USER MANUAL

UPRIGHT REFRIGERATORS	DM-92601	DM-92601-BA	DM-92621	DM-92621-BA
	DM-92602	DM-92602-BA	DM-92622	DM-92622-BA
	DM-92603	DM-92603-BA	DM-92624	DM-92624-BA
	DM-92604	DM-92604-BA	DM-92625	DM-92625-BA
	DM-92609	DM-92609-BA		
	DM-92612	DM-92612-BA		
	DM-92614	DM-92614-BA		
	DM-92615	DM-92615-BA		
	DM-92616	DM-92616-BA		
UPRIGHT FREEZERS	DM-92606	DM-92606-BA	DM-92627	DM-92627-BA
	DM-92607	DM-92607-BA	DM-92628	DM-92628-BA
	DM-92608	DM-92608-BA		
UPRIGHT FRIDGE-FREEZERS	DM-92610	DM-92610-BA		

Information of special importance for the user's safety and a correct operation of equipment is marked with this sign
Read this user manual carefully before operating the equipment

PROPER AND SAFETY OPERATION PRINCIPLES

In order to ensure operational safety and long trouble-free operation of the device, the following principles should be observed:

- ***Acquaint the operating staff with basic regulations concerning the operation of electric equipment, rules of safe operation and first aid provision in case of emergency.***
- ***Acquaint practically the operating staff with proper operation rules.***
- ***It is forbidden to connect the device to the power supply system that is not previously checked with regard to the anti-shock protection installation correctness.***
- ***It is forbidden to connect the device to the plug-in socket without a grounding pin.***
- ***It is forbidden to wash, clean or carry out any repairs of the device connected to the power supply system.***
- ***All repairs of the device can be carried out only by an authorized person, observing rules related to the replacement of damaged parts with identical ones.***
- ***The producer does not assume responsibility for the use of the device contrary to its purpose or the recommendations of this user manual.***
- ***Ensure a free airflow above the upright refrigerator or freezer. The minimum distance between the edge of the upright refrigerator or freezer and the ceiling of the room should be 400 mm.***
- ***In order to ensure the correct operation of the device and to obtain the parameters specified by the producer of the upright refrigerator or freezer it is forbidden to cover the perforation in the side part of the control panel. The producer does not guarantee the correct operation of the device if the perforation is covered.***
- ***The devices of the Standard Plus and Premium group may be operated only and exclusively in a ventilated room within the range of the ambient temperatures of +16 to +40ºC and relative air humidity of up to 40%.***
- ***In case of the operation of the devices in the ambient conditions exceeding the recommended ones the lowest declared operating temperature may not be achieved and the electricity consumption may be increased.***
- ***The devices are not designed for the operation outside the buildings and they cannot be exposed to the direct effects of adverse weather conditions (snow, rain, sunlight).***
- ***It is forbidden to store the devices in rooms where freezing temperatures may occur.***
- ***After withdrawal of the device from service it should be disposed in an environmentally responsible manner. The valid local regulations related to disposal and scrapping works should be observed.***
- ***It is forbidden to store explosive substances or as aerosol cans with combustible gas, e.g. propane, butane etc., in the device. It is forbidden to store electrical appliances.***
- ***Please keep this user manual for future use or transfer to any subsequent user***

TABLE OF CONTENTS

PURPOSE

The devices produced by DORA METAL belong to a group of professional chilling and freezing equipment. They are intended for short-term storage of foodstuffs at work place. The devices can be used in restaurants, confectioners' shops, cafés, networks of stores in which it is necessary to display foodstuffs in a chilled or frozen state allowing maintaining their taste, smell and aesthetic values.

The temperature adjustment ranges for particular types of devices are specified in the technical data.

Note: The devices are not designed for the operation outside the buildings and they cannot be exposed to the direct effects of adverse weather conditions (snow, rain, sunlight).

The devices are not intended to store drugs, blood plasma, laboratory resources and other substances and products specified in the directive 2007/47/CE.

The producer does not assume responsibility for any improper use of the device, contrary to its purpose

REFRIGERATED SYSTEM OPERATION

There is one-step, compressor's refrigerating cycle in the device. The refrigerated system is filled with an ecological refrigerating medium R290 – data specified on the rating plate.

Appliances in DM-926_ _ - BA series are designed for remote cooling circuits and don't have compressor.

INTERIOR TEMPERATURE SET-UP

An electronic temperature controller sensor is located in the rear part of the chamber ceiling. The controller is programmed in such a manner that the device achieves an interior temperature specified in the technical data. For the method of the required temperature set-up – see page 16.

START-UP PREPARATION. CLEANING AND MAINTENANCE

The first start-up and daily maintenance may be carried out by the operating personnel, provided that the below-mentioned recommendations are strictly observed. The producer shall not take responsibility for any operation carried out on the device without observing the recommendations specified in this user manual

Disconnect the device from the power supply system before starting any maintenance works. The removal of any safety systems is forbidden.

Remove a protective foil before the first start-up. Wash external and internal surfaces with warm water with an addition of degreasing agent, used for washing kitchen utensils, with a soft cloth in accordance with a direction of the joint, never by circular movements. The protective foil should be removed slowly to avoid leaving remains of adhesive. If the adhesive is left, it can be removed by means of proper cleaning agent dedicated for stainless steel – after this operation the surface should be washed out and dried.

In daily cleaning also use generally available cleaning agents dedicated for stainless steel

It is forbidden to use scouring agents, materials including steel wool that can scratch the surface and agents containing aggressive acids. Do not use a stream of water but only a damp cloth wipe while washing.

After washing, before connecting to the electric system, leave the device to dry completely.

When planning the location of the device there should be taken into account the space for free opening of the doors. The devices should be moved away from the wall to ensure free air circulation through the condenser. It is necessary to leave 40 cm of free space at least above the device and not less than 10 cm of free space on the sides and at the back which ensures a proper air circulation for the correct operation of the device.

Check if the floor is levelled where the device is to be located. Then, level the device, using adjusting feet, checking whether the door is closed well at the same time.

In accordance with the EN378 standard it should be ensured that the room where the device with R290 medium is to be located has the proper volume. 1 m^3 is required for 8 g of R290 refrigerant. The amount of R290 refrigerating medium is specified on the rating place of the device.

CONNECTION TO ELECTRIC SYSTEM

The construction of the device is made according to the appropriate directives and harmonised standards:
- low voltage directive 2006/95/EC,
- electromagnetic compatibility directive 2004/108/EC,
- PN-EN 60335-2-89:2012, PN-EN 60335-1:2012 standards,
- PN-EN 55014-1:2012, PN-EN-55014-2:1999 standards,
- PN-EN 61000-3-2:2007, PN-EN 61000-3-3:2009 standards.

The device is adapted to be supplied from the 230V 50Hz line and should be supplied from a separate low voltage circuit. A grounded plug-in socket must be equipped with anti-shock protection selected, according to the requirements of local standards and regulations, in compliance with the parameters specified on the rating plate. The parameters of a residual current device should be selected according to the current value, specified on the rating plate. The devices are provided with a flexible power supply cable of HO5VV-F type (3x1,5mm², including protective conductor). The damaged power supply cable should be replaced by a specialist from technical service or by a skilled person with appropriate qualifications.

The devices are equipped with a terminal to connect external equipotential bonding, marked by a symbol ⏚ . Before connecting the device the installation correctness and effectiveness of equipotential bonding operation should be checked in accordance with PN-IEC-60364-4-41

The device can be started when effectiveness of anti-shock protection is confirmed by results of measurements carried out according to the regulations in force.

The device can be connected to the electric system when it is stated that the electric system fulfils the afore-mentioned requirements. The device is connected by inserting a plug of connecting cable into the plug-in socket. A device, prepared in such a way, is ready to operate.

Because during transport the device could be inclined by more than 30° from the vertical, wait about 1 hour before connecting the device to the power supply system. Otherwise, the condensing unit can be damaged.

OPERATION

The temperature of chilled space and operating cycle of the refrigeration unit can vary. It depends on the ambient temperature, amounts of inserted fresh products and heat inflow from outside. Therefore it is necessary to avoid opening the door when unnecessary and inserting warm foodstuffs with temperatures that significantly exceed the storage temperatures. Otherwise, it can considerably increase the chilling time of products.

It is recommended to avoid a long contact of the skin with cold surfaces of the device or cold products. The protective clothing should be used in case of longer contact. The failure to use the protective clothing can cause torpidity or frostbite.

During operation of the device, observe the rule that the maximum load does not exceed the values specified in the table and the red symbol in the device chamber. The products should be arranged in such a manner to allow free air circulation in the upright refrigerator or freezer

.

The first filling of the refrigerated space should be done after cooling it earlier to the operating temperature (the required time for the first cooling of the unloaded upright refrigerator or freezer to the set-up temperature: ~ 2h). This rule should be observed also after a longer break in operation.

It's not recommended to place in chamber not chilled products (which have temperature higher than ambient or opened containers with liquids). Such situation can cause fast icing of cooling circuit, higher energy consumption and worse performance (problem with achieving lowest declared temperatures).

From time to time it is recommended to stop the operation of the device to clean its interior, defrost naturally the evaporator unit, clean the condenser of the refrigeration unit and check the condition of the door seal. A face heated by electric heater protects the seal against freezing in the freezing devices.

Any replacement of the seal consists in removing the old seal and pushing the new one in the groove of the profile.

Before performing the afore-mentioned steps, it is necessary to switch off the device by means of a main switch and remove the plug of connecting cable from the plug-in socket.

The condenser of the refrigeration unit should be cleaned not rarely than every 4 weeks. It should be cleaned by means of a soft brush or vacuum cleaner

Do not use a stream of water while cleaning the device. The producer does not assume responsibility for the damages of the condensing unit arisen as a result of not maintaining the condenser in a clean state!

The icing of the evaporator is removed automatically. The most frequent reason for the excessive icing of the evaporator is the failure to observe the procedure of the pre-cooling of a product before placing it in the freezing device.

All setups of the controller necessary for a normal function of the device are introduced by the producer**.**

It is strictly forbidden to intervene in the system parameters of the controller because it may cause very serious consequences, including damage of the goods and refrigerated device. In case of the breakdown the goods stored in the device should be protected against damage. Dora Metal does not assume responsibility for the goods damaged as a result of the breakdown of the device.

The devices are provided with an automatic condensate evaporation system. The condensate in the engine room is evaporated by means of electric heater

TRANSPORT

The producer delivers the device in the crated, protected with cardboard angles and foil. During the transport the device should be protected against moving.

The device should be transported in an operation position. Upon receipt of the device (before unpacking) it is necessary to check if any damages did not arise during the transport. All noticed damages should be immediately notified to the forwarder. In no case, a damaged device can be returned to its producer, without notification, and without a written permit, received earlier from the producer.

The producer does not assume responsibility for the device that is damaged during the transport.

DISPOSAL

Prior to the transport the device is protected by a packing crate which consists of the following recyclable elements: wooden planks, cardboards, propylene fastening tapes, polyethylene foil.

The elements of the device packaging should be kept out of reach of children.

After withdrawal of the device from service it cannot be mixed with other household waste. Before handing over the device to disposal it is necessary:

- to protect the device by disconnecting the power supply cable,
- to check the tightness of the refrigerated system

The valid local regulations related to disposal and scrapping works should be observed.

NOTE:

Due to proces of continual products' improvement we reserve the right to implement changes in products.

TECHNICAL DATA

Table 1. Stainless steel upright refrigerators of DM-926xx series

Data		Catalog number								
		DM-92601	DM-92603	DM-92612 (DM-92610)	DM-92614	DM-92602	DM-92615	DM-92616	DM-92604	DM-92609
Depth	mm	821					681		821	
Width	mm	720					660		1440	
Height	mm	2050								
Number of doors	pcs	1							2	
Type of doors		Solid				Glass	Solid	Glass	Solid	Glass
Capacity (gross)	litre	610 (290)					440		1340	
Permissible loading	kg	150							250	
Surface of shelf	m^2	0,34					0,24		0,34	
Number of shelves	pcs	3 (1)							6	
Max. loading of shelf	kg	35								
Arrangeability of shelves	mm	Spacing every 50mm								
Air circulation		Forced (fan)								
Interior temperature	^{O}C	+2...+10			-4 ..+6	+2...+10				
Power supply	V/Hz	230 / 50								
Power rating	-	Data specified on the rating plate								
Climatic class	-									
Type of refrigeration unit	-									
Type of refrigerant	-	R290								
Amount of refrigerant	kg	0,075								
GWP / ODP	-	3								

Table 2. Stainless steel upright refrigerators without compressor of DM- 926xx – BA series

Data		Catalog number								
		DM-92601-BA	DM-92603-BA	DM-92612-BA (DM-92610-BA)	DM-92614-BA	DM-92602-BA	DM-92615-BA	DM-92616-BA	DM-92604-BA	DM-92609-BA
Depth	mm	821					681		821	
Width	mm	720					660		1440	
Height	mm	2050								
Number of doors	pcs	1							2	
Type of doors		Solid				Glass	Solid	Glass	Solid	Glass
Capacity (gross)	litre	610 (290)					440		1340	
Permissible loading	kg	150							250	
Surface of shelf	m^2	0,34					0,24		0,34	
Number of shelves	pcs	3 (1)							6	
Max. loading of shelf	kg	35								
Arrangeability of shelves	mm	Spacing every 50mm								
Air circulation		Forced (fan)								
Interior temperature	^{O}C	+2...+10			-4 ..+6	+2...+10				
Power supply	V/Hz	230 / 50								
Power rating	-	Data specified on the rating plate								
Climatic class	-									
Type of refrigeration unit	-									
Type of refrigerant	-	R290								
Amount of refrigerant	kg	-								
GWP / ODP	-	3								

Table 3. Stainless steel upright refrigerators of DM-9262x series

Data		Catalog number			
		DM-92621	DM-92625	DM-92622	DM-92624
Depth	mm	821			
Width	mm	720			1440
Height	mm	2050			
Number of doors	pcs	1			2
Type of doors		Solid		Glass	Solid
Capacity (gross)	litre	610			1340
Permissible loading	kg	150			250
Surface of shelf	m^2	0,34			0,34
Number of shelves	pcs	3			6
Max. loading of shelf	kg	35			
Arrangeability of shelves	mm	Spacing every 50mm			
Air circulation		Forced (fan)			
Interior temperature	^{O}C	-2...+10			
Power supply	V/Hz	230 / 50			
Power rating		Data specified on the rating plate			
Climatic class					
Type of refrigeration unit					
Type of refrigerant	-	R290			
Amount of refrigerant	kg	0,08			
GWP / ODP	-	3			

Table 4. Stainless steel upright refrigerators without compressor of DM-9262x – BA series

