

## Heated circulating baths » T100, TC120, TX150 and TXF200

# Heating circulators

## T100, TC120, TX150, TXF200

The versatile Optima™ heating circulator range consists of 4 models - two general purpose: T100 and TC120 and two advanced models: TX150 and TXF200. Combine any of the four models with a Grant stainless steel or plastic tank or use independently with a clamp.

General purpose digital		Advanced digital	
T100 ambient +5 to 100°C*	TC120 ambient +5 to 120°C*	TX150 ambient +5 to 150°C*	TXF200 ambient +5 to 200°C*



T100 / TC120		TX150 / TXF200	
Features	Benefits	Features	Benefits
Stability $\pm 0.05^\circ\text{C}$	Excellent temperature stability and temperature control for demanding applications	Stability $\pm 0.01^\circ\text{C}$	Excellent temperature stability and temperature control for demanding applications
Clear, bright 4 digit LED display	Easy to view from a distance for instant reassurance of unit status	Large, bright full colour display	All key parameters visible on home screen for instant reassurance of unit status
Simple, intuitive user interface: dial and two function buttons	Easy and quick to set temperature and access menus. Minimal product training required	Icon driven home screen via a dial and two function buttons	Intuitive, quick and easy, language independent
Integral pump for external circulation (TC120)	Circulation of temperature control fluids to external apparatus / equipment	High performance integral pump for external circulation. TXF200 has variable speed	Conveniently circulate temperature control fluids to external apparatus / equipment
Model available with/without clamp (T-clamp)	Conveniently converts vessels into stirred bath, offering excellent versatility	Programming/temperature profiling (TX150, 1 program with 30 segments, TXF200 10 programs with 100 segments)	Easy and quick to configure temperature profiles to suit basic and advanced applications. Programming direct on TXF200
Low-liquid detection (float switch)	Unit will cut-out when liquid level is too low for operation	Model available with/without clamp (T-clamp)	Conveniently converts vessels into stirred bath, offering excellent versatility
User adjustable over temperature dial (TC120)	Independent safety feature and sample protection	Low-liquid detection (float switch)	Unit will cut-out when liquid level is too low for operation. Peace of mind that the unit will safely operate unattended
Fixed over temperature (T100)	Independent safety feature	5 point user calibration	Calibrate the TX150/TXF200 at any 5 temperatures against a precision reference thermometer. Provides optimum accuracy at temperatures important to the user.
Visual alarm	Alerts you when your attention is required	User adjustable over temperature dial	Independent safety feature and sample protection
2 point user calibration	Provides optimum accuracy at temperatures important to the user	Display with a choice of 5 languages (EN, DE, FR, ES & IT)	
Countdown timer (TC120)	Offers convenient reaction timing	USB/RS232 interface	Allows connection to PC or laptop for programming or data logging





- Applications:**
- Clinical, Microbiology and Pathology labs - media tempering, thawing & incubating samples
  - University research - temperature control of spectrophotometers & refractometers and jacketed vessels
  - Industrial labs - temperature probe calibration, water analysis, QC testing product, petrochemical testing, material testing, milk sample testing

## Heated circulating baths » Technical specifications

## Heated circulating baths – technical specifications

## Grant Optima™ thermostats

● = standard

			General purpose digital		Advanced digital	
			T100	TC120	TX150	TXF200
						
Stability (DIN 12876)@70°C	°C		±0.05	±0.05	±0.01	±0.01
Uniformity (DIN 12876)@ 70°C	°C		±0.1	±0.1	±0.05	±0.05
Setting resolution	°C		0.1	0.1	0.1 (0.01 with Labwise)	
Display			4 digit LED		full colour QVGA TFT	
Timer function			–	1 to 6000 mins	1 min to 99 hrs 59 mins	
No. of temperature presets			3	3	3	3
Re-calibration points			2	2	5	5
Socket for external probe (TXPEP, TXSEP)			–	–	●	●
Communications interface			–	–	USB, RS232	USB, RS232
Programmable			–	–	remote via PC / laptop 1 program / 30 segments	direct via user interface or remote via PC / laptop 10 programs / 100 segments
Relays			–	–	1	1
Safety	over temperature		fixed		adjustable cut-out	
	fluid level – float		●	●	●	●
Language capability			–	–	EN, FR, DE, IT, SP	EN, FR, DE, IT, SP
Alarms (can be configured to switch a relay)			–	high (no relay)	high and low	high and low
Heater power	230 V	kW	1.3	1.3	1.9	1.9
	120 V	kW	1.4	1.4	1.4	1.4
Electrical power	230 V	kW	1.4 (50-60 Hz)	1.4 (50-60 Hz)	2.0 (50-60 Hz)	2.0 (50-60 Hz)
	120 V	kW	1.5 (50-60 Hz)	1.5 (50-60 Hz)	1.5 (50-60 Hz)	1.5 (50-60 Hz)
Height above tank rim		mm	200	200	200	200
Depth below tank rim		mm	135	135	145	145

## Grant Optima™ thermostat pumps (integral)

Maximum pressure	water	mbar	–	210	310	530
Maximum flow	water	L/min	–	16	18	22 (adjustable flow rate)
Pump connector	6 mm bore*		–		fits 9 mm inner diameter tubing	
Pump connector	11 mm bore*		–		fits 15 mm inner diameter tubing	

\* 6 and 11 mm bore pump connectors supplied as standard. For more options see page 1.9

Grant immersion thermostats are suitable for use with Grant stainless steel and plastic tanks. With the addition of a clamp (T-clamp) they can also be attached to virtually any vertical sided tank with a maximum wall thickness of 35 mm for rectangular tanks, 30mm for circular tanks (300 mm diameter), and a capacity of up to 50 litres. Minimum and maximum temperatures achievable are dependent upon the tank insulation and minimum operating temperature depends on the accessory cooling device.

