

# TEMPERATURE CONTROLLED MUFFLE FURNACE

## Applications

- Ash Determination, Assaying, Tempering, Hardening
- Heat transfer, Glass annealing, Melting, Fusion
- Dry Precipitates, Thermal cycling, Carbon/sulfur test
- Cement test, Glass & enamel tests, Petroleum test
- Powder metallurgy, Thermocouple standardization, Ceramic test
- Polymers, Leather, Medicine, Solid State Physical Research.

( FEEDBACK CONTROLLED)

## Introduction:

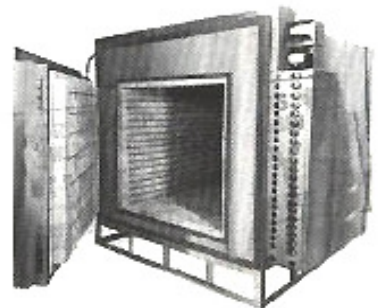
MTMF series of muffle furnace optimally controls temperature irrespective of volume/weight or any thermo dynamical/rheological parameters of sample, using feedback/ feed forward control topologies assisted by multi point average temperature sensing technique (using thermopiles), which ensures homogeneous thermal distribution in the furnace. Oven temperature is controlled using high frequency chopper control system, working under thermal feedback control in constant current/high frequency switch mode topology. Furnace may be operated either in controlled vacuum or under inert gas environment using Vacuum gauge/ gas thermal mass flow controller supplied with temperature controller as option.

## Benefits:

- Compact & less electricity consumption.
- Trouble free solid state temperature control working in cascade control.
- Fine temperature control to the resolution of 0.1°C between 10% to 100%.
- Temperature-time profile control facility with display.
- High thermal resistance brick/fiber board for rapid heat control.
- Ceramic coated heater with controlled vacuum/ gas injection/exhaust facility.
- Furnace with large size and special temperature control available.

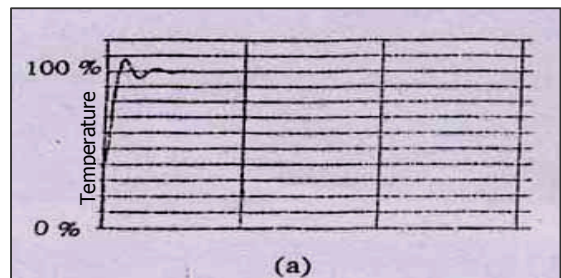
## Mechanical/Electrical Specification:

MODEL	Inner Dimension Inches	Outer Dimension Inches	POWER				Weight Lbs
			volts	amps	phase	T <sub>max</sub> °F	
MTMF0224	8X9X4	16X17X17	220	7.5	1	2350	60
MTMF0224	6X6X6	14X14X19	220	7.5	1	2350	80
MTMF0224	8X9X8	16X17X21	220	7.5	1	2350	110
MTMF0424	13X13X8	21X21X21	220	10	3	2350	290
MTMF1124	22X22X13	30X30X26	220	30	3	2350	280
MTMF0824	15X18X15	29X29X29	220	20	3	2350	300
MTMF0924	17X17X20	31X31X31	220	26	3	2350	410
MTMF1134	21X21X24	31X36X35	220	30	3	3350	460
MTMF1634	23X23X26	31X31X31	220	40	3	3350	520
MTMF1934	25X25X28	31X36X35	220	50	3	3350	580



## Technical Specification of controller:

- Operating power supply : 220 volts/50HZ( 1/3 phase).
- Heat output : 50 Watts to 10-kilo watts.
- Temperature control range : up to 3500° F.
- Resolution in temperature control : 0.1°C (0.01° C optional).
- Accuracy in temperature control : 99.9% of set point.
- Display accuracy : as above.
- Permissible humidity : 90%
- Permissible ambient temperature : 60°C
- Protection : overload/short circuit.
- Power efficiency : 95%
- Cooling : air- cooled.
- Control : Time domain temperature profile/single set point control along with P.C. compatible 0-12 volts d.c. signal with vacuum control or inert gas injection controlled by mass flow controller.



Dimension of controller : 4x5x6 for power rating upto 2000watts.

(in inches) 4x6x4 for power rating upto 5000 watts.

6x6x4 for power rating upto 20000 watts.

- The first two digit in product code MTMF indicates kilo watts (09 indicates 9000 watts). Second two digit indicates digit indicate temperature (24 indicates 2400° F).
- Controller displays on-line real time/set point temperature, time. It may be programmed to achieve set temperature profile ( 8 step @ of 1.0°C-100°C/minute ) or in single set point mode.

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