Data		Catalog number			
		DM-92621-BA	DM-92625-BA	DM-92622-BA	DM-92624-BA
Depth	mm	821			
Width	mm	720			1440
Height	mm	2050			
Number of doors	pcs	1			2
Type of doors		Solid		Glass	Solid
Capacity (gross)	litre	610			1340
Permissible loading	kg	150			250
Surface of shelf	m^2	0,34			0,34
Number of shelves	pcs	3			6
Max. loading of shelf	kg	35			
Arrangeability of shelves	mm	Spacing every 50mm			
Air circulation		Forced (fan)			
Interior temperature	^{O}C	-2...+10			
Power supply	V/Hz	230 / 50			
Power rating		Data specified on the rating plate			
Climatic class					
Type of refrigeration unit	-				
Type of refrigerant	-	R290			
Amount of refrigerant	kg	-			
GWP / ODP	-	3			

Table 5. Stainless steel upright freezers of DM-926xx series

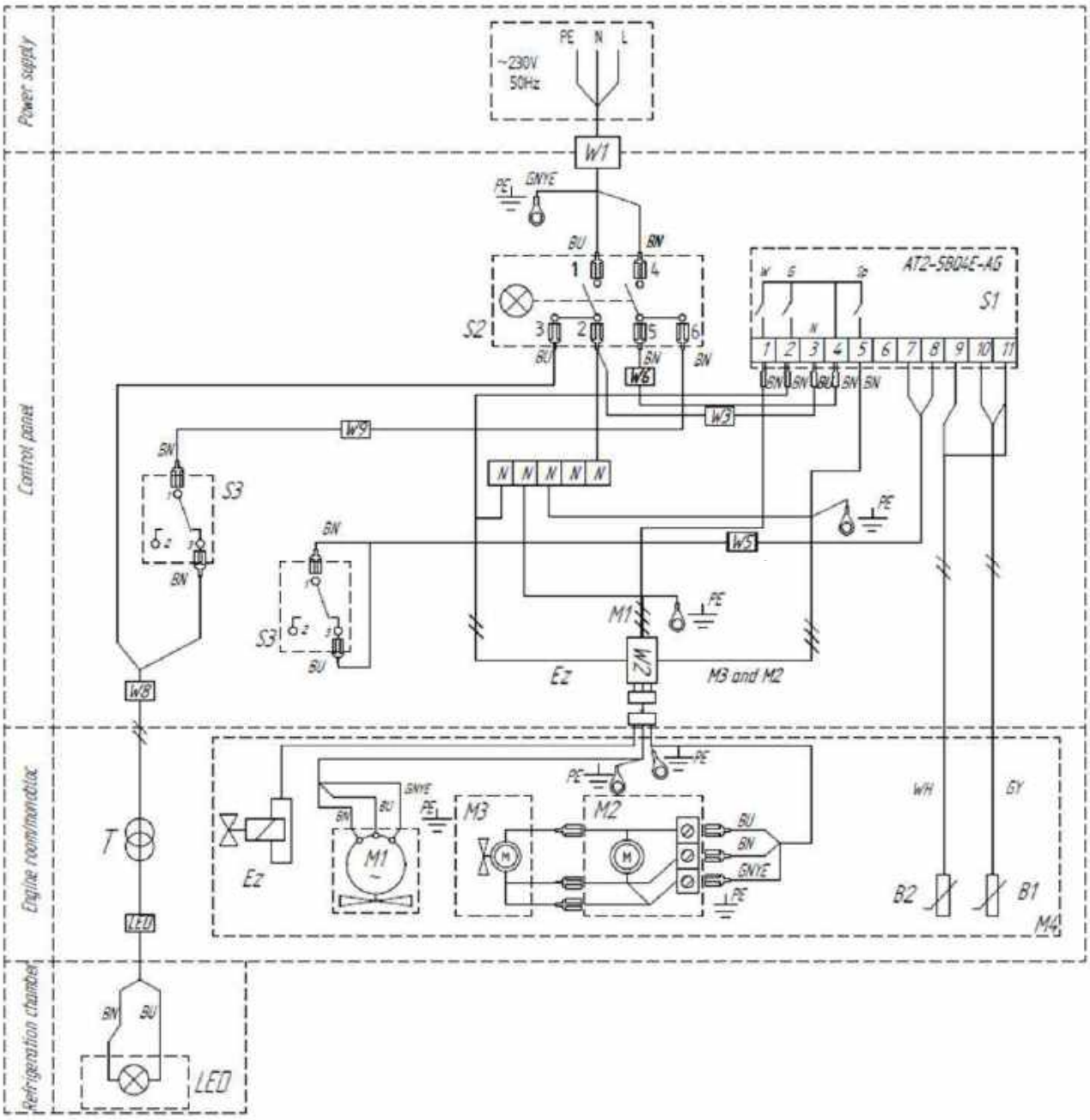
Data		Catalog number			
		DM-92606	DM-92607 DM-92627 (DM-92610)	DM-92617	DM-92608 DM-92628
Depth	mm	821		681	821
Width	mm	720		660	1440
Height	mm	2050			
Number of doors	pcs	1			2
Type of doors		Solid			
Capacity (gross)	litre	610 (300)		440	1340
Permissible loading	kg	150			250
Surface of shelf	m^2	0,34		0,24	0,34
Number of shelves	pcs	3 (1)			6
Max. loading of shelf	kg	35			
Arrangeability of shelves	mm	Spacing every 50mm			
Air circulation		Forced (fan)			
Interior temperature	^{O}C	-14…-21			
Power supply	V/Hz	230 / 50			
Power rating		Data specified on the rating plate			
Climatic class					
Type of refrigeration unit					
Type of refrigerant	-	R290			
Amount of refrigerant	kg	0,13			
GWP / ODP	-	3			

Table 6. Stainless steel upright freezers without compressor of DM-926xx -BA series

Data		Catalog number			
		DM-92606-BA	DM-92607-BA DM-92627-BA (DM-92610-BA)	DM-92617-BA	DM-92608-BA DM-92628-BA
Depth	mm	821		681	821
Width	mm	720		660	1440
Height	mm	2050			
Number of doors	pcs	1			2
Type of doors		Solid			
Capacity (gross)	litre	610 (300)		440	1340
Permissible loading	kg	150			250
Surface of shelf	m^2	0,34		0,24	0,34
Number of shelves	pcs	3 (1)			6
Max. loading of shelf	kg	35			
Arrangeability of shelves	mm	Spacing every 50mm			
Air circulation		Forced (fan)			
Interior temperature	^{O}C	-14…-21			
Power supply	V/Hz	230 / 50			
Power rating		Data specified on the rating plate			
Climatic class					
Type of refrigeration unit	-				
Type of refrigerant	-	R290			
Amount of refrigerant	kg	0,13			
GWP / ODP	-	3			

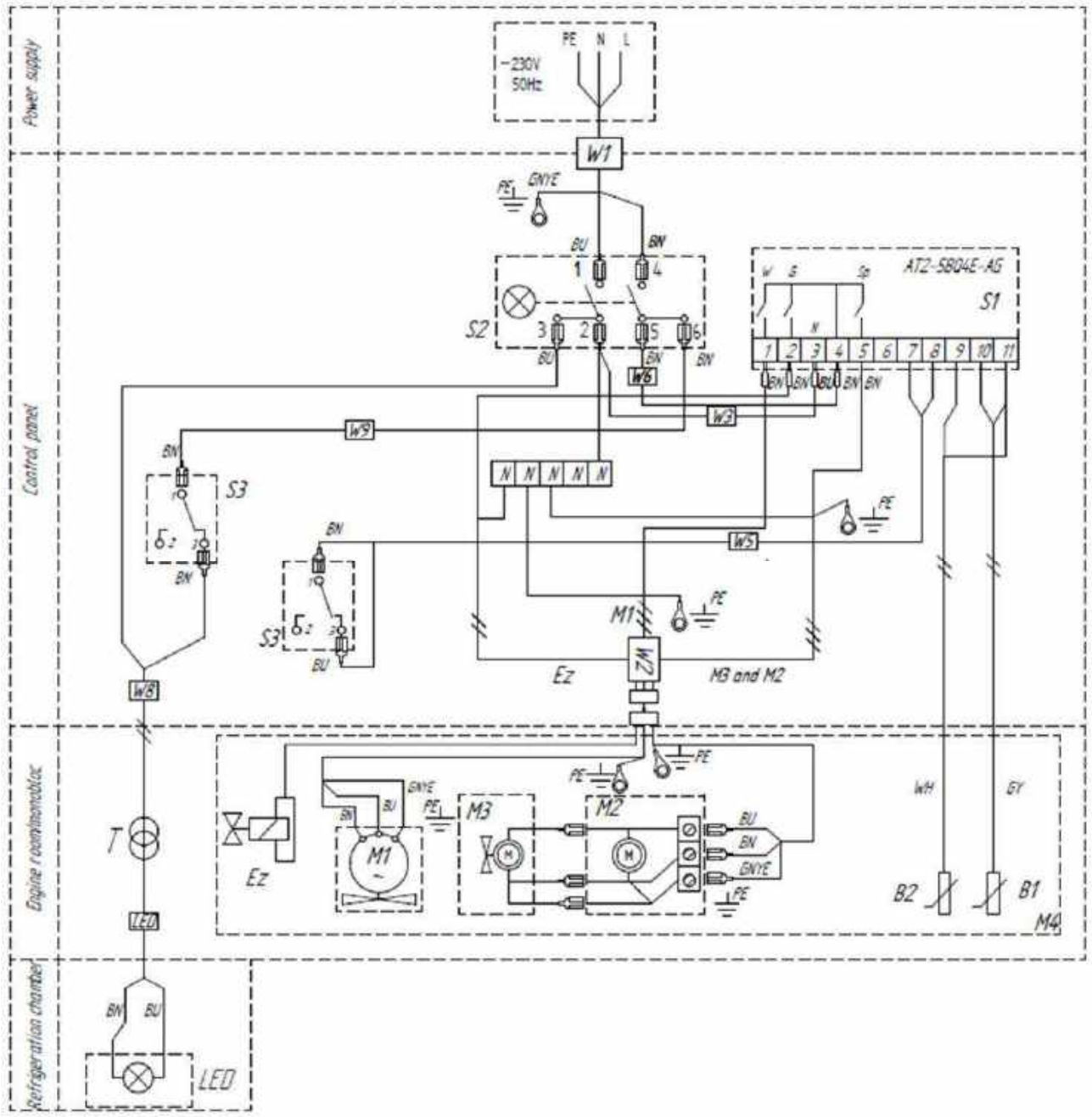
WIRING DIAGRAM FOR REFRIGERATORS WITH COMPRESSOR:

DM-92601, DM-92602, DM-92603, DM-92612, DM-92615, DM-92616 – with controller LAE AT2-5BQ4E-AG(ST)



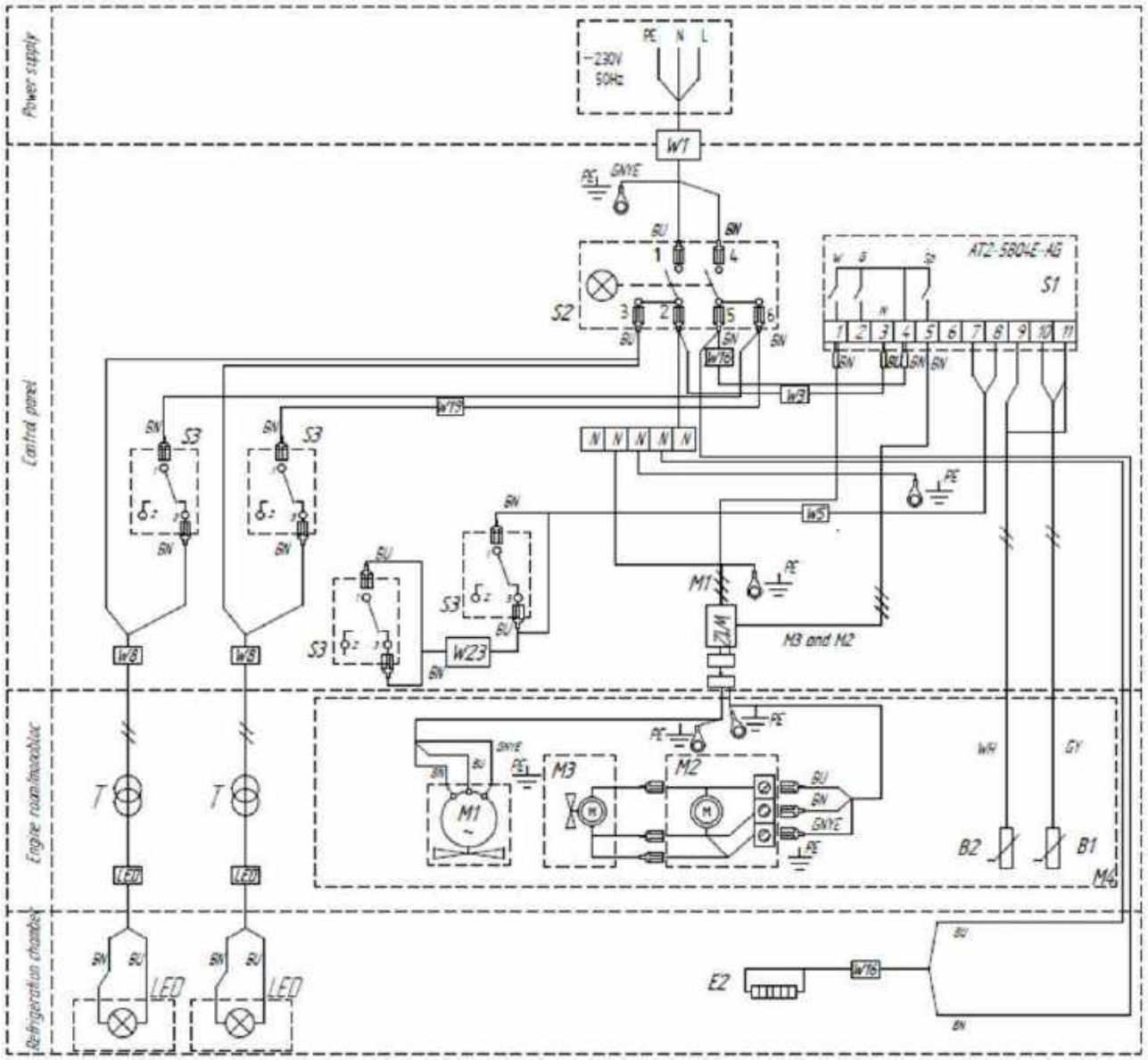
E4	Evaporation heater
E3	Evaporation heater in cooler tray
E2	Gasket heater
E1	Defreezing heater
W	Bunch
T	Power supply
S3, S4	Door switch
S2	Rocker switch
S1	Controller
Ez	Electromagnetic valve
M4	Monobloc
M3	Condenser fan
M2	Compressor
M1	Cooler fan
B2	Evaporator temperature sensor
B1	Chamber temperature sensor

DM-92621, DM-92622, DM-92625– with controller LAE AT2-5BQ4E-AG(ST)



