

TMJ-9712 Programmable Temperature & Humidity Chamber

The TMJ-9712 Programmable Temperature & Humidity chamber is designed to test a wide range of materials including: Plastic, Rubber, Films, Packaging materials, Textiles, Leather, Adhesives, Medical products printing, synthetic glass, paints, ink, and others pigments industries, Electronic parts and components and etc. in a different temperature and humidity conditions prior for subsequent physical or materials test.

Through advanced technology and quality engineering T-Machine has produced this Chamber which is accurate and easy to use. Powerful as a stand alone unit, the Chamber capability is enhanced by the functionality of connecting it direct to a standard recorder and obtain a comprehensive test report .
The T-Machine 9712 Chamber can be used in laboratory and factory environments.

T-machine guarantees the resolution and accuracy of the machine by providing a traceable calibration certificate free of charge.

Specifications

- Temperature range : $-20^{\circ}\text{C} \sim 150^{\circ}\text{C}$,
 $-40^{\circ}\text{C} \sim 150^{\circ}\text{C}$
or as request
- Temperature uniformity : $\pm 0.5^{\circ}\text{C}$
- Temperature Constancy : $\pm 0.3^{\circ}\text{C}$
- Humidity Range : 20-98% RH
- Humidity Constancy: $\pm 2.0\%$ RH
- Humidity Uniformity : $\pm 3.0\%$ RH
- Heat up time : $-20^{\circ}\text{C} \sim 100^{\circ}\text{C}$ within 35min
- Pull down time : $+20^{\circ}\text{C} \sim -20^{\circ}\text{C}$ within 40min
- Cooling System : Air Cooled
- Refrigeration system : Hermetic compressor, cascade refrigerating system
- Insulation : High Quality Rigid Polyurethane
- Controller: Touch Screen controller.
999steps x
99 patterns x 999times. with 999 recalled programs capability or equivalent
- Safety devices :
Breaker Thermal fuse
Boil dry protector Overheat protector
Watchdog timer circuit protection fuse
Emergency switch Water low level warning

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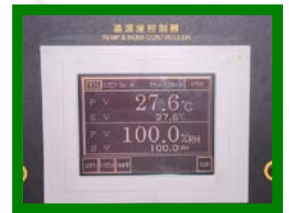
Accessories

TMJ-9712 Programmable Temperature & Humidity Chamber



Control Panel

Complete Digital Controller with
Touchscreen(Honeywell or OYO
LCD Panel)
Details graphics online display
Online recorder : 6 points input
capabilities



Touch screen
controller



Viewing window



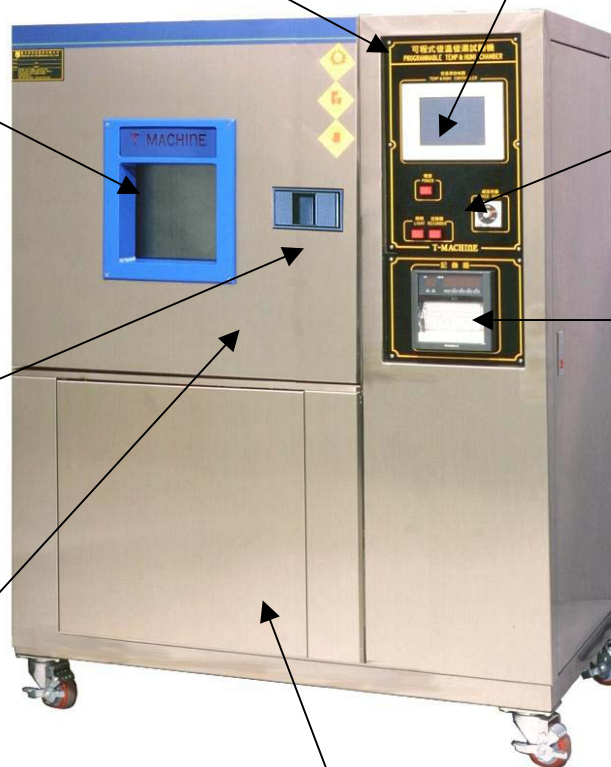
Easy Operation
buttons



Handy lock



6 points Online
Recorder



Highly refined exterior and
interior designed.
With quality SUS 304
Stainless steel as standard
Feature.



