EWBC 800

Controllers for blast chillers - Base board

DESCRIPTION

The base is an electronics board controlling the basic functions of a blast chiller, combined with a capacitive touch keypad with display, called the user interface. The base is supplied 'open', and is equipped with a microcontroller, inputs and outputs.

MECHANICAL INSTALLATION

Care must be taken to avoid damage from electrostatic sources when handling this device.
In particular exposed connectors and, in some cases, exposed printed circuit boards are exceptionally vulnerable to electrostatic discharge.

⚠ WARNING

UNINTENDED EQUIPMENT OPERATION DUE TO ELECTROSTATIC DISCHARGE DAMAGE

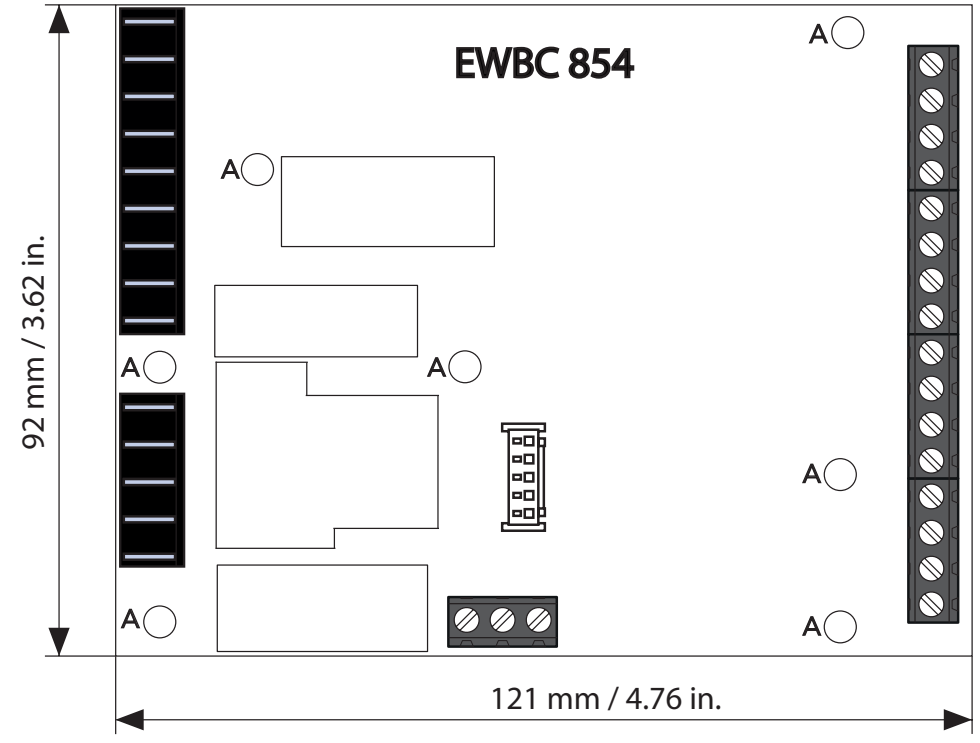
- Keep device in the protective conductive packaging until you are ready to install the equipment.
- Only install device in approved enclosures and / or locations that prevent casual access and provide electrostatic discharge protection as defined by IEC 1000-4-2.
- Use a conductive wrist strap or equivalent field force protective device attached to an earth ground when handling sensitive device.
- Always discharge yourself by touching a grounded surface or approved antistatic mat before handling the device.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

