

Walk in Stability Chambers

Environmentally friendly walk in stability chambers powered by Meditech Technology



Construction – Stability Chambers

Meditech walk in stability chamber are made of Pre-fabricated modular panel type construction with CFC Free PUF insulation. Stability chambers to be assembled on site with floor panels having extra reinforcement to sustain the movement and sample load inside the chamber. Walk in stability Chambers is provided with effective air circulation system, refrigeration system, humidity system, multi pane vacuum sealed observation glass window, stability chambers illumination and stainless steel racks and perforated trays.

Stand by refrigeration system for stability chamber and stand by humidity system is provided as an optional feature as a redundancy

Control Features of stability chamber

Microprocessor-based PLC controller with 7 inch touch screen with auto tuning for accurate control of temperature and humidity conditions and printer interface facility to store data and to print it directly on a printer with variable print time interval for walk in stability chambers

Meditech walk in stability chamber is provided with a multiple point (8+8) temperature and humidity scanner with printer interface and PC interface facility for online mapping purpose.

A PLC system for an auto changeover of standby systems and other event logging and monitoring purpose.

GSM mobile alert module to give malfunction SMS on three cell phones simultaneously.

Door Access Security System with smart cards / bio-metrics and software to authorize and to monitor door accessibility.

Walk in stability chamber is also fixed with Advance PLC system with touch screen display with all the above features incorporated. Network connectivity via Ethernet for web based online remote monitoring.

Utility management system provided for continuous machines operations and cross checks

Safety Features of stability chamber

Walk in stability Chambers are provided with safety cut offs and alarms at centrally located places including one at the security gate.

Special door lock is provided which can be opened from inside even if locked from outside.

An emergency bell switch is also provided inside the walk in stability chamber.

Dedicated Safety system to shut off the humidity system and chamber shut down in case of overshoot or undershoot of temperature or humidity with audio visual alarm.

Thermostatic safety system is provided as an additional safety feature.

Low water level cut off for humidity system.

Door open alarm.

All the alarms and events are logged in the software.

Software for walk in stability chamber

21 CFR part 11 USFDA compliant software with validation documents.

Secured audit Trail.

Multi level security password with aging and history.

Electronic signature.

Web based (Ethernet) online remote monitoring

GSM alarm system (mobile alert)

Data of door access security system in software with remote options.

All the events, utility, working status, all the alarms are logged in the software.

Records in graphical and in tabular form.

Reports of mean Kinetic Temperature Reading.

Works on 440V AC three phase 50Hz (country specific).

Complete with extensive DQ, IQ, OQ and PQ protocols as per the International guidelines along with calibration certificates.

- **Standard features include:**
 - Temperature uniformity $\pm 0.5^{\circ}\text{C}$.
 - Temperature uniformity of $\pm 2^{\circ}\text{C}$.
 - Humidity Range/Accuracy.: 40% to 95% RH $\pm 2\%$
 - Humidity Uniformity : $\pm 3\%$ RH
 - No-waste, custom-cut wall panels
 - Average 60dBA maximum noise level
 - Digital temperature controls with Touch Screen
 - Narrow-range chart recorder, accurate to $\pm 0.5\%$ of the -100 to 100°C spare on demand
 - Intelligent, active high/low alarms
 - CFC Free insulated panels with SS304 inside and Galvannealed Mild steel with powder coated Outside (or) SS304 inside and outside for cGMP models

Complete utilization of costly space

Unlike vendors which provide a limited number of standard-size stability chambers, Meditech insulated panels can be made to fit each installation exactly. This means your limited space will be fully utilized for productive activity. In some cases, particularly where structural columns must be surrounded by the room enclosure, Meditech custom-cut panels can increase floor space by more than 15% over rooms built with restrictive, standard size panels.

Air Flow Pattern for stability chamber

Our center-mount, low velocity air handler provides an "umbrella airflow" pattern which envelopes the room with conditioned air, providing maximum uniformity (1.0°C or better) without the need for lay-in ceiling tiles which are difficult to clean and represent a prime location for mold and spore growth over time. All stability rooms are equipped with precision 100 ohm, 3-wire platinum RTD (Band 5) temperature sensors and thin-film polymer capacity humidity sensors with hermetically sealed microprocessor transmitters, representing the latest in sensor technology

Principles of Operation of walk in stability chamber.

