

Blood Bank Refrigerators



Blood Bank Refrigerators

Advance Blood Storage Solution from Meditech

Alarms – 12 Types

Inbuilt Battery Backup for 48 Hours (can be increased to 96 hours)

Inbuilt Cooling Back up for 24 Hours in case of power and technical failure

Inbuilt USB and Data Logger

Real Time Clock and Calendar Setting

Meditech is the largest Manufacturer and Exporter of Various types of Blood Bank Refrigerator in INDIA. Meditech offers the most advance and safe storage of Blood Components according to various international norms. All Blood Bank Refrigerators are lined with special Phase change material to provide 24 hours Cooling backup in case of power and technical failure and 48 hours of battery back up for controller and chart recorder. Meditech Refrigerators saves 51% electricity consumption from its power saving design and new vacuum insulation technique.

Working close with World Health Organization and Installation in Tropical areas. Solar Blood Bank Refrigerator is the most advance and carefully crafted for power crises area developed by Meditech. It has self regulating system which works on hybrid technology of Solar and Battery.

Pioneered in the Blood storage field , Meditech offers SCADA and Touch screen for refrigerators for easy management of Blood Bank using Modern Touch Screen Solution. Lab Operators have an option to maintain Blood inventory on refrigerators itself . Hence all activity of blood storage becomes hassle free and paperless. No need to maintain bulky records. All Software meets CFR21 Guidelines.

Various Types of Blood Bank Refrigerator Manufactured by Meditech are

- (1) Vertical Blood Bank Refrigerator**
- (2) Double Door Vertical Blood Bank Refrigerator**
- (3) Horizontal Blood Bank Refrigerator**
- (4) Solar Blood Bank Refrigerator**

- (1) All the above versions are manufactured with High Strength Steels.
- (2) All versions are inbuilt with Advanced PLC based LED Controller.
- (3) All the above Blood Bank Refrigerators are available in Touch screen configuration.
- (4) Glass Doors and Solid Doors are available in Vertical Series .
- (5) We accept OEM orders and can manufacture to any given specifications.

Blood Bank Refrigerators **G**reen Technology for life

Environmentally friendly blood bank refrigerator powered by Meditech Technology for safe storage of blood bags.

Stable Temperature Control

Temperature is controlled by two sensors located in the liquid-loaded **monitor bottles**, which are in the shape of a blood bag

Two thermistor sensors constantly monitor the temperature in both the upper and the lower part of chamber.

Microprocessor control ensures the most accurate temperature control available.



Multi air-flow plenum system ensures excellent temperature uniformity in larger capacity models.

Temperature-maintained defrost designed with thermal sensors and heaters on the evaporator, all under precise microprocessor control.



Designed to conform to AABB criteria, the series ensures stable and reliable temperature control utilizing Meditech original technology. A special highly efficient compressor designed and used by Meditech provides rapid cooling and quiet performance for each model.

Temperature Variations Prevented

The Meditech BBR Series is designed to minimize cold air loss even with frequent door openings.

Separated transparent inner doors minimize the chamber air leakage during door openings.

Foamed-in-place insulation in the walls and magnetic sealed outer doors with **double-pane glass window** prevent chamber air leakage and promote complete door closings

Large air circulation fan enables rapid temperature recovery after door openings

User Friendly Design

Selectable storage system **Fluorescent interior lamp** with ON/OFF switch and a **large view window** in the outer door provide a clear view of stored items

Eye Level Digital display is easy to see, and is calibratable through the control panel Filterless construction eliminates bothersome filter cleaning

Alarm and Safety Functions

To ensure the safety of precious blood supply, the Meditech Series provides the following safety functions

Audible and flashing LED visual alarms with remote alarm contacts, in case of power failure, high or low temperature

Door Alarm and key lock are standard features

Built-in temperature recorder.



Temperature-maintained defrost designed with thermal sensors and heaters in the evaporator, all under precise microprocessor control.

