B
RANGE

Blood Bank Refrigerators

B Medical Systems | B Range

Blood Bank Refrigerators are devices intended for the safe storage of whole blood and blood components at temperatures ranging from +2°C to +6°C.

Compliant to DIN 58371 | ÖNORM K 2030 | AABB Standards | Medical Device according to 21CFR Part 864.9700, Class II

9 MODELS

+4°C TEMPERATURE

31 > 750 BLOOD BAGS (350ml)

SN SN/T CLIMATE CLASS

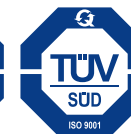**AABB STANDARDS-COMPLIANT**

ï B medical systems

SAVING LIVES THROUGH RELIABLE AND INNOVATIVE TECHNOLOGY

Blood Management Solutions

Safety Standards
B Medical Systems

DIN 58371 | ÖNORM K 2030 | CE 0123

The Safety Standards developed by B Medical Systems define certain significant technical features of a product. These ensure the safe storage of the preparations as well as setting the highest standards of safety for the user.

PRECISION LINE	PREMIUM LINE	
●	●	B Medical Systems Electronics
●		B Medical Systems digital display
	●	B Medical Systems 7'' full touchscreen display
●		Safety door lock (with 2 keys) and key-operated power switch ON/OFF (with 2 keys)
●	●	Power indicator light and digital temperature indicator (display: 0.1 digits)
●	●	Controlled fan cooling system for constant temperature and even temperature distribution across the entire refrigerating chamber [not applicable for model BF261 (Freezer compartment)]
●	●	Automatic switch-off of the evaporator fans when the door opens [not applicable for model BF261 (Freezer compartment)]
●	●	Self-contained alarm system with integrated battery takes over the alarm function and temperature value measurements in case of system failure for at least 48 hours
●		Acoustic and visual alarm signal in case of temperature alarm and system failure
		The alarm history function on the electronic stores all the relevant values during a temperature alarm, such as: min., max., average temperature and alarm duration
●	●	Remote transmission alarm signal (via potential-free contact) in case of temperature alarm (change-over contact)
●	●	Safety thermostat prevents dropping of the temperature below +2°C
●	●	Door opening alarm (visual / acoustic)
●		Designed and tested for climatic class SN (ambient temperature range +10°C to +32°C)
	●	Designed and tested for climatic class SN / T (ambient temperature range +10°C to +43°C)
	●	Interior made from stainless steel
●	●	Internal LED lighting
●	●	Additional remote transmission alarm signal (via potential-free contact) in case of system failure (change-over contact)
	●	Smooth castors for optimum flexibility of movement
	○	Ambient temperature sensor
○	●	°B Connected - Universal software for the monitoring of refrigeration devices, including the acquisition, recording and visualization of temperature data
○		DCU (Data Communication Unit) - Hardware module monitoring all operating conditions and passing them through to a central database – via local network (in combination with °B Connected)
	●	Ethernet interface for the visualization of all operating and control functions (hardware and software settings) via °B Connected monitoring software on a peripheral device (computer)

● Standard ○ Optional

Subject to change without prior notice.

Blood Bank Refrigerators

B Medical Systems | B Range

> **Blood Bank Refrigerators are devices intended for the safe storage of whole blood and blood components at temperatures ranging from +2°C to +6°C** with multiple controls, warning and data recording safety features developed as a result of 40 years of expertise in refrigeration technology.

9 models • Volume **1.8 > 31.6 cu ft** • Set temperature **+4°C** • Climate class **SN | SN/T** • Compliant to **DIN 58371 | ÖNORM K 2030 | 21CFR Part 864.9700, Class II | AABB Standards**
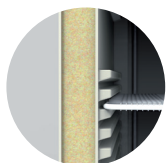
In conformity with national and international guidelines, regulations for Medical Devices offering reliability, efficiency and safety at an optimal price.

