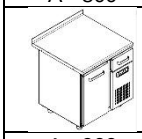
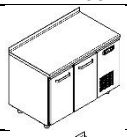
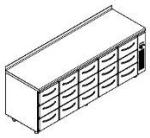
Backwall Counters user and service manual

HUOM! Säännöllisten puhdistustoimenpiteiden laiminlyönti voi olla peruste takuun raukeamiselle.

A - 800	A -1200	A - 1600	A - 1800	A - 2000	A - 2200	A - 2400	A - 2600
							
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Measurements l/w/h, mm		A / 700-800 / 950	
Inside temperature		drawers: 0…+4°C	
Climate Class		3 (25°C, 60%)	
Type of refrigerant	Remote	R448	
	Plug-In	R290	900-1200 - 120 g. Other sizes - 140 g.
Cooling capacity		344 W (-10/+45°C)	
Sound Level		51 dB	
Power supply		~220-240 V, 50 Hz	

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1.Warning and safety instructions

This appliance complies with all relevant local and national safety requirements. Improper use can, however, present a risk of both personal injury and material damage.

To avoid the risk of accidents, damage to the appliance and obtain the best possible performance please read these instructions carefully before installation and before using it for the first time. They contain important notes on the installation, safety, operation and care of the appliance.

Keep these instructions in a safe place and pass them on to any future user.

Failure to observe these instructions may invalidate your right to free service during the guarantee period.

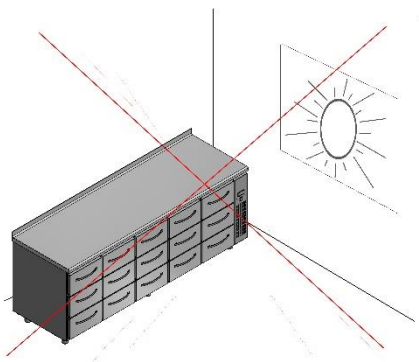
- See installation and mounting instructions on page 3.
- Do not plug several appliances into the same power receptacle. Large appliances draw a lot of power. Powering more than one appliance or machine from a single power source could cause overheating and cause a fire.
- Always make sure that you have grounded the appliance before attempting to investigate or repair any part of it. Power leakages can cause severe electric shock.
- Do not move the furniture if power chord is connected to electricity supply. Otherwise there is a risk that the cable will be stretched and damaged, which can result in short circuit.
- Do not use other electrical equipment inside the compartments of the appliance, unless they are of the type recommended by the manufacturer.
- Do not clean appliance with flammable fluids. Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance. The fumes can create a fire hazard or explosion.
- Before performing any maintenance or cleaning, ensure that the unit is unplugged or that the power line is disconnected.
- Do not attempt to repair or replace any part of your appliance. You may run the risk of fire, appliance malfunctions, and/or personal injury. All servicing should be referred to a qualified technician.
- Do not operate the unit with wet hands, while standing on a wet surface or while standing in water.
- Do not install the cabinet in a damp place or place where it may come in contact with water. Wet and/or deteriorated insulation of the internal electrical parts may cause electric shock or fire.
- Never unplug your appliance by pulling on the power cord. Always grip the power cord firmly and pull straight out from the outlet. Pulling on the power cord may cause a short-circuit, fire, and/or electric shock.
- A damaged power cord must be replaced by the manufacturer, a certified service agent, or qualified service personnel.
- Exercise caution and use reasonable supervision when appliance is used near children. Never allow children to operate, play, climb, stand, or hang on the shelves of the appliance. They could

damage the appliance and/or seriously injure themselves. Keep packing materials away from children.