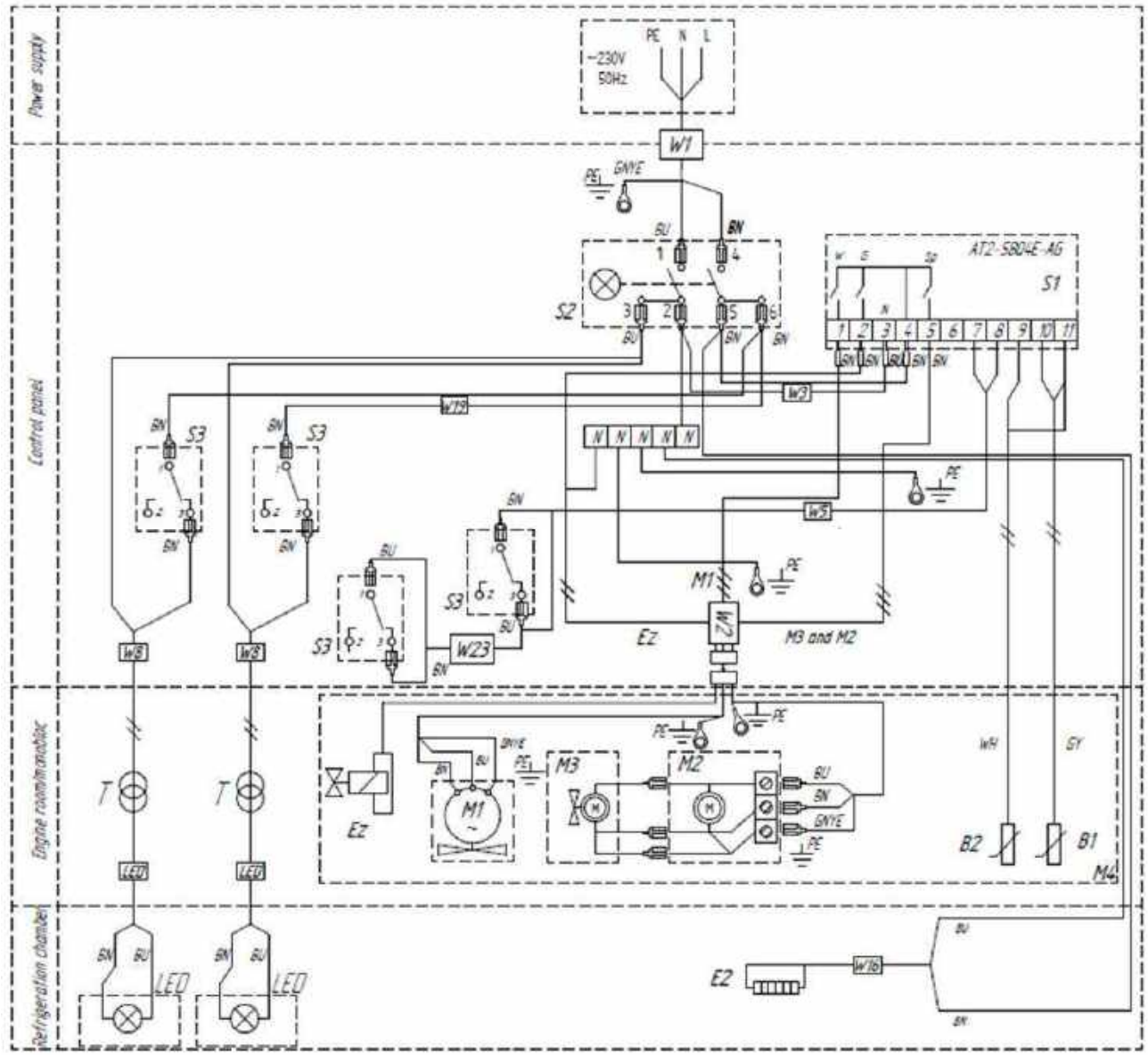
E4	Evaporation heater
E3	Evaporation heater in cooler tray
E2	Gasket heater
E1	Defreezing heater
W	Bunch
T	Power supply
S3, S4	Door switch
S2	Rocker switch
S1	Controller
Ez	Electromagnetic valve
M4	Monobloc
M3	Condenser fan
M2	Compressor
M1	Cooler fan
B2	Evaporator temperature sensor
B1	Chamber temperature sensor

DM-92604, DM-92609 – with controller LAE AT2-5BQ4E-AG [ST]



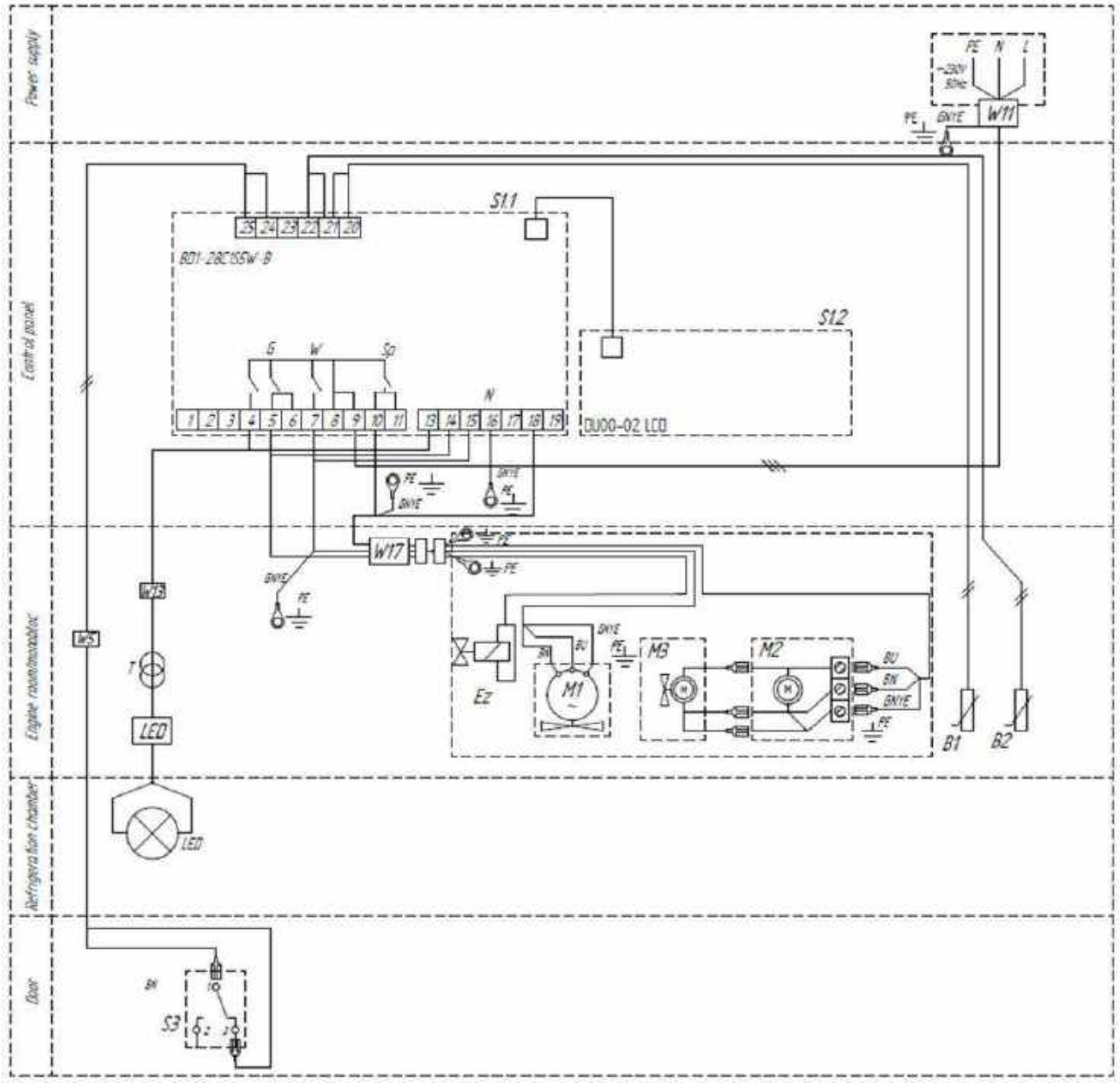
E4	Evaporation heater
E3	Evaporation heater in cooler tray
E2	Gasket heater
E1	Defreezing heater
W	Bunch
T	Power supply
S3, S4	Door switch
S2	Rocker switch
S1	Controller
Ez	Electromagnetic valve
M4	Monobloc
M3	Condenser fan
M2	Compressor
M1	Cooler fan
B2	Evaporator temperature sensor
B1	Chamber temperature sensor

DM-92624 – with controller LAE AT2-5BQ4E-AG [ST]



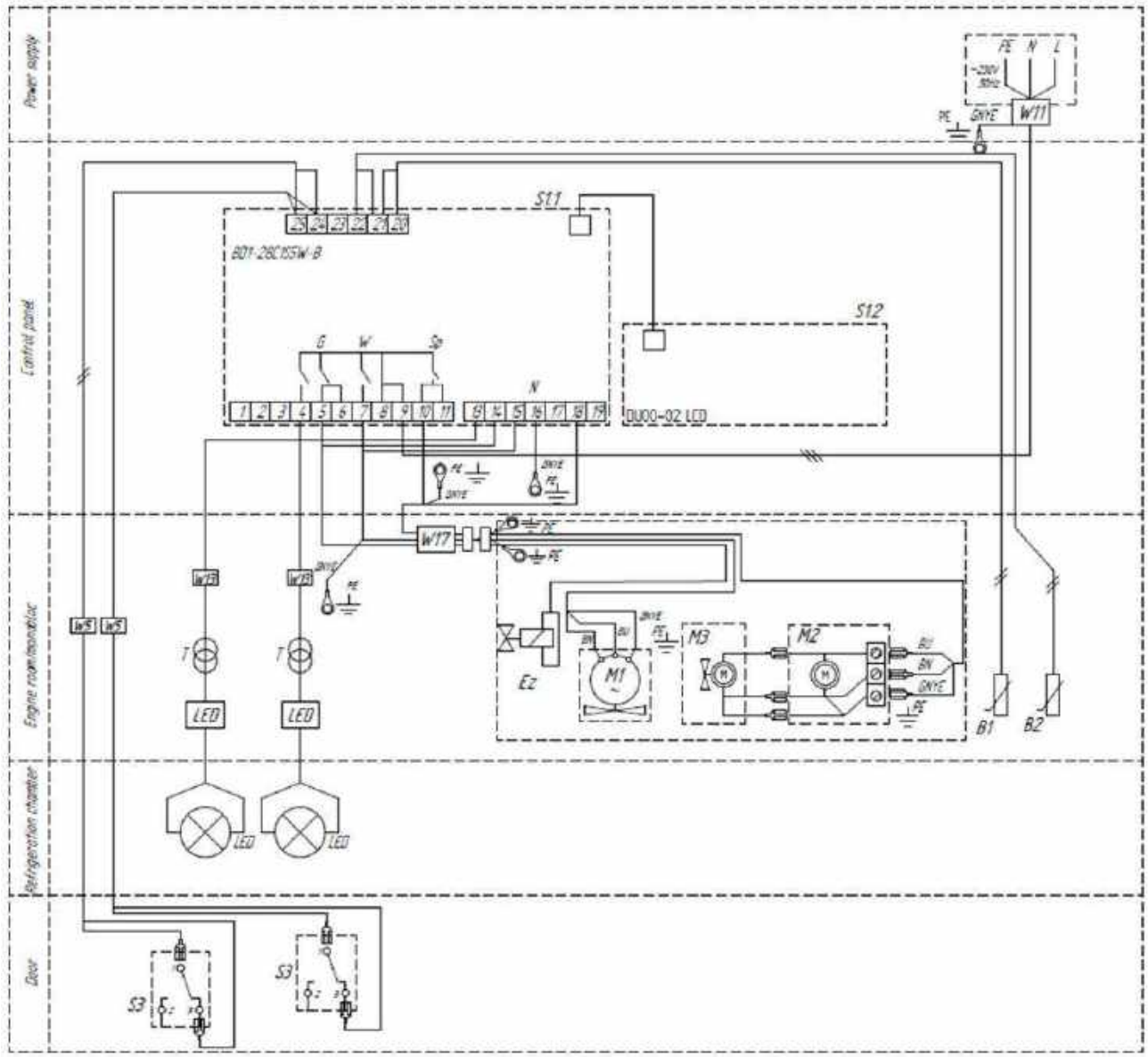
E4	Evaporation heater
E3	Evaporation heater in cooler tray
E2	Gasket heater
E1	Defreezing heater
W	Bunch
T	Power supply
S3, S4	Door switch
S2	Rocker switch
S1	Controller
Ez	Electromagnetic valve
M4	Monobloc
M3	Condenser fan
M2	Compressor
M1	Cooler fan
B2	Evaporator temperature sensor
B1	Chamber temperature sensor

DM-92621, DM-92622, DM-92625 – with controller BD-1-28C1S5W-B [SM]



E4	Evaporation heater
E3	Evaporation heater in cooler tray
E2	Gasket heater
E1	Defreezing heater
W	Bunch
T	Power supply
S3, S4	Door switch
S2	Rocker switch
S1	Controller
Ez	Electromagnetic valve
M4	Monobloc
M3	Condenser fan
M2	Compressor
M1	Cooler fan
B2	Evaporator temperature sensor
B1	Chamber temperature sensor

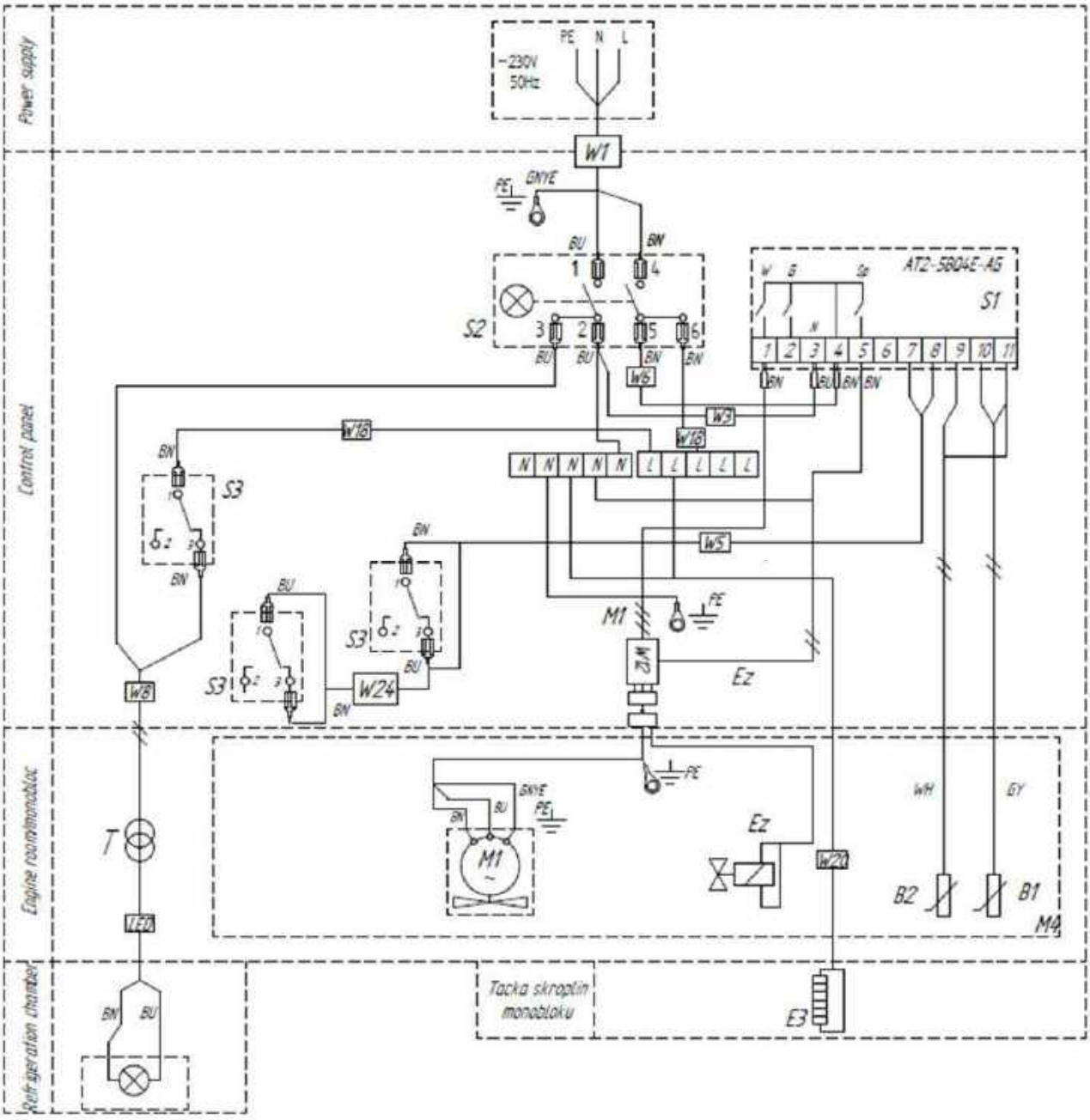
DM-92624 – with controller BD-1-28C1S5W-B [SM]