MODELS B51-131-291-381 & BF261 | **PRECISION LINE**

Integrated multifunction monitoring electronics

Integrated B Medical Systems multifunction electronics; with easy access in the door level; offers alarms, central alarm system, set point security, battery backup, full display and many other control features; compatible with °B Connected solution for data monitoring and recording.
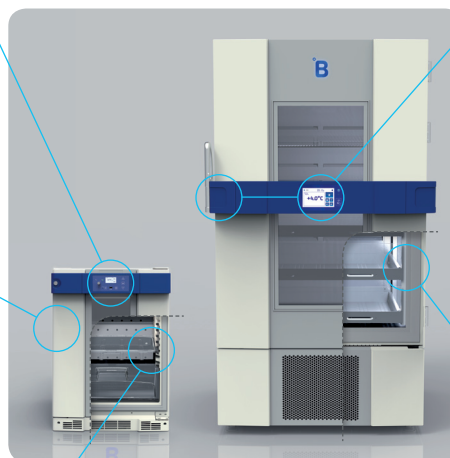
Lifetime warranty corrosion-free cabinet

• One piece material cabinet with a lifetime warranty for zero corrosion, highest quality polypropylene for better insulation and no sharp edges to provide easier maintenance and cleaning

• Smart ergonomy - Easier and safer handling because of heavier components placed at the bottom
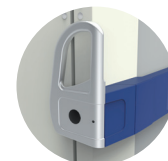
High storage capacity

High storage per square meter in terms of net volume, with a very versatile inner volume utility due to multiple user friendly rails allowing modularity.

Exclusive integrated electronics handle bar *(Patent pending)*

All functionalities are easily accessible:

• Digital control with full functionalities - New B Medical Systems 7'' full touchscreen display integrated at optimal level in the door handle with pre-installed connection allowing exclusive °B Connected monitoring functionalities

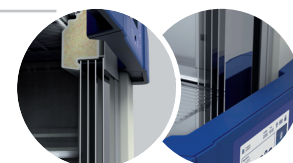• Open/close - Heavy duty door lock mechanism

High quality materials

New high quality coating, certified medical devices quality and antibacterial, high quality steel for better longevity and easy hygiene control.

Versatile modularity

Excellent storage capacity and modularity - Large choice of shelves and drawers offering modularity for every need.

Highest insulation value (organic glass door)

4-layer (Precision Line) and 5-layer (Premium Line) PMMA organic glass offering highest insulation, combined with reduced weight reducing efforts to close door and constraints on hinges, offering better longevity.
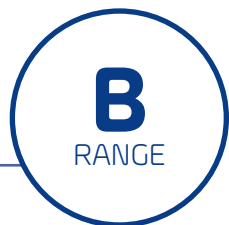
MODELS B401-501-701-901 | **PREMIUM LINE**

Subject to change without prior notice. Some of the accessories shown in the pictures are optional.

SAVING LIVES THROUGH RELIABLE AND INNOVATIVE TECHNOLOGY

B
RANGE

Technical Data
General features

	B51	B131	B291	B381	BF261	Refrigerator & Freezer combined
Gross / Net volume (cu ft)	1.8 / 1.6	4.3 / 3.7	10.5 / 9.5	12.8 / 11.6	R I 4.3 / 3.7	F I 4.3 / 3.7
Storage capacity (blood bags)	24 (450ml) 31 (350ml)	51 (450ml) 79 (350ml)	159 (450ml) 235 (350ml)	213 (450ml) 313 (350ml)	51 (450ml) 79 (350ml)	64 (plasma bags at 450ml) 104 (plasma bags at 350ml)
Set temperature (preset)	+4°C					-32°C
Preset cold / warm alarm limit	+2°C / 6°C					-37°C / -27°C
Hold over time	2.5 h (+4°C to +10°C)	2.7 h (+4°C to +10°C)	2.2 h (+4°C to +10°C)	1.9 h (+4°C to +10°C)	2.7 h (+4°C to +10°C)	0.7 h (-32°C to -23°C)
Climate class (ambient temperature range)	SN (+10°C to +32°C)					
Defrosting technique	Natural					Manual
Refrigerant type	R600a					R290
External dimensions H x W x D (in)	26.4 x 19.5 x 22.6	32.7 x 23.4 x 27.4	65.8 x 23.4 x 27.4	78.0 x 23.4 x 27.4	65.0 x 23.4 x 27.4	
Inner dimensions H x W x D (in)	18.5 x 14.8 x 13.8	24.8 x 18.7 x 18.5	57.9 x 18.7 x 18.5	70.5 x 18.7 x 18.5	24.8 x 18.7 x 18.5	24.8 x 18.7 x 18.5
Net weight with standard equipment (lb)	84	126	212	240	258	

