

# Delta-T Dew Heater for CDK

## Delta-T Dew Heater for CDK12.5 (125902)

Your CDK 12.5 Delta-T Dew Heater includes the following:

QTY	
1	Delta-T control box w/ mounting bracket attached
1	2.5Amp AC adapter
2	RCA Cables
1	Temp cable (phone jack on both ends)
1	USB cable
2	Mounting Screws
1	USB Flash Drive with PWI Software
1	Instruction Sheet



*\*Delta-T Dew Heater is only compatible with CDK telescopes that are equipped with pre-installed heaters on the primary and secondary mirrors.*

## Mounting the Delta-T Control onto your CDK Telescope

The Delta-T control box attaches to any of the mounting holes around the outside of the telescope's back plate. Use the included ¼-20 screws the thread the L-bracket attached to the control box to the corresponding mounting holes on the telescope back plate.



Fig 1– Delta-T Control box with mounting bracket and screws

## Attaching the Cables - CDK 12.5

Your Delta-T controller comes with two RCA cables for connecting to the heaters installed in the CDK telescope. Also included is a cable to connect to the telescope's temperature sensors, and a USB to connect to a PC.

1. Connect one end of the RCA cable to the port marked "PRI" on the back of the telescope (see Fig 2) and connect the other end to the port labeled "Primary" on the control box (see Fig 4).
2. Connect one end of the RCA cable to the port marked "SEC" on the back of the telescope and connect the other end to the port labeled "Secondary" on the control box.
3. Connect one end of the phone jack cable to the port marked "TEMP" on the back of the telescope (see Fig 2) and connect the other end to the port labeled "Temp" on the control box (see Fig 4).
4. Connect the USB cable to the port marked "USB" on the front of the control box (see fig 3) and connect the other end to your PC.

*Note: remember that you must always connect the Temp cable as described in step #3 before plugging in the USB cable. Otherwise the PWI3 software may not be able to detect the temperature sensors attached to the mirrors.*

5. Now power on the control box by connecting the barrel connector of the AC adapter to the 12vDC port on the control box (fig 3).
6. Turn the power switch on the control box to the “on” position and check that the red LED light comes on (see fig 3).

*NOTE: The power on the telescope’s electronics panel does not need to be on in order for the dew heater to work. However the EFA box will need to be on and connected in order to read the primary mirror and ambient temperature sensors*



Fig 2 – Electronics panel on back plate of CDK12.5



Fig 3 – Front electronics panel on the Delta-T controller



Fig 4 – Rear electronics panel on the Delta-T controller

## Delta-T Dew Heater for CDK14 (600195)

Your CDK14 Delta-T Dew Heater includes the following

QTY	
1	Delta-T control box w/ mounting bracket attached
1	AC Adapter 12V, 5Amp
2	RCA Cables
1	Secondary Output cable
1	Temp cable (phone jack on both ends)
1	USB cable
2	Mounting Screws
1	USB Flash Drive with PWI Software
1	Instruction Sheet



*\*Delta-T Dew Heater is only compatible with CDK telescopes that are equipped with pre-installed heaters on the primary and secondary mirrors.*

### Mounting the Delta-T Control onto your CDK Telescope

The Delta-T control box attaches to any of the mounting holes around the outside of the telescope's back plate. Use the included ¼-20 screws to thread the L-bracket attached to the control box to the corresponding mounting holes on the telescope back plate.

### Attaching the Cables - CDK 14

Your Delta-T controller comes with two RCA cables for connecting to the heaters installed in the CDK telescope. Also included is a cable to connect to the telescope's temperature sensors, and a USB to connect to a PC.



Fig 5– Delta-T Control box with mounting bracket and screws

1. Locate the Secondary Output Cable that has a Turck connector at one end and two Molex connectors (two pin and three pin).
  - a. Connect the two pin and three pin Molex connectors to the corresponding connectors on the cable coming from secondary assembly (see Fig 6).
  - b. Connect the other end to the port labeled "Secondary Output" on the back of the telescope. (see Fig 7)



Fig 6 - Secondary Output Connectors



Fig 7 - Secondary Output Port

2. Connect one end of the RCA cable to the port marked "PRI" on the back of the telescope (see Fig 8) and connect the other end to the port labeled "Primary" on the control box (see Fig 10).
3. Connect one end of the RCA cable to the port marked "SEC" on the back of the telescope and connect the other end to the port labeled "Secondary" on the control box.
4. Connect one end of the phone jack cable to the port on the back of the telescope (see Fig 8) and connect the other end to the port labeled "Temp" on the control box (see Fig 10).
5. Connect the USB cable to the port marked "USB" on the front of the control box (see Fig 9) and connect the other end to your PC.

*Note: remember that you must always connect the Temp cable as described in step #3 before plugging in the USB cable. Otherwise the PWI3 software may not be able to detect the temperature sensors attached to the mirrors.*

6. Now power on the control box by connecting the barrel connector of the AC adapter to the 12vDC port on the control box (Fig 9).
7. Turn the power switch on the control box to the "on" position and check that the red LED light comes on (see Fig 9).