E4	Evaporation heater
E3	Evaporation heater in cooler tray
E2	Gasket heater
E1	Defreezing heater
W	Bunch
T	Power supply
S3, S4	Door switch
S2	Rocker switch
S1	Controller
Ez	Electromagnetic valve
M4	Monobloc
M3	Condenser fan
M2	Compressor
M1	Cooler fan
B2	Evaporator temperature sensor
B1	Chamber temperature sensor

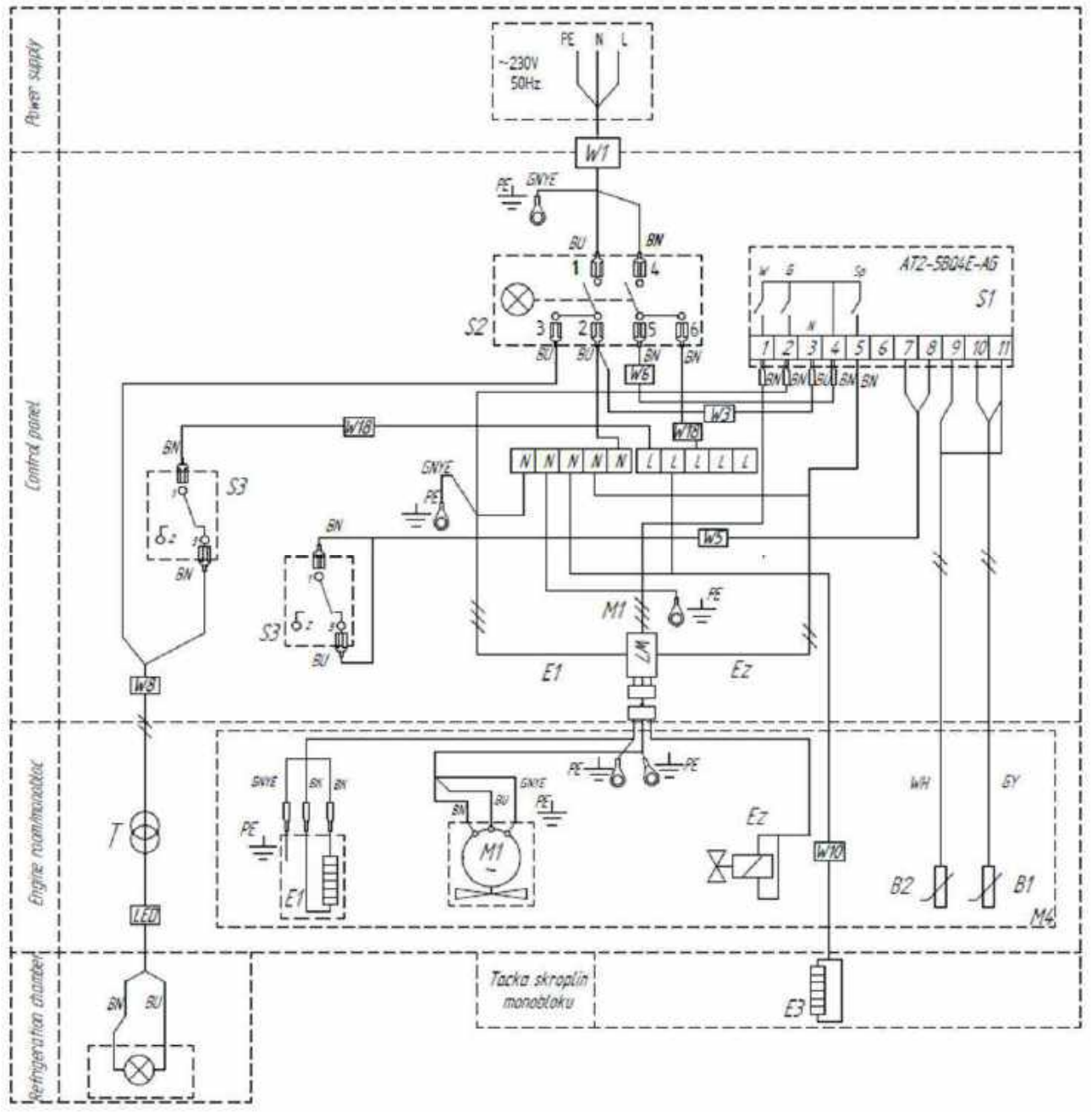
DIAGRAMS FOR REFRIGERATORS AND FREEZERS WITHOUT COMPRESSOR:

DM-92601-BA, DM-92602-BA, DM-92603-BA, DM-92612-BA, DM-92615-BA, DM-92616-BA – with controller LAE AT2-5BQ4E-AG [ST]



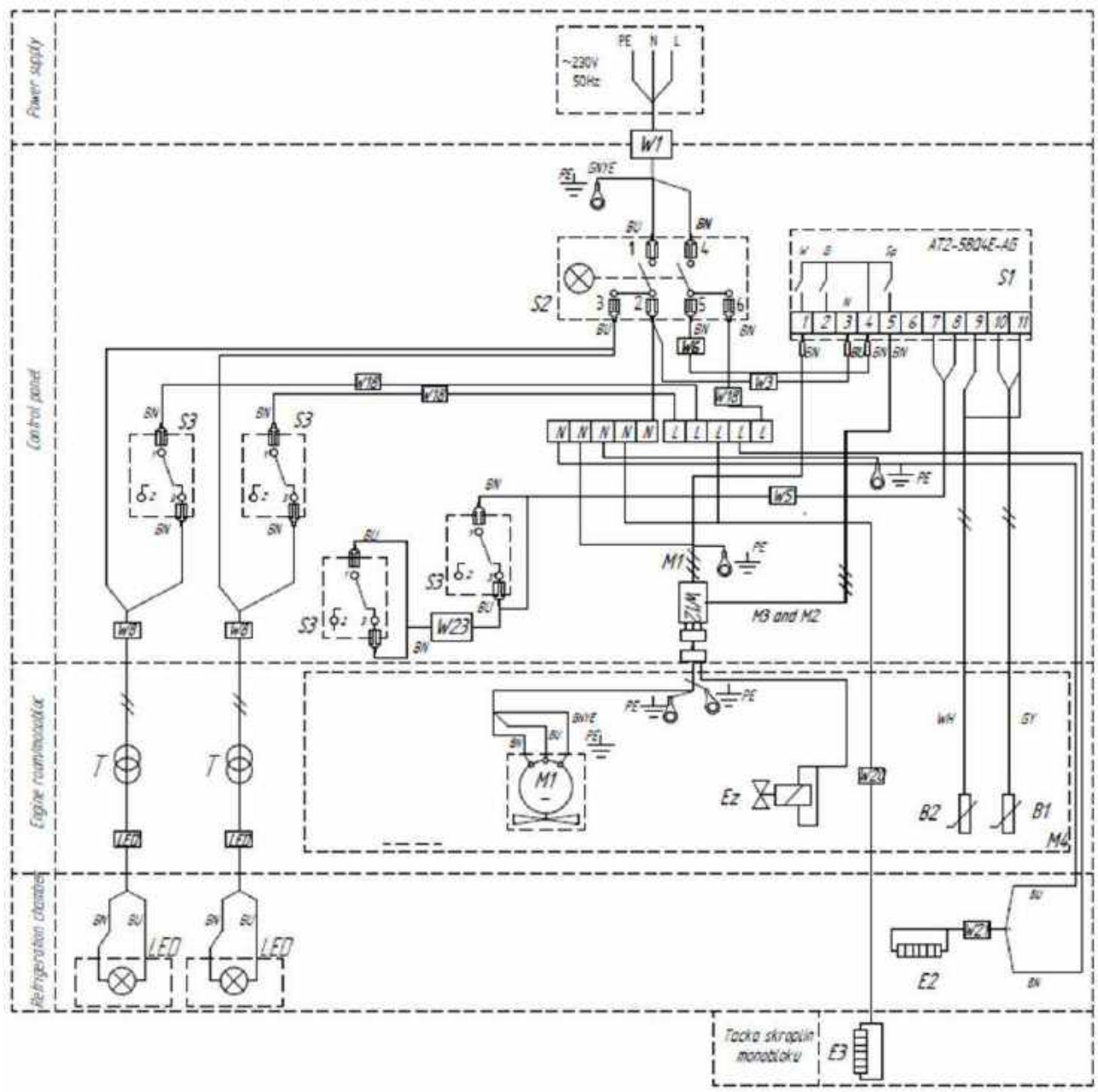
E4	Evaporation heater
E3	Evaporation heater in cooler tray
E2	Gasket heater
E1	Defreezing heater
W	Bunch
T	Power supply
S3, S4	Door switch
S2	Rocker switch
S1	Controller
Ez	Electromagnetic valve
M4	Monobloc
M3	Condenser fan
M2	Compressor
M1	Cooler fan
B2	Evaporator temperature sensor
B1	Chamber temperature sensor

DM-92621-BA, DM-92622-BA, DM-92625-BA – with controller LAE AT2-5BQ4E-AG [ST]



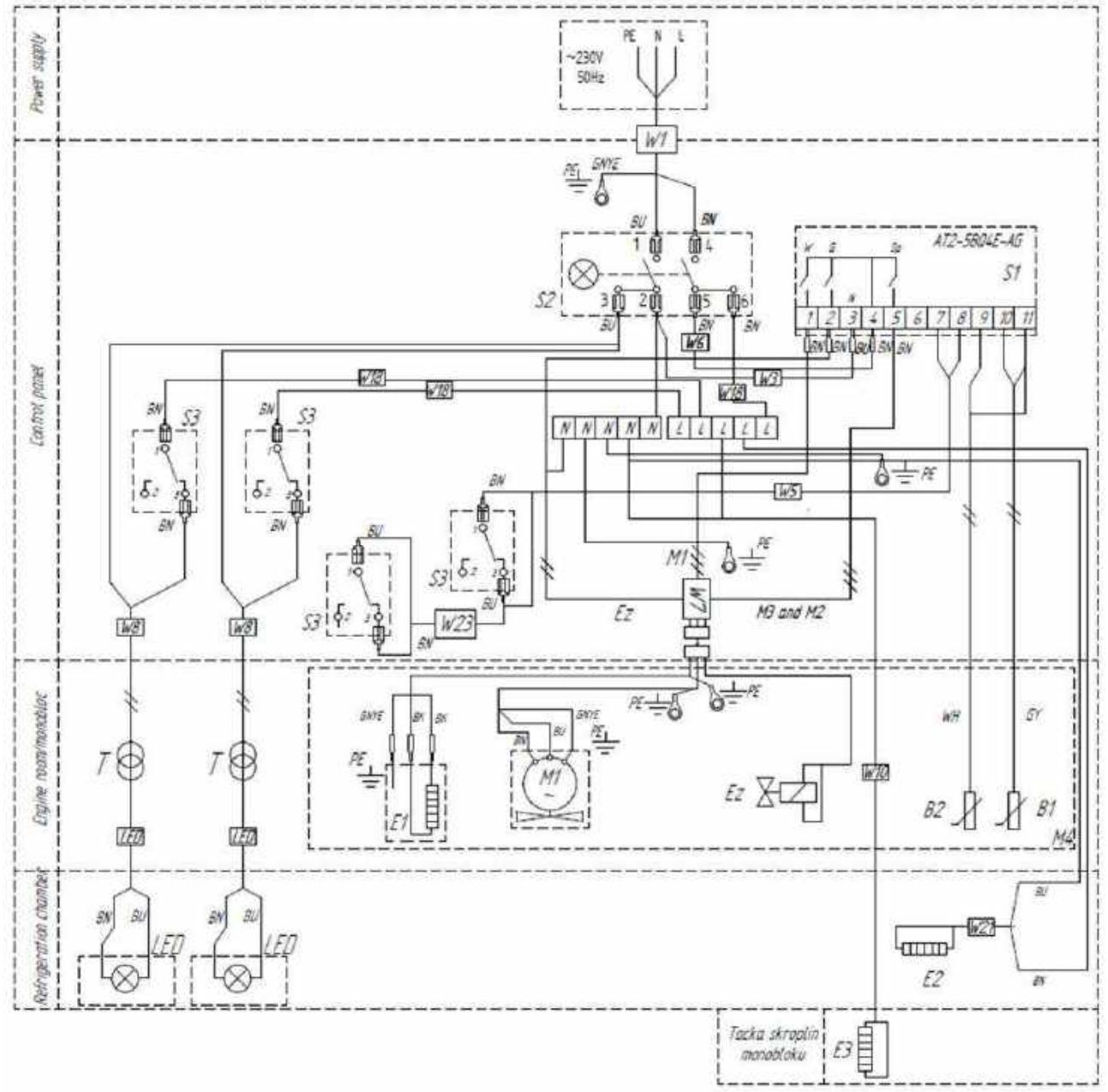
E4	Evaporation heater
E3	Evaporation heater in cooler tray
E2	Gasket heater
E1	Defreezing heater
W	Bunch
T	Power supply
S3, S4	Door switch
S2	Rocker switch
S1	Controller
Ez	Electromagnetic valve
M4	Monobloc
M3	Condenser fan
M2	Compressor
M1	Cooler fan
B2	Evaporator temperature sensor
B1	Chamber temperature sensor