Energy Saver	*Supply voltage (V)*	220-240	115-127	220-240	115-127	220-240	115-127	220-240	115-127	220-240	115-127	220-240	115-127
	Frequency (Hz)	50 / 60	60	50 / 60	60	50 / 60	60	50 / 60	60	50 / 60	60	50 / 60	60
	Power (W)	100	100	200	200	200	200	200	200	200	200	300	360
	Energy consumption (kWh/24h)	0.42 / 0.44	0.50	0.85 / 0.86	0.68	1.13 / 1.21	0.99	1.22 / 1.28	1.06	0.85 / 0.86	0.68	1.35 / 1.28	1.98
	Heat emission (Kcal/h)	12	12	27	24	34	34	41	34	27	24	53	65
	Compressor running time (%)	32	31	28	34	33	46	35	42	28	34	37	36
	Noise level (dB(A)) (at 1m height & 1m distance)	35 / 36	37	35 / 36	38	38 / 40	39	40	38	35 / 36	38	45 / 47	47

All values were measured at +25°C ambient temperature and without load (with inertial mass). Hold over time measured at +20°C ambient temperature (acc. to DIN 58371). Subject to change without prior notice. Some of the accessories shown in the pictures are optional. The figures are approximate, and may vary based on the number of bags that are actually stored and the different bag manufacturers' specifications available on the market, the actual bag sizes as well as the individual user's practice of loading.

B
RANGE

Technical Data
General features

	B401		B501		B701		B901	
Gross / Net volume (cu ft)	15.9 / 13.6		21.1 / 18.0		26.4 / 22.5		31.6 / 26.9	
Storage capacity (blood bags)	270 (450ml) 375 (350ml)		360 (450ml) 500 (350ml)		450 (450ml) 625 (350ml)		540 (450ml) 750 (350ml)	
Set temperature (preset)	+4°C							
Preset cold / warm alarm limit	+2.5°C / +5.5°C							
Hold over time	2.5 h (+4°C to +10°C)		2.8 h (+4°C to +10°C)		2.8 h (+4°C to +10°C)		2.7 h (+4°C to +10°C)	
Climate class (ambient temperature range)	SN / T (+10°C to +43°C)							
Defrosting technique	Natural							
Refrigerant type	R600a							
External dimensions H x W x D (in)	78.3 x 27.5 x 40.9		78.3 x 33.3 x 40.9		78.3 x 39.1 x 40.9		78.3 x 44.8 x 40.9	
Inner dimensions H x W x D (in)	46.0 x 17.6 x 28.1		46.0 x 23.2 x 28.1		46.0 x 29.1 x 28.1		46.0 x 34.9 x 28.1	
Net weight with standard equipment (lb)	454		503		553		602	

Energy Saver		B401		B501		B701		B901	
	Supply voltage (V)	220-240	115-127	220-240	115-127	220-240	115-127	220-240	115-127
	Frequency (Hz)	50 / 60	60	50 / 60	60	50 / 60	60	50 / 60	60
	Power (W)	300	300	300	300	300	300	300	300
	Energy consumption (kWh/24h)	1.50 / 1.50	1.40	1.50 / 1.50	1.40	1.50 / 1.60	1.40	1.60 / 1.70	1.40
	Heat emission (Kcal/h)	36	30	35	35	36	35	41	36
	Compressor running time (%)	27	25	26	29	27	29	29	30
	Noise level (dB(A)) (at 1m height & 1m distance)	46 / 49	52	47 / 51	50	50 / 51	46	47 / 47	46

All values were measured at +25°C ambient temperature and without load (with inertial mass). Hold over time measured at +20°C ambient temperature (acc. to DIN 58371). Subject to change without prior notice. Some of the accessories shown in the pictures are optional. The figures are approximate, and may vary based on the number of bags that are actually stored and the different bag manufacturers' specifications available on the market, the actual bag sizes as well as the individual user's practice of loading.

