

Blood Bank Refrigerator - EMO

MODEL	SET POINT	TEMPERATURE RANGE	CAPACITY (LTRS/BB)	EXT. DIMENSIONS (W x D x H cm)	DOOR TYPE
BB 0041NFP EMO	+4°C(Adj)	+2°C ÷ +10°C	210	67 x 64 x 140	Double Glass



Alarm Limits: HI +8°C ; LOW +2°C (adjustable)
DRY CONTACT and BACK-UP Battery 24/36Hrs
 Blood bags capacity (450ml): max 128 (4 drw.)
 Blood bags capacity (250ml): max 176 (4 drw.)

Colour: Gray, White or any RAL colour (Option)
Structure: Internal and external Steel Laminated Plate with FINGER PRINT PROOF TECHNOLOGY® to assure a Bacteria-Static Activity
Insulation: Polyurethane Foam, CFC FREE, 42Kg/m3, thick. 60mm
Refrigeration type: Ventilated (NO-FROST), Forced Air
Defrosting: Automatic with condensing water evaporation
Electric power: 1 / 200-255Volt / 50 (60Hz)
Compressor: No.1 Hermetic Type - 350Watt – 1/3 Hp
Refrigerant gas: R485a (compatible to R404a / R507a) or **R290**
Door: No. 1 Glass Door
Inner setting: Max 4 Shelves/Grids or Pull-out Drawers
Lighting: LED lamp 6000K, active on opening door
Electronic controller: Hi Efficiency display, Accuracy 0,1°C
Castors and Wheels: 4 Swivel Wheels + 2 adjustable feet

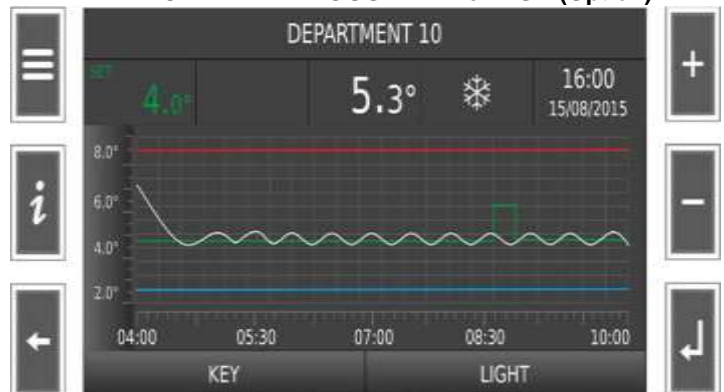
Main Visual and acoustic alarms: - HI and LOW Temperature
 - Door Open
 - Devices failure
 - Probes failures

MAIN OPTIONS and ACCESSORIES:
 DTLSD3 - Interactive Data Logger TFT 5", RGB Colors, USB
 ESEDL - Electronic Lock with Password
 RG1 - Graphic Chart Recorder with 52 weekly paper disks
 CHAUT - Self Closing Door with stopper at 95°
 HLO - Pass-through Hole Ø25 mm for External Sensor
 LED - LED Lamp Inside, 60cm long, High Brightness
 CS1 / CS1-AI - Sliding Aluminum or S/S Drawers
 SH1 - Sliding Perforated S/S Shelves for Blood Samples
 WI-FI/3G - On-line Monitoring and Remote Alarm System
 GR - Remote cooling system
 RS485 - Serial port for PC / BMS connection
 RFD - Badge /card /ID access control with Access Log

ALUMINUM or S/STEEL DRAWERS



INTERACTIVE DATA LOGGER TFT5" RGB (Option)



Six excellent reasons to choose **TEKNALAB**

1 INTERACTIVE TOUCH PAD

A touch pad with 5 dynamic backlit keys simplifies navigation for the user. The central key is backlit by a RGB led which varies in colour according to the refrigeration unit operation. Even from a distance it is easy to check the operating status of the refrigerator.

2 REAL-TIME GRAPH

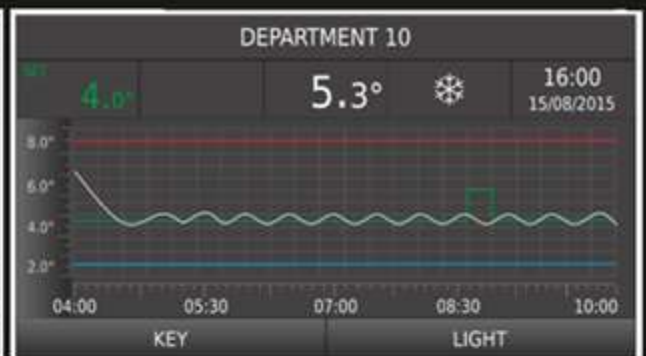
The temperature is shown on the screen with a graphical display that substitutes the now obsolete electro-mechanical thermograph. The feature is integrated with a 10 year memory of the recorded data and list of events regarding temperatures and operation variables.

