



HOT AIR OVEN

MAKE:-RESOTECH
MODEL NO. RESOTECH MATRIX-0152



HOT AIR OVEN

INTRODUCTION

Resotech ovens provide uniform temperatures throughout. Process applications for laboratory ovens can be for annealing, die-bond curing, drying, Polyimide baking, sterilizing, and other industrial laboratory functions.

CONSTRUCTION DETAILS

Material of Construction

Our Hot air ovens are double walled with inner chamber of Stainless steel sheet of grade SS 304 and outer wall of heavy gauge PCRC steel. sheet duly degreased and pretreated with primers for rust proofing duly painted with attractive stove enamel or powder coated .

Temperature Range

5 Degree C above ambient to 250 degree C

Temperature Control

The temperature inside the chamber is controlled by intelligent programmable temperature controller and indicator. This controller is based on the microcontroller nano watt technology and its ergonomic design suits for any specific requirement of the hot air oven, like Data logger facility, Thermal and DOT Matrix interface, direct data load facility in computer office automation software like MS-Word and Excel and many other features listed in the specification below.



PROGRAMMABLE TEMPERATURE CONTROLLER



- Use digital calibration technology for input measurement with input measurement accuracy F.S.0.25%, Support standard thermocouples and RTDs, maximum resolution is 0.1°C
- Use advanced artificial intelligent control algorithm, no overshoot and with the function of auto tuning (AT) and self-adaptation.
- Use advanced modular structure, conveniently providing plentiful output options, able to satisfy the requirements of various applications, make quick delivery and convenience the maintenance of the instrument.
- Friendly and customized operating interface leads to quick and easy to operate. Parameter can be promoted to immediate operator access in Field Parameter Table or password protected in Full Parameter Table.
- With worldwide power supply of 100-240VAC or 24VDC and various installation dimensions for users to choose.
- ISO9001 and CE certified, achieving world class level of quality, anti-interference ability and safety.

MODULES

Slots of modules

AI-518/518P series instruments have five slots for modules to be installed (D dimension instruments have 3 slots: OUP, AUX and COMM/AL1; D2 dimension instruments have 2 slots: OUP and COMM/AUX). By installing different modules, the controller can meet the requirements of different functions and output types.

Multiple function Input / Output (MIO)

Can input signal from 2-wire transmitter or 4-20mA signal by installing I4 (current input) module and I4 module can provide 24VDC to transmitter. If a I2 (on-off signal input) module is installed, the instrument can switch between set points SV1 and SV2 by an external switch. Cooperating with OUP and installing a K3 module can realize three-phase thyristor zero cross triggering output.

Main output (OUTP)

Commonly used as control output such as on-off control, standard PID control, and AI PID control. It can be used as retransmission output of process value (PV) or set point (SV). Installing L1 or L4 modular can realize relay contact output; installing X3 or X5 module can realize 0-20mA/4-20mA/0-10mA linear current output; installing G module can realize SSR voltage output; installing W1 or W2 module can implement TRIAC no contact switch output.

Alarm (ALM)

Commonly used as alarm output. Support 1 normally open + normally close relay output (AL1) by installing L1 or L2 module or 2 normally open relay outputs (AL1+AL2) by installing L5 module.

Auxiliary output (AUX): In a heating/refrigerating dual output system, module X3, X5, L1, L4, G, W1, W2 can be installed for the second control output. It can also output alarm by installing L1, L2 or L5 module, or be used for communicating with computer by installing R module (RS232C interface).

Communication Interface (COMM): Module S or S4 can be installed in for communicating with computer (RS485 communication interface), and it can also be used as power supply for external sensor when equipped with a voltage output module.

Commonly used modules

N No module installed (or null)

L1/L2 Normally open + normally close relay output module (small volume, capacity: 30VDC/1A, 250VAC/1A, suitable for alarm, L1 modules is 2A)

L4 Large capacity normally open relay output module (large volume, Capacity: 30VDC/2A, 250VAC/2A)

L5 Dual normally open relay output module (Capacity: 30VDC/2A, 250VAC/2A)

W1/W2 TRIAC no contact normally open (W2 is normally close) discrete output module (Capacity: 100-240VAC/0.2A)

G SSR voltage output module (DC12V/30mA)

G5 Dual SSR voltage driver (DC12V/30mA)

TECHNICAL SPECIFICATION

Input type: (Either of below specifications can be used selectively in the one instrument)

Thermocouple: K, S, R, E, J, N, T, B, WRe3-WRe25, WRe5-WRe26.

