Immersion Constant Temperature Device

Thermomate® BF201/401/501/601

Operating temp. range	RT +5~80°C BF201/401/501	RT +5~180°C BF601

- Multi-function immersion thermostatic device for various usage
- Operation functions from "fixed temperature operation" to "programmable operation"
- Water jet can be adjusted in 10 patterns (BF401/501)
- Various options available such as data output, external communication and level controller
- BY100 testing bath comes standard with the unit

Basic BF201 | Multi-function BF401 | Multi-function BF501 | Oil / water compatible BF601

Specifications

Type	Basic	Multi function		Oil / Water compatible
Product code	221808	221809	221810	221811
Model	**BF201**	**BF401**	**BF501**	**BF601**
Temp. setting range*1	-20.0 to 90°C*2			0 to 200°C
Operating temp. range*1	Room temp. +5 to 80°C*3			Room temp. +5 to 180°C*5
Temp. control accuracy*1	±0.05 / 0.1°C*4	±0.02 / 0.05°C*4		±0.05 / 0.2°C*6
Stirrer	Propeller stirring (fix)	Water jet stirring (10 steps variable)		Propeller stirring (fix)
Heater	Stainless pipe heater			
	1.0kW			1.2kW
Temp. control	PID control by micro computer			
Temp. setting	Digital setting by UP/DOWN key			
Temp. display	Digital display by green LED			
	Min. digit indication: 0.1°C			Min. digit indication: 1°C
	Setting / Measured temp. changeable	Displayed on main indicator (sub-indicator displays setting temp.)		
Timer	–	1min. to 99h.59min. or 100h. to 999h.		
Timer resolution	–	1min. or 1h.		
Operation function	Fixed operation	Fixed operation: Setting temp., Quick auto stop Program operation: 1 to 3 Pattern, (Max. 10 Segment Pattern) Repeat Operation: Auto Start		
Additional functions	Temp. pre-setting (Memory / Recall 10 temp.)	Temp. Pre-setting (Memory / Recall 10 Temp.), Timer (to 49,999h.), Calibration offset, Key lock, Power failure recovery mode selection		
External output terminals	–	–	Temp. output*7, External alarm output, Time–up output, External communication function (RS422A)	–
Heater circuit control	Triac Zero-cross type			
Sensor	Platinum resistance temperature detector (Pt100Ω)			
Safety device	Self diagnosis function (Power frequency abnormality detection, Controller abnormality detection, sensor abnormality detection, Heater disconnection detection, Triac short-circuit detection, Main relay defect detection, Automatic temperature overheat prevention, Measurement temperature abnormality detection), Independent overheat prevention device, Circuit protector, Water level sensor of prevent empty boiling			
External dimension*8 / Weght	W140×D138×H312mm / Approx. 4kg			
Clamp available thickness	Max. 35mm			
Power source (50/60Hz)	AC220V 5A Single phase with step-down transformer			AC220V 6A Single phase with step-down transformer
Accessory	Testing bath, Model BY100 (Polypropylene made)			

*1 Conditions: Temp. and Humidity 23°C ±5°C, 65%RH ±20% (no load)
*2 When using it at room temp. +5°C or less, please use it in combination with a low temp. thermostatic bath or Neo Cool Dip BE type.
*3 When BY100 testing bath is used. *4 When the setting temp. is 37°C/80°C and the BY100 testing bath is used.
*5 When using testing bath BZ100D, viscosity 50cSt silicone oil, water cannot be used at a temp. above 81°C.
*6 When setting temp. is 40°C/180°C, testing bath BZ100D, viscosity 50cSt silicone oil is used. *7 The output is mixed and supported by one output terminal.
*8 Do not include protrusions.
The length of the power cord is about 2m outside the unit.

Function Chart

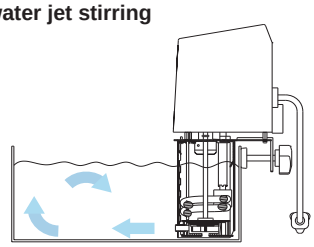
Model	BF201	BF401	BF501	BF601
Digital setting / display	●	●	●	●
Temperature pre-setting	●	●	●	●
Program function		●	●	●
Water jet strength changeable function		●	●	
Propeller stirring	●			●
External output, communication function etc.			●	
Oil temperature control				●

Control Panel

BF201

BF401/501/601

Structure of water jet stirring



Easy to Carry

Overheat Prevention Device

Optional items

No.	Product name	Option model	Specification	Main unit model no.	Item code
①	Level controller (Automatic water supplier)	OBF10*	Water supply directly connected to tap water (Electromagnetic valve open/close type), Fixed to testing bath by clamp	All models	221570
②	Cooling pipe	OBJ10	SUS304, O.D. ϕ10mm with Neo plane hose 3m (ϕ 13× ϕ9)	All models	221572
③	Bath cover	OBI11	Stainless cover for testing bath BY100 (This cover cannot be set with automatic water supplier, external circulation nozzle and cooling pipe are installed.)	All models	221578
④	External circulation nozzle	OBG10	Neo plane hose I.D. 9mm 3m, Flow rate: Approx. 8L/min., Lift: approx. 1.8m	BF401/BF501	221573
⑤	External communication adapter set	OBF12	RS485-USB adapter, USB cable, RS485 connection cable	All models	221871

*Use water pressure between 50 to 500 kPa (0.5 to 5kgf/cm²).

Immersion Constant Temp. Device Combination Examples

for Constant temperature		
BF201	BF201	BF401
		
Constant temp. water bath	**Low temp. water bath + Neo cool dip**	**Shaking bath BW series**
Thermomate BF201 + Testing bath BZ100D	Thermomate BF201 + Testing bath BZ100D + Neo cool dip BE201F	Thermomate BF401 + Shaking bath BW400


Cooling Pipe


Level Controller


External Circulation Nozzle


Bath Cover

Testing Baths

Material	Model	Bath internal size (W×D×H)	Capacity	Operating temp. range	Product code
Stainless steel plate	BZ100	230×390×150mm	12L	Up to +200°C	221820
	BZ100D	240×300×200mm	13L		221821
	BZ200	300×500×150mm	20L		221822
	BZ300	300×500×200mm	27L		221823
Polypropylene	BY100	327×185×156mm	8L	−5 to +80°C	221824
	BY200	300×455×160mm	18L		221825
Acrylic	BX100	230×390×150mm	12L	Up to 50°C (For water only)	221826
	BX100D	240×300×200mm	13L		221827
	BX200	300×500×150mm	20L		221828