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Refrigeration System

- Heavy-duty, air-cooled refrigeration system with non-CFC R134A refrigerant provides high efficiency and is environmentally friendly.
- Forced-air circulation maintains chamber uniformity of $\pm 1^{\circ}\text{C}$ and provides quick recovery after door openings
- No defrost cycle required to maintain constant temperature
- Auto condensate evaporation
- Evaporator fan(s) shut off during door openings to maintain stable temperatures

Cabinet Construction

- Bacteria resistant stainless interior, exterior, and door handle(s)
- Ergonomic door handle is padded for comfort
- Superior engineered frame for maximum rigidity
- Dual-pane glass door(s) with ADA compliant full-length handle
- Sure Seal self closing door with magnetic closure
- LED lighting with control panel mounted switch
- Auto ON/OFF¹
- Minimum of 4" (100mm) non-CFC foamed urethane insulation
- Swivel locking casters
- Access port located in top of cabinet for external monitoring probe(s)
- Recessed floor contains spills for easy clean-up
- Hospital grade plug and cord

Storage

- Stainless steel pull-out drawers
- Durable, liquid-tight construction for containment of spills
- Stainless steel drawer standards guard against rust and corrosion
- Easy access to inventory with fully extendable drawer slides
- Scratch Guard edge protectors keep glass doors from being scratched by drawers
- Tube Guard drawer shields minimize the risk of tube damage

Chart Recorder

- 6" (150 mm) chart recorder with 7-day circular charts
- Inkless, pressure-sensitive chart paper (-5°C to $+20^{\circ}\text{C}$)
- Battery backup for 48 Hours
- Button controls for chart changes and calibration



Guidelines for Solar Bank Refrigerators



Environmentally friendly blood bank refrigerator powered by Meditech Technology for safe storage of blood bags.

Specification Reference: BTS/RFS.3

Purpose of Equipment: A refrigerator for the storage of whole blood/red cell packs in a blood bank

Type of Equipment: Compression refrigerator which uses CFC free refrigerant gas and electricity from solar energy