Balanced against a small refrigeration load, resistive heaters are finitely pulsed with a PID controller to maintain precise temperature control even at near-ambient temperatures, while maximizing energy efficiency. Humidification works on a similar principle: While the evaporator coil provides a small, but constant, dehumidification effect, ultrasonic transducers pulse water vapor back into the room for finite control. Meditech rooms do not use steam boilers, which are subject to corrosion over time, represent a high energy load, and introduce an independent and uncontrolled heat source within the room, disrupting uniformity performance.

Eliminate product stability problems

Temperature deviations at the working height can make compounds unstable and research results unpredictable. Meditech walk in stability chambers meet and surpass uniformity requirements of $\pm 0.5^{\circ}\text{C}$ and maximum temperature gradients of 1.0°C . The temperature is constant even when transient heat loads occur from process equipment and door openings.

Comfortable work environment

Productive research and manufacturing requires exceptional illumination and a quiet environment. Meditech walk in stability chambers are equipped with recessed fluorescent lighting fixtures, which deliver a full 70 to 100 foot candle illumination at the working surface. Air handling systems are designed with components sized to limit noise to an average maximum of 70dBA – the level of normal human conversation.

Intelligent, active alarms

Unlike passive systems, Meditech alarm circuits take action to mitigate an out-of-spec condition. For example, if temperature is too low, all cooling is automatically shut down while the system provides visual and audible warning of the problem. Such intelligent alarms ensure that basic corrective measures are taken immediately.

Surface

finish

Standard surface finishes for walk in stability chambers include baked white enamel powder coated Mild Steel, with SS extrusions to join panels. For exceptionally corrosive environments SS panels are available as best option. These options are usually avoided except in extreme cases.



Reliable, trouble-free operation

Meditech walk in stability rooms are equipped with extra equipment capacity for unusual peaks in cooling and heating loads. Also, all Meditech refrigeration systems have safety features such as automatic compressor restarts. Such robust design-features help ensure continuous reliability of Meditech mechanical systems.

Specifying Stability Chamber

Stability rooms can be designed to maintain virtually any temperature required for life science and storage applications. To ensure the stability chamber meets your particular requirements, consider these issues as you develop your specification

Active alarms = no loss of product

Alarms advise room operators of fault conditions, but when specified, these circuits can provide other useful functions.

For example, if the room goes above the high alarm set point, the door heaters, lights, fans, and hot gas valves should be shut off automatically. Active alarms can help prevent “runaway” conditions rather than just announcing that a problem is occurring, and should be clearly specified by the designer in critical applications.

Meditech also provides SMS features that can be incorporated to send SMS to officer in case of alarms and emergency.

Humidity control

In most cold rooms, humidity control is not essential. In those cases, the designer should avoid specifying a defined humidity level in order to minimize equipment costs. There are, however, two reasons end users sometimes include humidity control in the specification: to reduce excessive defrost cycles or to avoid problems with humidity-sensitive products.

Cold room refrigeration systems operate at temperatures cold enough to freeze water on heat transfer surfaces. This frost must be melted off when it begins to block air flow. When the system defrosts, the air handler shuts down, and room temperature can rise slightly above set point for 5 to 12 minutes. This occurs about four times in 24 hours.

In other circumstances, sensitive materials demand a uniform humidity.

Benefits of humidification include:

Raising the relative humidity inhibits moisture loss.

The right humidity level ensures that product quality is maintained.

Improved profitability through maintained product weight.

Longer storage and greater shelf life reduce waste.

Direct room humidification ensures the right humidity level evenly around the store, maintaining produce quality throughout.

Close humidity control means the right humidity for the right product

Refrigeration

controls

To avoid any confusion among suppliers, the room designer should clearly specify PID temperature controls when the uniformity requirement is $\pm 0.5^{\circ}\text{C}$. This will alert the vendor that controls suited only for cold storage rooms are not acceptable. Meditech uses PLC based touch screen controller for the application.