*NOTE: The power on the telescope's electronics panel does not need to be on in order for the dew heater to work. However the EFA box will need to be on and connected in order to read the primary mirror and ambient temperature sensors*

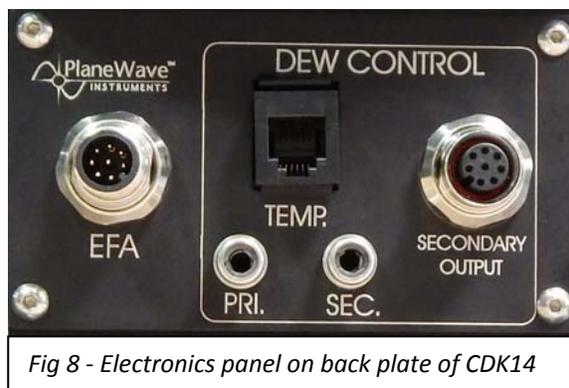


Fig 8 - Electronics panel on back plate of CDK14



Fig 9 – Front electronics panel on the Delta-T controller



Fig 10 – Rear electronics panel on the Delta-T controller

## Delta-T Dew Heater for CDK17 & 20 (170902/200902)

Your CDK17/20 Delta-T Dew Heater includes the following:

QTY	
1	Delta-T control box w/ mounting bracket attached
1	AC Adapter 12V, 5Amp
2	RCA Cables
1	Temp cable (phone jack on both ends)
1	USB cable
2	Mounting Screws
1	USB Flash Drive with PWI Software
1	Instruction Sheet



*\*Delta-T Dew Heater is only compatible with CDK telescopes that are equipped with pre-installed heaters on the primary and secondary mirrors.*

### Mounting the Delta-T Control onto your CDK Telescope

The Delta-T control box attaches to any of the mounting holes around the outside of the telescope's back plate. Use the included ¼-20 screws to thread the L-bracket attached to the control box to the corresponding mounting holes on the telescope back plate.



Fig 11– Delta-T Control box with mounting bracket and screws

### Attaching the Cables - CDK 17/20

Your Delta-T controller comes with two RCA cables for connecting to the heaters installed in the CDK telescope. Also included is a cable to connect to the telescope's temperature sensors, and a USB to connect to a PC.

8. Connect one end of the RCA cable to the port marked "PRI" on the back of the telescope (see Fig 12) and connect the other end to the port labeled "Primary" on the control box (see Fig 14).
9. Connect one end of the RCA cable to the port marked "SEC" on the back of the telescope and connect the other end to the port labeled "Secondary" on the control box.
10. Connect one end of the phone jack cable to the port on the back of the telescope (see Fig 12) and connect the other end to the port labeled "Temp" on the control box (see Fig 14).
11. Connect the USB cable to the port marked "USB" on the front of the control box (see Fig 13) and connect the other end to your PC.

*Note: remember that you must always connect the Temp cable as described in step #3 before plugging in the USB cable. Otherwise the PWI3 software may not be able to detect the temperature sensors attached to the mirrors.*

12. Now power on the control box by connecting the barrel connector of the AC adapter to the 12vDC port on the control box (Fig 13).
13. Turn the power switch on the control box to the “on” position and check that the red LED light comes on (see Fig 13).

*NOTE: The power on the telescope’s electronics panel does not need to be on in order for the dew heater to work. However the EFA box will need to be on and connected in order to read the primary mirror and ambient temperature sensors*