Laboratory Test Procedure: Standard Test Procedure: BTS/ Proc/ 5

Construction: Chest type

Internal : Stainless Steel 304 lining

External: Corrosion Resistant (CR at least 1mm thickness) CFC-free insulation

Blood pack racks for easy packing or retrieval of packs

Solid door

Electrical Characteristics: Input voltage: Direct Current to Required Voltage

Equipment meets electrical safety specifications such as that of IEC

Minimum Compressor Starting Voltage: 22% below nominal voltage

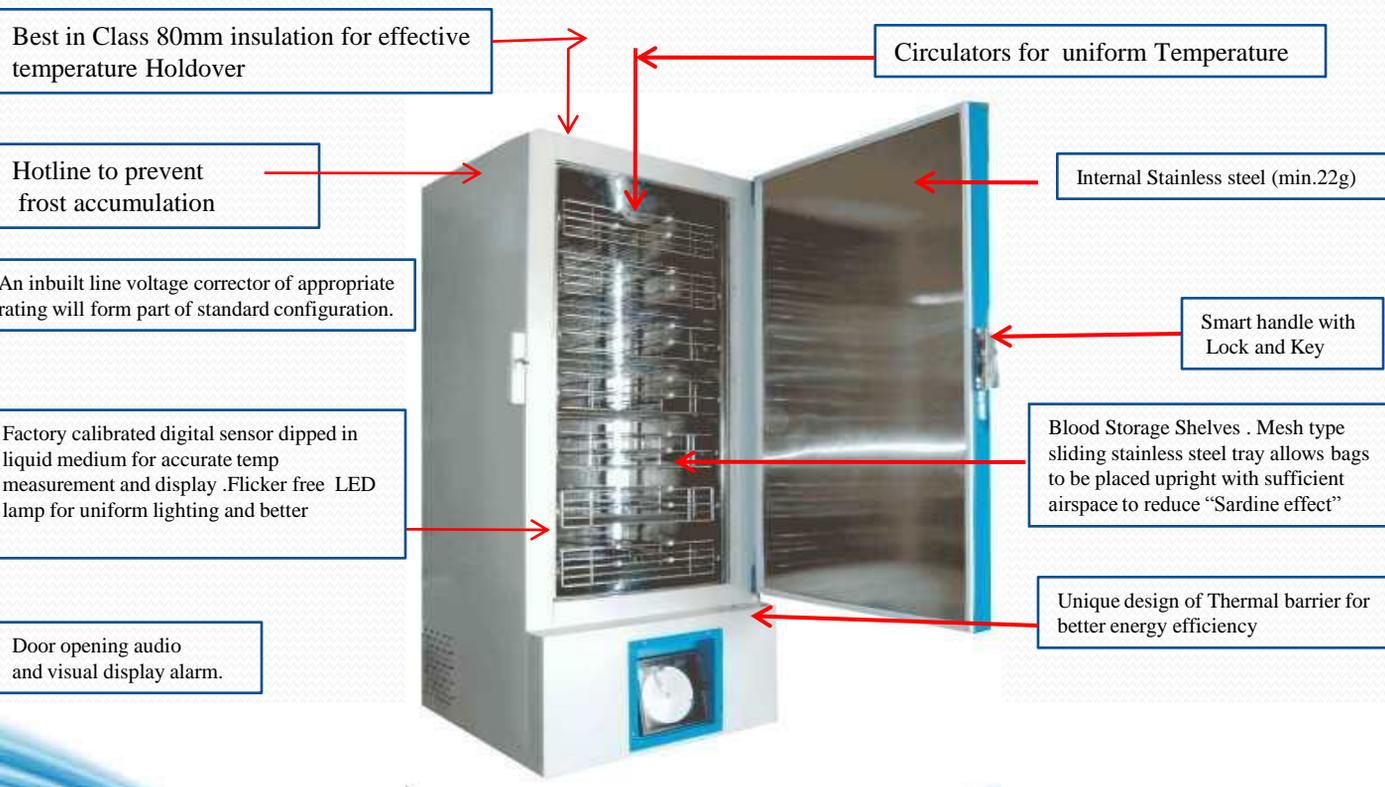
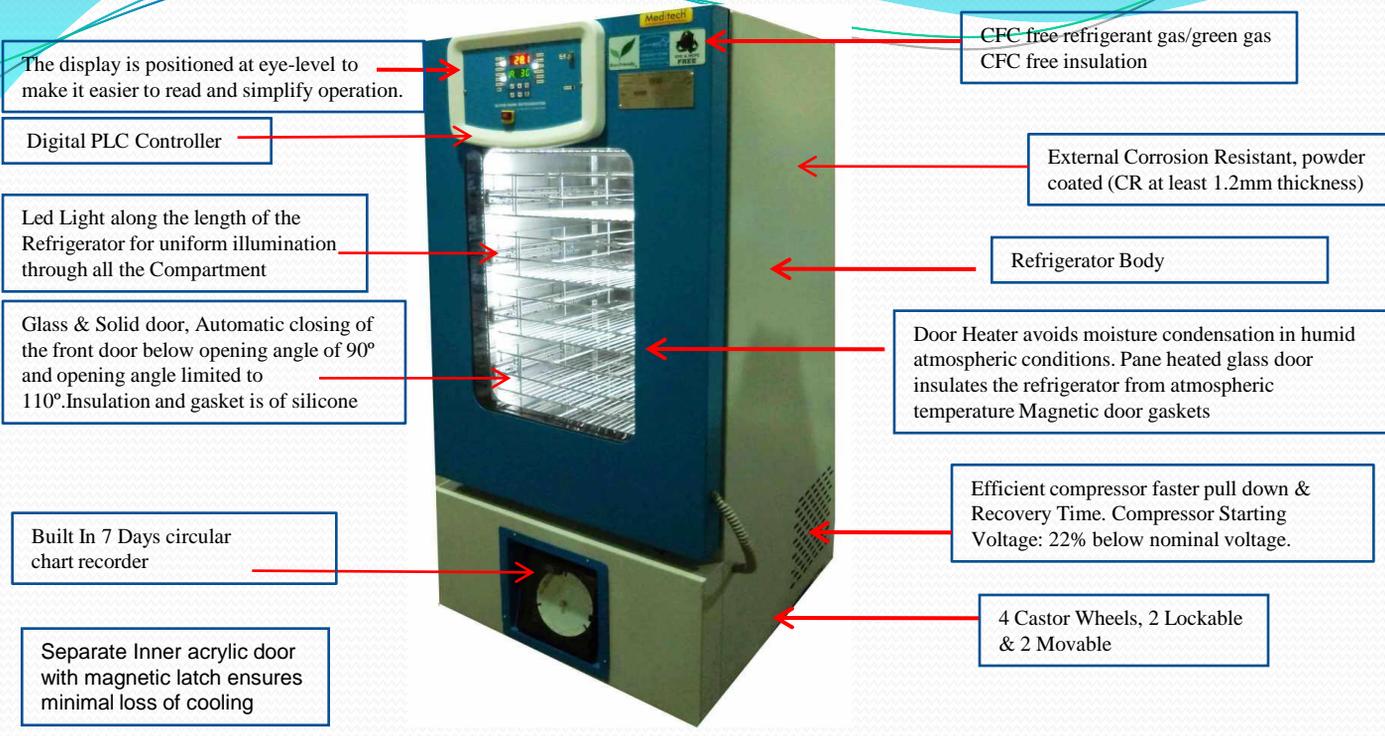
Internal Temperature Control: Electronic temperature control,

