

BMT Eye-Level Intelligent Touch Screen Controller Series

ULTRA LOW TEMPERATURE DEEP FREEZERS



The pioneer of the temperature control

- 1918 – Creation of the Couprie Company, the origin of our current activity
- 1920 – First centrifuge
- 1925 – First baby warmer for premature baby
- 1926 – First poupinel (sterilizer)
- 1927 – First bacteriological incubator
- 1948 – First low temperature equipment
- 1970 – First -86°C (-123°F) deep freezer
- 1979 – First Component Thermal Conditioner -80°C/+250°C (-112°F/+482°F)
- 2008 – First vented incubator with a disinfection cycle
- 2009 – Introduction of the predictive Intellidiag® system on -45°C/-86°C (-49°F/-123°F) deep freezers
- 2010 – First refrigerated vented incubator with a 160°C/2h30 disinfection cycle (320°F/2.50h)

Since 2009, **FROILABO** is a member of the Techcomp Group alongside other scientific manufacturers such as Precisa Gravimetrics in Switzerland. With more than 100 years of experience in temperature and humidity control, **FROILABO** offers a product range from -86°C to 250°C (-123°F to -148°F) with precision and homogeneity rarely achieved by other manufacturers and in accordance to the only European norm in force: **EN60068-3-11** Using a FROILABO product keeps samples safe as well as the operator and protect the environment.

Our commitment to the environment is daily and is expressed by the selective use of “noble” material (stainless steel inner chamber), the use of recycled material (electroplated external case) and the recycling of all waste.

All **FROILABO** equipment is created and developed in France.

Precision for life

A UNIQUE TECHNOLOGY: Maximum protection of the samples

Based on the well-known and proven double stage compressors cascade technology, the efficient pipe architecture of the FROILABO cooling system combined with a high refrigerant velocity allows extreme simplification of the refrigeration system. This significantly reduces the risk of blockages and therefore the need for regular and expansive maintenance.



BMT Eye-Level Intelligent Touch Screen Controller Series

- 1 Easy Temp Setting
- 2 High/Low Temperature Alarm
- 3 CO2 / N2 Backup system trigger
- 4 24V Back up battery
- 5 BOSS product protection system
- 6 Data History display and Data logger
- 7 User Password
- 8 Remote alarm contacts
- 9 4GB Smart SD Card data storage
- 10 Service mode For service Engineer



Main Screen:

Password required for enter setting mode, time out in one minute without action

Default system level password: 0000

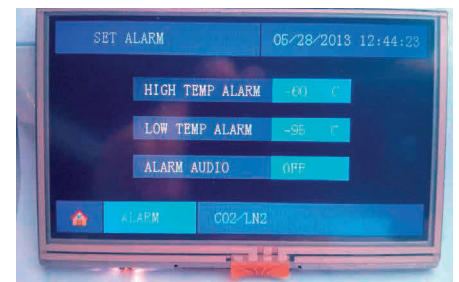
Default user level password: 1234

1. Press to enter alarm setting window.
2. Press to silence/enable alarm sound.
3. Press to enter data logging setting window.
4. Press to start /stop data logging. System will confirm before turn off data logging.
5. Press to enter Date/Time setting window. Data logging need to be off to access Time setting.
6. Press to change user level password.
7. Press to enter temperature set point setting window.
8. Press to access data logging window.

Data/Graph Screen:

1. Press to open previous log file
2. Display current log file opened (format: MMDYYxx)
3. Press to open next log file
4. Press to search for a specific log file name (format: MMDDYYxx)
5. Display last 7 days data (Graph jump back 6 days before today)
6. Press to return to main screen
7. Press to zoom in around the red line
8. Press to move the red line one data point left
9. Display the actual temperature on the red line
10. Display the time of current data point on red line
11. Display the active alarm code on the red line
12. Press to move the red line one data point right
13. Press to zoom out to the whole data file

High/Low alarm setting window:



High/Low alarm setting window

HIGH TEMP ALARM input range (-85C to -10C)

LOW TEMP ALARM input range (-99C to -85C)

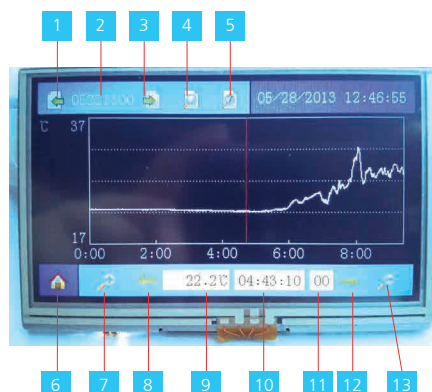
ALARM AUDIO (ON / OFF)

CO2/LN2 Alarm Setting Window:



ALARM LIMIT input range (-70C to -50C)

