

PR332 Series Multi-zone High Temperature Thermocouple Calibration Furnace

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Note: The left side is PR332L, and the right side from top to bottom are PR332W and PR332A

PR332 series multi-zone high-temperature thermocouple calibration furnace is a new generation of high-temperature thermocouple calibration furnace developed by our company. It consists of a furnace body and a matching control cabinet. It can provide high-quality temperature source for the verification and calibration of Type B thermocouples/tungsten-rhenium thermocouples in the temperature range of 600°C~1600°C. The PR332 series products adopt three-zone temperature control technology, and the temperature field indicators meet and exceed the current JJF 1184-2024 "Testing Specification for Temperature Uniformity in Thermocouple Calibration Furnaces" and JJF 1176-2024 "Calibration Specification for (0~2300)°C Tungsten Rhenium Thermocouples". This series of products has the characteristics of fast heating speed, good constant temperature performance, and excellent temperature field indicators. It can be used independently and can also be used as an ideal supporting equipment for the company's ZRJ series intelligent thermal instrument calibration system.

I. Features

■ Large Furnace Cavity

The inner diameter of the furnace cavity is $\phi 50\text{mm}$, which is convenient for verification and

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sales@intercal.co.za

www.intercal.co.za

+27 11 315 432

calibration of type B thermocouples with protection tubes. It is suitable for the situation that the used Type B thermocouple wire cannot be removed from the protection tube. For the PR332W and PR332L tungsten-rhenium thermocouple calibration furnaces, the large furnace cavity is conducive to the sealing of the argon protection device.

■ Wider Working Temperature Range, Better Temperature Field Uniformity

The introduction of multi-zone temperature control technology, on the one hand, it effectively improves the degree of freedom in adjusting the temperature field index of the high-temperature furnace, and allows the temperature distribution in the furnace to be flexibly adjusted through software (parameters) to meet different use environments (such as the length of the under calibrated thermocouple, changes in loading). On the other hand, it is ensured that the high temperature furnace can meet the requirements such as temperature gradient of the related specification over its entire operating temperature range. And according to the shape and quantity of the specific under calibrated thermocouple, by adjusting the parameters of the temperature zone, eliminate the influence of the thermal load on the temperature field of the calibration furnace, achieve the ideal calibration performance under the load state.

■ High Precision Smart Thermostat

It adopts high-precision multi-temperature zone constant temperature regulation circuit and algorithm, with a temperature measurement resolution of 0.01°C, fast heating, monotonic and stable temperature, and good constant temperature effect. The actual controllable (stable) minimum temperature of the high-temperature furnace by this constant temperature regulator can reach 300°C.

■ Strong Power Adaptability

There is no need to configure an additional three-phase AC regulated power supply for the high temperature furnace.

■ Complete Protection Measures

- Slow start: prevents a sudden increase in heating power and effectively suppresses current shock during cold start of the equipment.
- Main circuit protection: each phase of the three-phase load implements overpower protection and overcurrent protection.

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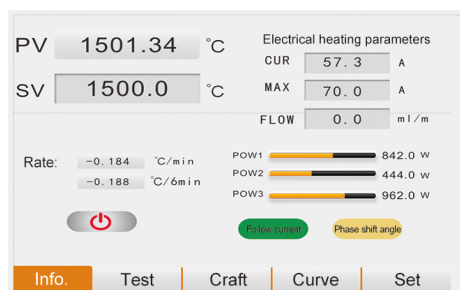
- Temperature protection: including over-temperature protection, broken thermocouple protection, etc.

■ Built-in Operation Recorder

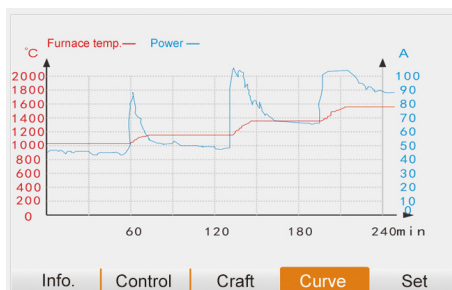
It has functions such as cumulative running time in different temperature zones.

■ Compatibility

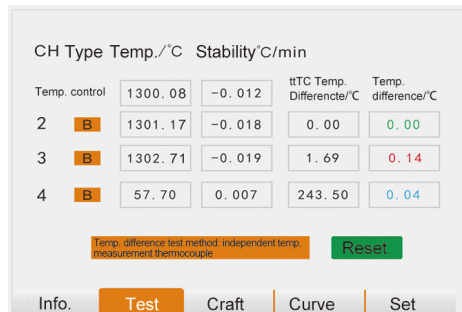
PR332 series products can be used independently or as supporting equipment for our company's ZRJ series intelligent thermal instrument calibration system, realizing functions such as remote control start/stop, real-time recording, parameter query setting, etc.



Main Interface



Curve Interface



Temperature Difference Test Results

II. Model Selection & Technical Parameters

Item	PR332A	PR332W	PR332L	Remarks
Product Name	Multi-zone High Temperature Thermocouple Calibration Furnace	Multi-zone Tungsten-Rhenium Thermocouple Calibration Furnace		/
Working Temperature Range	600°C~1500°C	600°C~1500°C	600°C~1600°C	/

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Heating Material	Silicon Molybdenum Rod			/
Power Supply	220VAC Three-phase five-wire			No voltage regulator required
Furnace Maximum Current	70A(three-phase)	70A(three-phase)	80A(three-phase)	Control cabinet low voltage side
Max. Heating Power	6kW	6kW	8kW	/
Furnace Cavity Dimension	Φ50mm×675mm	Φ50mm×960mm	Φ50mm×1120mm	/
Dimensions	1105×610×1490mm	1105×610×1520mm	1230×790×1660mm	/
Weight	270kg	276kg	405kg	/
Axial Temperature Field	<p>The highest temperature point in the furnace deviates from the geometric center of the furnace by no more than 20mm.</p> <p>Within ±20mm of the highest temperature point, there is a uniform temperature field with a temperature gradient of ≤0.5°C/10mm.</p> <p>Within 60mm, the maximum temperature difference is ≤1°C (±0.5°C).</p> <p>The highest temperature point can be adjusted left (or right) by 50mm</p>			<p>The temperature field index refers to the index that can be achieved in the full temperature range when the thermocouple to be tested is loaded. The specification stipulates that the index is 1000°C, 1300°C, 1500°C no-load conditions</p>
Temperature Control Deviation	≤±1°C			/
Constant Temperature Capability	≤0.1°C/min ≤0.5°C/6min			/
Supporting Equipment	/	<p>Argon protection device, including sealing components, water cooling components, vacuum pump, vacuum gauge, micro pressure gauge</p> <p>Note: Customers should prepare their own high purity argon</p>		/