Resistance temperature detector: Cu50, Pt100

Linear voltage: 0~5V, 1~5V, 0~1V, 0~100mV, 0~20mV, 0~500mV etc.

Linear current (external precise shunt resist needed): 0~10mA, 0~20mA, 4~20mA, etc.

Extended input (install I4 module in MIO) : 0~20mA, 4~20mA or two line transmitter.

Optional: apart from the above-mentioned Input type, an additional type can be provided upon request.

(Graduation index is needed)

Instrument Input range

K(-50~ 1300°C), S(-50~ 1700 °C), B(-50~ 1700 °C), E(0~ 800 °C), J(0~ 1000 °C), N(0~ 1300 °C), T(- 200~+350°C), B(200~1800°C)

Cu50(-50~+150°C), Pt100(-200~+600°C)

Linear Input: -9990~30000 defined by user

Measurement accuracy : 0.25%FS ± 1 measurement unit

Resolution : 0.1°C for K, E, T, N, J, Cu50, Pt100; 1°C for S,R

Temperature shift : ≤0.015%FS / °C (typical value is 80ppm/°C)

Sampling period : read A/D converter 8 times per second 11

Response time : ≤0.5s (when digital filter parameter FILT=0)

Alarm function : High limit, low limit, deviation high limit and deviation low limit; providing the function of alarm blocking at the beginning of power on.

Control period : 0.24~300.0 seconds selectable, and it should be integer times of 0.5 second.

Control mode

On-off control mode (dead band adjustable)

Standard PID with auto tuning

AI PID with auto tuning, adopting artificial intelligence algorithm.

Output mode (modularized)

Relay output (NO+NC): 250VAC/2A, 30VDC/2A, 250VAC/1A and 30VDC/1A

TRIAC no contact discrete output (NO or NC): 100～240VAC/0.2A (continuous), 2A (20mS instantaneous, repeat period≥5s)

SSR Voltage output: 12VDC/30mA (used to drive SSR).

Thyristor zero crossing trigger output: Can trigger TRIAC of 5～500A, a pair of inverse paralleled SCRs or SCR power module.

Linear current output: 0～20mA, 4～20mA can scaling by user. (Output voltage : X3≥10.5V; X5≥7V maximum load resistor 500ohm, output precision 0.2%FS)

Electromagnetic compatibility (EMC): ±4KV/5KHz according to IEC61000-4-4; 4KV according to IEC61000-4-5.

Isolation withstanding voltage : Between power, relay contact or signal terminals ≥2300VDC; between isolated electroweak terminals ≥600V

Power supply : 100～240VAC, -15%, +10% / 50-60Hz; 120～240VDC; or 24VDC/AC, -15%, +10%.

Power consumption: ≤5W

Operating Ambient : Temperature 0～60℃, humidity ≤90%RH

Front panel dimension: 96×96mm, 160×80mm, 80×160mm, 48×96mm, 96×48mm, 48×48mm, 72×72mm

Panel cutout dimension: 92×92mm, 152×76mm, 76×152mm, 45×92mm, 92×45mm, 45×45mm, 68×68mm

Depth behind mounting surface: ≤100mm

	INNER CHAMBER SIZE (W×D×H)	Volume (Litres)
(a)	300 x 300 x 300 mm	30 ltrs
(b)	355 x 355 x 355 mm	45 ltrs
(c)	455 x 455 x 455 mm	95 ltrs
(d)	455 x 455 x 605 mm	125 ltrs
(e)	605 x 605 x 605 mm	224 ltrs
(f)	605 x 455 x 910 mm	252 ltrs
(g)	605 x 605 x 910 mm	336 ltrs

INSULATION

The gap of 75 mm between the outer and the inner wall is filled with special grade glass wool to prevent thermal losses.

