

AA **ANTUNES** CONTROLS

DIVISION OF A.J. ANTUNES & CO.

TEMPERATURE CONTROLLERS **1/16 DIN** **MODEL-TCS**

INSTALLATION INFORMATION

SPECIFICATIONS

SENSOR: Thermocouple (Type J or K)

ACCURACY: 2% Full Scale

AMBIENT OPERATING

TEMPERATURE: -30°F to 140°F
(-35°C to 60°C)

AMBIENT STORAGE

TEMPERATURE: -40°F to 180°F
(-40°C to 82°C)

POWER: 115 Vac, 230 Vac

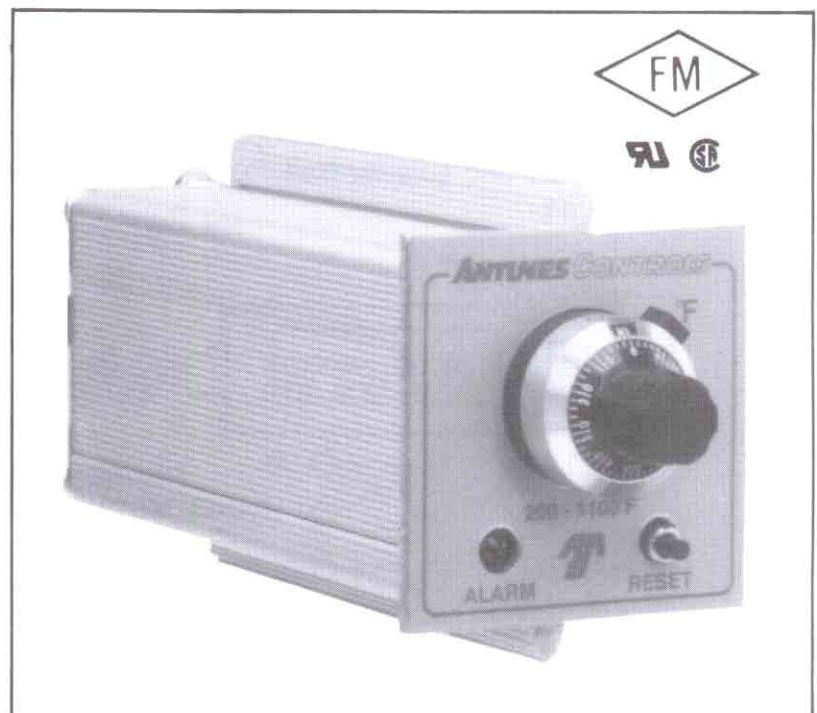
PACKAGE: 1/16 Din Panel Mount
Anodized Aluminum Case

OUTPUT: 8A Relay, Standard
(Resistive Load)

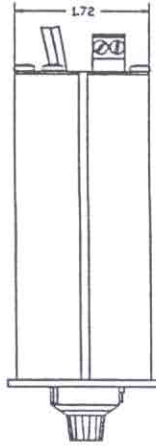
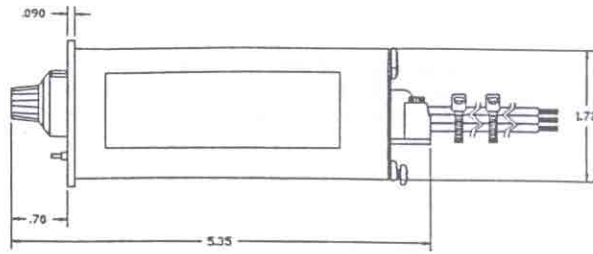
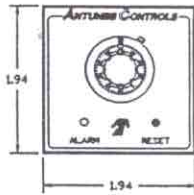
CONTROL: High Limit - Manual Reset

CONNECTIONS: Wire Leads (12" Length)

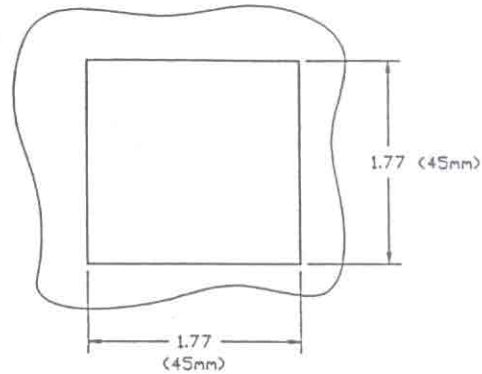
TEMPERATURE RANGE: 200°F to 1100°F
1000°F to 2000°F
100°C to 1100°C



THESE TEMPERATURE CONTROLLERS ARE COMPACT AND EASILY INSTALLED. PLEASE READ THIS FOLDER CAREFULLY TO ASSURE CORRECT INSTALLATION. THIS EQUIPMENT MUST BE INSTALLED BY LICENSED ELECTRICIAN. PRIOR TO BEING PUT INTO OPERATION, CHECK ALL WIRING AND FUNCTION OF UNIT.