2. Installation and mounting

- Do not connect your appliance to the electricity supply until all packing and transit protectors have been removed.
- Before setting up the appliance, check it for any externally visible damage. Do not install and use a damaged appliance.
- Install the cabinet in a dry place or place where it can't come in contact with water.
- The cabinet should stand on a solid, level (or nearly level) surface.
- The appliance must be positioned so that the plug is accessible.
- Before you insert the plug into the wall socket make sure that the voltage and the frequency shown on the rating plate inside the appliance corresponds to your electricity supply. This data must correspond in order to avoid the risk of damage to the appliance. Consult a qualified electrician if in any doubt.
- If the electrical wall socket is loose, do not insert the power plug. There is a risk of electric shock or fire. Have the plug looked at by a licensed electrician.
- Locate the unit away from direct sunlight

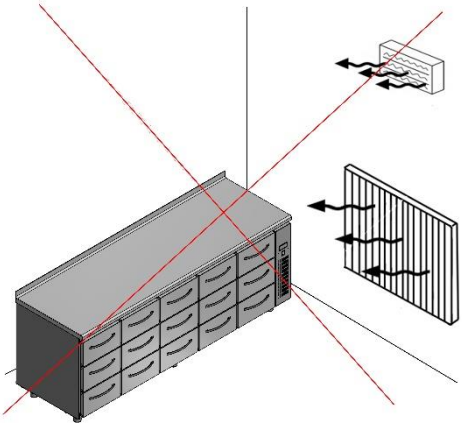
A



- Do not pour salt, acid, or other impuritys in a drip tray!

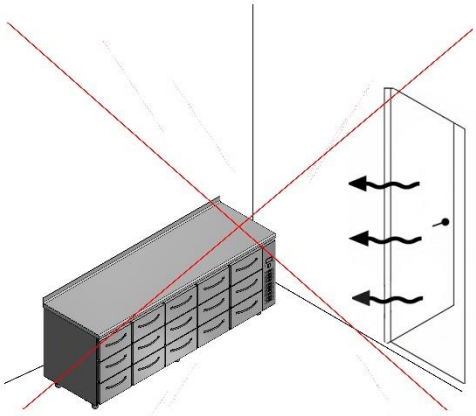
and sources of heat (stove, heater, radiator, etc.).

B



- This unit is intended for indoor use only, do not place it near open outside door Fig. C

C



- Do not cover and block ventilation holes of the appliance. Appropriate air ventilation must be provided around your product in order to achieve an efficient operation. If the product is to be placed in a recess in the wall, pay attention to leave at least 5 cm distance with the ceiling and side walls.

2.1 Cleaning after mounting

Dry clean the appliance on the inside and outside before start using it. Use neutral detergent or simple water If you use another detergent, finish the cleaning with a neutral one.

2.2 Product start-up

- If the appliance has been stored in an unheated space so that the temperature of the machinery was below 0°C degrees, before the starting appliance it must be stored in an indoor space until the compressor temperature reaches +10°C, otherwise compressor could be damaged.
- The appliance can be started for the first time 4 hours after it has been put into place. Start the cabinet using switches. Temperature decreases in a time and reaches the value which was factory setted up by default. The products shall not be put into the appliance before the default temperature is reached.

2.3 Cleaning

CAUTION: Failure to unplug the appliance could result in electrical shock or personal injury!

Before commencing any maintenance or cleaning activities, switch the device off and then remove the plug from power outlet. All repairs and maintenance should be performed by authorized personnel only. You should absolutely protect yourself against accidental switching the device on by unaware persons.

- Turn off the power, unplug the appliance and remove all items from the shelves.
- Wash the outside cabinet, inside surfaces and shelves with warm water and mild detergent solution. Rinse well and wipe dry with a clean soft cloth.
- Plexi glasses and additional parts from plexi should be cleaned ONLY with mild water and soft microfiber cloth. Any kind cleaner with alcohol will damage the glasses.
- Wring excess water out of the sponge or cloth before cleaning control panels or any electrical parts.
- Avoid using too much water because the electrical components could be damaged. It is strictly forbidden to shower the water directly on the outside or inside of the appliance.
- Do not connect or disconnect the electric plug when your hands are wet.
- Do not clean appliance parts with flammable fluids. Fumes can create a fire hazard or explosion.
- Never use solvent-based cleaning agents or abrasives on the interior. These cleaners may damage or discolor the interior.
- Condensers should be cleaned at least once every three months or even more often if the appliance is used under dusty conditions. The power should be switched off and the plug should be pulled out of the wall socket before cleaning. During the cleaning a hoover

or a soft brush may be used. If the condenser is brushed, make sure that the aluminum disks will not be damaged. Check that the drip slide drain pipe is not clogged with dirt or dust. How often this must be done depends on how frequently the appliance is used.