DM-92604-BA, DM-92609-BA – with controller LAE AT2-5BQ4E-AG (ST)



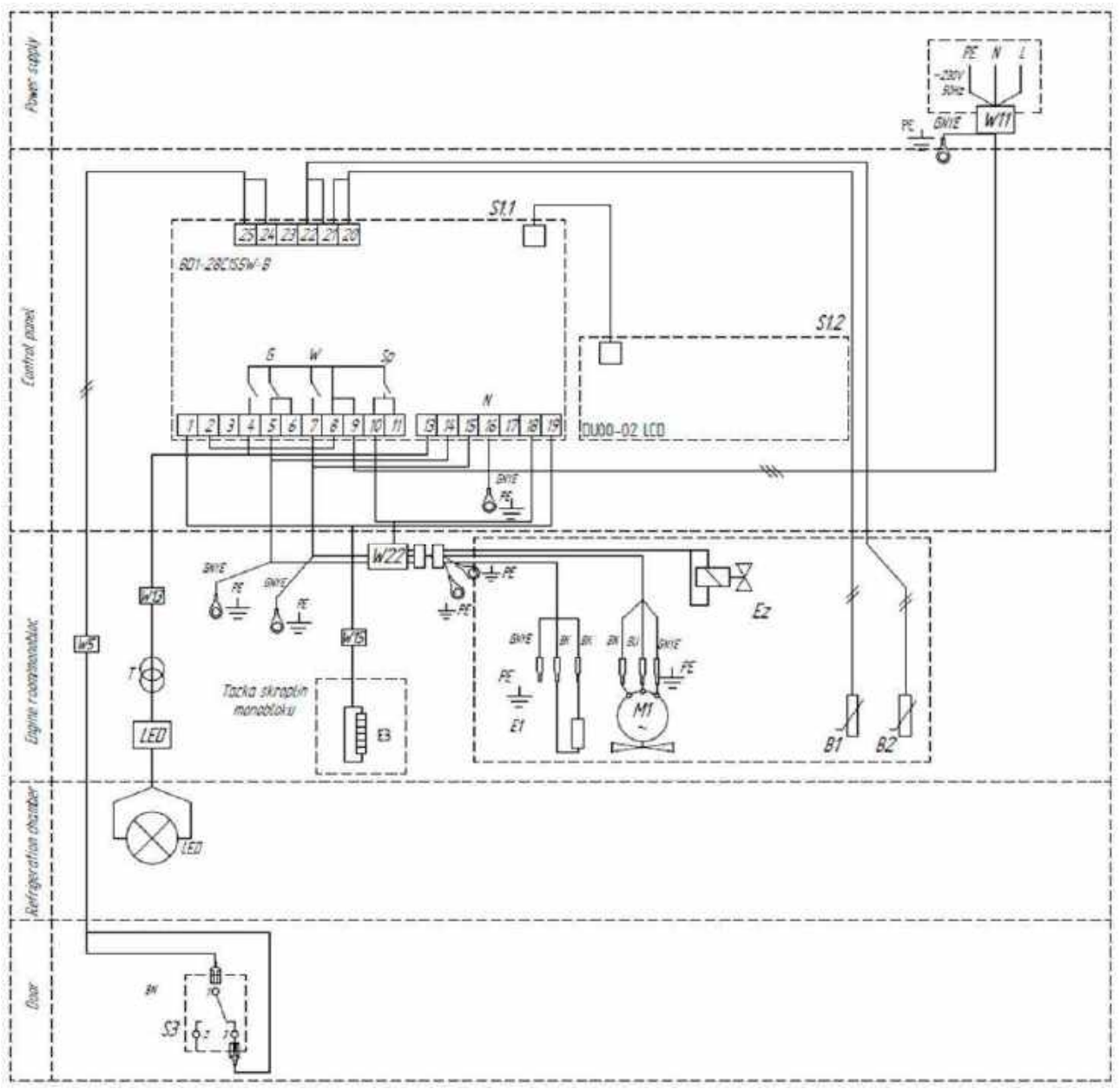
E4	Evaporation heater
E3	Evaporation heater in cooler tray
E2	Gasket heater
E1	Defreezing heater
W	Bunch
T	Power supply
S3, S4	Door switch
S2	Rocker switch
S1	Controller
Ez	Electromagnetic valve
M4	Monobloc
M3	Condenser fan
M2	Compressor
M1	Cooler fan
B2	Evaporator temperature sensor
B1	Chamber temperature sensor

DM-92624-BA – with controller LAE AT2-5BQ4E-AG (ST)



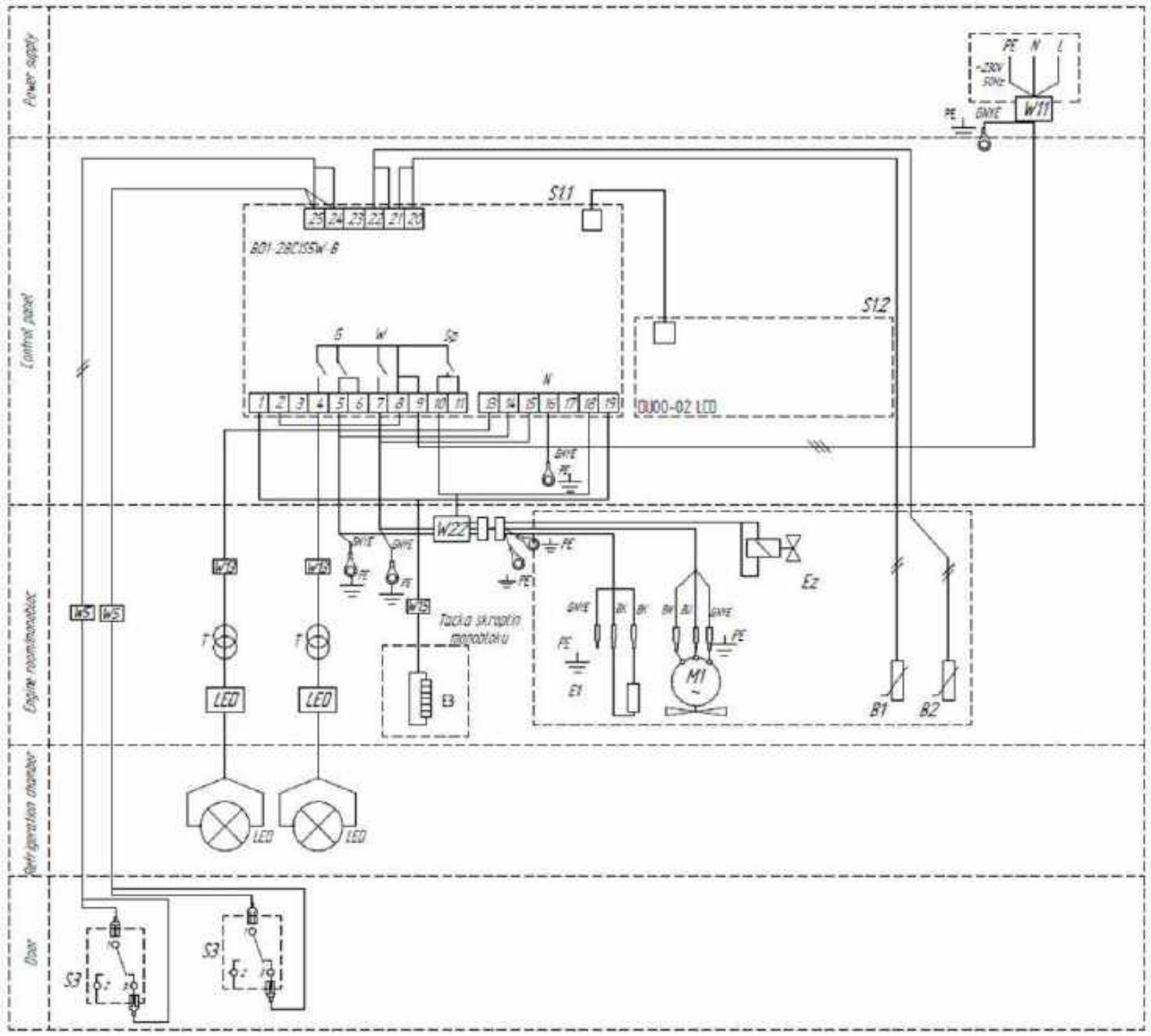
E4	Evaporation heater
E3	Evaporation heater in cooler tray
E2	Gasket heater
E1	Defreezing heater
W	Bunch
T	Power supply
S3, S4	Door switch
S2	Rocker switch
S1	Controller
Ez	Electromagnetic valve
M4	Monobloc
M3	Condenser fan
M2	Compressor
M1	Cooler fan
B2	Evaporator temperature sensor
B1	Chamber temperature sensor

DM-92621-BA, DM-92622-BA, DM-92625-BA – with controller BD-1-28C1S5W-B



E4	Evaporation heater
E3	Evaporation heater in cooler tray
E2	Gasket heater
E1	Defreezing heater
W	Bunch
T	Power supply
S3, S4	Door switch
S2	Rocker switch
S1	Controller
Ez	Electromagnetic valve
M4	Monobloc
M3	Condenser fan
M2	Compressor
M1	Cooler fan
B2	Evaporator temperature sensor
B1	Chamber temperature sensor

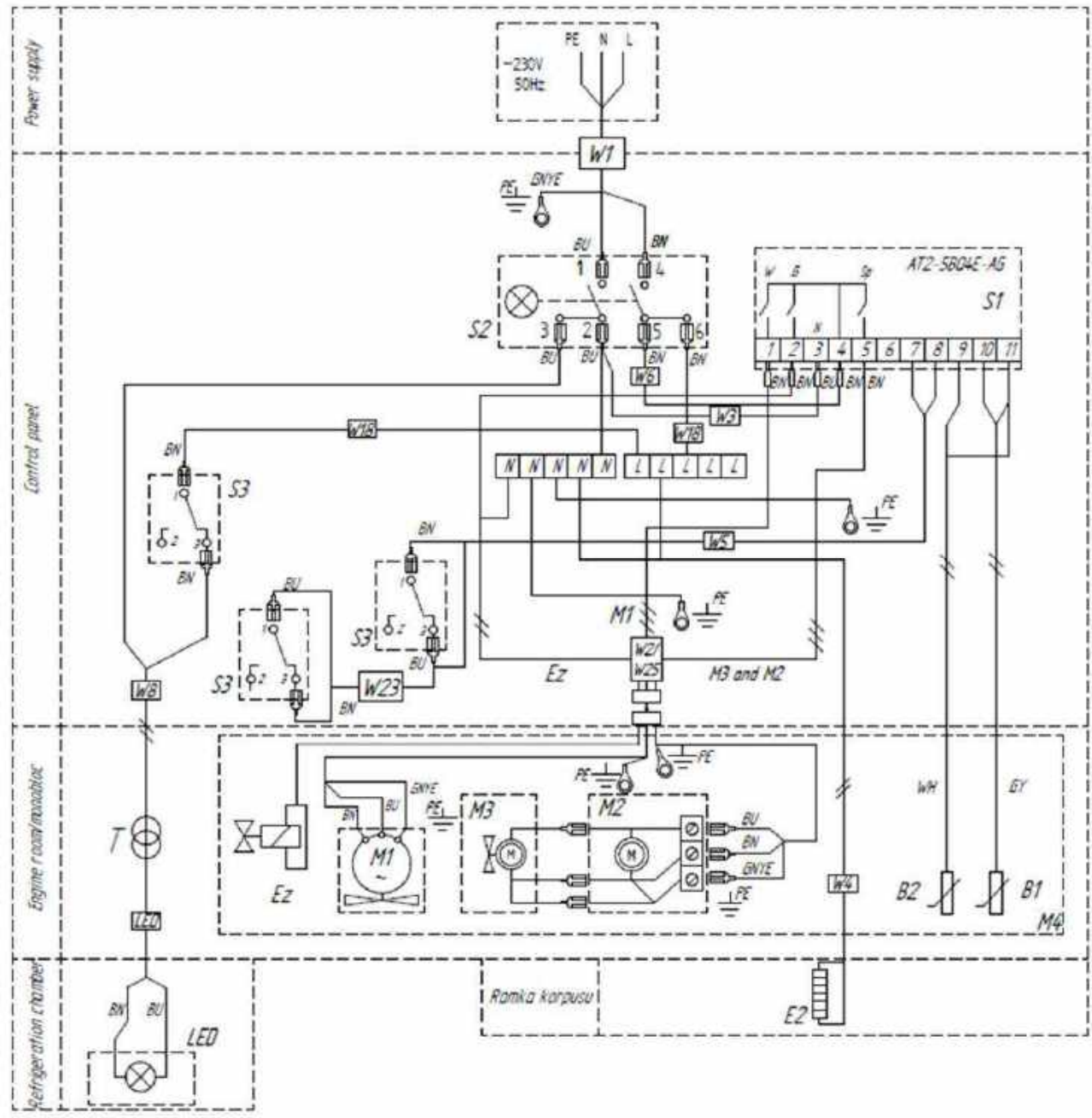
DM-92624-BA – with controller BD-1-28C1S5W-B



E4	Evaporation heater
E3	Evaporation heater in cooler tray
E2	Gasket heater
E1	Defreezing heater
W	Bunch
T	Power supply
S3, S4	Door switch
S2	Rocker switch
S1	Controller
Ez	Electromagnetic valve
M4	Monobloc
M3	Condenser fan
M2	Compressor
M1	Cooler fan
B2	Evaporator temperature sensor
B1	Chamber temperature sensor