range +2 °C to +6 °C with setting accuracy of $\pm 1^{\circ}\text{C}$

whatever the load

Know your machine

Equipment meets electrical safety specification such as that of IEC (Class I)



Advance PLC Based LED Controller



LED CONTROLLER

Blood Bank Refrigerators



Advance LED based PLC Based Controller



LED INDICATION

1. Line In
2. Power
3. Comp On
4. Heater On
5. Battery On
6. Battery Low
7. Temp High
8. Temp Low
9. Power Fail
10. Sensor Fail
11. Chart Change
12. System On

Scrolling LIVE Data logger on LED screen

1. Temperature
2. Incoming Voltage
3. Ambient Temperature
4. Time in hours of revolution chart
5. Current Date
6. Current Time
7. Battery Voltage

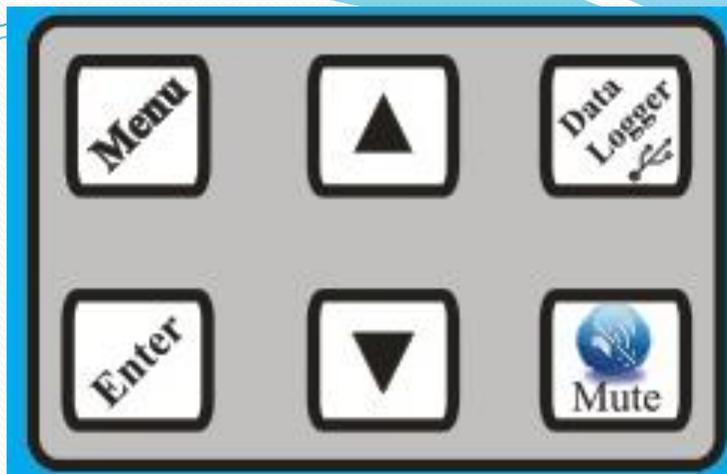
User Friendly Settings

1. Date
2. Time
3. High Temp Alarm
4. Low Temp Alarm
5. Hysteresis
6. Compressor Delay

6.0 LED Indicators

Sl.No	Photos	Function Indication
1.		This LED is on when there is a power supply to the machine from the main source
2		This LED is on when the Controller is in working condition.
3		This LED is on when the compressor is in working condition
4		This LED is on when the heater is in working condition
5		This LED is on when the battery is in working condition
6		This LED is on when the battery is discharged
7		This LED is on when the inside compartment temperature of the refrigerator is high above the set temp
8		This LED is on when the inside compartment temperature of the refrigerator is Low below the set temp
9		This LED is on when there is power failure.
10		This LED is on when there is sensor fail
11		This LED is on when after 162 hours of charge change (6 hours before the completion of 7 days)
12		This LED is on when all functions of the System is in working condition