Fig 12 – Electronics panel on back plate of CDK17/20

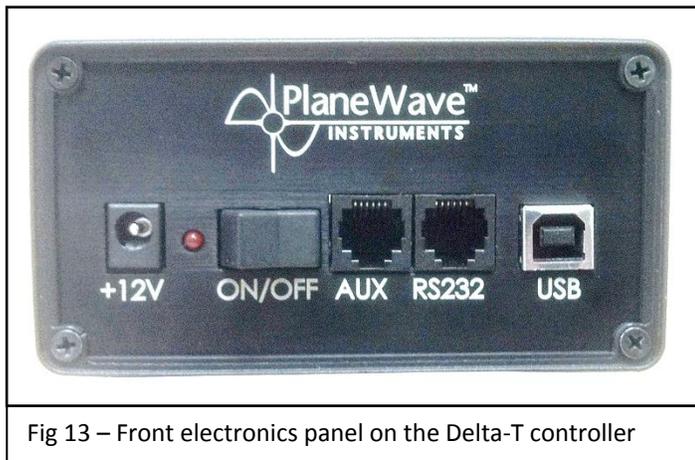


Fig 13 – Front electronics panel on the Delta-T controller

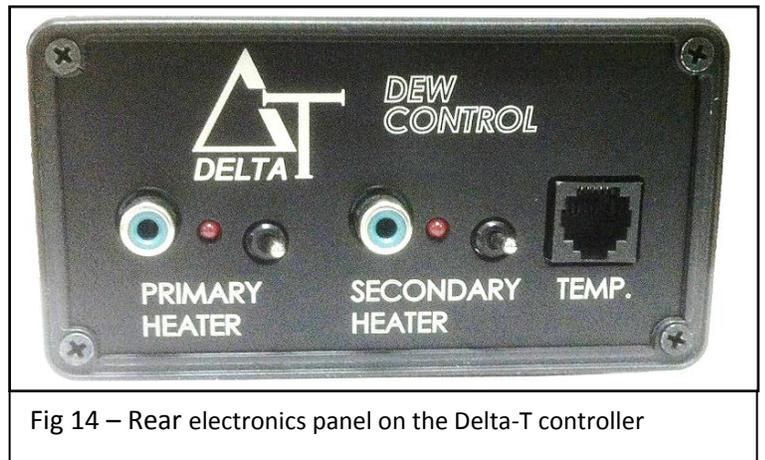


Fig 14 – Rear electronics panel on the Delta-T controller

## Delta-T Dew Heater for CDK24 (240902)

Your CDK24 Delta-T Dew Heater includes the following:

QTY	
1	Delta-T control box w/ mounting bracket attached
1	AC Adapter 12V, 5Amp
1	Primary Heater Cable (PH)
1	Temperature Cable (TEMP)
1	USB cable
2	Mounting Screws
1	USB Flash Drive with PWI Software
1	Instruction Sheet



### Attaching the Cables - CDK 24

Your Delta-T controller comes with two cables for connecting to the CDK telescope. One cable has a RCA connector at one end and a 2-pin connector (labeled “PH”, for “Primary Heater”). The second cable has a phone jack connector at one end and the 3-pin connector (labeled “TEMP”) at the other end. There is also another RCA cable that is already attached to the scope, that will connect directly to the control box.

1. Connect one end of the RCA cable to the port marked “PRIMARY HEATER” on the Delta-T control box, and connect the other end (labeled “PH”) to the wire connector (Labeled “PH”) attached to your telescope. See Fig 15
2. Connect one end of the phone jack cable to the port marked “TEMP” on the control box and connect the other end to the wire connector (labeled “TEMP”) attached to your telescope. See Fig 16
3. Locate the RCA cable that is pre-attached to the telescope and connect it to the port labeled “Secondary Heater” on the control box.
4. Connect the USB cable to the port marked “USB” on the control box and connect the other end to your PC.

*Note: remember that you must always connect the Temp cable as described in step #2 before plugging in the USB cable. Otherwise the PWI3 software may not be able to detect the temperature sensors attached to the mirrors.*

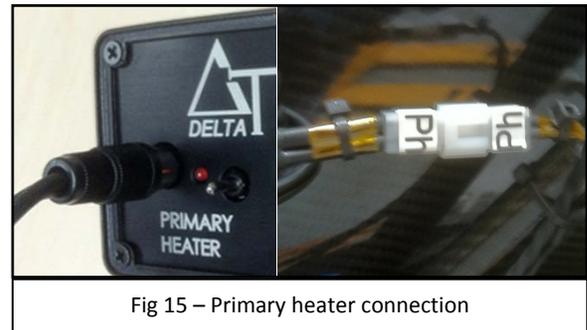


Fig 15 – Primary heater connection

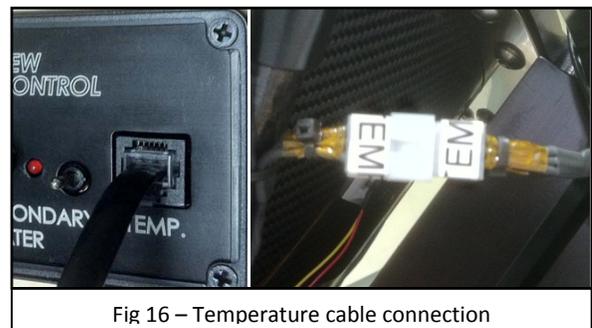


Fig 16 – Temperature cable connection

5. Now power on the control box by connecting the barrel connector of the AC adapter to the 12vDC port on the control box.

6. Turn the power switch on the control box to the “on” position and check that the red LED light comes on.

## Delta-T Control Box

### Installing the Drivers

Once the Delta-T controller is powered on and plugged in to a USB port, it should be detected as a new device. If your computer cannot automatically find the correct drivers, search the USB driver folder on the memory stick provided with the Delta-T.

### Installing PWI3 Software

In order to control your heater remotely, you must first install the PlaneWave Interface software (PWI3). Plug in the USB memory stick that was included with your heater, and run the Setup\_PWI3\_1000.exe file. Follow the installation wizard instruction to complete the installation.

Once installed you should see the PWI3 icon appear on your computer’s desktop. Double-click the icon to start the program.



### Controlling the Delta-T Heater



*NOTE: When controlling the heater using the PWI3 software, the primary and secondary control switches (see fig 4) should be switched off so that the red LED lights are not on.*

- ❖ *For complete instructions on how to use the software features, refer to the Help file under the Help menu of the software.*

### Using Delta-T Manually

You can also use the Delta-T heater independently of the PWI3 software or a computer. With the control box connected as described above, flip the heater control switches (see fig 4 ) so that the red LED lights come on. This will turn both the primary and secondary heaters on to 100% power until the control switches or power switch is turned off.