

Tubular furnaces are designed for sample testing under gas/vacuum atmosphere they are available in customize size and options with water cooled flange. Maximum design temperature of furnace is upto 1800°C.

The high-grade insulation materials guarantee low energy consumption and high heating rates due to their low thermal conductivity. Three-zone tube furnaces TF-3Z can achieve better temperature uniformity than single-zone versions. In these models each zone is equipped with a dedicated thermocouple and controller, which is especially useful to preheat gases required for reactions inside the system. The tube furnaces TF do not include an integral work tube. The work tube must be selected as an additional item. The work tube length is dependent on the application and will vary if used with or without modified atmosphere or vacuum.

The Various applications includes ageing, annealing, brazing, calcination, catalyst research, CIM, coating, CVD, degassing, drying, hardening, MIM, miniplants, pyrolysis, sintering, soldering, sublimation, synthesis, tempering, test fuel cells, thermocouple calibration

Tempsens is ISO and CE certified Laboratory & Industrial furnace manufacturers and suppliers. Tempsens has wide range of tubular furnaces with different tube sizes and Temperature range upto 1800 deg C.



## Standard features

- Maximum operating temperature 1800°C
- High Alumina/Quartz ceramic tubes
- Advance refractory interior, used in combination with energy efficient low thermal mass insulation.
- Multi Zone temperature control for better uniformity.
- Over-temperature limiter with adjustable cutout temperature for thermal protection class 2 in accordance with EN 60519-2 as temperature limiter to protect the furnace and load
- Equipped with thermocouple break protection that help preventing thermocouple failure run away.
- Water Cooled SS Flanges at both end with gas/vacuum provision with ball valve for Vacuum and Gas purging application. Leak proofing ensured with rubber/viton O ring
- Power control through Solid state relay or Thyristor unit provides low noise operation.
- Thermocouple with NABL Certificate.

## Technical Specification

S.No.	Description	Value
1	Max temp (°C)	1200/1400/1600/1800 deg c
2	Working Temperature	1200/1400/1600/1800 deg c
3	Heating Element	Kanthal A1/Silicon Carbide/MoSi2
4	Temperature Controller	Microprocessor based PID controller
5	External Chamber Construction	MS Powder Coated / 304 Grade Stainless Steel (Optional)
6	Internal Chamber Construction	Vacuum formed ultra high purity alumina low thermal mass insulation with pre sintered fiber insulation board for maximum energy saving design
7	Tube material	High density alumina/ Quartz
8	End Flange	Flange made of SS at both end with gas/vacuum provision with ball valve. Leak proofing ensured with rubber/viton O ring
9	Temperature Accuracy	+/- 1 Deg C

Model	Maximum Temperature(°C)	Ceramic Tube * ID X Hot zone length (mm)	Controlling Thermocouple	Heating Element
TF - 1200	1200	50 X 200* & 80 X 250** Customized tube size available on request	N	Kanthal A1
TF-1200 3Z	1200		N	Kanthal A1 (With 3 Individual Control Zone)
TF – 1400	1400		R	Silicon Carbide
TF – 1400 3 Z	1400		R	Silicon Carbide (With 3 Individual Control Zone)
TF – 1600	1600		B	MoSi2
TF-1600 3 Z	1600		B	MoSi2(With 3 Individual Control Zone)
TF – 1800	1800		B	MoSi2
TF-1800 3 Z	1800		B	MoSi2(With 3 Individual Control Zone)

## Optional Features

- ✓ Provision for gas/vacuum purging application (Ar, N2, O2, CO2 etc.)
- ✓ Available in standard or as per customer size requirement
- ✓ Programmable PID Controller with RS-232/RS-485/Ethernet & Data Logging Software

## Optional Accessories

- ✓ Gloves
- ✓ Heating Element
- ✓ Tongs

## Other Features

- ✓ Simple Installation
- ✓ Hassle free operation
- ✓ Automatic Temperature Control
- ✓ Easy Maintenance
- ✓ Spare part available at stock
- ✓ Rugged construction for long run
- ✓ Heating element from KANTHAL/ I Squared R brand
- ✓ Dual Shell housing for low skin temperature.

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