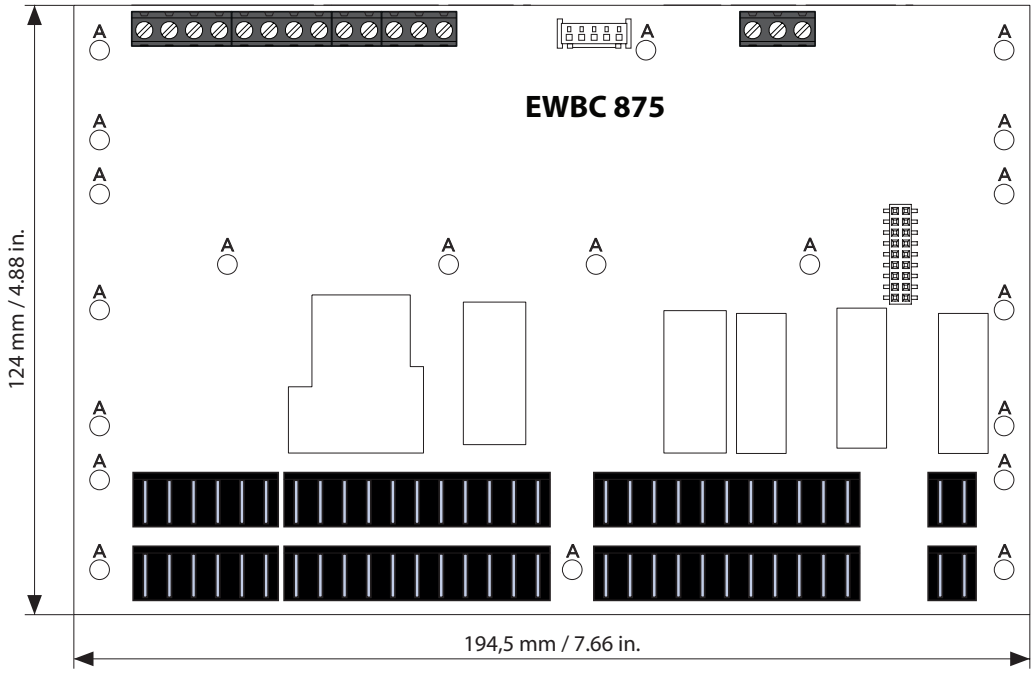
Do not install **EWBC 800** base board in places subject to high humidity and/or dirt; it is intended for use in sites with ordinary or normal levels of pollution.
Keep the area around the chiller cooling slots adequately ventilated.
Base installation takes place inside the blast chiller, with plastic spacers applied to the holes (**A**) already present.

The following is the mechanical installation of 2 models:

EWBC 854



EWBC 875



ELECTRICAL CONNECTIONS

⚠⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- Disconnect all power from all equipment including connected devices, prior to removing any covers or doors, or installing or removing any accessories, hardware, cables, or wires.
- Always use a properly rated voltage sensing device to confirm the power is off where and when indicated.
- Replace and secure all covers, accessories, hardware, cables and wires before applying power to the device.
- For all the devices where this is provided, confirm that a proper ground connection exists before applying power to the unit.
- Use only the specified voltage when operating this equipment and any associated products.

Failure to follow these instructions will result in death or serious injury.

This device has been designed to operate outside of any hazardous location.
Only install this device in zones known to be free of hazardous atmosphere.

⚠ DANGER

POTENTIAL OF OVERHEATING AND FIRE

- Do not use with loads other than those indicated in the technical specification.
- Do not exceed the maximum permitted current; for higher loads, use a contactor with sufficient power capacity.

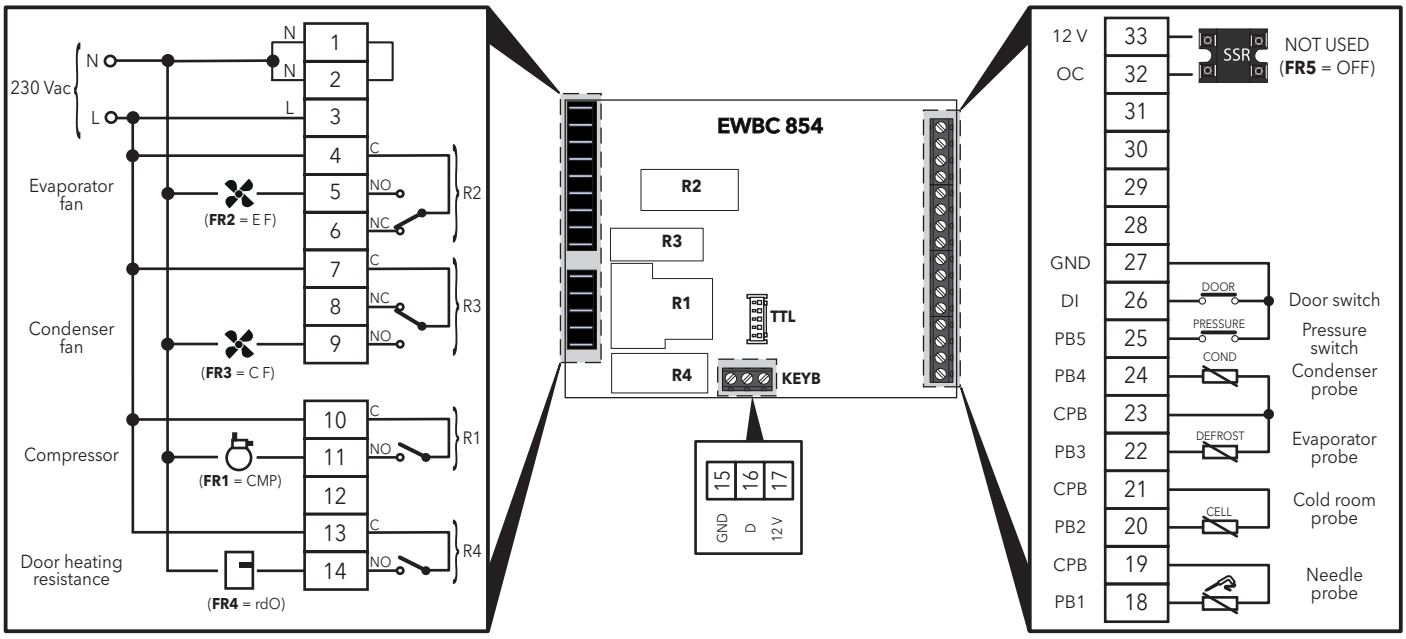
Failure to follow these instructions will result in death or serious injury.