Software

- 21 CFR part 11 USFDA compliant software with validation documents.
- Secured audit Trail.
- Multi level security password with aging and history.
- Electronic signature.
- Web based (Ethernet) online remote monitoring
- GSM alarm system (mobile alert)
- Data of door access security system in software with remote options.
- All the events, utility, working status, all the alarms are logged in the software.
- Records in graphical and in tabular form.
- Reports of mean Kinetic Temperature Reading.
- Works on 230V AC single phase 50Hz (country specific).
- Complete with extensive DQ, IQ, OQ and PQ protocols as per the International guidelines along with calibration certificates.



Web Based Software (SAIFIN53) - Remote Chamber and Room Management

Access Anywhere Anytime!! Around the Globe

Instantly connect and control your Stability Chambers and Rooms without installing software

For more than a decade, Meditech SAIFIN53 software has gained popularity among operators and end users for its reliability and ease. SAIFIN53 is available remotely via a web browser using internet facility. SAIFIN53 is designed to meet the increasing demands for improved efficiencies. This web based software also adds extra capabilities of data logging, user-configuration and features of all alarm notifications via SMS and Email.

Features

- Eliminate the need for multiple software installations and Qualifications
- Web based software accessible through browser
- Compatible with server-based OS, android, Windows-7/8/9/10
- Ensure one-time software installation on your plants server and access the software anytime, anywhere through a web browser from any Desktop/Laptop (same LAN Network)
- View Status, take printouts or execute any of your tasks from anywhere
- Department wise segregation of users, equipment & Data
- Harmonization of reporting format (header, footer, etc) and other such operations through the plant

Centralized user defined Alarms, alerts and Notifications through SMS & emails

Configure the type & no. of alarms to be sent via email/SMS & configure delay time too

Running time calculation of MKT and Moving Average Component running hours to determine the shelf-life of major components

Real-time display of all connected equipment in single screen

Automatic data backup facility

System Diagnosis for troubleshooting via Team Viewer

Ethernet communication with chambers

Complying US FDA 21 CFR Part 11

Key Features

- A Truly innovative data handling and communication options
- Plug and Play fashion via Ethernet to connect local or plant networked PC or Laptop
- One can view LIVE system parameters and historical graphs as well as receive alarms, reports, data log files over email
- Settings with just a standard browser
- Access live or stored data remotely within the facility (LAN network) or from anywhere in the world

Technical Data

Standard Model(S): Inside S.S.304 with mirror polish & outside mild steel powder coated.

GMP Model(G): Inside and outside with SS 304 matt buff.

Temp. Range /Accuracy.: 20°C to 60°C /± 0.2°C

Temp Uniformity : ± 2°C

Humidity Range/Accuracy.: 40% to 95% RH /± 2%

Humidity Uniformity : ± 3% RH

		Dimensions in meters					
Models	Capacity	Internal			External		
		W	D	H	W	D	H
MTBBR	ltrs.						
MTBBR80	8000	2	2	2	2.16	2.95	2.16
MTBBR125	12500	2.5	2.5	2	2.7	3.45	2.16
MTBBR187	18750	2.5	3	2.5	2.7	3.95	2.7
MTBBR225	22500	3	3	2.5	3.16	3.95	2.7

Note: Other sizes are available on request.

Above chambers are suitable for conditions such as 25°C/60% RH, 40°C/75% RH and 30°C/65% RH.

Low RH chambers are also available for conditions of 25°C/40% RH, 40°C/25% RH and 30°C/35% RH.

FEATURES AND FUNCTIONS

A REVOLUTIONARY MONITORING & ALARM SYSTEM



Secure audit trails

- Audit protection
- Provide certified proof of process control



View Data from Any part of the World

- Browser base application software
- view from PC, smart phones and tablets



Alarms

- Alarms for parameter deviation
- SMS Alerts
- Alarm log with acknowledgement and user comments
- Email alerts for supervisor

Wireless Display with Humidity, Temperature CO2 Sensors for Visibility and audit

USES : Freezers, Stability Chambers, Warehouse, Labs, Cold Rooms and Blood Banks

Audio and Visual Alarms for Settable Range

Compact size chart recorders and alarms system



Receive SMS and Email alarm notification.