MINERAL GLASS WOOL INSULATION

Glass mineral wool is one of the most environmentally friendly, stable and sustainable insulants available. Glass wool is incombustible by nature. Euro class classification is A. It does not propagate flames and toxic smokes. Thanks to a dense entanglement of materials with a low conduction and trapping a great amount of air, glass wool is an excellent thermal insulant. The thicker it is, the better thermal resistance it has, thus reducing heat losses in our equipments for better sensitivity and economical operations. And its impact on the environment in manufacture, use and disposal is minimal.

AIR CIRCULATION

Triple walled back of unit is fitted with two air circulation fans for maintaining temperature uniformly throughout the chamber

FEATURES OF COAXIAL CIRCULATION FAN

- Vacuum impregnated starter.
- non-hygroscopic.
- Best IR value
- Bright bar (EN - 8 class) shaft.
- Bush bearing of branded companies.
- Surge comparison testing in fans and pumps eliminates into turn short circulating of the stator.
- Pressure die-casted-rotor manufactured with zero error.
- Boats of high accuracy

FRONT PANEL

The front panel is provided with separate indicator lamps for main heating and incoming voltage. Digital Temperature controller cum Indicator and voltmeter.

SHELVES

The unit is supplied with one/two/three shelves of stainless steel sheet. (Model Specific)

TECHNICAL MATRIX

Temperature Control		
Temperature variation (time)	+/- °C	0.5
Temperature deviation (spatial)	+/- °C	0.5
Readability/ Set ability	°C	0.5
Temperature range ***	°C	5°C above ambient to 250°C
Sensor thermocouple		PT 100
Controller		Nano technology based ergonomic controller
Display		LCD
Adjustable alarm limits (visual and acoustic)		Optional
Safety thermostats		
Temperature variation (time)	+/- °C	3
Sensor thermocouple		PT 100
Automatic setting		Yes
Adjustable limits		Yes

Accessories Real Time Program Printer Report Program Serieal Data Port Inspection window in door	Rs232	optional optional Yes optional
Shelves Standard/ max Dimensions w,d Max load per shelf Permitted total load	 mm kg kg	 1-2- 3 (depending on the internal size) As per the individual model 20 60 kg (Max Internal Size)
Accessories Printer Report Program 2 x 24 characters LCD Display Access Port 30 mm Inspection window in door with cover Castors, lockable		optional optional optional optional optional
Power consumption Nominal voltage Frequency	V Hz	230, 1~ 50/60

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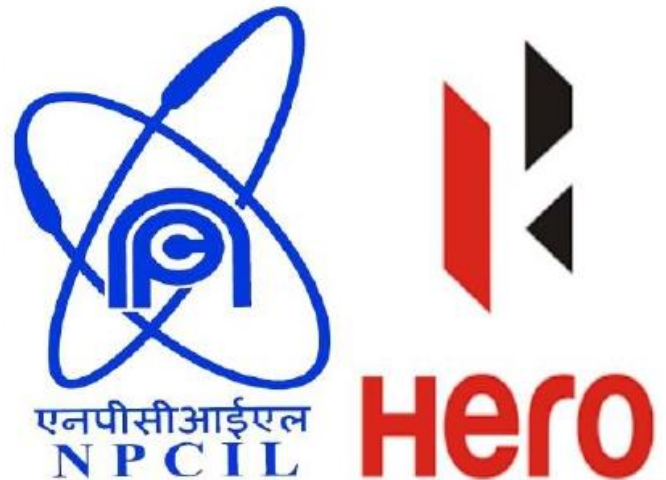
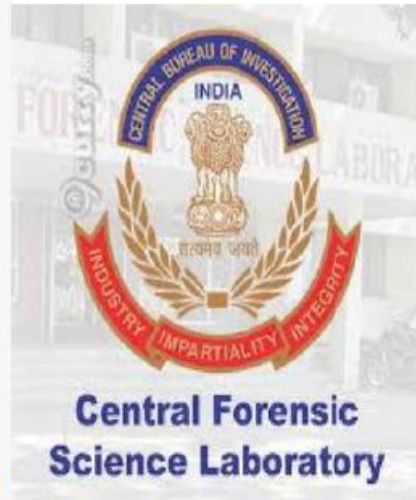
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