7.0 Keypad Functions



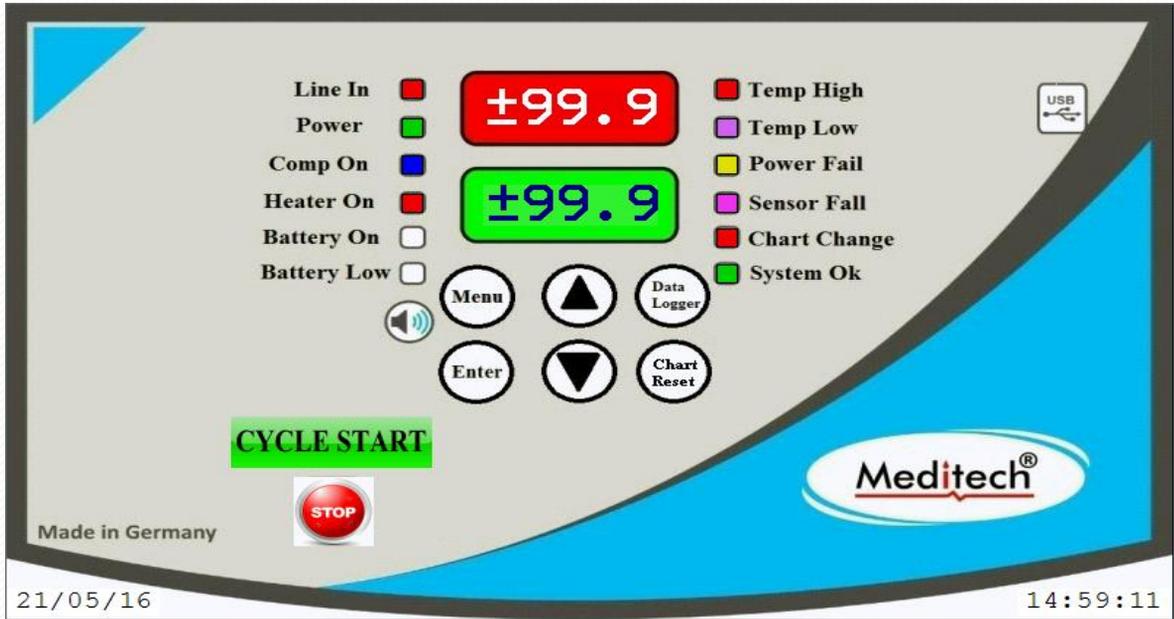
Sl.No	Photos	Function Indication
1		The Menu button is pressed to enter into MENU option.
2		The Enter button is pressed to enter into “ENTER” option.
3		The Up Arrow button is pressed to go Upwards in the menu option.
4		The Down Arrow button is pressed to go Downwards in the menu option.
5		The data logger is pressed to get the data from the PLC to the computer
6		The MUTE button is pressed to MUTE any Alarms and sounds
7		The Door Open LED is activated along with the buzzer sound indicating the Door Open function
8		The ON button is pressed to switch on the refrigerator
9		The USB is provided to connect the Refrigerator to the computer system.

PLC Touch Screen 7 inch based LED Controller



**TOUCH SCREEN
CONTROLLER**

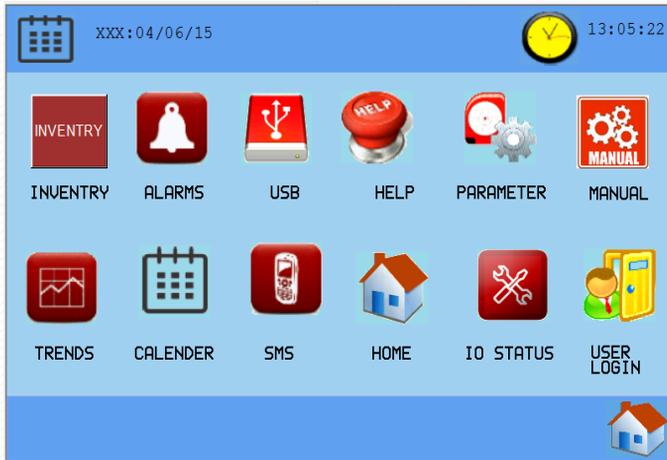
Touch Screen LCD Controller



Blood Bank Refrigerators

Environmentally friendly blood bank refrigerator powered by Meditech Technology for safe storage of blood bags.

TOUCH SCREEN FUNCTIONS



INVENTORY: Now maintain inventory of Blood Groups Electronically. No need of bulky registers and manual confusion. Meditech Helps to maintain Blood groups row wise , tray wise and partition wise so that the touch screen always displays the current stock in Refrigerator. Also Meditech screen displays blood stock group wise such as A, A+, B+, B-, AB+, AB-, O+ and O-

SCADA software is also available for full Blood Bank management system.

ALARMS: Low Temperature and high temperature alarms history and graphs can be viewed or printed or transferred using PEN Drive.