2.4 Moving the appliance

- Before moving the unit first be sure to remove all items from the shelves/drawers.
- Always unplug the unit before moving.
- Use two or more people to move and install the appliance. Failure to do so can result in back or other injuries.
- Securely tape down any loose items, such as shelves/drawers inside the unit.

2.5 Energy saving tips

- The unit should be located in the cool area, away from heat sources or direct sunlight.
- Ensure that the unit has proper allowances on all sides for proper ventilation. Never cover any air vents.

2.6 Troubleshooting

Problem type	Possible cause	Solution
Unit does not operate, does not have power	The plug is not properly placed in the wall socket.	Check and plug the appliance properly.
	The wall socket has no power	Make sure there is power in wall socket with another electrical appliance.
		If outlet is controlled by a wall switch, make sure switch is set to on.
Power is ON but the temperature does not reach the set value	The products are placed in a way that blocks air circulation inside the appliance.	Place the products so that the air can circulate in the appliance
	Ambient temperature is too high	Check the area around the appliance. See section 2. Installation and mounting.
	Air supply to the condenser is hindered	Remove all the obstacles so that the air can reach the condenser.
	Condenser is dirty	Clean the condenser. See section 2.3 cleaning.
	Ice on evaporator	Start defrosting manually. Make sure that all ice disappears.
	Fan does not work	Call a service technician.
Temperature in device has risen rapidly	The device is overloaded with products or placement of them hamper the air.	Improve the placement of the products.
	Device loaded with warm/hot products.	Do not place hot products to the appliance.
	The appliance stands too close to the wall	Move the appliance away from the wall.
	Condenser is dirty	Clean the condenser. See section 2.3 cleaning.
	Ventilators of the condenser isn't working.	Call a service technician.

Appliance vibrates and makes loudly noises	Does the device stand level?	Level the unit

If the solutions mentioned above does not help, call a service technician.

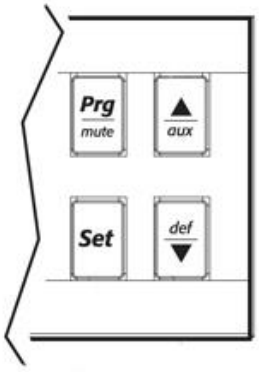
3. Controller service manual

3.1 User interface and start up

The blinking status indicates a request for activation that cannot be implemented until the end of the corresponding delay times.

Icon	Function	ON	OFF	blink	Startup
	COMPRESS.	compressor ON	comp. OFF	compressor request	
	FAN	fan ON	fan OFF	fan request	
	DEFROST	defrost in progress	defrost not required	defrost request	
AUX	AUX	auxiliary output AUX active	auxiliary output AUX not active	anti-sweat heater function active	
	ALARM	delayed external alarm (before the expiry of the time 'A7')	no alarm present	alarms in normal operation (eg. high/low temp.) or alarm from ext. digital input immediate or delayed	
	CLOCK	at least one timed defrost has been set	no timed defrost is present	clock alarm	ON if Real-Time Clock pre-
	sent				
	LIGHT	auxiliary output LIGHT ACTIVE	auxiliary output LIGHT NOT ACTIVE	anti-sweat heater function active	
	SERVICE		no malfunction	malfunction (eg. EEPROM error or probe fault)	
HACCP	HACCP	HACCP function	HACCP function enabled	HACCP alarm (HA and/or HF) not enabled	
	CONTINUOUS CYCLE	enabled	not enabled	request	

