

**PID Based Control System**



**HMI/PLC Based Control System**



**Technical Specification :**

- Temperature Range** : 20°C to 60°C
- Humidity Range** : 40% RH to 95% RH
- Accuracy** : ±0.2°C & ±2.0% RH
- Uniformity** : ±2.0°C & ±3.0%RH
- Suitable For** : 25°C & 60%RH, 30°C & 65%RH, 40°C & 75%RH, 30°C & 75% RH & also for low Humidity 25°C & 40%RH, 40°C & 25%RH , 30°C & 35%RH
- Control System** : PLC or PID Based

Models	Capacity	Internal Dimension In MM			External Dimension In MM			Max. Nos. of Trays
		Width	Depth	Height	Width	Depth	Height	
GMP-SC90L	90 Liter	450	400	500	600	1100	1050	3
GMP-SC227L	227 Liter	600	630	600	750	1350	1180	4
GMP-SC325L	325 Liter	600	630	900	750	1350	1480	6
GMP-SC400L	400 Liter	600	630	1060	750	1350	1640	7
GMP-SC500L	500 Liter	600	630	1350	750	1350	1905	8
GMP-SC600L	600 Liter	800	800	950	950	1550	1530	6
GMP-SC800L	800 Liter	800	800	1250	950	1550	1830	9
GMP-SC1000L	1000 Liter	800	800	1570	950	1550	2150	11
GMP-SC2040L	2040 Liter	1500	800	1700	1660	1260	1860	20

**NOTE :** Other Sizes and Customized models are available on request.

## Features :

Low energy and Low water Consumption Equipments.

## Construction :

- Constructed and fabricated on fully automatic CNC machines. Chamber Interior is fabricated of stainless steel with dull/mirror finish & exterior is of stainless steel for GMP Model / G.I. Powder coated for standard Model.
- The inner working chamber is water & vapour tight high-grade stainless steel. All seams are arc-welded & passivity for strength & durability.
- Chambers are provided with effective air circulation system, heating & cooling systems and humidity generator system.
- Double Door : Inner full viewing glass door and outer door insulated with lock and key arrangement. Inner & outer doors are sealed by silicone sponge rubber gasket.
- Control panel with electrical switch gear and refrigeration system mounted on top for easy service accessibility.
- Equipment mounted on heavy castor wheels for easy movement.
- Heavy duty solid stainless steel duly electro polished wire mesh/perforated type trays are provided which are easy to clean, time & efforts saving, also adjustable for convenience.

## Control Systems :

### Option 1 : (PID controller based)

- Microprocessor based PID controller with auto tuning for accurate control of temperature and humidity conditions.
- Rotronic make 4-20mA sensors for better accuracy / Pt100 Sensor for Temperature & Direct % RH electronic capacitance type humidity sensor.
- Data Storage unit facility to store data and to print directly on printer or transfer to software with Date, Time, SV, PV, Door Open/ Close, Power On/Off remarks.
- Safety : Temperature & Humidity High / Low Alarm, Temperature very High / Low cut off, Water level low cut off.

### Option 2 : (HMI + PLC controller based)

- 4.3" HMI with TFT LCD Colour touch screen with password protection for all parameter actual status monitoring of utilities like Sensor, Heating & Cooling System, Humidity System)
- Rotronic make 4-20mA sensors for better accuracy.
- PLC with auto tuning facility for accurate control of temperature and humidity conditions.
- PLC system for auto changeover of standby systems.
- Data Storage unit facility to transfer the data to software via Ethernet for web based online remote monitoring with Date, Time, SV, PV, Door Open/ Close, Power On/Off remarks. Direct report printout provision from HMI.
- Safety / Alert :  
Temperature & Humidity High / Low alarm, Temperature & Humidity High / Low cut off, Low water level cut off, Auto change over for standby systems.
- Software (21 CFR PART-11 Compliance) :  
Log data, Event data, Audit Trail data, E-Records & E-Signatures, Graphical analysis & Data acquisition.