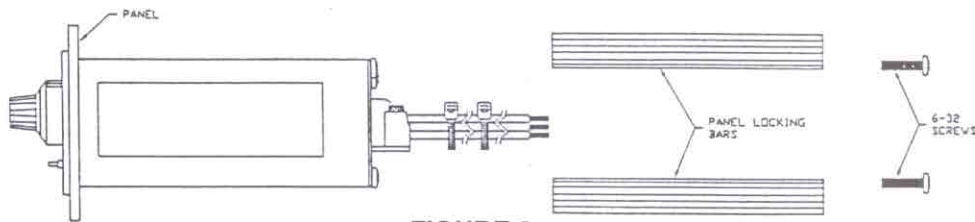
**FIGURE 1
DIMENSIONS
IN INCHES**



**FIGURE 2
PANEL CUT-OUT**

Figure 1 above shows the dimensions of the TCS controller. As shown in Figure 2, the unit requires a 1.77" x 1.77" panel cut-out. The unit is inserted into the panel from the front and secured in place by using the locking bars and screws, (see Figure 3) supplied with the unit.

SIDE VIEW



**FIGURE 3
PANEL INSTALLATION**

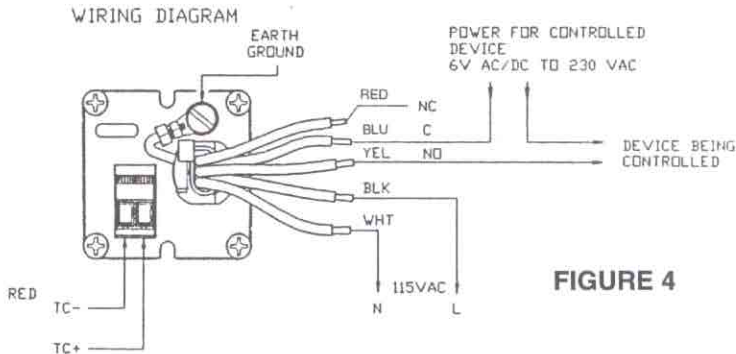


FIGURE 4

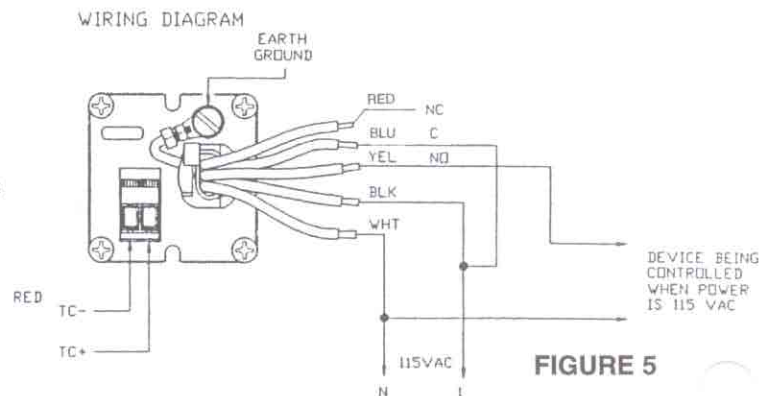


FIGURE 5

Figures 4 and 5 illustrate how to wire the relays for the different power requirements. The relay must have an external power source for you to be able to control your device.

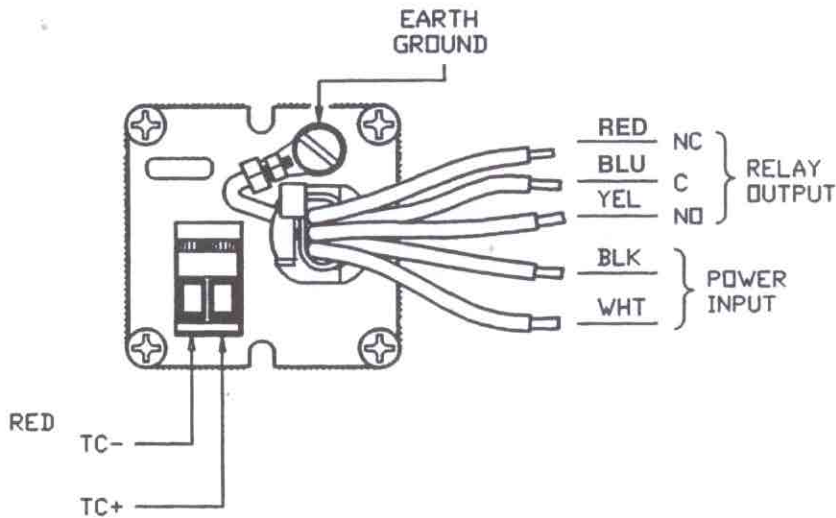


FIGURE 6

WIRING INFORMATION

115 Vac and earth ground are connected to the controller as shown in Figure 6 above. Controller relay output leads can be connected as required. They are available as shown in Figure 6.