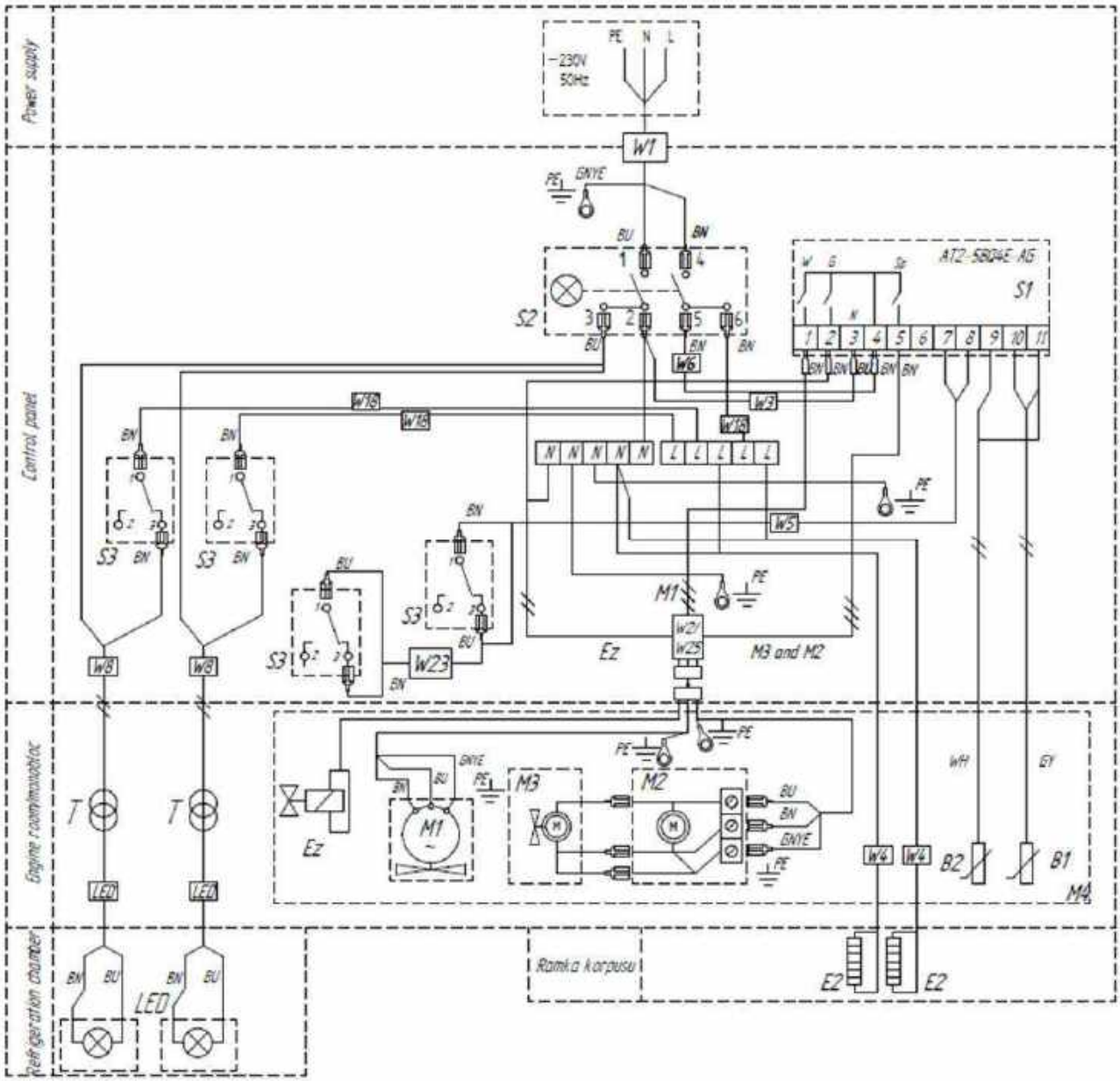
WIRING DIAGRAM FOR FREEZERS WITH COMPRESSOR:

DM-92606, DM-92607, DM-92614, DM-92617, DM-92627 – with controller LAE AT2-5BQ4E-AG(ST)



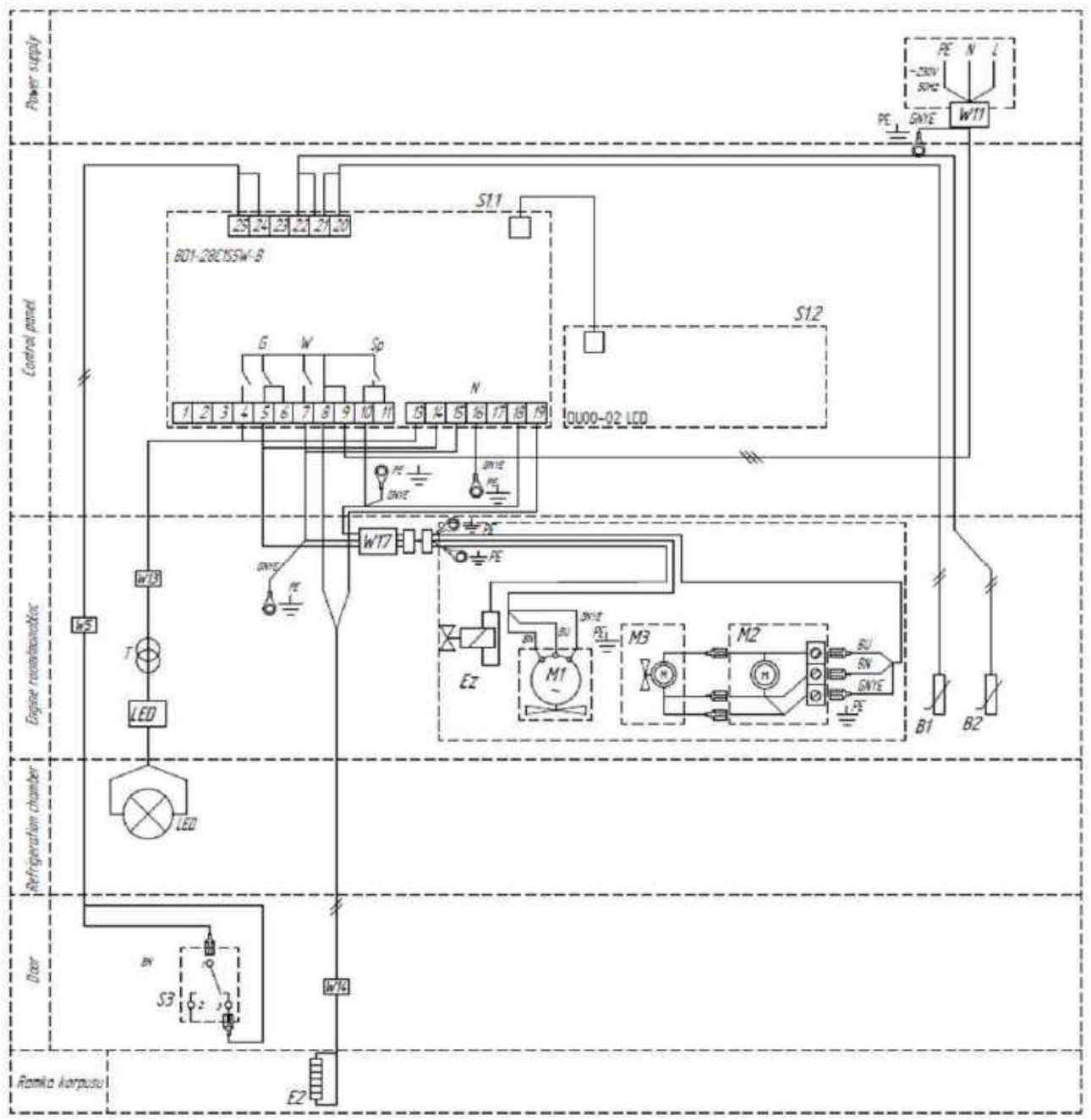
E4	Evaporation heater
E3	Evaporation heater in cooler tray
E2	Gasket heater
E1	Defreezing heater
W	Bunch
T	Power supply
S3, S4	Door switch
S2	Rocker switch
S1	Controller
Ez	Electromagnetic valve
M4	Monobloc
M3	Condenser fan
M2	Compressor
M1	Cooler fan
B2	Evaporator temperature sensor
B1	Chamber temperature sensor

DM-92608, DM-92628– with controller LAE AT2-5BQ4E-AG(ST)



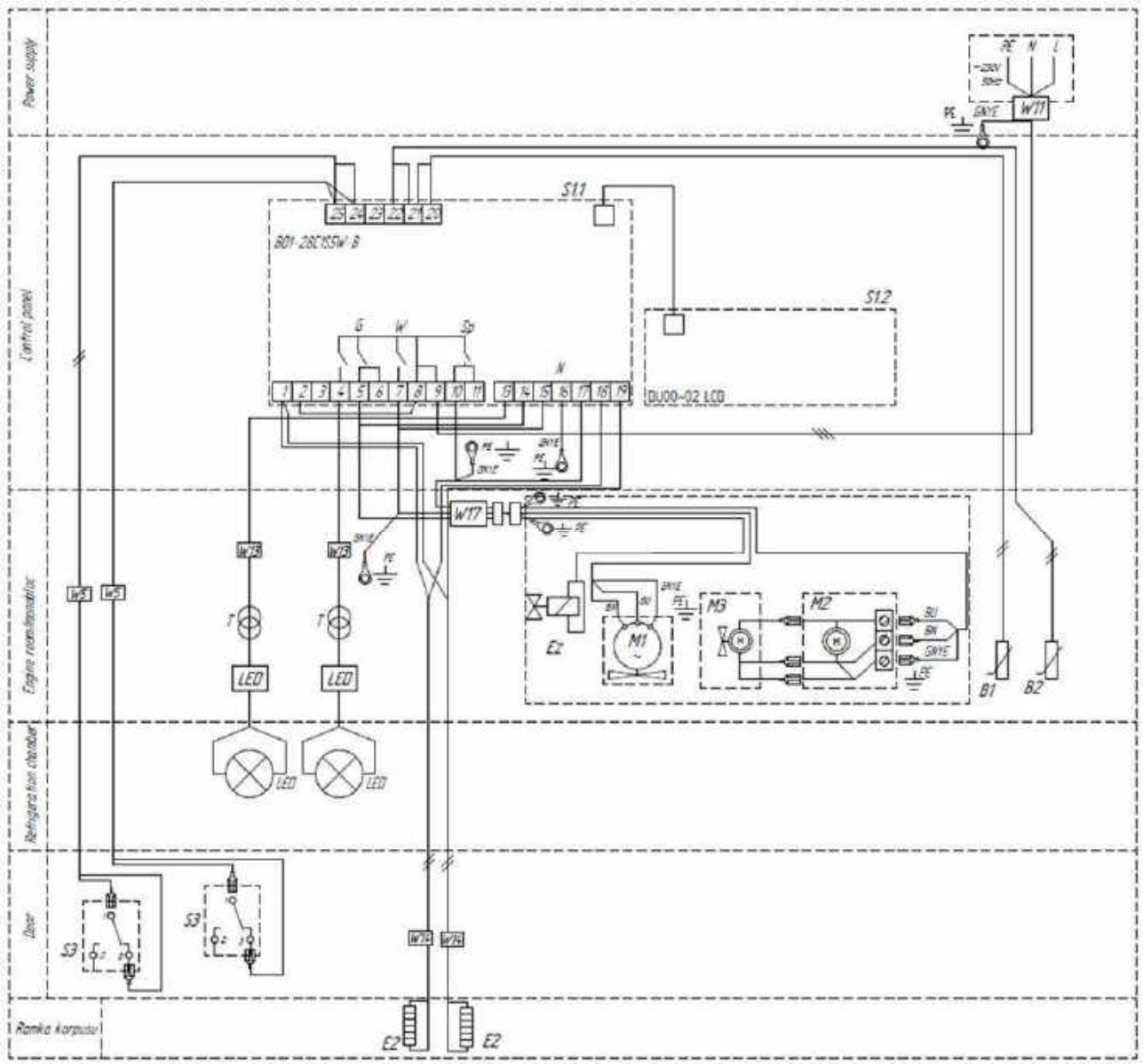
E4	Evaporation heater
E3	Evaporation heater in cooler tray
E2	Gasket heater
E1	Defreezing heater
W	Bunch
T	Power supply
S3, S4	Door switch
S2	Rocker switch
S1	Controller
Ez	Electromagnetic valve
M4	Monobloc
M3	Condenser fan
M2	Compressor
M1	Cooler fan
B2	Evaporator temperature sensor
B1	Chamber temperature sensor

DM-92627– with controller BD-1-28C1S5W-B [SM]



E4	Evaporation heater
E3	Evaporation heater in cooler tray
E2	Gasket heater
E1	Defreezing heater
W	Bunch
T	Power supply
S3, S4	Door switch
S2	Rocker switch
S1	Controller
Ez	Electromagnetic valve
M4	Monobloc
M3	Condenser fan
M2	Compressor
M1	Cooler fan
B2	Evaporator temperature sensor
B1	Chamber temperature sensor

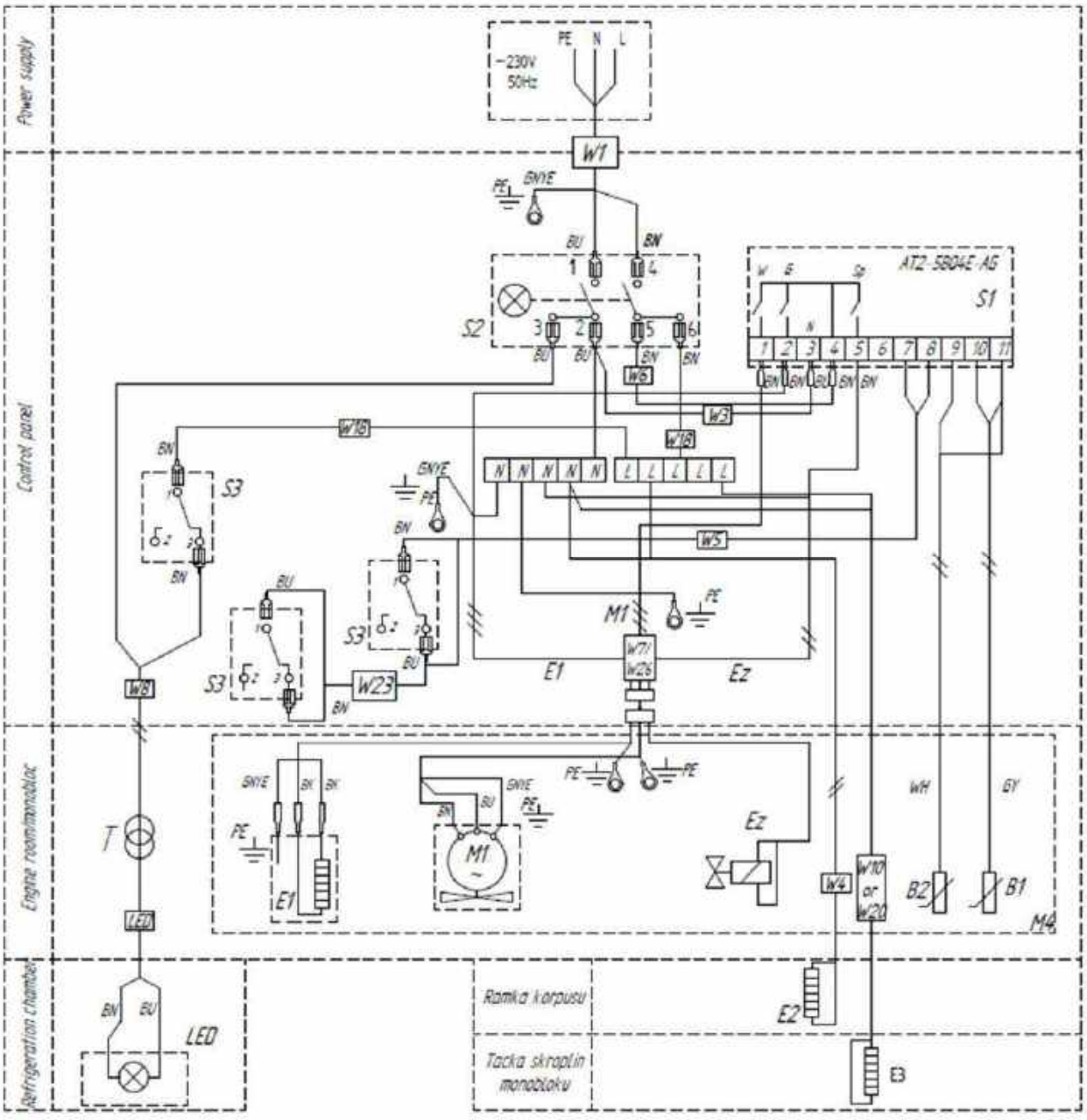
DM-92628– with controller BD-1-28C1S5W-B [SM]