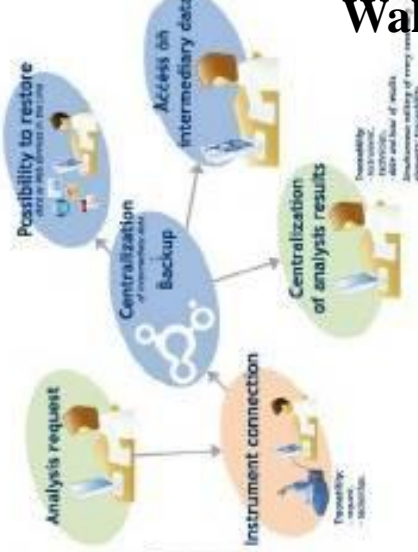
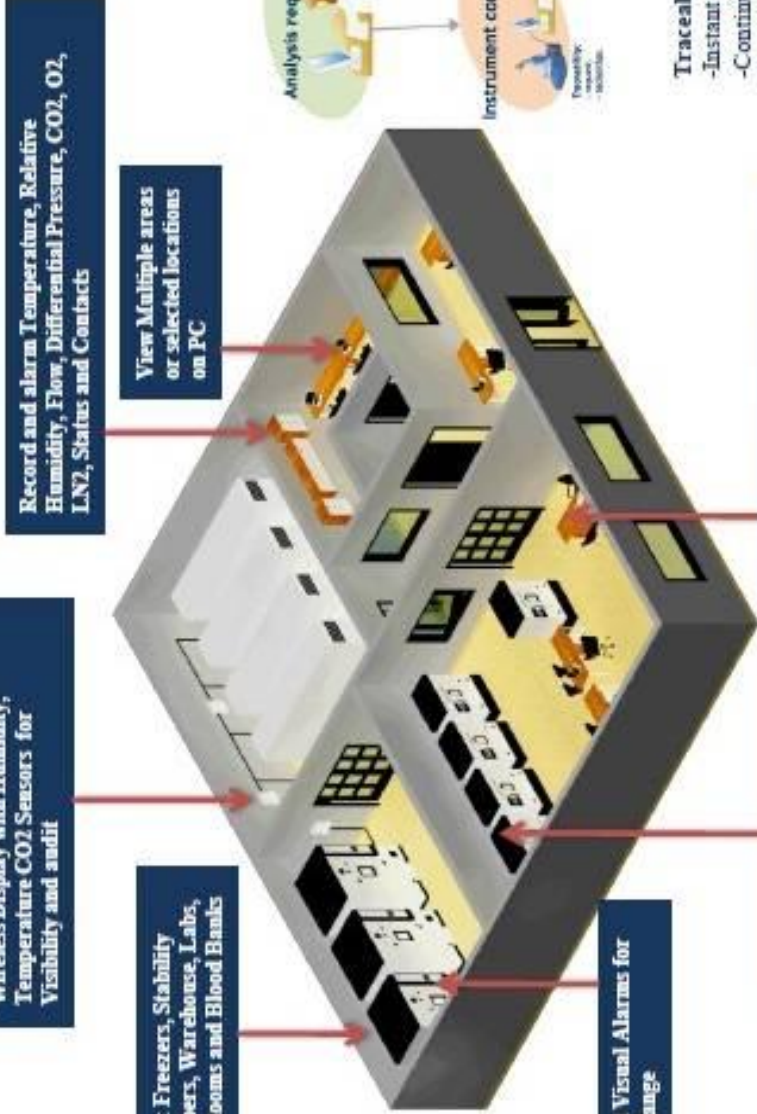
Record and alarm Temperature, Relative Humidity, Flow, Differential Pressure, CO2, O2, LN2, Status and Contacts

View Multiple areas or selected locations on PC

Data recorders are easy to relocate and swap for service and calibration

Say No To Manual Recording

- Error Free
- Separate signatures for data reviews & data approval
- No mistake in record maintaining
- Data analysis
- Tabular and graphical data representation



Traceability

- Instant response to data request
- Continues Data saving
- Data Protection and backups



Supervisor Function

- Alerts users for pending activity
- Escalates unattended issues to higher authority