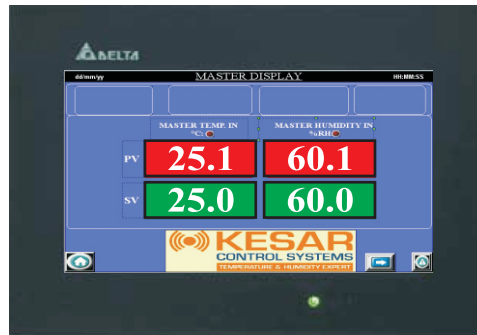
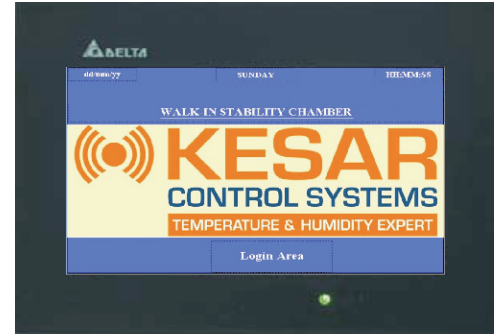
## Optional :

- Software (21 CFR PART-11 Compliance)
- Stand by Cooling System
- Stand by Humidity System
- Scanner (4 Temp. + 4 RH for Online Monitoring Purpose)
- Mobile Alert System
- Security Alarm System
- Extra Trays

## PLC based control system :

### Features :

- Direct Report Printout Provision From HMI
- Controlling system - PLC
- User friendly operating system
- Communication via Ethernet
- PLC based auto tune facility
- Password protected HMI
- 4.3" HMI with LCD colour touch screen (for small chamber)
- 7" HMI with TFT LCD colour touch screen (for walk in chamber)
- PLC based safety cut off
- Rotronic make 4 to 20 mA sensors

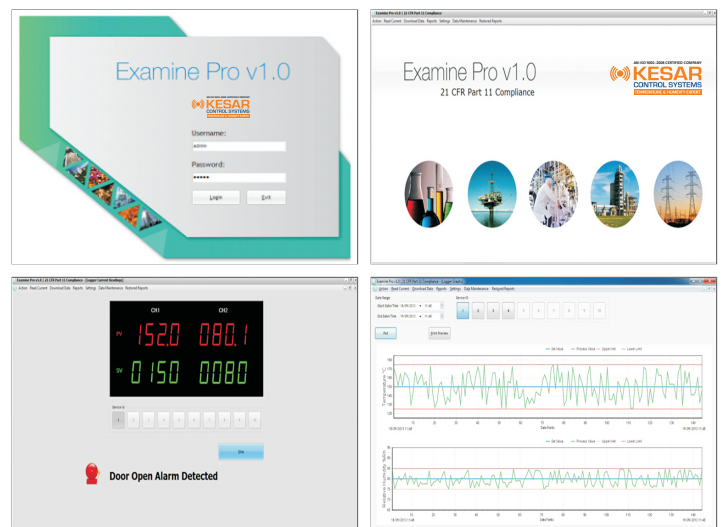


## Examine Pro Software :

Web based software is complete solution for online monitoring and recording data.

### Features :

- 21 CFR Part 11 compliance
- Secured audit trail (User, Equipment, Alarm SMS, Events).
- E-Records and E-Signatures with Date and Time stamp
- MKT (Mean Kinetic Temperature)
- Browser based software
- Real time & Graphical analysis
- First time User Login Change Password.
- Password Encryption.
- Alpha Numeric Password and Password Ageing.
- System Administration.
- Offline analysis (in Tabular and graphical analysis)
- Data generated on PDF report.
- Realtime Parameter Setting.
- Automated Backup Facility.
- Auto logout, account Blocking and reactivating facility
- Log data, event and audit trail data recording



### Documentation :

**Equipment** : Design Qualification (DQ), Installation Qualification (IQ), Operational Qualification (OQ), Performance Qualification (PQ), with all Supporting Documents.

**Software** : Installation Qualification (IQ), Operational Qualification (OQ) and User Guide.