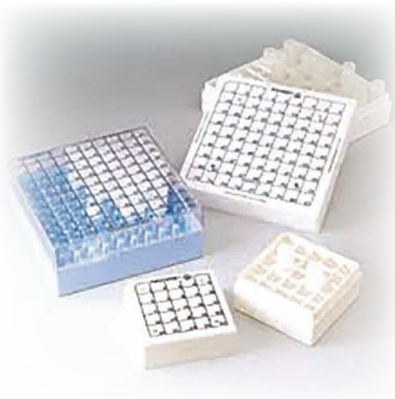
ALARM AUDIO (ON / OFF)



Large storage capacity

2 ml cryo-vials

- 175 liters: 12 000
- 340 liters: 24 000
- 515 liters: 36 000
- 690 liters: 48 000
- 1000 liters: 72 000



Storage, up to 72,000 ml Cryotubes (1000L). The Largest capacity with small footprint available on the market.
A large selection/choice of drawers and racks allowing any kind of sample storage



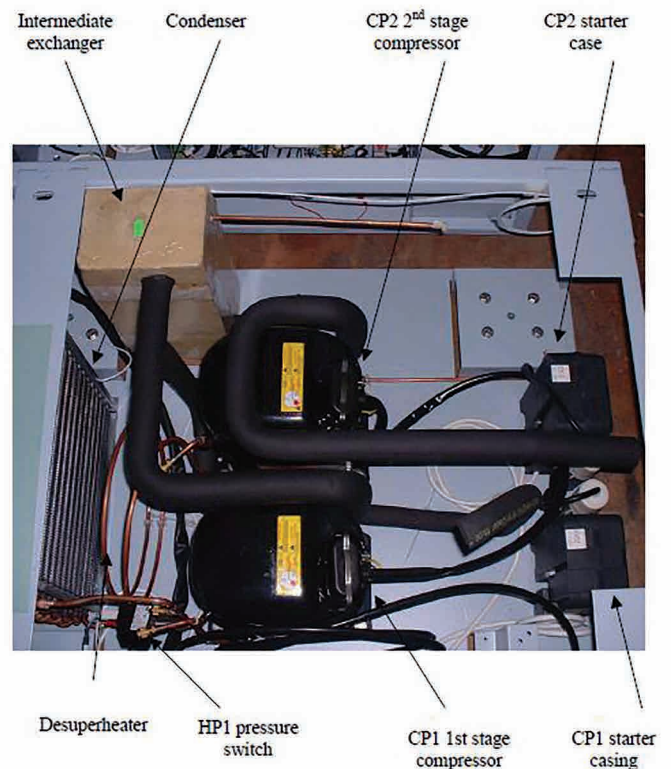
Excellent Performances

- Stability : +/-1C at -80C
- Excellent temperature homogeneity: better than +/-3C at -80C
- From ambient (23C) to -70C less than 4hrs (BM690)
- Quick temperature recover after door open & close
- Operation up to 35C ambient temp