Screen Shots of Touch Screen Controller



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16/02/15		PARAMETERS		17:50:31	
DESCRIPTION	VALUE	UNIT	DESCRIPTION	VALUE	UNIT
Heater On Time	±99999	Min			
Temp Set RTD1	±9999.9	°C			
Temp Set RTD2	±9999.9	°C			
Comp. Sel.	Comp1				
Comp 1 Time	±9999.9	Min			
Comp 2 Time	±9999.9	Min			

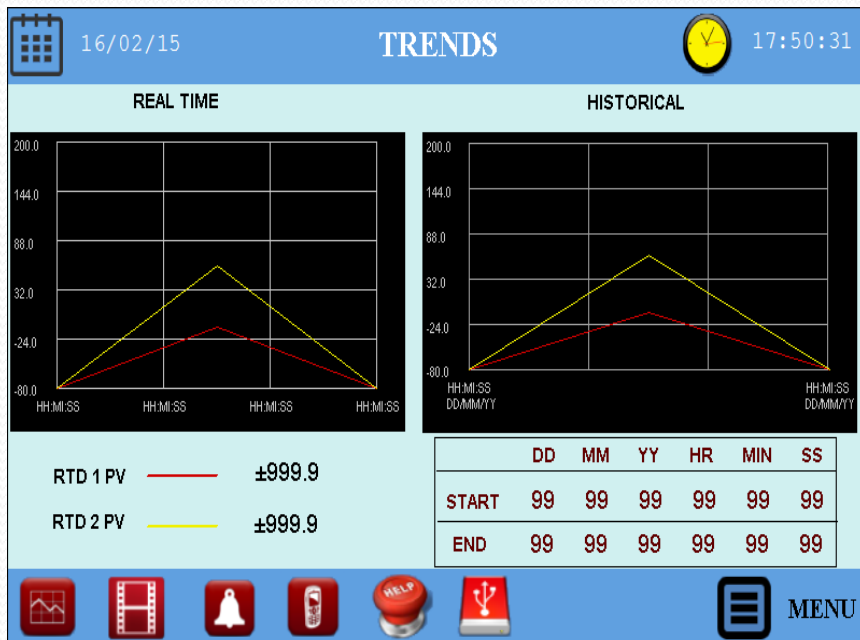
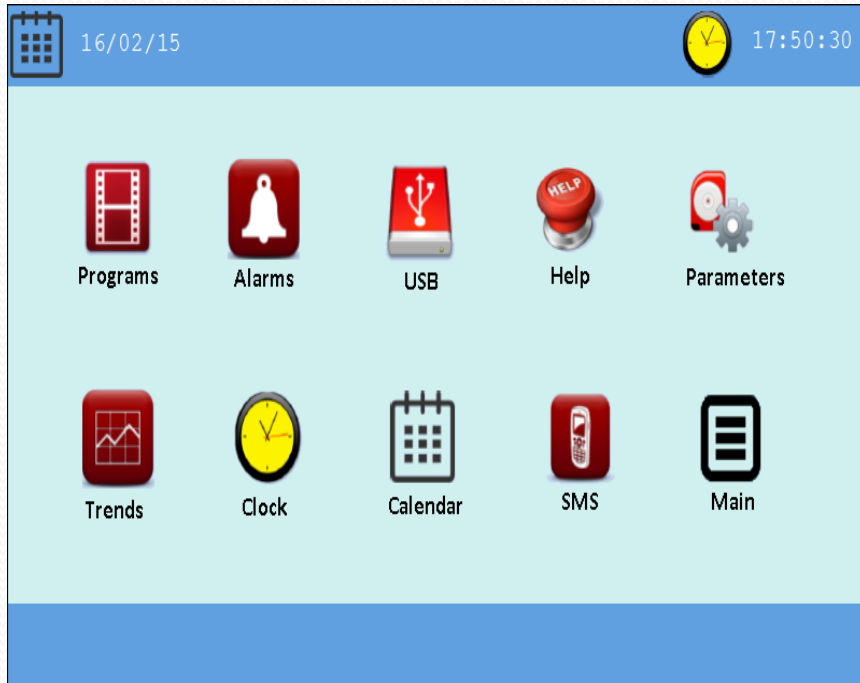







MENU

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Screen Shots of Touch Screen Controller



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