The **EWBC 800** must be installed in compliance with the following requirements:

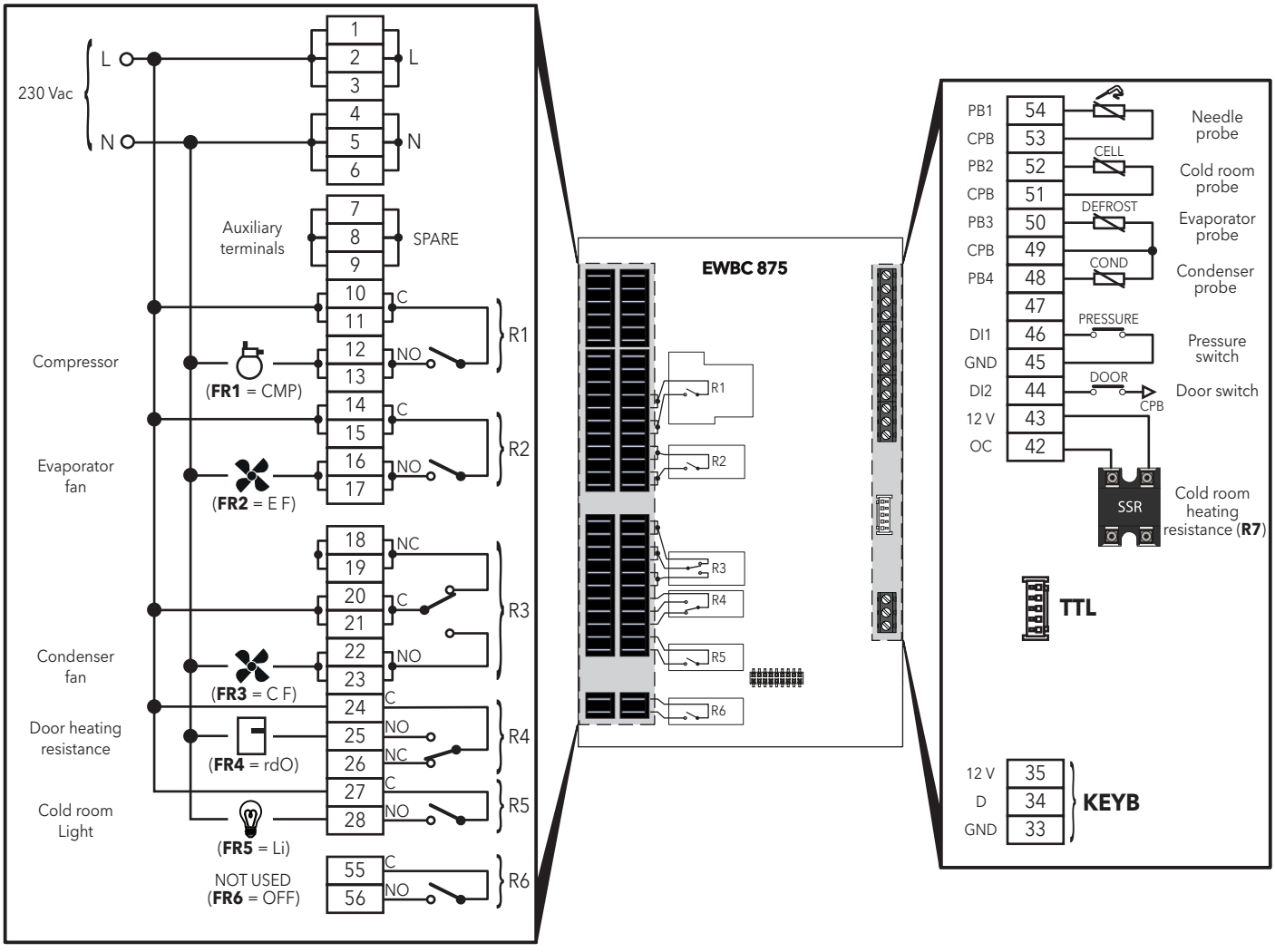
- the wiring must comply with the safety regulations and according to the procedures given below, so as not to compromise the **EWBC 800** good stability with respect to electromagnetic interference;
- it is necessary to wire separately the sensor and power supply cables or use shielded cables to avoid interference phenomena;
- avoid the passage of wires (although isolated) above the **EWBC 800** (and particularly above the microcontroller).