SAVING LIVES THROUGH RELIABLE AND INNOVATIVE TECHNOLOGY

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Technical Data
Specifications

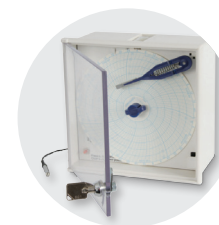|	B51-131 & BF261		B291-381	B401-501-701-901
Regulation sensor *Precision (from -80°C to +180°C) ± 0.3°C*	NTC			PT1000
Display sensor *Precision (from -80°C to +180°C) ± 0.3°C in reference body / 100 ml DOW corning 200-5CST (Silicon Oil)*	NTC			PT1000
Accu data / function time of the control panel when system failure	12 V - 2.3 AH / 48h			12 V - 7 AH / 48h
Relative humidity at +32°C	≤ 75%			
Door insulation (polyurethane)	3.23 in PU with 4-Layer PMMA organic glass			2.56-3.23 in PU with 5-Layer PMMA organic glass
Cabinet insulation (polyurethane)	2.36-2.56 in PU			3.03-3.23 in PU
Material — Inner body	Polypropylene (copolymer UV)			Stainless steel (1.4301)
Material — Outer body	Polypropylene (copolymer UV)			DX51D + Z100 coated
Material — Inner door	Polypropylene (copolymer UV)	Aluminium		Stainless steel (1.4301)
Material — Outer door	Polypropylene (copolymer UV)			DX51D + Z100 coated
Material — Drawer	Polycarbonate, transparent			Stainless steel (1.4301)
Material — Shelf	-			Wire DIN177, PA11 coated
European Medical Device Directive	MDD 93/42/EEC, Class IIa (models: 220-240 V - 50/60 Hz)			
EMC directive	2014 / 30 / EU (models: 220-240 V - 50/60 Hz)			
Low voltage directive	2014 / 35 / EU (models: 220-240 V - 50/60 Hz)			
**FDA regulation	Medical Device**	21CFR Part 864.9700, Class II (models: 115-127 V - 60 Hz)			
cCSAus certificate	Yes (models: 115-127 V - 60 Hz)			
GMP - Clean room classification	Class ISO 6 / EC GMP B			Class ISO 5 / EC GMP A

B
RANGE

7" FULL TOUCHSCREEN DISPLAY

ERGONOMIC HANDLE

ORGANIC GLASS DOOR

TEMPERATURE CHART RECORDER
(sample image)

Equipment
General

		B51	B131	B291	B381	BF261	B401	B501	B701	B901
B Medical Systems Electronics	Digital display	●	●	●	●	● 2	-	-	-	-
	7'' full touchscreen display	-	-	-	-	-	●	●	●	●
Ergonomic handle open/close - heavy duty door lock mechanism		-	-	-	-	-	●	●	●	●
Organic glass door for quick check / pre-selection of the refrigerator's content		●	●	●	●	●	●	●	●	●
Internal LED lighting		●	●	●	●	●	●	●	●	●
°B Connected - Monitoring Software		○	○	○	○	○	●	●	●	●
DCU - Data Communication Unit (in combination with °B Connected)		○	○	○	○	○	-	-	-	-
Ethernet interface		-	-	-	-	-	●	●	●	●
Temperature chart recorder pre mounted (in the form of a circular chart recorder)		○	○	○	○	○	○	○	○	○
Ambient temperature sensor		-	-	-	-	-	○	○	○	○
Potential-free alarm contact in case of system failure		●	●	●	●	●	●	●	●	●
Integrated port for external sensor (installed by customer)		●	●	●	●	● 2	●	●	●	●
Rollers		-	● 2	● 2	● 2	● 2	-	-	-	-
Smooth castors with stabilizers		-	-	-	-	-	● 4	● 4	● 4	● 4
Door hinge Right | Left		●|○	●|○	●|○	●|○	●|○	●|○	●|○	●|○	●|○

