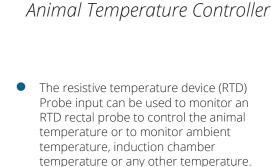


ATC2000



- When using a thermocouple probe, the thermocouple (TC) probe input can be used just like the RTD input. (A T type thermocouple must be used.)
- The heater plate also has an internal temperature sensor. The ATC2000 monitors this sensor to prevent the localized hot spots under animal.

The controller has three operational modes:

- Normal mode uses the configured sensor (RTD or TC) or the plate sensor to drive the control loop.
- Adaptive mode uses the temperature of the heated plate and the temperature of the subject to control. This approach is less prone to overshoot, but somewhat slower the normal mode, depending on the sampling rate used.
- Shutdown is a fail safe mode used if the plate temperature ever exceeds 45°C.

The **ATC2000** is tuned at the factory. However, the PID parameters may also be set manually. The temperature resolution of the controller is 0.1°C. The rectal temperature probe has a 6-ft ultra-flexible, shielded cable and an RTD sensor.

The metal heating plates (available separately) have built-in temperature sensors. Compatible with stereotaxic systems, the rigid, flat surface fits under the U-frame. Plates are washable with water and detergent.



- PID control for maximum temperature stability
- Low Noise DC Heater
- Three temperature sensor inputs
- Automatic shutdown if the plate reaches 45°C

ATC2000 is a low noise heating system for maintaining animal body temperature during experimental procedures. The DC heater is extremely quiet in terms of electromagnetic radiation. This is essential in electrophysiological recordings which are very sensitive to electromagnetic interference.

The controller uses proportional, integral, and derivative (PID) technology in adjusting the DC voltage output. Compared with switched on/ off type controllers, PID controllers provide a much more precise and stable control of temperature. The PID approach is also more immune to the variation of the experimental conditions such as change in animal size and unexpected disturbances.

The controller has three temperature sensing inputs.



ATC2000

Animal Temperature Controller

PROBES

Probe Type	Size/Lead Diameter	Style	Time Constant	Isolated	Max. Temp	Lead Length	Description		
Fast-respor	CROPROBES ase needle probe to ensure only				ds, liquids, ve	ery small spe	ecimens, powders and materials. Needle		
MT-29/1	29 ga / 1 cm	Α	0.125 sec	No	200°c	5 ft.	29g ~0.013 in		
MT-23/3	23 ga / 3 cm	Α	0.15 sec	No	200°c	5 ft.	23g ~ 0.125 in		
MT-D	_	С	0.025 sec	No	200°c	5 ft.	Fast response surface probe (stainle steel for locating inflammation, arte etc. Also for dental use.		
Designed fo	MPLANTABLE Por high accuracy resistant Teflon	on extrer	mely small speci	mens such as ir	nsects, seeds	, etc. Maxim	um insertion depth 1/8". Totally sheathed		
IT-18	0.025" dia	D	0.1 sec	Yes	150°c	3 ft	-		
IT-23	0.009" dia	Е	0.005 sec	Yes	150°c	3 ft	For ultra fast measurements/use on micro-size specimens. Tissue implantable with 23ga. needle. Fragile Teflon coated.		
IT-1E	0.025" dia	F	0.005 sec	Yes	150°c	3 ft	As IT-18 sensor except lead exposed. Combines ultra fast response of IT-23 with sheath strength of IT-18		
RECTAL PR									
RET-2	3.175mm	G	0.8 sec	No	125°c	5 ft	Rectal probe (thermocouple)		
61824	2.5mm						Rectal probe (RTD) - 1.25mm shaft		
RET-3	1.6mm	G	0.5 sec	No	125°c	5 ft	Rectal probe (thermocouple)		
				PLA	TES				
61840	X-Small Heating Plate with built-in RTD sensor, 4x15cm								
61830	Small Heating Plate with built-in RTD sensor, 10x15cm								
61800	Medium Heating Plate with built-in RTD sensor, 15x25cm								

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. up to 45°C . 0.1°C
. ± 0.3°C
. RTD, OD 2.0mm tube with 3.5mm ball head (Optional mouse sensor is available)
. 10V, 3A
. Universal AC Adapter 90–264V Input, 12V@4.5A maximum output
. 45x30x7 cm (17.7 x 11.8 x 2.76 in.)
. 1.6 kg (3.6 lb.)



WORLD PRECISION INSTRUMENTS

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