E4	Evaporation heater
E3	Evaporation heater in cooler tray
E2	Gasket heater
E1	Defreezing heater
W	Bunch
T	Power supply
S3, S4	Door switch
S2	Rocker switch
S1	Controller
Ez	Electromagnetic valve
M4	Monobloc
M3	Condenser fan
M2	Compressor
M1	Cooler fan
B2	Evaporator temperature sensor
B1	Chamber temperature sensor

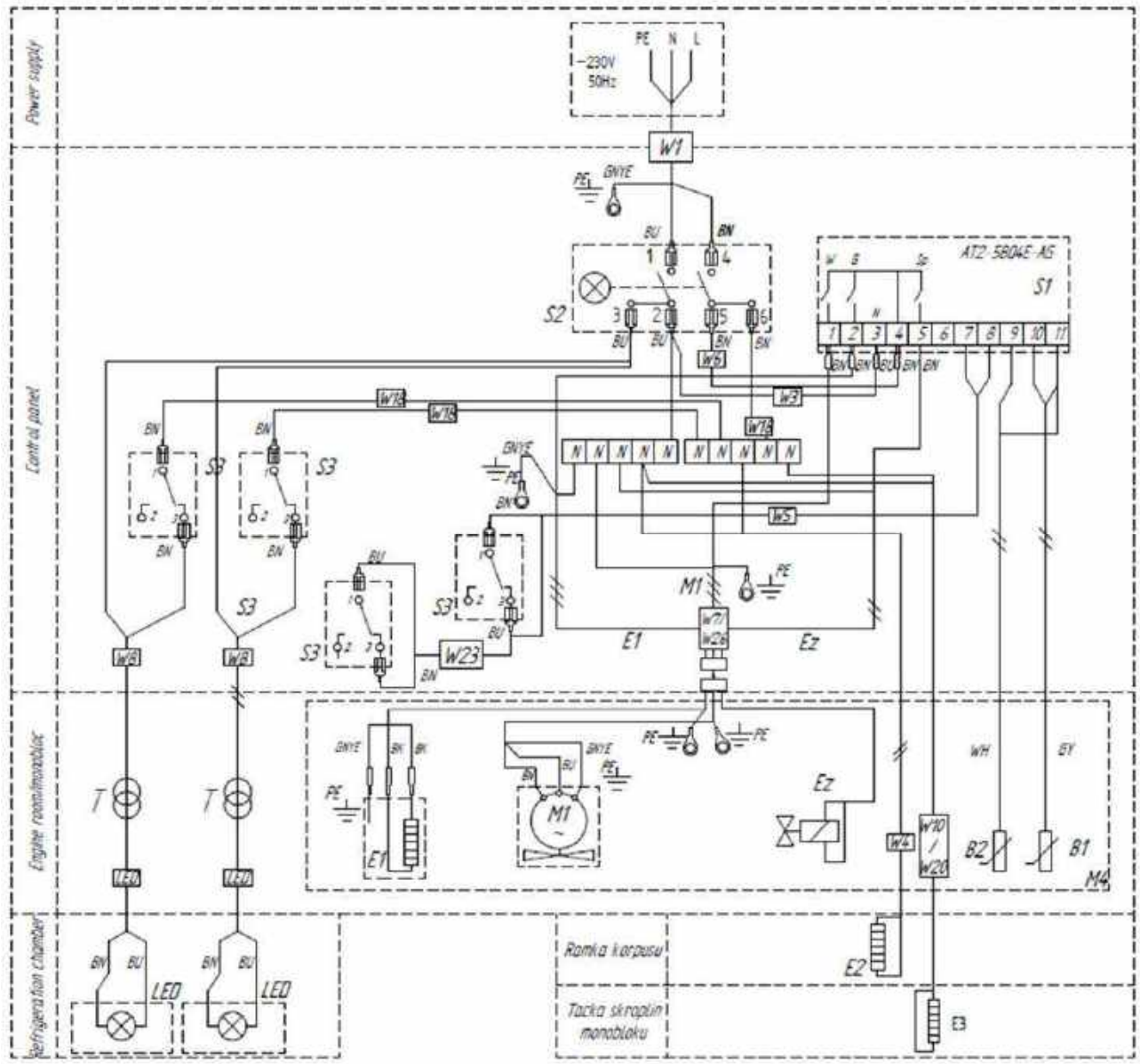
ELECTRIC DIAGRAM FOR FREEZERS WITHOUT COMPRESSOR:

DM-92606-BA, DM-92607-BA, DM-92614-BA, DM-92617-BA, DM-92627-BA – with controller LAE AT2-5BQ4E-AG [ST]



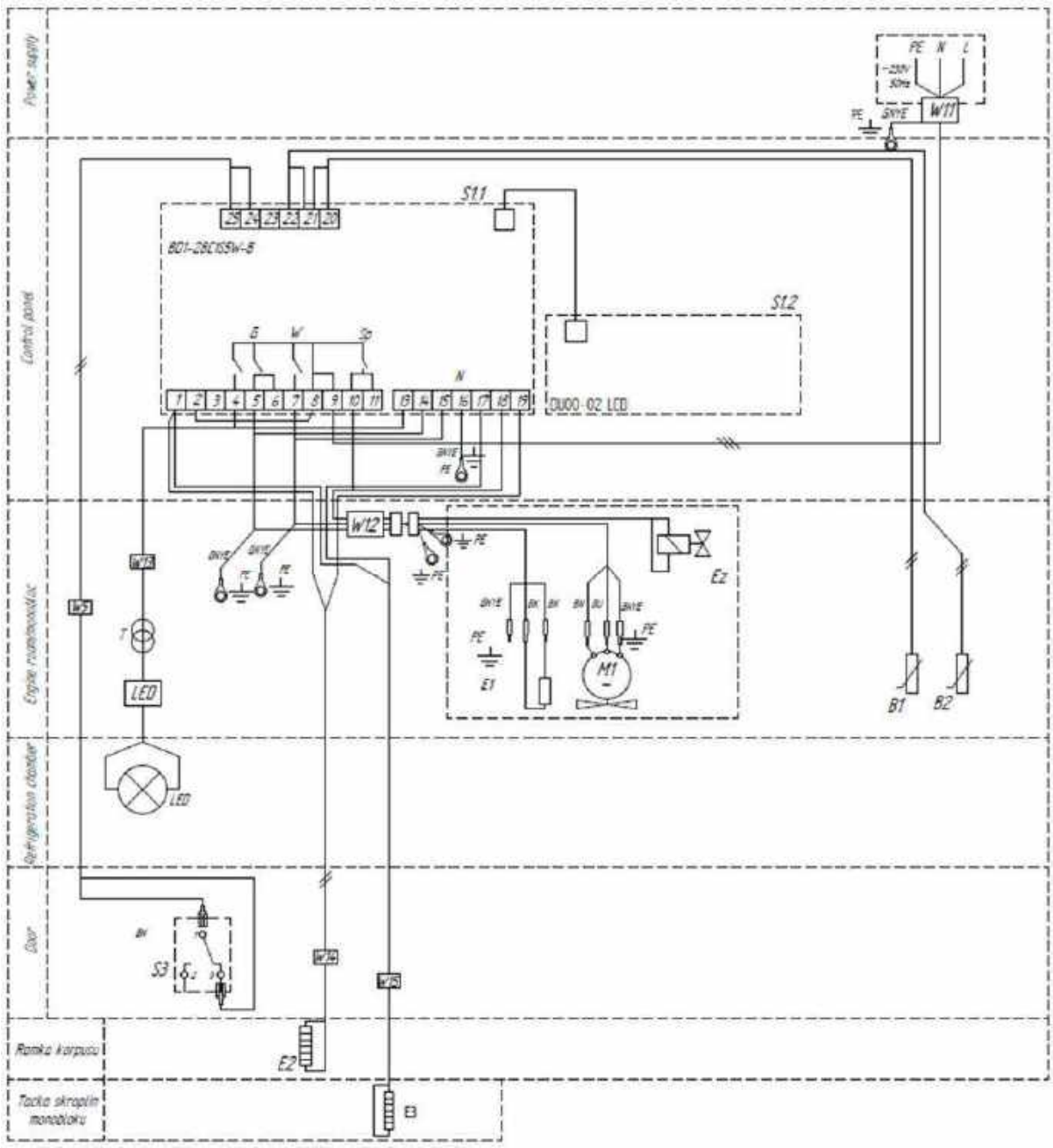
E4	Evaporation heater
E3	Evaporation heater in cooler tray
E2	Gasket heater
E1	Defreezing heater
W	Bunch
T	Power supply
S3, S4	Door switch
S2	Rocker switch
S1	Controller
Ez	Electromagnetic valve
M4	Monobloc
M3	Condenser fan
M2	Compressor
M1	Cooler fan
B2	Evaporator temperature sensor
B1	Chamber temperature sensor

DM-92608-BA, DM-92628-BA– with controller LAE AT2-5BQ4E-AG [ST]



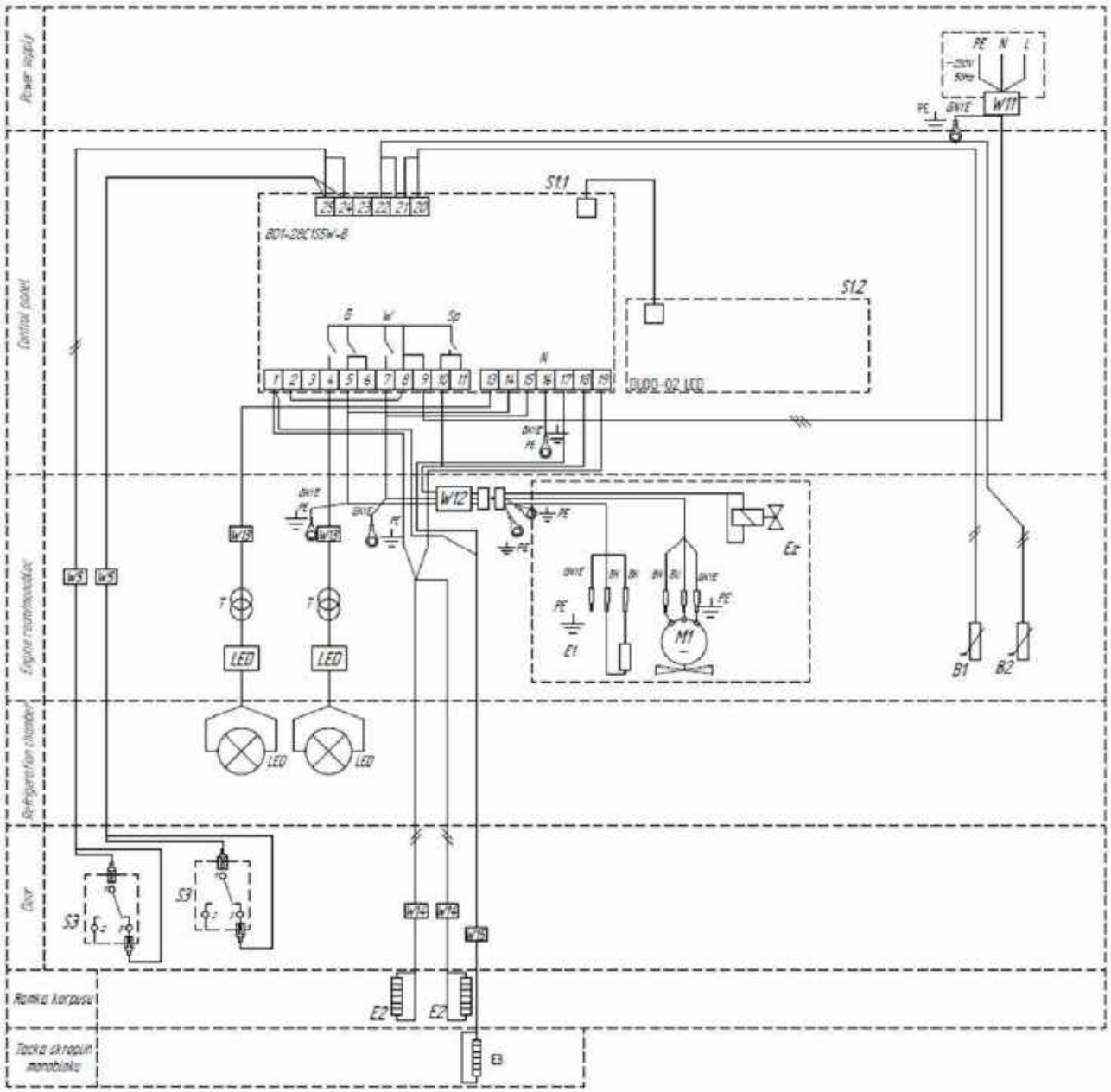
E4	Evaporation heater
E3	Evaporation heater in cooler tray
E2	Gasket heater
E1	Defreezing heater
W	Bunch
T	Power supply
S3, S4	Door switch
S2	Rocker switch
S1	Controller
Ez	Electromagnetic valve
M4	Monobloc
M3	Condenser fan
M2	Compressor
M1	Cooler fan
B2	Evaporator temperature sensor
B1	Chamber temperature sensor

DM-92627-BA– with controller BD-1-28C1S5W-B [SM]