Hermetic Compressor, CFC Free

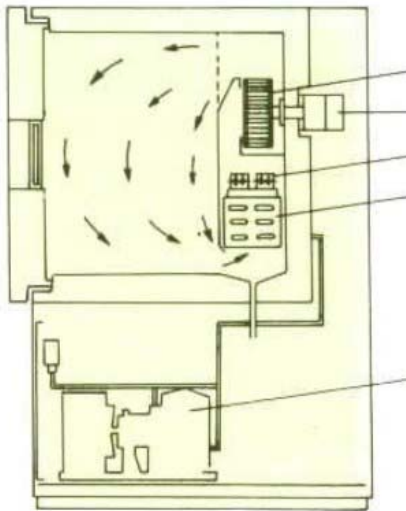


Built-in water tank

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Accessories

TMJ-9712 Programmable Temperature & Humidity Chamber



Ventilating fan
Ventilating motor

Heater

Cooling System

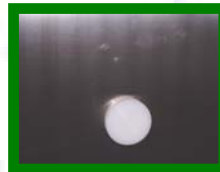
Compressor



Temperature over
load protector

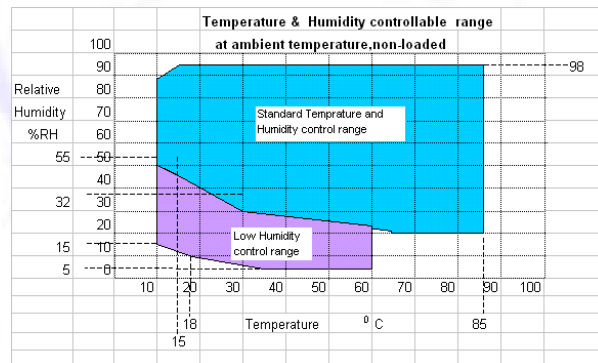


Efficient Ventilation system to
provide constant cooling Effects for
control box



External Connector outlet for
Real time electrical connectivity

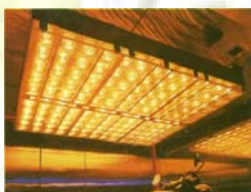
Optional :



Software control

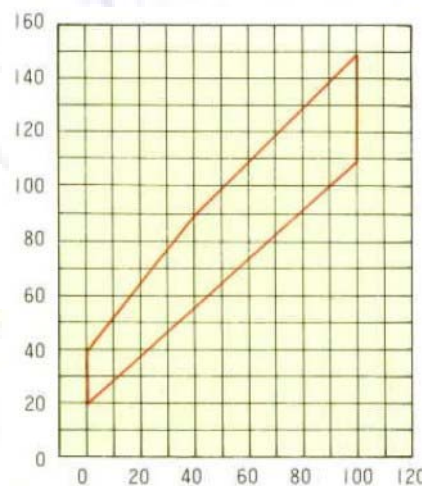


Fix IR lamp device



Moveable IR
Lamp device

Surface
Temp. ° C



Chamber Temp ° C

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Programmable Temp./Humi. Controller IPC500/1000



Features

- **Screen Touch-Key Operation**

Screen touch switch allows easy operation & programming

- **User Friendly Interface Design**

Displays are designed for user's easy understanding & quick operating

- **High Precise-Control**

0.1%FS±1 digit of indication accuracy is capable of the high precise control process

- **Free Ware (RS-232 Comm.)**

Free software is offered for PC operation, and it has operation, monitoring, and recording functions.

- **Programming Capacity**

Max. 30 patterns with 800 segments are available for programming (for IPC 1000 only)

- **Communication**

RS-232 & Lonworks (option) communications are available. Especially, Lonworks allows the multi-monitoring of a maximum of 64 controllers.

- **Language**

IPC500/1000 supports English, Chinese and Korean languages for its user interface.

