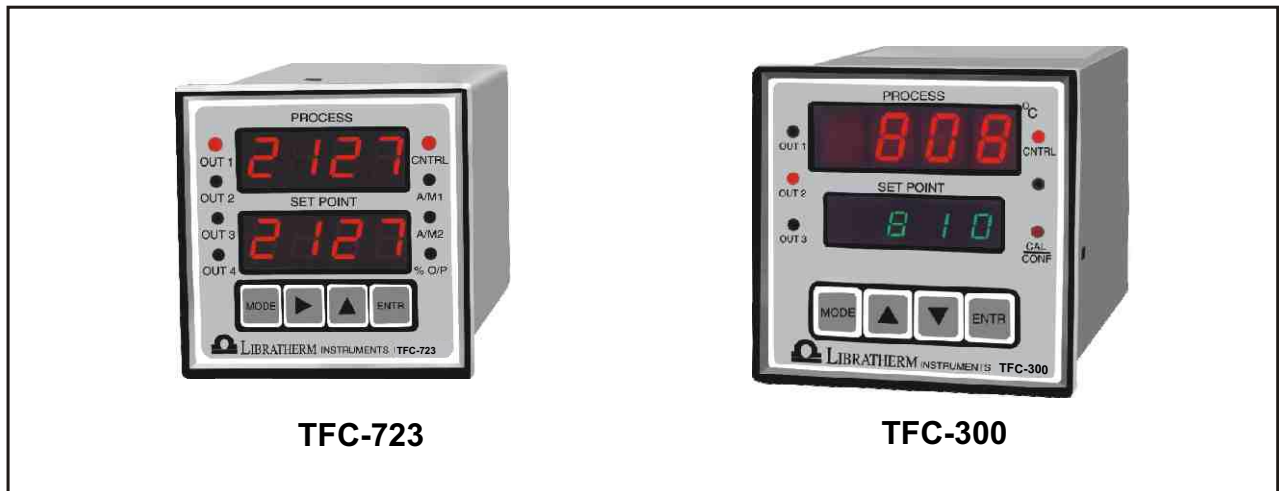


(G1) MICROCONTROLLER & MICROPROCESSOR BASED SINGLE ZONE SINGLE RAMP/ SOAK PROGRAM CONTROLLERS



MODEL WISE DESCRIPTIONS :

SR.NO.	MODEL	DESCRIPTION
8.1	TFC-723	Microcontroller based Single input Single Ramp / Soak controller with Control & Soaking Timer
8.2	TFC-300	Single input Single Ramp / Soak controller with Control & Soaking Timer

DESCRIPTION :

Libratherm offers Single input One Ramp and One Soak model **TFC-723** and **TFC-300** which are suitable for applications where time dependent control is required, such as in tempering furnaces and powder coating or paint baking ovens. When the process temperature reaches the soaking temperature an event relay output is energized and the internal soaking timer

starts to indicate the start of soaking time. At the end of the soaking time the same relay is de-energized to indicate the end of soaking time. The time and temperature both are user programmable through front panel keyboard. The control action is PID or On/Off, which is user selectable. These models are available in 72 x 72 x 120 mm and 96 x 96 x 160 mm sizes respectively in Metal enclosure with ABS front and they operate on 230 VAC supply.

FEATURES :

- ▶ Microcontroller & Microprocessor based design.
- ▶ Highly accurate and sturdy in operation.
- ▶ Programmable Ramp time and built in soaking timer
- ▶ Elegant looks and Very easy to operate.
- ▶ Servo start from the process temperature.
- ▶ Facility to use as PID and / or ON / Off controller.

APPLICATION :

- Heat Treatment tempering cycle
- Baking Oven with curing time control
- Investment casting
- Food processing
- Constant temperature bath etc.

TECHNICAL SPECIFICATIONS:

Input	Thermocouple type J, K, R, S, B, C, D or RTD(Pt-100)/2 or 3-wire, (4-20)mA, (0-5)V etc. (any one to be specified).
Range	Subject to the full range of the specified input.
Resolution	0.1°C, 1°C Subject to the specified range.
Accuracy	Better than $\pm 0.1\%$ of the specified range (software linearized).
Display	4 digit 0.5" OR 0.3" Red 7-segment LED display for process value 4 digit 0.3" Red 7-segment LED display for set value
Tuning	Auto or Manual tuning of PID values.
Control Action	PID or On/Off (for both direct and reverse action).
CJC	Built-in automatic from 0 - 50 °C for thermocouple input.
Open Sensor Indication	Display shows Flt-1 or Flt-2 and relays will be turned OFF.
Set point	Programmable over full range using front panel key board.
Soaking Time	Programmable from 1 to 999 minutes using front panel key board.
Program Hold Facility	Manual Hold or Auto Hold (Hold back feature for guaranteed Ramp/Soak facility).
Memory Backup	Retention of PID and set values in the non-volatile memory in the event of power failure.
Alarm Output	High or Low Alarm Relay changeover contacts (5A @ 230VAC).
Control Output	DC pulses to drive external SSR, Built in Triac output or (4-20)mA or (0-5)VDC output with soft start and power limit facility for analog output.
Supply	230VAC / 110 VAC $\pm 10\%$ (10VA), 50/60Hz or 24VDC @ 500mA.
Size	72 x 72 x 120, 96 x 96 x 160 mm.
Panel cut out	68 x 68, 92 x 92 mm. +/- 0.5 mm.
Enclosure	Metal Powder coated.

ORDERING INFORMATION:

MODEL	INPUT (A)	RANGE (°C) (B)	OUTPUT TYPE (C)	EVENT RELAY 1 (D)	SUPPLY (E)
TFC-723	J (A1)	0 to 760°C (B1)	SSR (C1)	High (D1)	230VAC (E1)
TFC-300	K (A2)	0 to 1372°C (B2)	Triac (C2)	Low (D2)	110VAC (E2)
	E (A3)	0 to 1000°C (B3)	(0-5)V (C3)	None (D3)	
	T (A4)	0 to 400 °C (B4)	(4-20)mA (C4)		
	S (A5)	0 to 1768 °C (B5)	(0-20)mA (C5)		
	R (A6)	0 to 1768 °C (B6)	None (C6)		
	B (A7)	200 to 1820 °C (B7)			
	PT-100 (A8)	0.0 to 400.0 °C (B8)			
	Other (A9)	-50.0-199.9 °C (B9)			
		Other (B10)			

EXAMPLE:

MODEL	A	B	C	D	E
TFC-300	A 2	B 2	C 1	D 1	E 1

This is Model TFC-300 single Ramp / Soak controller with K type thermocouple input having Range (0-1372)°C with SSR DC pulse output and High Alarm Relay and Operating on 230VAC supply.

