

OPERATING MANUAL

TCAT-2AC CONTROLLER

CONTENTS

SECTION		PAGE
1.0	GENERAL DESCRIPTION	2
2.0	UNPACKING AND CHECKING CONTENTS	2
3.0	SETTING UP THE TCAT-2AC	3
4.0	OPERATING INSTRUCTIONS	4
5.0	SPECIFICATIONS	5
6.0	MAINTENANCE, WARRANTY AND SERVICE	6

TCAT-2 CONTROLLER

1.0 GENERAL DESCRIPTION

1.1 The TCAT-2 is a general purpose autotuning controller for a variety of laboratory applications.

The **TCAT-2AC** provides two time-proportioning controlled AC outlets for the control of resistive loads such as heat lamps or warming blankets. It can also be adapted to many different types of load (maximum 500 Watts.)

The **TCAT-2LV** provides a low voltage DC output for electrically sensitive applications where AC frequencies will interfere with monitoring devices. It can be supplied with a variety of different DC power supplies depending on the load requirements. The TCAT-2LV uses a dual set point control circuit to prevent a heating element from overshooting the control point. This is recommended in applications such as animal warming tables or blankets where thermal lag in the control system is an issue and might lead to burns.

The **TCAT-2DF** combines features of both the instruments described above.

A type T thermocouple probe is used as the temperature feedback sensor and any of Physitemp's extensive line of probes can be used for this application.

All the TCAT-2 instruments operate on a 110V - 230V AC supply.

2.0 UNPACKING AND CHECKING THE PACKAGE CONTENTS

The following items should be found in the packing box:

- TCAT-2 controller
- AC Line cord
- Auxiliary AC adaptor cable
- Probes and other items as ordered.

3.0 SETTING UP THE TCAT-2AC CONTROLLER

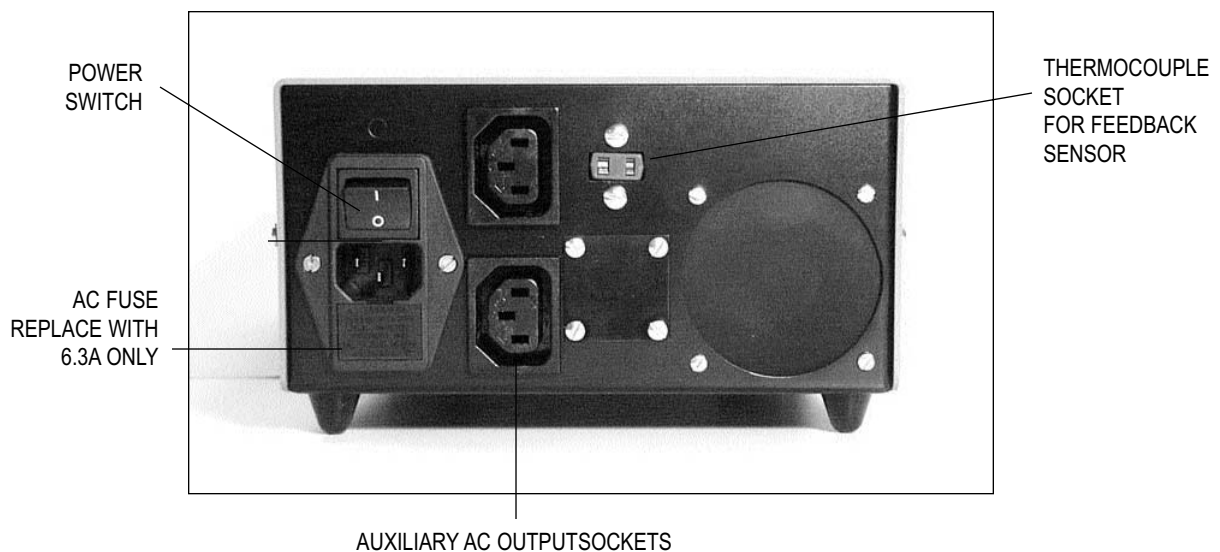
3.1 Connect a suitable load (500 Watts maximum) to either of the auxiliary AC outlets on the rear panel of the TCAT-2AC using the auxiliary AC adaptor cable if necessary.

