low temperature stirring reaction bath for experiment

Low temperature stirring reaction bath is a comprehensive experimental equipment integrating temperature control, liquid circulation and reaction mixing, which is widely used in chemistry, materials, biology, pharmaceuticals, energy and other research and pilot areas.

Low Temperature Stirring Reaction Bath

Combining high-efficiency refrigeration and precise heating, the low temperature stirring reaction bath provides a stable, controllable environment for reaction processes. Its strong circulation and stirring functions ensure uniform temperature and consistent reaction conditions, meeting stringent requirements for low-temperature and thermostatic control in various experiments.

Features

1. **Integrated Modular Design:** Refrigeration, heating, circulation, and control are combined in one compact system for high integration and small footprint.

2. **High-Efficiency Compressor Refrigeration:** Employs Taikang hermetic compressor for rapid, stable cooling with low vibration and noise.
3. **Stainless Steel Components:** Key parts (evaporator, liquid tank, pipes) are made from 304 stainless steel, providing corrosion resistance and easy cleaning.
4. **Automatic Temperature Control:** Intelligent PID controller with self-tuning and adaptive functions for precise temperature regulation.
5. **Programmed Operation:** Supports up to 5 temperature and time settings; ideal for complex, multi-step temperature profiles.
6. **LCD User Interface:** Color LCD display for easy, intuitive parameter setting and operation.
7. **Low-Temperature Circulating Pump:** Shielded stainless steel pump ensures smooth, quiet circulation even in cryogenic conditions.
8. **Multiple Protection Mechanisms:** Over-temperature, over-current, delayed start, and other safety features protect equipment and operators.

Working Principle

The closed-loop refrigeration and heating system maintains constant bath temperature. The compressor cycles refrigerant through condensation and evaporation to absorb/remove heat, while an electric heater provides controlled heating as needed. A circulating pump continuously transports temperature-controlled liquid to the reaction vessel or jacket, ensuring the medium stays within the set temperature range. The circulation system guarantees uniform temperature distribution, prevents local overcooling/overheating, and can be linked with external devices (condenser, reactor, heat exchanger) for remote temperature control.

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Model	**RB10-5**
Bath volume	5L
Temperature range	-40°C to +99°C
Temperature stability	±0.2°C
Heater rating power	1500W
Overall power	2450W
Cooling method	air cooling

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Model	**RB10-5**
refrigerants	R404A
cooling power	1100W at 90°C, 720W at 20°C, 680W at 0°C, 640W at -10°C, 500W at -20°C, 310W at -30°C, 150W at -40°C
Circulation pump Flow rate	20L per minute
Circulation pump Pressure	0.4bar
Environmental temperature	5°C to 35°C
protection class	IP20
Power supply	220 to 240Vac, 50Hz
Outer Circulation Interface	RC1/2
Bath opening size	diameter 210mm
Bath size	diameter 250x130mm

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Model	**RB10-5**
Flask volume	2L
contamination level	2
Overall dimensions	385Wx560Dx735H mm
Weight	60kg