USB: USB Menu helps to transfer all logs to a flash PEN Drive

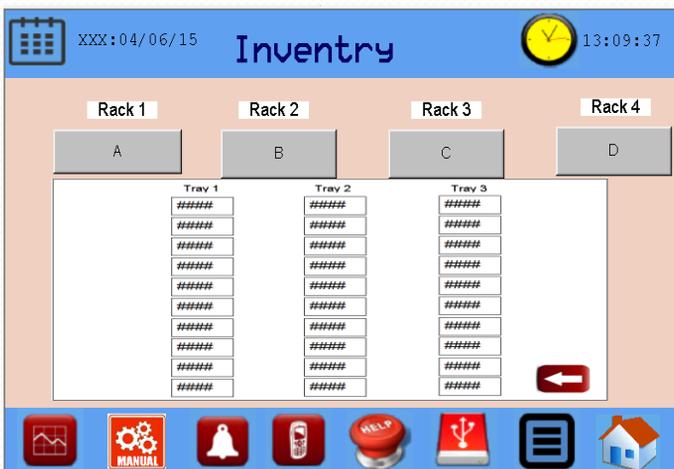
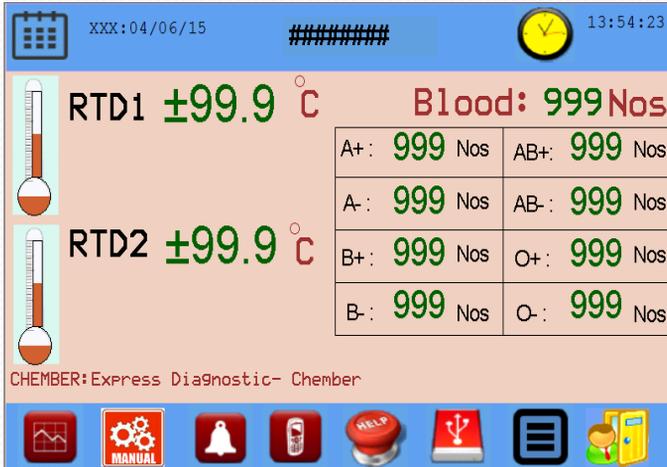
TRENDS: This Menu displays higher and lower temperature parameters with time in Historical and Real Time.

CALENDAR: Time and Date can be set using this MENU

SMS: This MENU is set to sent SMS of all critical parameters to a predefined number

IO STATUS: This MENU is used at the time of trouble shooting

USER LOGIN: Keep you Refrigerator and data protected with passwords. User are created using this MENU



RM-Series

Please mention following code while ordering. **W-Glass Door** , **S- Solid Door**

(A) Advance PLC based LED Controller – Ordering code : A

(B) Advance Touch Screen based 7 inches PLC Controller – Order Code: B

Technical Specification					
Particulars	MTBBR1	MTBBR2	MTBBR3	MTBBR4	MTBBR5
Display	LED				
Internal Dimensions W x D x H [mm]	540 x 520 x 650	660 x 765 x 650	660 x 765 x 850	660 x 765 x 1050	660 x 765 x 1250
External Dimensions W x D x H [mm]	640 x 685 x 1185	800 x 945 x 1205	800 x 945 x 1435	800 x 945 x 1635	800 x 945 x 1835
Capacity [Liters]	120	215	310	410	500
Capacity of Blood Bags [450 ml/350 ml]	56 / 72	120 / 150	180 / 225	240 / 300	300 / 375
Number of Drawers	2	2	3	4	5
Drawer Capacity	Maximum 28 / 36 bags	Maximum 60 / 75 bags			
Temperature	Preset at 4°C ± 1°C				
Temperature Alarm	High 6°C & Low 2°C, Audio Visual Alarm				
Internal Body Material	Stainless Steel 304 (AISI Grade, Non Corrosive, Non Magnetic)				
External Body Material	Powder Coated CRCA Steel				
Insulation	100mm Cabinet & Door	100 mm minimum for Body & 100 mm for for Door, CFC free polyurethane foam			
Illumination	Fluorescent Lamp				
Recorder	Seven Days Circular Chart Recorder				
Noise Level	Less Than 65 db(A)				
Battery Backup (Controller)	Rechargeable, Fully charged Sealed Maintenance Free battery runs for more than 48 Hours				
Line Voltage Corrector	In built of suitable rating				
Power Failure Alarm	Audio Visual Alarm				
Electrical	220-240 Volts, 50 Hz, SINGLE PHASE				

TP-Series

Please mention following code while ordering. **W-Glass Door** , **S- Solid Door**