● Standard ○ Optional - Not available

Subject to change without prior notice.
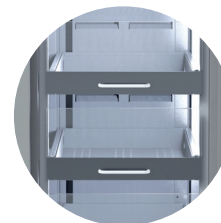
B RANGE

Equipment
Internal storage

DRAWER
2 versions:
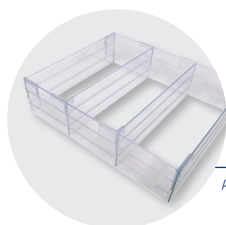· with or without Front Cover
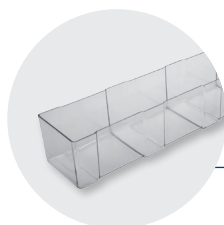· bottom

WIRE SHELF

ST-DRAWER (STAINLESS STEEL)
Available with or without Front Cover

Standard	B51	B131	B291	B381	BF261	B401		B501		B701		B901	
						VERSION 1	VERSION 2	VERSION 1	VERSION 2	VERSION 1	VERSION 2	VERSION 1	VERSION 2
Drawer with Front Cover	-	●1	●5	●6	●3	-		-		-		-	
Drawer without Front Cover	●1	-	-	-	-	-		-		-		-	
Bottom Drawer	●1	●1	●1	●1	●2	-		-		-		-	
Wire Shelf	-	-	-	-	-	●2	-	●2	-	●2	-	●2	-
ST-Drawer with Front Cover	-	-	-	-	-	●3	●5	●3	●5	●3	●5	●3	●5

Optional	B51	B131	B291	B381	BF261	B401	B501	B701	B901
ST-Drawer without Front Cover	-	-	-	-	-	○13 (max. per unit)	○13 (max. per unit)	○13 (max. per unit)	○13 (max. per unit)

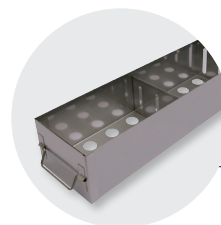	Accessories		B51	B131	B291	B381	BF261	B401	B501	B701	B901
Dividers Set (H 3.94 in) to facilitate the handling and storage management		-	●1	●5	●6	●3	-	-	-	-
S-Rack (H 3.94 x W 4.45 x D 25.12 in)		-	-	-	-	-	○12 (max. per unit)	○20 (max. per unit)	○25 (max. per unit)	○30 (max. per unit)
ST-Rack (H 3.74 x W 5.28 x D 25.51 in)	with Wire Shelf	-	-	-	-	-	○2 (max. per tray)	○3 (max. per tray)	○3 (max. per tray)	○4 (max. per tray)
	with ST-Drawer	-	-	-	-	-	○2 (max. per tray)	○2 (max. per tray)	○3 (max. per tray)	○4 (max. per tray)
	with ST-Shelf	-	-	-	-	-	○2 (max. per tray)	○3 (max. per tray)	○4 (max. per tray)	○4 (max. per tray)

DIVIDERS SET
Available for Drawer with Front Cover

S-RACK

ST-RACK (STAINLESS STEEL)

● Standard ○ Optional - Not available

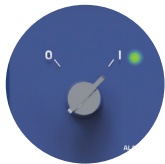Subject to change without prior notice.

SAVING LIVES THROUGH RELIABLE AND INNOVATIVE TECHNOLOGY

Full functionalities at a glance

B Medical Systems | Electronics

PRECISION LINE | Multifunctional electronics with digital display and easy access, in the door handle; compatible with °B Connected monitoring solution.