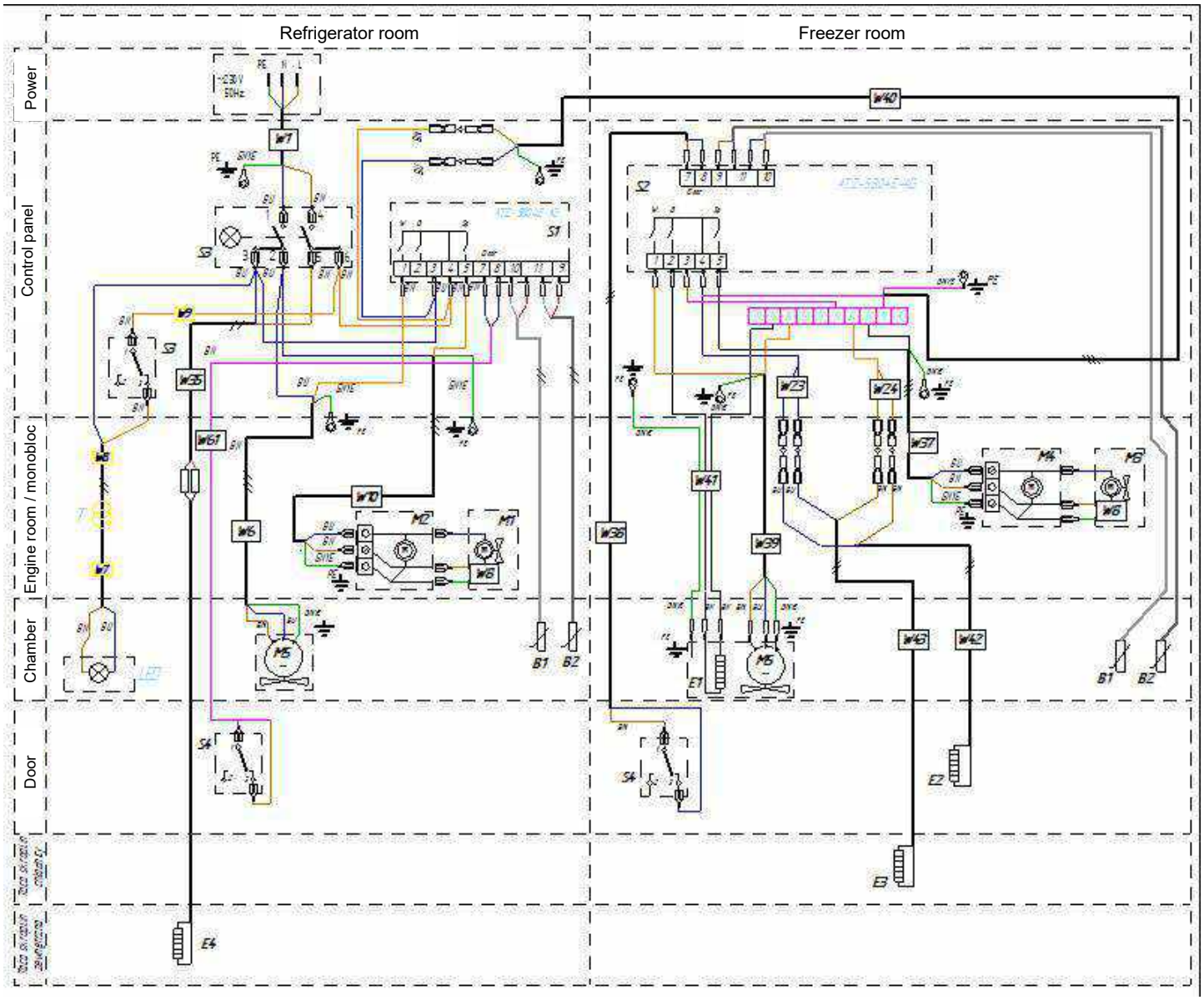
E4	Evaporation heater
E3	Evaporation heater in cooler tray
E2	Gasket heater
E1	Defreezing heater
W	Bunch
T	Power supply
S3, S4	Door switch
S2	Rocker switch
S1	Controller
Ez	Electromagnetic valve
M4	Monobloc
M3	Condenser fan
M2	Compressor
M1	Cooler fan
B2	Evaporator temperature sensor
B1	Chamber temperature sensor

DM-92628-BA– with controller BD-1-28C1S5W-B [SM]



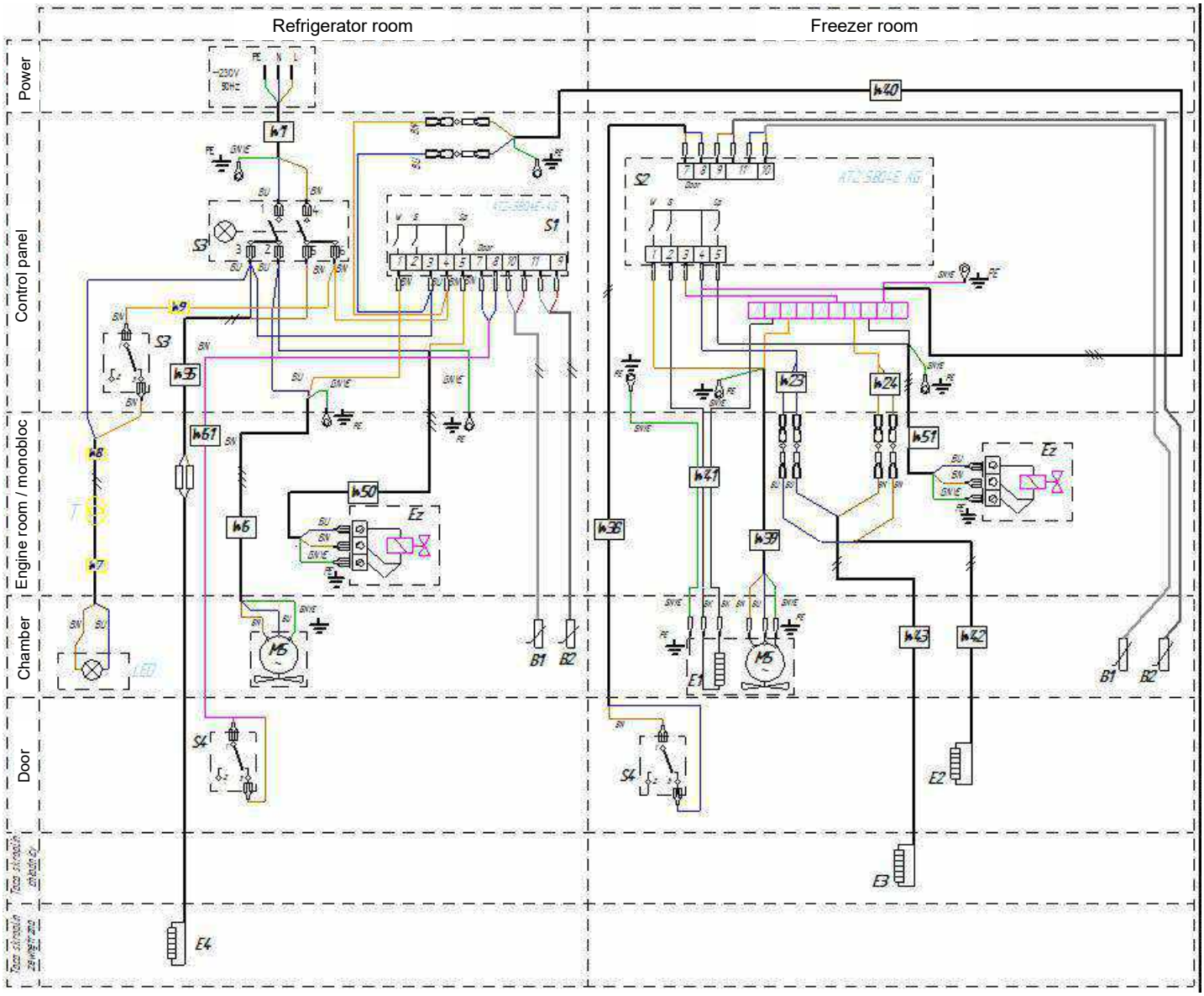
E4	Evaporation heater
E3	Evaporation heater in cooler tray
E2	Gasket heater
E1	Defreezing heater
W	Bunch
T	Power supply
S3, S4	Door switch
S2	Rocker switch
S1	Controller
Ez	Electromagnetic valve
M4	Monobloc
M3	Condenser fan
M2	Compressor
M1	Cooler fan
B2	Evaporator temperature sensor
B1	Chamber temperature sensor

refrigerator DM-92610 with compressor – controller LAE AT2-5BQ4E-AG(ST



E4	Evaporation heater
E3	Evaporation heater in cooler tray
E2	Gasket heater
E1	Defreezing heater
W	Bunch
T	Power supply
S3, S4	Door switch
S2	Rocker switch
S1	Controller
Ez	Electromagnetic valve
M4	Monobloc
M3	Condenser fan
M2	Compressor
M1	Cooler fan
B2	Evaporator temperature sensor
B1	Chamber temperature sensor

refrigerator DM-92610 without compressor – controller LAE AT2-5BQ4E-AG(ST



E4	Evaporation heater
E3	Evaporation heater in cooler tray
E2	Gasket heater
E1	Defreezing heater
W	Bunch
T	Power supply
S3, S4	Door switch
S2	Rocker switch
S1	Controller
Ez	Electromagnetic valve
M4	Monobloc
M3	Condenser fan
M2	Compressor
M1	Cooler fan
B2	Evaporator temperature sensor
B1	Chamber temperature sensor

LAE CONTROLLER WITH BUTTONS - SERVICE INSTRUCTION

Basic operation

The power supply is turned on by means of a rocker switch located on the control panel of the device or by pressing the button of the controller. The switching condition is signalled by the values of the air temperature in the chamber appeared on the controller's display.

In order to display and modify the required temperature of the chamber:

- Press and hold the button for half a second to display a current programmed temperature value.
- Press and hold the button then:
- Press the button to increase the temperature value.
- Press the button to decrease the temperature value.
- After release of the button the newly programmed value is stored. Since then the controller will start running a new programme.

- **Defreezing (defrosting):**

During operation of the device the message "***dEF***" appears on the display at regular intervals, this means that the device operates in the defreezing mode of the cooler. The defreezing cycle and its duration are determined by the producer of the device and user does not affect this parameter. If due to the difficult operating conditions of the device the additional defreezing of the cooler is needed, press and hold the button for 2 seconds. The message "***dEF***" will appear on the display. The defreezing process will stop automatically after reaching the time or temperature programmed by the producer.

- **Alarms:**

The meaning of messages that can appear on the display:

E1 - Chamber temperature sensor damaged. The controller will start the device in a time cycle according to the times programmed by the producer. Defreezing will function normally. Call the service in order to remove the defect.

E2 - Evaporator temperature sensor damaged. The controller will not run the automatic cycle and manual defreezing. In such a case the only possibility of defreezing the cooler is turn off the device and wait for the natural ice melting on the cooler. Call the service in order to remove the defect.

dEF - Defreezing cycle activated (see section: **Defreezing**)

REC - Evaporator drainage after defreezing process

CL - Warning: condenser must be cleaned

Note! Message CL

Clean the condenser, see: page 6 – section: Operation. After cleaning of the condenser follow the below instruction.

In order to turn off the alarm ***CL*** reminding that the condenser must be cleaned (every 4 weeks):

- press the button until the display shows the message ***CND***,

- then holding the button , press the button .

After these steps the parameter CND is zeroed and the cycle is set up to the beginning.

NOTE! Keypad lock

The most common mistake made by the users involves **locking the keypad unintentionally** resulting in lack of access to the controller menu. The non-verification of the locking option setup results in sending the controller back to the distributor as 'damaged'. The keypad lock allows avoiding the undesirable and potentially dangerous tampering if the controller is installed in an easily accessible place. In the menu INFO, set the parameter LOC=YES in order to turn on the keypad lock. **In order to resume the operation of the keypad, set the parameter LOC in the value NO.**

In order to unlock the keypad

- press the button until the display shows the message ***LOC***,

- then holding the button , press the button .

- in order to exit this menu, press the button or wait 10 seconds.

Switching the device into the mode ECO

The operation of the device can be quickly changed into the mode ECO (switching the device into alternative setups). The mode ECO functions most effectively under proper operating conditions of the device (i.e. low door opening frequency, putting products pre-refrigerated or frozen to the chamber). Under such conditions the function ECO allows saving a part of energy in relation to the operation with the basic settings. In order to switch between the standard mode

and the mode ECO, press and hold the button MA for 2 seconds. The activation of the mode ECO is signalled by the proper lamp lit on the controller screen.

Messages from controller

During work of controller it is possible to have following messages in display (except temperature):

dEF	Defrosting running	hP	Too high pressure in evaporator
oFF	Controller in standby mode	hi	Ambient high temp. alarm
cL	Necessary cleaning of condenser	Lo	Ambient low temp. alarm
do	Opened door alarm	E1	Failure of sensor 1
hc	Condenser high temp. alarm	E2	Failure of sensor 2
		E3	Failure of sensor 3

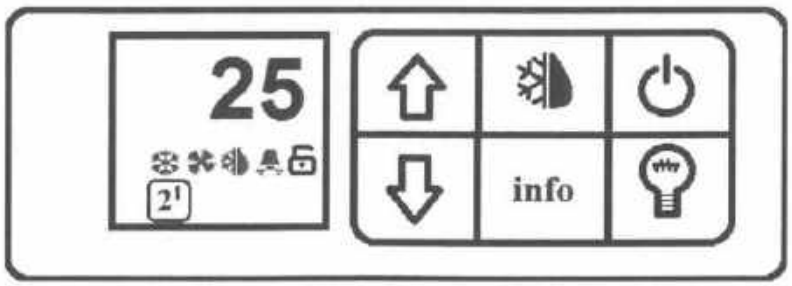
Messages from controller INFO

Messages available in menu INFO (after pushing „info" buton"):

t1	Temperature of sensor 1	thi	Maximum saved temp. T1
t2	Temperature of sensor 2	tLo	Minimum saved temp. T1
t3	Temperature of sensor 3	cnd	Compressor working time (weeks)
		Loc	Keypad locked

LAE CONTROLLER WITH LCD DISPLAY AND MEMBRANE BUTTONS - SERVICE INSTRUCTION

Description of symbols



Description of diode indicators:

	LED indicators		Buttons
	Active thermostat relay (cooling is turned on)	info	Information/setup display button
	Active fan relay (fan is turned on)		Setup value decrease
	Active electric heater relay (defrosting is turned on)		Setup value increase
	Active 2. (alternative) set of operating parameters		On/off (stand-by) button
	Alarm		Manual start of 2. (alternative) set of operating parameters
	Locked keypad		Manual start of defrosting

Basic operation

The power supply is turned on by pressing and holding the button for 5 seconds on the control panel. The switching condition is signalled by a short acoustic signal and graphically - showing the current value of the air temperature in the chamber on the display LCD.

In order to display and modify the required temperature of the chamber:

- Press the button to increase the required temperature of the chamber.
- Press the button to decrease the required temperature of the chamber.
- After setting of the temperature press the button info or wait for 5 secunds – ten the required temperature is stored and the display returns to the current temperature in the upright refrigerator of freezer.

The power supply is turned off by pressing and holding the button for 5 seconds on the control panel.

Mode ECO

The advanced controller used in the device detects automatically the operating conditions of the mode ECO. When the proper conditions are detected the controller switches the device automatically in the mode ECO. Under such conditions the function ECO allows saving a part of energy in relation to the operation in the basic mode

Note! Message CL

Clean the condenser. After cleaning follow the below instruction.
In order to turn off the alarm ***CL*** reminding that the condenser must be cleaned (every 4 weeks):
- press the button info until the display shows the message ***CND***,
- hold the buttons and at the same time.

After these steps the parameter CND is zeroed and the cycle is set up to the beginning.

RATING PLATE

	Data concerning the producer		Place for product designation
Name and type of product			
Factory number/year of production		Rated voltage	
Mass		Current frequency	
Climatic class		Rated current	
Type of refrigeration unit		Max. lighting power	
Refrigerant		Heating system power	
Refrigerant mass		Temperature range	

DORA METAL Sp. z o.o.
ul. Chodzieska 27
64-700 Czarnków
Telefon +48 (067) 255 20 42
Faks +48 (067) 255 25 15
http://www.dora-metal.pl
E-mail: info@dora-metal.pl
serwis@dora-metal.pl

serwis tel. 602 286 179