The **EWBC 800** connection diagrams are shown in the figures below, in which the default loads are illustrated.

EWBC 854 CONNECTIONS



EWBC 875 CONNECTIONS



TECHNICAL DATA (EN 60730-2-9)

	EWBC 854	EWBC 875
Classification:	electronic automatic control (not safety) device for incorporation	
Mounting:	open board	
Type of action:	1.B	
Pollution class:	2	
Material class:	IIIa	
Over-voltage category:	II	
Nominal pulse voltage:	2500 V	
Temperature:	Operating: -5 ... 55 °C (23 ... 131 °F) - Storage: -30 ... 85 °C (-22 ... 185 °F)	
Power supply:	SMPS 100 ... 240 Vac ±10 %, 50/60 Hz	
Consumption:	5.5 W max	7.5 W max
Fire resistance category:	D	
Software class:	A	
RTC battery life:	---	Without any external power supply, the clock battery will last 4 days.

FURTHER INFORMATION

	EWBC 854	EWBC 875
Input Characteristics:		
Measurement range:	**NTC**: –50 ... 110 °C / -58 ... 230 °F; **PTC**: –55 ... 150 °C / -67 ... 302 °F (on 3-digit display with +/- sign)	
Accuracy:	±1.0 °C/°F for temperatures below -30 °C (-22 °F) ±0.5 °C/°F for temperatures between -30 ... 25 °C (-22 ... 77 °F) ±1.0 °C/°F for temperatures between 25 ... 80 °C (77 ... 176 °F) ±2.0 °C/°F for temperatures above 80 °C (176 °F)	
Resolution:	1 or 0.1 °C (1 or 0.1 °F)	
Buzzer:	NO	NO
Analogue Inputs:	1x PTC not configurable (PB1) 3x NTC/PTC jointly configurable (PB2-PB3-PB4)	1x PTC not configurable (PB1) 3x NTC/PTC jointly configurable (PB2-PB3-PB4) 1x Not used (PB5)
Digital Inputs:	2x Voltage-free with closing current for ground (closure current for ground 0.5mA) (DI/PB5)	2x Voltage-free with closing current for ground (closure current for ground 0.5mA) (DI1/DI2) 1x Not used (DI3)
Output Characteristics:		
Digital Outputs:	**R1**: 1 SPST relay: 2 HP - 240 Vac max **R2**: 1 SPDT relay: 16 A - 250 Vac max **R3**: 1 SPDT relay: 8(4) A - 250 Vac max **R4**: 1 SPST relay: 8(4) A - 250 Vac max	**R1**: 1 SPST relay: 2 HP - 240 Vac max **R2**: 1 SPST relay: 16 A - 250 Vac max **R3**: 1 SPDT relay: 16 A - 250 Vac max **R4**: 1 SPDT relay: 8(4) A - 250 Vac max **R5**: 1 SPST relay: 8(4) A - 250 Vac max **R6**: 1 SPST relay: 8(4) A - 250 Vac max
OC (Open Collector - SSR) Output:	**R5**: 1x multifunctional output: 12 Vdc - 20 mA	**R7**: 1x multifunctional output: 12 Vdc - 20 mA
Mechanical Characteristics:		
Dimensions:	121x92 mm (4.76x3.62 in.)	194.5x124 mm (7.66x4.88 in.)
Terminals:	• Faston 6.3 mm (0.25 in.) connectors for cables with a cross-section of 2.5 mm^2 (13 AWG) for power supply and relay outputs • Screw-on terminals for cables with cross-section of 2,5 mm^2 (13 AWG) for inputs and OC digital output	
Connectors:	• 3-way voltage serial connector for connection to **KEYB** keypad • TTL 5-way connector for connection to Unicard / Device Manager (via DMI) (maximum length 3 m / 118 in.)	
Ambient humidity	Operating / Storage: 10…90 %RH (non-condensing)	
Regulation:		
Food Safety:	The device complies with standard EN13485 as follows: • suitable for storage • application: air • climate range: A • measurement class 1 in the range -25 ... 15 °C (-13 ... 59 °F) (*) **(* using Eliwell probes only)**	

