

PULSAR Portable Thermostatic Air Furnace, Ambient Temperature to +600°C

Verification and calibration of temperature sensors

Verification and calibration of temperature measuring channels

Verification of thermostat contact and alarm thresholds

Thermal tests on metal samples

This high performance portable thermostatic air furnace is designed for verifying temperature measuring instruments by comparison, in the laboratory or on site, within a range of ambient temperature to +550°C for the standard version (+600°C option with special heating block).

The PULSAR oven is based on a compact and robust mechanical design, with proprietary instrumentation and control, providing excellent stability and other useful functions such as measurement of an external reference probe, RS232 serial interface, gradient and contact tests.



Specifications (at 20°C ± 3°C)

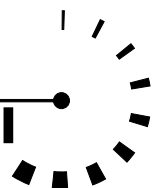
Operating range	Ambient temperature to +550°C standard (+600°C as option)
Stability	± 0.05°C (at +450°C)
Radial uniformity	± 0.02°C (at +450°C)
Axial uniformity	± 0.8°C (in an area 80 mm from the bottom of the block)
Max. heating gradient	20°C/minute
Max. cooling gradient	25°C/minute (to reach +100°C)
Display resolution	0.1 / 0.01°C
Display accuracy	± 0.3°C (at +450°C)
Thermostat test circuit	12 VDC
External probe connection	Pt100 3-wire
Interface	RS232
Power supply	230 V ± 10% or 115 V ± 10% 50/60 Hz 800 VA (1600 VA for version block in copper alloy)
Dimensions of holes internal	Standard heating block, dia. 50 mm, made of aluminium alloy, with four drillings, dia. 17 mm, dia. 9.5 mm, dia. 6.5 mm and dia. 4.5 mm, and a depth of 185 mm. Other heating blocks of different materials, external dimensions and drilling diameters are available as options.
Furnace dimensions (l,d,h)	370 x 140 x 300 mm
Case dimensions (l,d,h)	410 x 260 x 350 mm
Weight of standard furnace	9 kg
Weight of standard furnace in carrying case	15 kg
Reducing inserts for standard furnace	2 bronze inserts, dia. 16.7 mm x length 185 mm. One insert without holes, one insert with 1 hole dia. 9.5 mm.
Electromagnetic compatibility	Emission EN50081-1 Immunity EN50082-2
Standard accessories	A power supply cable, a fuse kit, 2 test leads and an instruction booklet.

Options

- Reducing inserts with specific holes: contact us for details
- Carrying case for the oven and accessories
- Heating blocks (contact us for details):
 - aluminium alloy, dia. 50 mm (+ 550°C) with specific holes
 - aluminium alloy, dia. 65 mm (+ 550°C) with specific holes
 - copper alloy, dia. 50 mm (+ 600°C) with standard holes, or specific holes
 - copper alloy, dia. 65 mm (+ 600°C) with specific holes
- Possibility of automated calibration using software from our range: contact us for details
- RS232 link cable, Sub D, 9-pin
- PT1003FD400: external probe, Pt100 3-wire class A IEC 751 straight, dia. 6 mm, length 400 mm, range -50 ... +650°C
- PT1003FC240: external probe, Pt100 3-wire class A IEC 751 right-angle, dia. 6 mm, immersed length 215 mm, emerging length 75 mm, range -50 ... +650°C
- Probe pairing possible on the external connection to create a heat measuring channel.
- MT100: COFRAC calibration traceability certificate covering 5 points for the internal temperature display of the block
- MT101: COFRAC calibration traceability certificate covering 5 points for the display of the external probe connected to the furnace

**BOURDON
HAENNI**

made to measure



Operation

A microprocessor-controlled regulator provides man-machine dialog via a 4-key keypad.

The PULSAR's homogenization block is heated by resistors around its full circumference and cooled by a fan. The conduction quality of the block ensures homogeneous temperatures in the drillings without the need for transfer fluid, thus avoiding the emission of polluting vapours. The PID-type regulator designed around a microprocessor guarantees a stable temperature at the defined setpoint.

The easily-read display has two lines of 20 characters, 5 mm high with backlighting. The furnace can generate a temperature ramp with a programmed gradient for fine verification of thermostat triggering thresholds, with storage of switching values. Connected to an external Pt100 probe, the furnace becomes a fully stand-alone measurement standard, with the possibility of traceability to national measurement standards. Finally, the RS232 serial interface can be used for automated calibration with software from our range, and can also provide measurement monitoring and instrument traceability for the purposes of an ISO 9000 quality initiative.

The use of a PID regulator with microprocessor provides a wide range of functions

Selection of setpoint value

Definition of linear temperature ramps (selection of starting point, gradient and end point)

Selection of resolution: 0.1 or 0.01°C

Selection of measurement unit: °C or °F

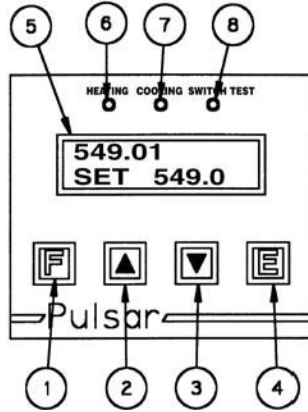
Display of high and low thresholds values for thermostat triggering

The display of the temperature inside the oven (linearized class A Pt 100) and the temperature outside the oven (Pt 100 connected to the oven)

Adjustment of PID regulation parameters

Display of communication parameters via the RS232 serial link

Automated calibration control by PC via the RS232 serial link, using software from our range.

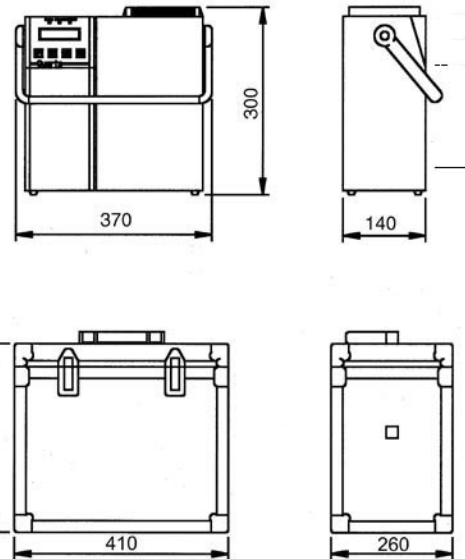
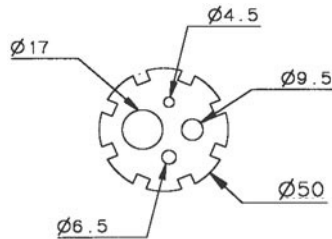


1. Function key
2. Increase key
3. Decrease key
4. Validation key
5. Display
6. Heating indicator lamp
7. Cooling indicator lamp
8. "Test circuit closed" indicator lamp
9. External probe socket
10. Test circuit connection terminals
11. RS232
12. IEC mains socket
13. ON/OFF switch
14. Fuses

Dimensions (mm)

Standard holes

(dia. 65 mm block option)



Coding

		PULSAR	x
Model	1'...6' digit	PULSAR	
Power supply	7' digit		
230 VAC			A
115 VAC			D