

# TEMPERATURE CONTROLLED WATER BATH

**Feed back controlled**

## INTRODUCTION:

**MTCWB** series of temperature controlled water bath finely controls the interface surface/fluid temperature optimally, irrespective of its volume and weight or any thermo dynamical/ theological parameters of fluids under heating, using feedback/ feed forward control topologies which ensures homogeneous thermal distribution across the water bath volume. Bath temperature is controlled using high frequency chopper control system, working in current /switch mode, under thermal feedback control. Multi point sensing ensures uniform thermal distribution across the water bath. These finds application in Pharmaceutical, Cosmetics & Synthetics, genetic engineering, Petrochemical, Paper and Environments application Metal Finishing and Corrosion Control ,petrochemical , Polymer manufacturing , Medicines, biotechnology, medicine , Process control and Chemical Engineering ,Semiconductors/ Ceramics application .

## Benefits:

These water baths are compact, Trouble free mechanical relay less control, Fine temperature control to the resolution of 0.1<sup>0</sup> C ( 0.01<sup>0</sup> C optional) Less electricity consumption, Temperature control between 10% to 100% with stirring option, Electronic display for temperature of fluid and set point, Temperature-time profile control facility at option. Water bath tank are Cermic/teflon/glass coated hygienic/ corrosion resistant water bath surface



General water bath

MTCWB-03020

MTCWB-03020

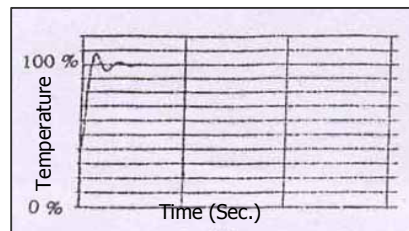
## Electrical and mechanical specifications of Precision water bath

200.0 < Pr < 50000 watts

Model:	MTCWB-03020	MTCWB-05020	MTCWB-01020	MTCWB-03020	MTCWB-05020	MTCWB-10020
Capacity/size ( liter/ inches)	3.0/(option)	5.0/(option)	10.0/(option)	30.0/(option)	50.0/(option)	100.0/(option)
Operating volt/power( volt/watts)	220/100	220/200	220/500	220/750	220/1000	220/2000
Temperature control range °C	-50 to + 100	-50 to + 100	50 to + 100	-50 to + 100	50 to + 100	-50 to + 100
Resolution of temperature control °C	0.1/0.01	0.1/0.01	0.1/0.01	0.1/0.01	0.1/0.01	0.1/0.01
Accuracy of temperature control °C	99.9%	99.9%	99.9%	99.9%	99.9%	99.9%
Response time-mili sec	10	12	16	23	36	50
% overshoot	Critically damp	Critically damp	Critically damp	Critically damp	Critically damp	Critically damp
Settling time-mili second	60	70	80	90	100	110
Control scheme	Feedforward/cascade	Feedforward/cascade	Feedforward/cascade	Feedforward/cascade	Feedforward/cascade	Feedforward/cascade
Temperature sensor type	thermopile	thermopile	thermopile	thermopile	thermopile	thermopile
Temperature control range <sup>0</sup> C	-100 to 400	-100 to 400	100 to 400	-100 to 400	100 to 400	-100 to 400

## Technical data of Water bath controllers.

Operating power supply :220 volts/50HZ or 110 volts D.C.  
 Heat output :50 Watts to 10 kilo watts  
 Temperature control range : -100 to 400<sup>0</sup> C.  
 Resolution in temperature control : 0.1<sup>0</sup>C (0.01<sup>0</sup> C optional)  
 Accuracy in temperature control :99.9% of set point  
 Display accuracy : temperature/flow rate  
 Permissible humidity : 90%  
 Permissible ambient temperature : 60<sup>0</sup>C  
 Protection : overload/short circuit.  
 Power efficiency : 95%  
 Cooling : air cooled



water bath temperature profile

Control : feed back/feed forward temperature control /with temperature profile control as preset / with 0-12 volts D.C. signal output.  
 Automatic temperature control according to preset profile of temperature w.r.t. time with high degree of repeatability and accuracy. Digital display for temperature, stirring speed (optional). Facility to interface with PC.

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