(A) Advance PLC based LED Controller – Ordering code : A

(B) Advance Touch Screen based 7 inches PLC Controller – Order Code: B

Model	MTBBR1	MTBBR2	MTBBR3
Type	Vertical		
Effective storage volume	165 Litre	300 Litre	600 Litre
Total storage capacity	96 nos of 450ml blood bags	144 nos of 450ml blood bags	300 nos of 450ml blood bags
Storage capacity per tray	24 nos of blood bags per tray	24 nos of blood bags per tray	60 nos of blood bags per tray
Trays (removable type)	4 stainless steel slide out trays	6 stainless steel slide out trays	5 stainless steel slide out trays
Acrylic door	2 doors of 5mm clear acrylic	3 doors of 5mm clear acrylic	3 doors of 5mm clear acrylic
Acrylic door hinge	Aluminum casting		
Acrylic door ring	SS 304		
Dimensions (external with caster wheel (W x D x H) in mm	600 x 630 x 1340	600 x 630 x 1785	810 x 905 x 1750
Dimensions (internal) (WxDxH) in mm	510 x 480 x 900	510 x 500 x 1360	705 x 770 x 1200
Door	Glass Door: Triple pane door glass fitted in door-frame made of 1 8swg CR Sheet, powder coated with structure finish and filled with formed in position PUF . Solid Door: of 1 8swg CR Sheet, powder coated with structure finish and filled with formed in position PUF		
Miniature Circuit Breaker (MCB)	240V / 10 A		
Cabinet material	18 swg CR Sheet - powder coated		
Inner chamber	22 SWG Stainless Steel Sheet		
Input voltage of BBR	160 - 270 V, 50Hz, single phase AC		
Stabilizer	1KVA Built in stabilizer		
Chamber temperature range	2°C to 6°C		
Air circulation inside the chamber	Continuously operated forced air circulation using the evaporator fan		
Slide out rail	Heavy duty telescopic rail		
Lamp	CF Lamp 14W / LED Lamp		
Compressor	Hermetically sealed compressor		
Refrigerant	R134a		
Wheels	Caster wheels		
Temperature sensing method	Encapsulated digital sensor dipped in 0.25% glycerine solution kept in a plastic bottle		
Temperature controller	Temperature Recorder and Control Unit (TRCU)		
Accuracy of temperature sensor	(+/- 0.5°C)		
Display	4x7 segment LED (red)		
Display resolution	0.5°C		
Alarms & Indications	Line in	Visual	
	Power	Visual	
	Compressor ON	Visual	
	Heater ON	Visual	
	Temperature High	Audio - Visual	
	Temperature Low	Audio - Visual	
	Door open	Audio - Visual	
	Battery Low	Visual	
	Battery ON	Visual	
	Power failure	Audio - Visual	
	Sensor failure	Audio - Visual	
	Chart change	Visual	

1. Meditech can manufacture freezers according to customer Specifications and size
2. Full SS Body with life time warranty available on customer demand

Double Door -Series

Please mention following code while ordering. **W-Glass Door** , **S- Solid Door**

(A) Advance PLC based LED Controller – Ordering code : A

(B) Advance Touch Screen based 7 inches PLC Controller – Order Code: B

Model	MTBBR1-D	MTBBR2-D	MTBBR3-D
Type	Vertical		
Effective storage volume	990 Litres	1275 Litres	1586 Litres
Total storage capacity	600 nos of 450ml blood bags	728 nos of 450ml blood bags	1008 nos of 450ml blood bags
Trays (removable type)	12 stainless steel slide out trays	14 stainless steel slide out trays	14 stainless steel slide out trays
Acrylic door	2 doors of 5mm clear acrylic	3 doors of 5mm clear acrylic	3 doors of 5mm clear acrylic
Acrylic door hinge	Aluminum casting		
Acrylic door ring	SS 304		
Dimension External (W x D x H) in mm	762 x 990 x 2020	750 x 1505 x 2020	902 x 1505 x 2020
Dimensions Internal (WxDxH) in mm	616 x 890 x 1780	616 x 1397 x 1480	769 x 1397 x 1480
Door	Glass Door: Triple pane door glass fitted in door-frame made of 1 8swg CR Sheet, powder coated with structure finish and filled with formed in position PUF . Solid Door: of 1 8swg CR Sheet, powder coated with structure finish and filled with formed in position PUF		
Miniature Circuit Breaker (MCB)	240V / 10 A		
Cabinet material	18 swg CR Sheet - powder coated		
Inner chamber	22 SWG Stainless Steel Sheet		
Input voltage of BBR	160 - 270 V, 50Hz, single phase AC		
Stabilizer	1KVA Built in stabilizer		
Chamber temperature range	2°C to 6°C		
Air circulation inside the chamber	Continuously operated forced air circulation using the evaporator fan		
Slide out rail	Heavy duty telescopic rail		
Lamp	CF Lamp 14W / LED Lamp		
Compressor	Hermetically sealed compressor		
Refrigerant	R134a		
Wheels	Caster wheels		
Temperature sensing method	Encapsulated digital sensor dipped in 0.25% glycerine solution kept in a plastic bottle		
Temperature controller	Temperature Recorder and Control Unit (TRCU)		
Accuracy of temperature sensor	(+/- 0.5°C)		
Display	4x7 segment LED (red)		
Display resolution	0.5°C		
Alarms & Indications	Line in	Visual	
	Power	Visual	
	Compressor ON	Visual	
	Heater ON	Visual	
	Temperature High	Audio - Visual	
	Temperature Low	Audio - Visual	
	Door open	Audio - Visual	
	Battery Low	Visual	
	Battery ON	Visual	
	Power failure	Audio - Visual	
	Sensor failure	Audio - Visual	
	Chart change	Visual	