3.2 Buttons on the keypad



Normal operation

Button	Press. the button alone	Pressing together with other buttons		
Prg mute	• if pressed for more than 5 s accesses the menu for setting type "F" (frequent) parameters • **in the event of alarm:** silences the audible alarm (buzzer) and disables the alarm relay	• if pressed for more than 5 s together with the **SET** button, accesses the menu for setting the type "C" (configuration) or downloading the parameters • if pressed for more than 5 s together with the **UP/AUX** button resets any alarm with manual reset	**Start-up:** if pressed for more than 5 s at start-up, starts the default parameter setting	**Automatic address assignment:** if pressed for 1 s enters the automatic serial address assigning procedure
▲ aux	if pressed for more than 1 s, enables/disables the auxiliary output	• if pressed for more than 5 s together with **DOWN/DEF** button, enables/disables the continuous cycle operation • if pressed for more than 5 s with **SET** button, starts the procedure for printing the reports (function available, with management to be implemented) • if pressed for more than 5 s together with **PRG/MUTE** button, resets any active alarm with manual reset		
def ▼	if pressed for more than 5 s, enables/disables a manual defrost	• if pressed for more than 5 s together with **UP/AUX** button, enables/disables the continuous cycle operation • if pressed for more than1 s together with SET button, displays a submenu with the HACCP alarm parameters (HA, HAn, HF, HFn)		
Set	if pressed for more than 1 s, displays and/or set the set point	• if pressed for more than 5 s together with **PRG/MUTE** button, accesses the menu for setting the type "C" parameters "C" (configuration) or downloading the parameters • if pressed for more than 1 s together with **DOWN/DEF** button, displays a submenu with the **HACCP** alarm parameters (HA, HAn, HF, HFn) • if pressed for more than 5 s together with UP/AUX, starts the procedure for printing the report (function available, with management to be implemented)		

3.3 Summary of operating parameters

UOM = Unit of measure, Def = Default value.

Symbol	Code	Parameter	Models	UOM	Type	Min	Max	Def.
	Pw	Password	MSYF	-	C	0	200	22
	/2	Measurement stability	MSYF	-	C	1	15	4
	/3	Probe display response	MSYF	-	C	0	15	0
	/4	Virtual probe	MSYF	-	C	0	100	0
	/5	Select °C or °F 0: °C 1: °F	MSYF	flag	C	0	1	0
	/6	Display decimal point with tenths of a degree without tenths of a degree	MSYF	flag	C	0	1	0
	/tI	Display on internal terminal 1: virtual probe 2: probe 1 3: probe 2 4: probe 3 5: probe 4 6: probe 5 7: set point	MSYF	-	C	1	7	1
	/tE	Display on external terminal remote terminal not present 1: virtual probe 2: probe 1 3: probe 2 4: probe 3 5: probe 4 6: probe 5	MSYF	-	C	0	6	0
	/P	Select type of probe 0: NTC standard with range -50T90 °C 1: NTC enhanced with range -40T150 °C 2: PTC standard with range -50T150 °C	MSYF	-	C	0	2	0
	/A2	Configuration of probe 2 (S2) 0: Probe absent 1: Product probe (display only) 2: Defrost probe 3: Condenser probe 4: Antifreeze probe	YF MS	- -	C C	0 0	4 4	2 2
	/A3	Configuration of probe 3 (S3, DI1) As for /A2	MSYF	-	C	0	4	0
	/A4	Configuration of probe 4 (S4, DI2) As for /A2	MSYF	-	C	0	4	0
	/c1	Calibration of probe 1	MSYF	°C/°F	C	-20	20	0.0
	/c2	Calibration of probe 2	MSYF	°C/°F	C	-20	20	0.0
	/c3	Calibration of probe 3	MSYF	°C/°F	C	-20	20	0.0
	/c4	Calibration of probe 4	MSYF	°C/°F	C	-20	20	0.0

Symbol	Code	Parameter	Models	UOM	Type	Min	Max	Def.
	St	Temperature set point	MSYF	°C/°F	F	r1	r2	0.0
	rd	Control delta	SYF	°C/°F	F	0.1	20	2.0
	rn	Dead band	SYF	°C/°F	C	0.0	60	4.0
	rr	Reverse differential for control with dead band	SYF	°C/°F	C	0.1	20	2.0
	r1	Minimum set point allowed	MSYF	°C/°F	C	-50	r2	-50
	r2	Maximum set point allowed	MSYF	°C/°F	C	r1	200	60
	r3	Operating mode 0: Direct (cooling) with defrost control 1: Direct (cooling) 2: Reverse-cycle (heating)	SYF	flag	C	0	2	0
	r4	Automatic night-time set point variation	MSYF	°C/°F	C	-20	20	3.0
	r5	Enable temperature monitoring 0: Disabled 1: Enabled	MSYF	flag	C	0	1	0 0 1
	rt	Temperature monitoring interval	MSYF	hours	F	0	999	-
	rH	Maximum temperature read	MSYF	°C/°F	F	-	-	-
	rL	Minimum temperature read	MSYF	°C/°F	F	-	-	-