3 PREDICTIVE DIAGNOSTICS

In the mid-long term time period a relay fault is one of the most common failure to occur. In order to prevent this all relay switching are read with a representation of the remaining life expectancy of the component, and a warning is given when the threshold is about to be reached.

TFT COLOR
GRAPH DISPLAY

KEYBOARD TOUCH
WITH RGB BACKLIT



4 EFFICIENCY & SECURITY

The Smart Defrost function measures the level of frost on the evaporator and launches the defrosting only when necessary to maintain an always efficient operation of the refrigerator and to reduce consumption compared to traditional defrosting by time. Thermostat control with evaporator probe in case of thermostat probe fail.

5 DUAL CORE

A second powered micro-controller analyses the operation of the board, reads the coldroom temperature and mains voltage; a warning is given when the value are over or under the threshold defined by parameters to safeguard compressor life and electronics components.

6 CONNECTIVITY

USB port for downloading thermo-regulation data and parameter settings. Optional Bridge devices Ethernet - Wi-Fi - 3G complete the global connectivity between devices towards CLOUD Velex for monitoring and teleservice features via browser (PC or Smartphone) through credential access.

Control functions dedicated to each specific field of refrigeration: blood banks, laboratory and pharmacies

FUNCTIONS

Thermostat control

Regulation on central set with double hysteresis in cooling action for systems with single and double stage (superfreezers)

Heating action for climatized rooms.

Defrosting

Defrosting mode: electric, hot gas, stop compressor with activation from the touch pad, by a timer, by a clock and by the automatic detection of ice.

Fan management

Condenser fans control within a range of temperatures to guarantee the correct thermal exchange.

Evaporator fans control to maintain humidity and to block the flow of hot air into the coldroom during defrost phase.

Programmable outputs

Any of the following actions can be associated to every relay: compressor, defrosting, evaporator fans, condenser fans, door resistance, glass resistance, drainage resistance, active load light, heating action and 2nd stage compressor action for superfreezers.

DEDICATED FUNCTIONS

Redundancy

Double power supply for the logic.

A second micro-controller is designated to the function of diagnosis, battery charge and the reading and registration of temperature in normal conditions and in mains failure status.

For ventilated units in case of thermostat probe failure the regulation is transferred to the evaporator probe.

The temperature of the technical compartment is constantly monitored with a warning when it reaches the safety threshold.

The output and operation status is shown by exterior led (*expert points*).

PT100 probe monitor

PT100 precise independent monitor probe with a 0.1°C of resolution for thermo-registration and high and low temperature alarms with a coherence check between its readings and thermostat probe with alert for any possible unbalance.

NTC/PT100 thermostat probe

Two thermostat probe inputs are provided to regulate the temperature both of the ventilated unit with NTC probe and of the superfreezers -86°C with PT100 probe.

Back-up battery

Back-up batteries are connected in a recharging circuit, with periodic tests, charging status and substitution alert. In case of a mains failure they provide 24 hours of power supply.

Electric-Key Driver

Solid state output controls an electric-key with password access.

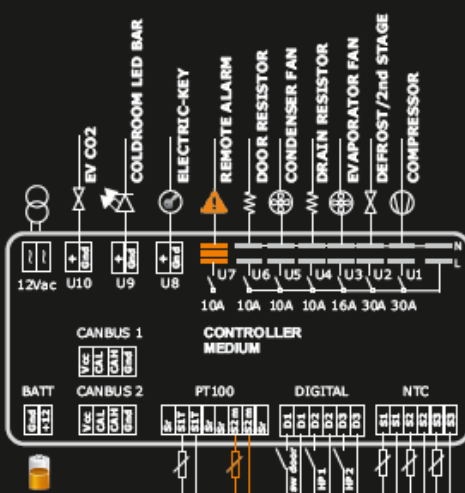
Led bar driver

A solid state output can be configured to directly control the coldroom light by led bars with automatic functions of switching on, turning off and energy savings.

CO2 valve driver

A solid state output controls the CO2 solenoid valve in normal conditions and in the event of mains failure for the freezer units that foresee this.

outputs wiring example



Driver Board

Power Supply 12Vac 50/60Hz >=6VA

Dimensions L200 x H110 x P35 mm

Inputs N°3 NTC [-50.0, 70.0]°
N°3 Digital
N°2 PT100 [-99.9, 50.0]°

Relais Out N°2 x 30A + N°1 x 16A
N°3 x 10A + Alarm 10A

Drivers Led Bar - EV CO2
Electric-key

Gates 2xCANBUS

Display Board

Power Supply from Driver Board

Housing plastic ABS

Dimensions L160 x W52 x H25 mm

Dima L154 x W49 mm

Keyboard 5 Keys Touch
with RGB backlit

Display TFT 2.41" 320x240 pixel

Gateway CANBUS
USB

for data exchange