⊙ Key power switch
O = OFF / I = ON

- To switch the unit on, turn the key switch to position „I". The green power LED lights up
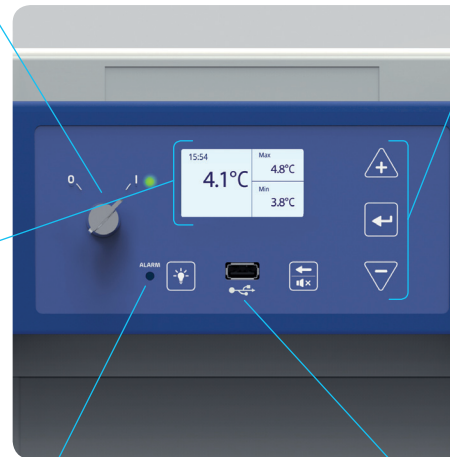- After the self-check, the temperature inside the device is displayed

⊙ Digital display

During normal operation the display shows:

- Left-hand side: current time and internal temperature displayed in °C (Celsius) or °F (Fahrenheit) in increments of 0.1°
- Right-hand side: the maximum and minimum inside temperature

⊙ Acoustic and visual alarm signal

When an alarm occurs, the red alarm LED lights up and an acoustic signal sounds. The corresponding alarm message appears on the display alternately with the measured inside temperature. If several alarms occur simultaneously, the messages will be shown alternately.

⊙ Function buttons

- UP / DOWN buttons: navigation within the parameters and modification of their values
- ENTER button: use the ENTER-key to confirm the actual selection. This applies the parameter value. The change of a parameter only becomes effective when confirmed
- MUTE / BACK button: in case of an alarm, the acoustic alarm can be muted for a specified time. In Parameter-mode the same key acts as "BACK-button" to go one step back
- LIGHT button: allows to switch on or off the interior light of the device without opening the door

⊙ USB port

A USB port is available for data export only. Measured values of the display sensor are stored for at least 30 days (ring buffer) together with a time stamp.

Subject to change without prior notice.

PREMIUM LINE | Multifunction electronics with 7'' full touchscreen display, integrated at optimal level
in the door handle with pre-installed connection allowing exclusive °B Connected monitoring functionalities.

Power switch OFF / ON

• To switch on press the ON/OFF button
for 1 second. The green LED will light up

• Switch off protected by password.
The door will automatically unlock
before powering down

Touchscreen 7'' full display

During normal operation the display shows:

• At the top: current voltage, current time,
and login status (user level)

• Left-hand side: temperature of the
regulation sensor (displaying this
temperature can be disabled through the
settings) and internal temperature displayed
in °C (Celsius) or °F (Fahrenheit)
in increments of 0.1°

• Right-hand side: touch buttons to access
door unlock, clean, menu, alarm mute
and message functions

Acoustic and visual alarm signal

When an alarm occurs, the red alarm
LED lights up and an acoustic signal sounds.
The corresponding alarm message appears
on the display together with the measured
inside temperature. If several alarms occur
simultaneously, the messages will be shown
alternately.

Keycard reader

Login / Unlock using a NFC card

Touch buttons

• DOOR UNLOCK button: unlocks the door of the device

• CLEAN button: the cleaning button allows the user to disable
the touch capability of the screen for a short period of time in
order to clean the screen. This button is replaced by the logout
button when user is logged in

• MENU button: allows access to the menu screen

• ALARM MUTE button: deactivates the acoustic alarm
for a predefined period of time

• MESSAGE button: during a warning or alarm situation, the
color of this button and the corresponding level will change.
Information on an active alarm and warning is accessible
by pressing the message button

USB port & SD card slot

SAVING LIVES THROUGH RELIABLE AND INNOVATIVE TECHNOLOGY

Optimum control and protection

B Medical Systems | °B Connected & DCU

°B CONNECTED | MONITORING SOFTWARE

Universal software for the monitoring of refrigeration devices, including the acquisition, recording and visualization of temperature data.