NOTE: The technical specifications stated in this document regarding measurement (range, accuracy, resolution, etc.) refer to the device alone and not to any accessories provided (for example: probes).

PARAMETER TABLE

PAR.	DESCRIPTION	EWBC MODELL		RANGE	M.U.
		854	875		
t1	Positive timed blast chilling duration (timeout for automatic program).	90	90	0...599	min
t2	Negative timed blast chilling (deep-freezing) duration (timeout for automatic program).	240	240	0...599	min
tP	Needle target for positive blast chilling.	3	3	SPS...99.0	°C/°F
tn	Needle target for negative blast chilling.	-18.0	-18.0	Snh...99.0	°C/°F
SCP	Room set point for positive storage.	2.0	2.0	-50.0...99.0	°C/°F
SCn	Room set point for negative storage.	-20.0	-20.0	-50.0...99.0	°C/°F
dFP	Program default setting. **PMH** (0) = Positive Manual HARD; **PMS** (1) = Positive Manual SOFT, **PAH** (2) = Positive Automatic HARD; **PAS** (3) = Positive Automatic SOFT, **nMH** (4) = Negative Manual HARD; **nMS** (5) = Negative Manual SOFT, **nAH** (6) = Negative Automatic HARD; **nAS** (7) = Negative Automatic SOFT, **HLd** (8) = Previous case	0	0	PMH/PMS/PAH/PAS/nMH/nMS/nAH/nAS/HLd	num
Uud	Sterilization cycle duration.	15	15	1...999	s
tUn	Timeout unfreezing. Timeout for end of the unfreezing.		360	1...999	min
tPC	Timeout precooking. Timeout for end of the precooking.		90	1...999	min
PS2	Password to access the advanced parameters. Restricted to qualified personnel. **Refer to the user manual available on Eliwell website in the restricted area or contact the technical support.**	15	15	0...999	num
tAb	Reserved - read-only parameter.	1	1	0...65535	num

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RESPONSIBILITY AND RESIDUAL RISKS

ELIWELL CONTROLS SRL declines any liability for damage due to:

- installation/use other than expressly specified and, in particular, in conflict with the safety prescriptions set down in regulations and/or specified in this document
- use on panels that do not provide adequate protection against electric shocks, water or dust in the adopted mounting conditions
- use on panels allowing access to dangerous parts without having to use tools
- tampering with and/or modification of the product
- installation/use on panels that do not comply with statutory regulations and requirements.

CONDITIONS OF USE

PERMITTED USE

For safety reasons, the device must be installed and used in accordance with the instructions provided. In particular, parts carrying dangerous voltages must not be accessible under normal conditions. The device must be adequately protected from water and dust with regard to the application, and must only be accessible using tools (with the exception of the front panel). The device is suitable for use in household refrigeration appliances and/or similar equipment and has been tested for safety aspects in accordance with the harmonized European reference standards.

PROHIBITED USE

Any use other than that expressly permitted is prohibited. The relay contacts provided are mechanical and subject to failure: any protection devices required by product standards, or suggested by good practice in view of obvious safety requirements, must be installed externally of the device.

DISPOSAL

The device (or the product) must be disposed of separately in compliance with the local standards in force on waste disposal.

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MADE IN ITALY

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