Wiring Instructions

Connecting the TLZ10 Temperature Controller to TCP Series Cold Plates

(These instructions are illustrated in a layman's schematic on the last page.)

There are a variety of ways to configure the TLZ10 and our cold plates. Following is the method we recommend. You will need three additional pieces of wire. Use 18 gauge wire to make all connections. Find red and black wires two to three feet long and a three inch long red "jumper" wire.

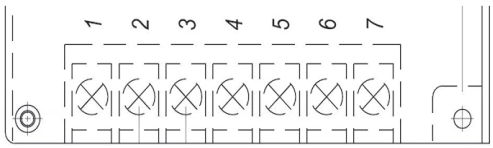
Caution! Risk of electric shock. Your new TLZ10 temperature controller and our cold plates are designed for operation from a 12 Volt DC power source (such as the AC-to-DC power supply you may have purchased). Do not connect the TLZ10 or Cold Plate directly to an AC source such as a wall outlet. If your power supply has a manual switch, make sure that the switch is in the correct position. In North America the switch should be set to 110 and in Europe 220.

1. Connect the Power Cord to the Power Supply

To attach the 3-prong power cord, first locate the three terminal posts for (AC) input on the terminal strip of the power supply. Typically these are the first three posts on the left hand side of the unit. Connect the white wire from the 3-prong power cord to the 1st post marked "L" and the black wire to the 2nd or negative post marked "N." Finally connect the green wire to the post marked "FG" or with the ground symbol ⏚ in the 3rd terminal post position. You may test the connections by plugging in your supply as observing the led glowing. Unplug the power supply until you have connected the fans.

Terminal Pin No. Assignment

Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4,5	DC OUTPUT -V
2	AC/N	6,7	DC OUTPUT +V
3	FG ⏚		



Typically there are two pairs (4 posts) of DC output terminals on all of our power supplies rated for 300 Watts or less. Two adjacent posts are marked "–V" in positions 4 and 5 and those marked "+V" in positions 6 and 7. Use posts numbered 4 and 6 (V- and V+) as a pair and post 5 and 7 as a pair. Red wires connect to V+ and black wires to V-.

2. Connect the Fan/s

The pair of fan leads can be identified with white shrink wrap exiting the cold plate and are typically thinner than the leads for the TEC/s leads that have blue shrink wraping. Connect the red fan lead directly to V+ post 7 on the power supply and the black fan lead from the cold plate directly to the V- post 5. Confirm that you have the fan leads correctly attached by plugging in the power cord and observing

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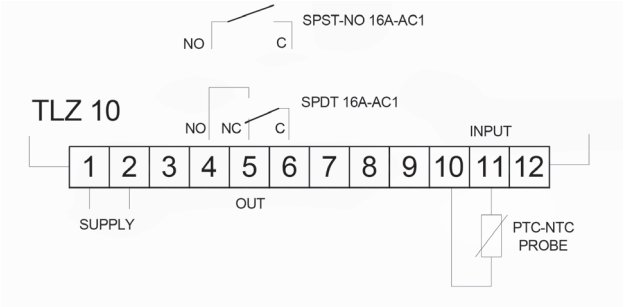
the fan/s spin. If the fan/s are not spinning, unplug the power cord and check the previous instructions then, if unsuccessful, call us.

We recommend connecting fans directly to the power supply so that they are supplied a constant nominal 12 Volts. If fans are connected within the loop that's temperature controlled the fans may not supply enough airflow to keep the hot-side heatsink cool.

3. Connect the TLZ10 Temperature Controller

On the top of the TLZ10 Controller you will see the following illustration



Connect the NTC (or PTC) sensor that's included by opening slots 10 and 11 on the TLZ10 terminal strip with a small Phillips head screw driver. Insert one lead in each slot and tighten the screws to hold the leads in place. There is no + or - for the sensor leads so either wire can go in either slot. Insert the actual senor (on the other end of the wire with a bullet shape) into the hole on the side of the cold plate.

On the TLZ10, slots 1 and 2, marked "SUPPLY" and are for DC power input from the power supply. Connect one end of the long spare piece of red wire to slot 1 in the TLZ10 and connect the other end to the +V output at post 6 on the power supply. Next connect the long spare piece of black wire to slot 2 on the TLZ10 and the other to the –V output at post 4 of the power supply.

Using the spare short piece of wire, that's about 3 inches long; make a jumper from TLZ10 slot 1 (also connected to the power supply) to the TLZ10's terminal slot 6 (common of SPDT switch).

From the cold plate, select the pair of leads exiting with blue shrink wrap. These leads are for the thermoelectric module/s inside the cold plate. Connect the red, positive lead/s to TLK10's slot 4 identified by "NO" (meaning the normally open circuit of the SPDT relay). Finally, connect the black, negative lead from this pair to –V terminal post 4 on the power supply (not the controller).

4. Power up and Program the TLZ10

You may now plug in the power cord and begin the programming of the TLZ10 for your application. See the TLZ10 User Manual at electracool.com/TLZ10Manual.pdf

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SPST-NO 16A-AC1

NO C

SPDT 16A-AC1

NO NC C

TLZ 10

INPUT

1	2	3	4	5	6	7	8	9	10	11	12

OUT

SUPPLY

PTC-NTC PROBE

TEC Fan

+	−		+	−

Extra length of wire

Jumper 1 to 6

7	6	5	4	3	2	1
+V	+V	-V	-V	⏚	N	L