- Unique monitoring software for the full range of Blood Management Solutions and Medical Refrigeration products
- Web-based interfaces for computers and mobile devices
- Modern design for simple and intuitive use
- Graphic display of temperature curves
- Integrated event and activity history of appliances' components
- Data recording on centralized database for long-term archiving
- Easy setting of specific alarm, via email or SMS alerts
- Generation of reports compiling crucial data and activities
- Temperature and detailed device data export for third-party software
- Important cost advantage compared to a traditional circular chart recorder and its spare parts
- REST API to access raw data directly from the database in read-only mode

KEY BENEFITS:

- Unique interface for the monitoring of the full range of refrigeration devices
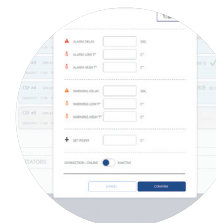- Centralized database providing data access to entire customer network

❶ CONFIGURATION

USER MANAGEMENT
- Password login
- Access right

DEVICE SETTINGS
- Device information
- Device & user configuration

ALARM PROFILE
- Parameters of the alarm profile (day, hour, minute)
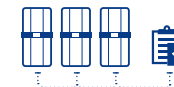- Alarm management

❷ DISPLAYING

DETAILED DISPLAY
- Optimized design for mobile and touch compatible devices
- Support of multiple languages
- Real-time data: Current temperatures, set point, upper and lower limit, door state, compressor runtime
- Log data: Events, alarms within date/time, event type, description of the event. Event and alarm confirmation function
- Batch management: Read in of plasma bags with a barcode scanner
- Parameter settings of each device: Factory settings, real-time clock, language, firmware version, RS485 address, IP address

°B Connected & DCU offer a highly flexible system that is adaptable to specific customer requirements
> Complete & legally safe documentation of temperature data
> Comprehensive applications and diagnostic functionalities

DCU | DATA COMMUNICATION UNIT (PRECISION LINE)

REAL TIME GRAPHICS

- Graphic temperature progress (in real time)
- Adjustable time axis
- Offline navigation

❸ ANALYSING

INTERACTIVE ANALYSIS

- No limitation in terms of time range
- Freely scalable
- Detailed information for any point of time
- Temperature data, events and alarms
- Login history and audit trails

CONTROL CENTER

Overview (Control Monitor) of all monitored appliances:
- Information regarding status, appliance name, location, connection, upper and lower limits, current temperature, events / alarms
- Dashboard to combine several temperature measurements in one single graph

PRINTED ANALYSIS

- Customizable print reports on daily, weekly and monthly basis
- Exports in various file types
- Standardized format

Hardware module monitoring all operating conditions and passing them through to a central database – via local network.

- Interface connection of B Medical Systems appliances to an existing network
- Graphical user interface displaying temperature and configurating devices and alarms easily
- Direct connection to Ethernet and serial bus RS485
- Digital in/out (programmable and customer-specific use)
- Recording and storing appliance-relevant data
- Integrated USB port allowing to export archived data
- The DCU combined with the °B Connected software replaces the paper temperature recorder
- All data are recorded and saved in the internal storage of the DCU and backed up in °B Connected database if connected
- Several additional self-sufficient temperature sensors (up to 4 PT1000) may be connected
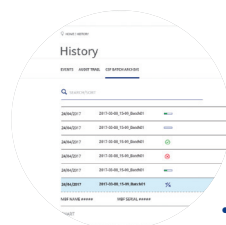- Humidity sensor input (4-20 mA)

KEY BENEFITS:

- Central system collecting relevant temperature data of the appliances and their respective operating conditions
- A number of connection abilities allowing flexible upgrades for individual projects

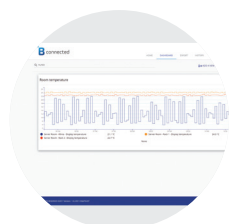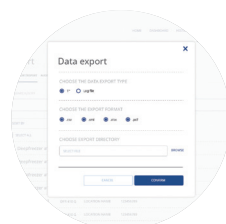**SAVING LIVES** THROUGH RELIABLE AND INNOVATIVE TECHNOLOGY

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The company, formerly known as Electrolux Medical Systems, was founded in 1979 when the World Health Organization approached Electrolux in Vianden, Luxembourg, to create a solution for the safe storage and transport of vaccines around the world. In 2001, Electrolux Medical Systems became part of the Dometic Group, and was renamed Dometic Medical Systems. Having established a legitimate reputation in the medical equipment industry, the company has also become a global leader in vaccine cold chain.

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