

Immersion Constant Temperature Device

Thermomate® BF201/401/501/601

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



Specifications

| Type | Basic | Multi function | Oil / Water compatible |
|-------------------------------|---|---|---|
| Product code | 221808 | 221809 | 221811 |
| Model | BF201 | BF401 | 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 | | ±0.05 / 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 / Weight | 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.

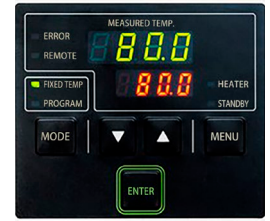
Function Chart

| 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

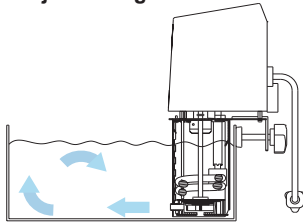


BF201



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. φ 10mm with Neo plane hose 3m (φ 13× φ 9) | 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 | Capacity | Operating temp. range | Product code |
|-----------------------|--------|--------------------|----------|-----------------------------|--------------|
| | | (W×D×H) | | | |
| 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 |