SPECIFICATIONS

TECHNICAL DATA	
Power Voltage & frequency	AC110/220V, 50/60Hz
Isolation Resistance	50M Ω min. between case and terminals using a 500V DC
Withstand voltage	AC1500V, 1 min, between case and power terminals
Ambient Temperature	0 ~ 50℃
Ambient Humidity	35 ~ 85%RH (no condensation)
Indication Accuracy	$\pm 0.1\%$ FS ± 1 digit $\pm 1\%$ RH FS ± 1 digit
Input Range	Temperature: -100.0 ~ 220.0℃ Humidity: 0.0~100.0% RH
Setting Method	Touch screen switch
Display device	Dot matrix LCD modules Dots : 320 X 240 pixels Back light : CCFL
Set Display	User set , initial set
Status Display	Pattern graph, monitoring
Input Sampling cycle	1 sec
Case Color	Case : ivory Face Cover : dark blue/ivory
Mounting	Panel-mount

Input & Output Specification	
PV Input	Dry and Wet (Pt100 or JPt100 X 2) Pt100 or JPt100 + 4~20mA
Run/Stop Input	Contact input X 1 (Program RUN/STOP external signal)
Alarm	Machine alarm contact input X 9 (alarm message display)
Control output	Temperature PID open collector output X 1 Humidity PID open collector output X 1 Temperature PID DC4~20mA output X 1 Humidity PID DC4~20mA output X 1
Auxiliary output	Temperature PV DC4~20mA output (variable range : -100 to 220℃) Humidity PV DC4~20mA output (variable range: 0~100% RH)
Communication	RS-232C / LONWORK (OPTION)
Digital output (Open Collector)	Inner Signal : 4 or 8 point (cooling, de-humidity, alarm, control) Time Signal : 4 point Run : 1 point End : 1 point Humidity Run: 1 point Down : 1 point Trouble : 1 point

Program Specification	
Steps & Patterns	800 steps / 30 patterns Max.
Step Times	99 hour 59 minute Max.
Program Links	6 patterns, 10 links Max.
PID Control	PID Auto tuning (Temperature/Humidity) P : 0.0 to 999.9% I : 0 to 3600 sec D : 0 to 3600 sec Control cycle : 1 to 99 sec ARW : 0 to 100%
Extra Functions	Language : English, Korean and Chinese Pattern repeat, HOLD, WAIT, ADVANCE, RUN, STOP, RUN LOCK, Total time display, Clock, BREAK/HOT/COLD Start Start Schedule, Enable display 2000 year LCD Back light control(13 steps) Test name set(10 patterns)

TECHNICAL SPECIFICATION

TMJ-9712 Programmable Temperature & Humidity Chamber

Model		TMJ-9712A	TMJ-9712B	TMJ-9712C
Item				
Inside Dimension (W x H x D) mm		400 x 500 x 400	500 x 600 x 500	1000 x 1000 x 800
Temperature Range		RT ⁰ C ~ +150 ⁰ C or (Max. temperature up to 200 ⁰ C as optional) -40 ⁰ C ~ +150 ⁰ C or -70 ⁰ C ~ +150 ⁰ C or as request		
Temp	Constancy	±0.2 ⁰ C at 100 ⁰ C, ±0.4 ⁰ C at 200 ⁰ C ±0.5 ⁰ C at 100 ⁰ C, ±1.5 ⁰ C at 200 ⁰ C		
	Uniformity			
Humidity Range		20 -98% (Humidity range 5 -98% RH as optional and dehumidifier needed)		
Humi.	Constancy	+/- 2.5 % +/- 3.0 %		
Temperature heat up		-20 ⁰ C ~ 100 ⁰ C within 35 min (RT ~ 200 ⁰ C within 40min) -40 ⁰ C ~ 100 ⁰ C within 45 min (RT ~ 200 ⁰ C within 40 min) -70 ⁰ C ~ 100 ⁰ C within 35 min (RT ~ 200 ⁰ C within 40 min)		
Temperature pull-down		+20 ⁰ C ~ -20 ⁰ C within 30 min +20 ⁰ C ~ -40 ⁰ C within 60 min +20 ⁰ C ~ -70 ⁰ C within 80 min		
Refrigeration system		Hermetic Sealed rotary compressor , cascade refrigerating system with Environmental safe refrigerant(R404A), Cooling system : Air cooled		
Interior material		SUS#304 stainless steel plate		
Outside material		SUS#304 stainless steel plate		
Insulation		High Quality Rigid Polyurethane Foam / Fiber Glass		
Fittings		Viewing window (glass incorporating heat generator), Cable port diameter 50 mm, shelves: two set, Chamber lamp (fluorescent lamp), Online Yokogawa Recorder		
Power consumption		240V SINGLE PHASE, 50/60Hz or as request		
Weight(Approx.)		250kgw	300kgw	350kgw

Local Agent :

T-MACHINE

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