Reliable & Durable Cooling and Control System



Industrial Grade Temperature Controller

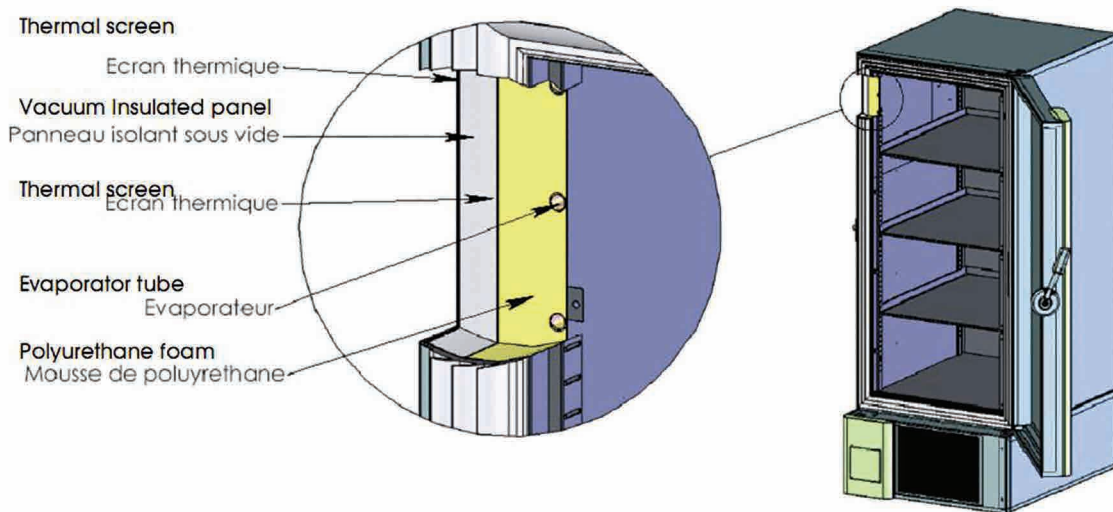


Better Temp insulation & Energy conservation

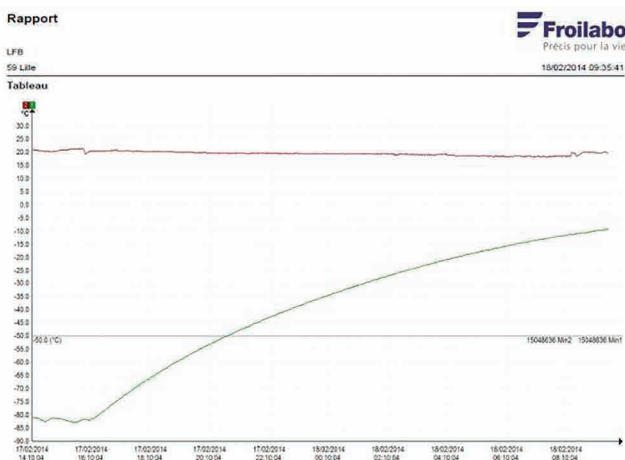
Vacuum insulated panel

Benefits compare with foams or fiber layer

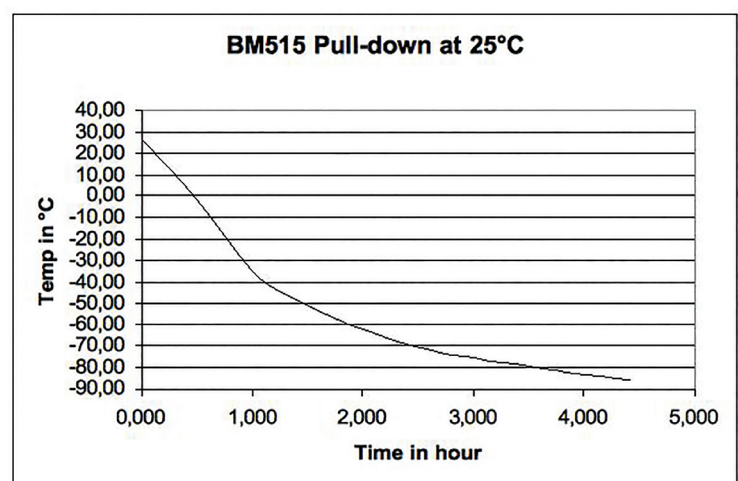
- Better Temp. insulation quality
- Slim construction
- Increased storage capacity with same footprint
- Transportation width : Even for 680L model can pass standard 900mm doorway



Froilabo -UNIQUE CONCEPTION : Achieve Excellent Performances



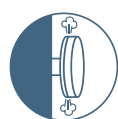
When Power cut off
Temperature change from -80C to 0C more
than 20 hours



Strong Cooling Power and low pressure operation
design
Room Temp to -80C
Less than 4 hours

Appliance Specifications

	BMT 340	BMT 515	BMT 690	BMT 1000
External dimensions				
Height (mm)	1280	1640	2000	2000
Width (mm)	900	900	900	1200
Depth (mm)	995	995	995	995
Free space required behind the appliance (mm)	200	200	200	200
Max. dimensions door open (mm)	1750	1750	1750	2050
Gross dimensions excluding racks				
Height (mm)	716	1076	1436	1436
Width (mm)	630	630	630	920
Depth (mm)	752	752	752	752
Weight (kg)	223	267	330	390
Power (watts)	1100	1800	1800	2300



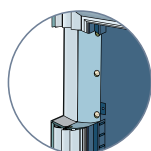
Heated decompression valve for easy opening (pressure equaliser)

Heated silicone 3 lips seal limits frost generation

Insulated inner door, color coded

Stainless steel inner chamber with round corners

Adjustable stainless steel lining and fitting



Insulation by Vacuum insulated Panels (VIP)

Door key lock

Front access washable condenser filter

4 castors and 2 level adaptors



Accessories

INTERIOR FITTINGS

Reference	Nb of shelves	Usable height (mm)	Cryoboxes* capacity *133x133x51mm	Deep freezer racks capacity 340/515/690/1000
-----------	---------------	--------------------	--------------------------------------	---

UPRIGHT MODELS 340/515/690/1000

Racks with drawers 288x730x343

BM/EL2T690	2	164	60	4 / 6 / 8 / 12
BM/EL3T690	3	109	60	
BM/EL4T690	4	80	40	
BM/EL5T690	5	63	50	
BM/EL6T690	6	53	60	

Racks with fixed shelves 140x730x343

BM/EL3E690	3	109	30	8 / 12 / 16 / 24
BM/EL4E690	4	80	20	
BM/EL5E690	5	63	25	
BM/EL6E690	6	54	30	

Racks for microplates 142x740x330

BM/ELMP690	2	140	160 x 96 well plates	8 / 12 / 16 / 24
------------	---	-----	----------------------	------------------

