

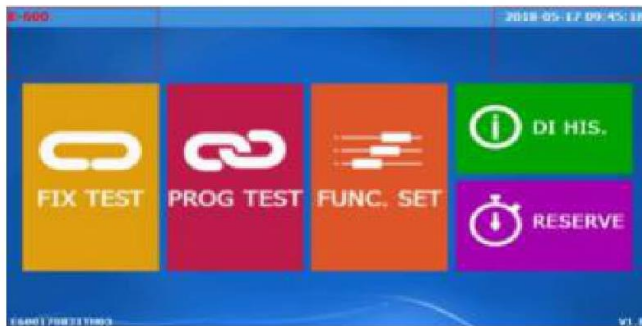
HD-E702-225B40 CLIMATE CHAMBER

1. Application



Climate chamber (also known as temperature and humidity test chamber) provides a wide temperature and humidity control range. It is used to simulate severe high temperature, low temperature or damp heat environment. Customer can select suitable models based on performance and test area capacity.

It is widely used in various industries, such as electronic instruments and meters, new materials, electricians, vehicles, metals, electronic products, aerospace materials, which may encounter environmental conditions during transportation, storage, and in-use.



Temp. Humid. Programmable Controller



France Tecumseh compressor



CÔNG TY TNHH GOIN INTERNATIONAL VIỆT NAM

Web.: www.goin-vn.com

Tel.: (+84) 2862575751

Email: Sales@goin-mail.com

2. Structure

| 2.1 Cooling System | |
|--|---|
| 1 | The refrigerating system equips France Tecumseh , and uses environmentally friendly refrigerant (R404a). Adopting binary low temperature circuit system design, it is convenient to use different compressors for work in different temperature regions. |
| 2 | Temperature and humidity control using P.I.D + S.S.R system coordinated control with the same channel. It has the function of automatic calculation, which can immediately modify the temperature and humidity change conditions to make the temperature and humidity control more accurate and stable. |
| 3 | High-precision controllers of temperature and humidity. The relative temperature and humidity performance is accurately set and displayed with a resolution of 0.1 °C. |
| 2.2 Temperature and Humidification System | |
| 1 | Temperature system using Nickel-chromium alloy high-speed heating electric wire; |
| 2 | High temperature system is completely independent; |
| 3 | The humidity system using stainless steel tube built-in nickel-chromium alloy high-speed heating electric wire and high-temperature magnesium oxide powder, which has fast response and long life; |
| 4 | The temperature and humidification system is completely independent, and humidity has automatic water supplement device. |
| 2.3 Control System | |
| Temp. & Humid. Sensor | High precision PT100 Platinum resistance |
| Controller | Youyi E600 |
| Display Function | a. Temp. & humid. Setting (SV) Practical (PV) value can be displayed directly b. Display numbers, paragraphs, remaining time and cycles, running time c. Program editing and graphic curve display, d. Fixed or program operation status display, |
| Interface | a. RS-232 or R485 port design b. Connected to computer c. Monitor and remote control by computer and Ethernet optional |
| 2.4 Protection System | |
| 1 | Protection for Electrical leakage |
| 2 | Over-temperature |
| 3 | Compressor overvoltage and overload |
| 4 | Heater short circuit |
| 5 | Water shortage |

3. Main Technical Parameters

| 3.1 Capacity and Material | |
|--------------------------------------|--|
| Internal dimension(W*D*H) | 500 × 600 × 750mm (225L) |
| External dimension(W*D*H) | 1160× 1015 × 1655mm |
| Internal material | 1.2mm thickness SUS#304 stainless steel, mirror finished; |
| External material | 1.2mm thickness cold-rolled steel plate baking |
| 3.2 Temperature | |
| Temperature Range | -40℃ ~ + 150℃ |
| Temperature fluctuation | ±0.5℃ |
| Temperature uniformity | ≤2℃ |
| Temperature Rate | 1℃/min in average (without loading) |
| | 3℃/min in average (without loading) |
| 3.3 Humidity | |
| Humidity Range | 10%~98%RH |
| Humidity fluctuation | ±3%RH |
| Humidity uniformity | ±2%RH |
| Temp. &Humid. Chart | <p>The graph displays the operational range for temperature and humidity. The x-axis represents Temperature Range from 0 to 100, and the y-axis represents Humidity Range from 0 to 100. A red shaded area indicates the operational range, which is approximately a square from 20 to 85 on both axes, with a small trapezoidal cutout at the bottom-left corner. The top-right corner of the shaded area is labeled '98%'.</p> |
| 3.4 Power Supply | |
| Power Source | Three-phase,AC 380V, 50Hz |
| Power | 14kw |
| Current | 12A |
| Weight | Approx. 325kg |
| 3.5 Cooling System and Others | |
| Compressor | Semi-Hermetically Sealed Germany Bock compressor |

| | |
|--------------------------|--|
| Refrigerant | R404A |
| Cooling method | Single-stage compression |
| Cooling method | Air-cooled flake condenser, cooling fan for heat dissipation |
| Humidification system | Stainless steel humidifier |
| Water Supply | Front-mounted water tank, automatic water supply system |
| Heating System | Nichrome stainless steel heater |
| Sample tray | SUS#304 stainless steel 2 pieces |
| Testing hole | Diameter 50mm, for cable routing |
| Evaporator | Finned tube heat exchanger |
| Dry filter | Absorb the residual moisture and acidic substances in the refrigerant of the refrigeration system, and filter out solid particles, copper shavings, etc. in the system to protect the normal operation of the expansion valve and capillary tube, and prevent ice blocking and dirty blocking. |
| Door handle | Non-reaction, explosion-proof door handle, easy to operate, safe and reliable |
| Insulation | 100mm polyurethane rigid foam and 100mm high density glass fiber cotton |
| Insulation system | Filling the insulation area with ultra-fine glass fiber; Machine connection parts are made of non-metal resistant high and low temperature materials, which effectively reduces the temperature conduction; Door seal is made of refined silicone rubber, which is more reliable seal; Using isolated humidification method |
| Observation window | Double-layer vacuum-strengthened glass; Heat-resistant defrosting on the inside with adhesive sheet conductive film, which can clearly observe inner chamber. |
| 3.6 Test Standard | |
| 1 | IEC6008-2-1 Cold |
| 2 | IEC6008-2-2 Dry Heat |
| 3 | IEC60068-2-38 Damp Heat, Cyclic |

4. Detailed Images



PLC OPERATION



INTERNAL CHAMBER



TESTING HOLE FOR CABLE ROUTING



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