3.2 Insert a type T thermocouple feedback sensor into the blue socket. Ensure that the sensor tip is securely attached to the load at an appropriate location. Call our Engineering Applications Department (1-800-452-8510) for more information on sensor placement.

3.3 Connect the AC power cord to the AC input module and to any suitable AC outlet.



REAR PANEL CONNECTIONS



4.0 OPERATING INSTRUCTIONS

The Instruction Label from the top of the instrument is reprinted here in case it is ever defaced.

**FEEDBACK
SENSOR**

**CONTROLLED
AC OUTPUT**

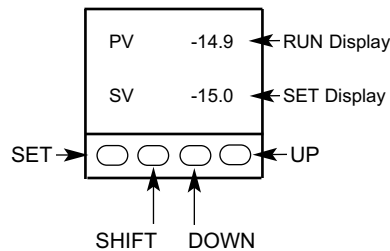
**OFF/ON
POWER
SWITCH**

TCAT-2 CONTROLLER

OPERATING INSTRUCTIONS

The TCAT-2 Controller parameters are set at the factory for the specific load supplied with it. If the TCAT-2 has not been so supplied, see the Operating Manual for adjustment of the control parameters

1. Connect the thermocouple sensor to the blue Feedback Sensor Socket on the rear panel and position the sensor.
2. Connect the load (lamp or mat, etc.) to the Controlled AC Output on the rear of the controller (7amp max.) or the Low Voltage 7-pin Output Socket
3. Connect the controller power cord to a suitable AC outlet.
4. Turn on controller Power Switch (rear panel). Set position of Heat/Cool Switch depending on control protocol (See manual for details.)
5. Set the control temperature:
 - a) Press SHIFT. A digit will flash.
 - b) Use UP and DOWN buttons to change the flashing digit. Press SHIFT again to select the next digit.
 - c) When all digits are changed, press SET to enter new control temperature.



SPECIFICATIONS:

Operating Range: -200°C to +400°C

Resolution: 0.1°C

AC Input Voltage: 110-130VAC or 220-240VAC, 50 or 60Hz (see Operating Manual)

SPECIAL DISPLAY INDICATIONS:

Red lamp will be illuminated when power is being supplied to load.

VIEWING ANGLE

The two front feet can be flipped down to adjust the viewing angle. Rotate feet down and towards the front until they lock in position. To return to original position, pull down slightly, then rotate back.

Serial Number:

9003

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Made in USA

5.0 SPECIFICATIONS TCAT-2AC

Operating Range:	-200°C to +400°C
Digital Readout Resolution:	0.1°C
AC Input Voltage:	100 - 130VAC or 200 - 240VAC, 50 or 60Hz user selectable Fused input module, (6.3Amp, 5 x 20mm fuse)
Output:	Via 2 controlled auxiliary AC sockets
Size:	7 3/8" wide x 10" deep x 4 3/8" high
Weight:	2.8 lbs
Other features:	Special Display Indications: Red lamp will be on when load is being controlled Adjustable viewing angle

6.0 MAINTENANCE, WARRANTY AND SERVICE

6.1 WARRANTY

Physitemp Instruments LLC warrants this system to be free from defects in material or workmanship for 12 months from date of shipment. Repair or replacement will be made at no charge at the discretion of Physitemp if the defect is not the result of misuse or abuse. Physitemp accepts no consequential liability for delay in delivery, alleged faulty performance of the product or any other cause.

Cables and probes are considered expendable and are not covered by this warranty.

6.2 REPAIRS AND RECALIBRATION

For technical applications information on this instrument contact us at:

Tel: 1-800-452-8510 or 1-973-779-5577

Fax: 1-973-779-5954

E-mail: info@physitemp.com

In the event that any part of this system is to be returned for repair or recalibration, please pack it with care (in the original packing material if possible) and send it prepaid to:

Service Department
PHYSITEMP INSTRUMENTS LLC
154 Huron Avenue
Clifton, NJ 07013 USA

Please include with the instrument:

1. A note describing any problems encountered
2. The name and telephone number of a person we can contact
3. The complete return address for shipping.

For your protection, please pack the item carefully and insure against possible damage or loss. Physitemp will not be responsible for damage resulting from careless packaging. Please return freight prepaid.



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