Figure 6 also shows the thermocouple connection data. Correct polarity must be observed. For long thermocouple runs the proper thermocouple extension wire must be used, and the correct polarity maintained. If these precautions are not observed,

the unit may not meet specifications.

Power and thermocouple wire should not be placed in the same conduit or wiring trough. However, wires from several thermocouples may be in the same conduit or wiring trough.

If shielded thermocouples are used, the shields should be insulated electrically from the thermocouple wires and terminated to earth ground.

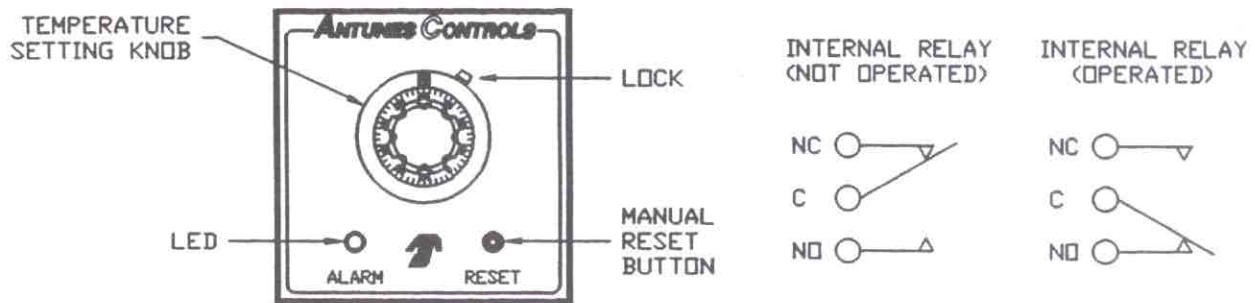


FIGURE 7

OPERATION & OUTPUT STATES

HIGH LIMIT MODE OPERATION – When the temperature being sensed by the thermocouple is below the temperature setting of the unit, the LED is "OFF" and the internal relay in the unit is "OPERATED". If the temperature sensed by the thermocouple is above the temperature setting of the unit, the LED will be "ON" and the internal relay will deactivate (go to the "NOT OPERATED" state) and lock up. The unit will remain locked up until the reset button is depressed, and temperature is below Set Point.

TEMPERATURE DIAL SETTING – The desired temperature is directly set with the counter knob. The hundreds digits (2-11 or 2-19) appear in the window and the tens and units digits are read from the dial ring below the index line on the lower edge of the window.

LIMITATION OF LIABILITY. It is understood and agreed that seller's liability whether in contract, in tort, under any warranty, in negligence or otherwise shall not exceed the return of the amount of the purchase price paid by purchaser and under no circumstances shall seller be liable for special, indirect or consequential damages.

The price stated for the equipment is a consideration in limiting seller's liability. No action, regardless of form, arising out of the transactions may be brought by purchaser more than one year after the cause of action has accrued.

WARRANTY

1. Antunes Controls products are guaranteed to be free from mechanical and electrical defects for a period of one year from date of shipment under normal use and service provided installation is made in accordance with manufacturers recommendations.
2. Parts deemed defective shall be repaired or replaced at manufacturers option and at manufacturers expense but shall not include foreign or federal excise taxes, state or municipal sale or use taxes, all such taxes not limited to the foregoing being responsibility of the purchaser.
3. No charge for travel and/or mileage will be allowed to purchaser.
4. Antunes Controls reserves the right to make changes in design or make any improvements on any products. The right is always reserved to modify our equipment because of new technology, underwriter's requirements and/or government regulations.
5. The following are not covered under warranty:
 - a. Failure from neglect, abuse, careless handling and mis-application of unit.
 - b. Failure to observe guidelines for installation or improper voltage hook-up.
 - c. Failure caused by improper maintenance. (See maintenance guidelines found in operation instructions.)
 - d. Unless specifically allowed by Antunes Controls, no other charges may be included under warranty.

 **ANTUNES** *CONTROLS*

DIVISION OF A.J. ANTUNES & CO.

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