.4.1 Standard Mode

When the controller is powered up in standard mode or switched to standard mode, the top display will show "Std" briefly.

This controller has been programmed for 100 Watt hot runner coil. The set temperature has been set to 300°F. If you want to change the set temperature, please follow the steps below:

- 1) Press down the knob briefly. The decimal point in the lower right corner of the bottom display will start flashing.
- 2) Turn the control knob to adjust the set temperature. Turn it clockwise to increase the value; counter-clockwise to decrease the value. Use fast rotation action for big adjustment, use slow rotation action for single digit adjustment.
- 3) Press down the knob again to confirm the new set temperature. The controller will also exit the editing mode if the knob was untouched for 10 seconds.

3.4.2 Boost Mode

In a boost mode, the user can quickly cycle between two set temperatures, a lower standby temperature and a higher boost temperature, by simply pressing down the control knob. There is no need to turn the knob back and forth to adjust for the desired set temperature.

To switch from the standby temperature to the boost temperature, simply press down the control knob. The lower display will show the new set temperature, which is the boost temperature. To switch back to the standby temperature, press down the knob again.

There are 3 boost modes available, named as "b-1", "b-2", and "b-3". A user can adjust and save customized standby temperature and boost temperature for each mode. By default, the standby temperature is 300°F and the boost temperature is 550°F for all three boost modes.

When the controller is powered up in a boost mode or switched to a boost mode, the top display will show the name of the boost mode briefly and then show the coil temperature. The bottom display will show the standby temperature.

More detailed explanation of the boost mode and the related parameters can be found in the RDK-300B Supplementary Manual.

3.4.3 Switching Between Standard Mode and Boost Mode

To change the operating mode, turn the control knob in any direction for at least a half turn (180°) in one action to bring up the mode-selecting menu. The top window will show "Mod" and the bottom window will show the name of the current mode. Turn the knob slowly in either direction to browse the options in the menu and press down the control knob to confirm your selection. The flashing dot in the lower right corner indicates the item is in editing and has not been saved yet.

3.5 Advanced Parameter Settings

Please see the RDK-300B Supplementary Manual for more information about parameters.

4. Reference links

Supplementary manual (for advanced functions/settings):

<https://bit.ly/RDK300SMA>

Or scan the following QR code by your smartphone:



Supplementary manual (for coil wattage settings):

<https://bit.ly/RDKCOIL>

Or scan the following QR code by your smartphone:



Product Demo Video:

<https://youtu.be/oFVv4iUYInw>

Or scan the following QR code by your smartphone:



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