Baskets 142x740x330

BM/TIR	1	330		8 / 12 / 16 / 24
--------	---	-----	--	------------------

CHEST MODEL 340/515/690

Upright racks 144x140x737

BM/12EBV	For cryo-boxes 133x133x51	12	20 / 28 / 40
BM/7EBV	For cryo-boxes 133x133x95	7	

Baskets 340x288x368

BM/PAN		Bulck	20 / 28 / 40
--------	--	-------	--------------

ADDITIONAL SHELVES

For model 175L	For model 340/515/690L	For model 1000L
BM/ETA1	BM/ETA2	BM/ETA3

Options

Reference	Description	BM	BMS
-----------	-------------	----	-----

Common options

BM/CRYO1	Cryo-reservoir for BM175, temperature increase delayed by additional +/- 6h	Option	
BM/CRYO2	Cryo-reservoir for BM340, temperature increase delayed by additional +/- 6h	Option	
BM/CRYO3	Cryo-reservoir for BM515, temperature increase delayed by additional +/- 6h	Option	
BM/CRYO4	Cryo-reservoir for BM690, temperature increase delayed by additional +/- 6h	Option	
BM/OPT8	On/off Switch, key lock	Option	Not available
BM/N2	LN ₂ backup system, 1m80 DN10 transfer hose included	Option	On request
BM/CO2	Co ₂ backup system, 3m transfer hose included	Option	Included

Traceability

BM/OPT2	Pt 100 ohm probe, 3 wires, 4-20 mA (-100°C to +50°C). Rear output on connectors	Option	
BM/OPT3	K thermocouple probe (-100°C to +50°C). Rear output on connectors	Option	
BM/OPT4	Pt 100 ohm probe, 3 wires (-100°C to +50°C). Rear DIN connector	Option	
BM/OPT5	Probe with 3 meters cable for external calibration	Option	
BM/OPT6	Certified temperature probe	Option	
BM/OPT9	RS485 port for data transfer	Option	
BM/OPT7	0°C to -100°C circular chart recorder, 1 run for 7 days	Option	
BM/OPT11	Cable entry port with gland on decompression valve	Option	
BMS/WIFI	WIFI	Not available	Option

Qualification

BM/QP	PQ : Performance qualification protocol	Option	
BM/QIQO	IQ/OQ : Installation and operational protocol manual	Option	



These equipments are produced on an ISO9001 certified site.

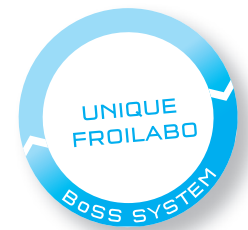
A UNIQUE CONCEPTION: Maximum protection of the cooling system

- Oil separator and depressurization tank free (reduces maintenance)
- Common refrigerant: R417A and R508A (CFC and HCFC free)
- Low operating pressure / Very limited pressure drop
- Low return temperature of the gas (<0°C) into the compressors keeping them operating at low temperature (extension of the compressor operating life)
- Maintenance can be made by non «cascade specialist» technician

THE BoSS SYSTEM : Maximum protection of the samples

The samples protection must be efficient in any circumstance, even in unlikely case of low voltage/electronic system outage. The BoSS system compensates for that potential issue and will engage the compressors permanently, maintaining a permanent deep freeze production.

- Preservation of the samples
- 30 hours regulation on batteries; then direct connection to the power source (110V or 220/230V) of the compressors
- No emergency maintenance required / easy problem identification for the service engineer



VACUM PANEL INSULATION (VIP)

- 15% reduction of the power consumption
- 22% improvement of the temperature rise in case of power failure
- Larger storage capacity with the same foot print

UNRIVALLED performance:

- Excellent homogeneity < +/-3°C at -80°C/-112°F and exceptional stability +/-1°C at -80°C/-112°F
- Fast cooling: from 22°C to -81°C (71°F to -113°F) in 4h (690L)
- Fast set temperature recovery after door opening
- Sustain ambient temperature (environment) up to 35°C/95°F

SPECIFICATIONS

- Maximised storage capacity vs footprint (up to 72000 cryo-tubes / 1.25m²)
- Door way access (h: 2m x w: 0,8m)
- Sound level <53dB



8, Bd Monge - 69330 Meyzieu - FRANCE
Tél. : +33 4 78 04 75 75 - Fax : +33 4 78 04 75 76
www.froilabo.com - froilabo@froilabo.com

DISTRIBUTOR :