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Horizontal Series

Only S- Solid Door

(A) Advance PLC based LED Controller – Ordering code : A

(B) Advance Touch Screen based 7 inches PLC Controller – Order Code: B

Model	MTBBR1	MTBBR2	MTBBR3	MTBBR4	MTBBR5
Type	Horizontal				
Total Blood storage capacity	100 nos of 450ml bags	165 nos of 450ml bags	288 nos of 450ml bags	360 nos of 450ml bags	504nos of 450ml bags
Basket (removable type)	3 stainless steel Mesh Type	5 stainless steel Mesh Type	7 stainless steel Mesh Type	7 stainless steel Mesh Type	8 stainless steel Mesh Type
Door	Door fitted in door-frame made of 1.8mm CR Sheet, powder coated with structure finish and filled with formed in position PUF				
Miniature Circuit Breaker (MCB)	240V / 10 A				
Cabinet material	High Strength Galvannealed Bacteria Resistant Sheet - powder coated				
Inner chamber	Stainless Steel Sheet 304				
Input voltage of BBR	160 - 270 V, 50Hz, single phase AC				
Stabilizer	1KVA Built in stabilizer				
Chamber temperature range	2°C to 8°C adjustable with 0.1 degree C Resolution.				
Air circulation inside the chamber	Continuously operated forced air circulation using the evaporator fan				
Lamp	CF Lamp 14W / LED Lamp				
Compressor	Hermetically sealed compressor				
Refrigerant	R134a				
Wheels	Caster wheels				
Temperature sensing method	Encapsulated digital sensor dipped in 0.25% glycerin solution kept in a plastic bottle				
Temperature controller	Temperature Recorder and Control Unit (TRCU)				
Accuracy of temperature sensor	(+/- 0.1°C)				
Display	4x7 segment LED (red)				
Display resolution	0.1°C				
Alarms & Indications	Line in				Visual
	Power				Visual
	Compressor ON				Visual
	Heater ON				Visual
	Temperature High				Audio - Visual
	Temperature Low				Audio - Visual
	Door open				Audio - Visual
	Battery Low				Visual
	Battery ON				Visual
	Power failure				Audio - Visual
	Sensor failure				Audio - Visual
Chart change				Visual	

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SCADA system for Blood Bank Centre

Blood Bank UI
Meditech Blood Bank

Freezer 12
127.0.0.1
Total Blood Bags = 2
Capacity = 672
Current Temperature °C
Location - Main Building
Incharge - Smith
Disconnected

priya
127.0.03
Total Blood Bags = 0
Capacity = 120
Current Temperature °C
Location -
Incharge -

Donors
Screening
Preparation
Storage
Patient Details
Blood Request
Blood Issue
Freezer
User
Setting

Active Alarms (2)
Freezer 12 temp1 : 45083
MaxReached : 10/11/2015 9:35:09 AM
9/22/2015 4:47:49 PM
Freezer 12 temp : 45081
MinReached : 9/22/2015 4:47:45 PM
9/22/2015 4:47:38 PM

See All Active Alarms
UnAcknowledge Alarms (0)
See All UnAcknowledge Alarms

1
2
3

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