Symbol	Code	Parameter	Models	UOM	Type	Min	Max	Def.
	c0	Comp., fan and AUX delay on start-up in dead band	SYF	min	C	0	15	0
	c1	Minimum time between successive starts	SYF	min	C	0	15	0
	c2	Minimum compressor OFF time	SYF	min	C	0	15	0
	c3	Minimum compressor ON time	SYF	min	C	0	15	0
	c4	Duty setting	SYF	min	C	0	100	0
	cc	Continuous cycle duration	SYF	hours	C	0	15	0
	c6	Alarm bypass after continuous cycle	SYF	hours	C	0	250	2
	c7	Maximum pump down time	SYF	s	C	0	900	0
	c8	Comp. start delay after open PD valve (factory default= 0, not visible from display)	SYFs	C	0	65		
	c9	Enable autostart function in PD	SYF	flag	C	0	1	0
	c10	Select Pump down by time or pressure Pump down by pressure Pump down by time	SYF	flag	C	0	1	0
	c11	Second compressor delay	SYF	s	C	0	250	4

Symbol	Code	Parameter	Models	UOM	Type	Min	Max	Def.
	d0	Type of defrost 0: Electric heater defrost by temperature 1: Hot gas defrost by temperature 2: Electric heater defrost by time 3: Hot gas defrost by time 4: Electric heater defrost thermostat by time	SYF	flag	C	0	4	0
	dI	Interval between defrosts	SYF	hours	F	0	250	8
	dt1	End defrost temperature, evaporator	SYF	°C/°F	F	-50	200	4.0
	dt2	End defrost temperature, aux evap.	SYF	°C/°F	F	-50	200	4.0
	dP1	Maximum defrost duration, evaporator	SYF	min	F	1	250	30
	dP2	Maximum defrost duration, aux evap.	SYF	min	F	1	250	30
	d3	Defrost start delay	SYF	Min	C	0	250	0
	d4	Enable defrost on start-up 0: No defrost is performed when the instrument is switched on 1: A defrost is performed when the instrument is switched on	SYF	flag	C	0	1	0 0 1
	d5	Defrost delay on start-up	SYF	min	C	0	250	0
	d6	Display on hold during defrost 0: Alternating display of dEF and probe value 1: Display of the last temp. shown 2: Display of dEF steady	SYF	-	C	0	2	1
	dd	Dripping time after defrost	SYF	min	F	0	15	2
	d8	Alarm bypass after defrost	SYF	hours	F	0	250	1
	d8d	Alarm bypass after door open	SYF	min	C	0	250	0
	d9	Defrost priority over compressor protectors 0: The protection times c1, c2 and c3 are observed 1: The protection times c1, c2 and c3 are not observed	SYF	flag	C	0	1	0
	d/1	Display of defrost probe 1	MSYF	°C/°F	F	-	-	-
	d/2	Display of defrost probe 2	MSYF	°C/°F	F	-	-	-
	dC	Time base for defrost 0: dI in hours, dP1 and dP2 in minutes 1: dI in minutes, dP1 and dP2 in seconds	SYF	flag	C	0	1	0
	d10	Compressor running time	SYF	hours	C	0	250	0
	d11	Running time temperature threshold	SYF	°C/°F	C	-20	20	1.0
	d12	Advanced defrost	SYF	-	C	0	3	0
	dn	Nominal defrost duration	SYF	-	C	1	100	65
	dH	Proportional factor, variation in dI	SYF	-	C	0	100	50

Symbol	Code	Parameter	Models	UOM	Type	Min	Max	Def.
	A0	Alarm and fan differential	MSYF	°C/°F	C	0.1	20	2.0
	A1	Type of threshold 'AL' and 'AH' 0: AL and AH are relative thresholds to the set point 1: AL and AH are absolute thresholds	MSYF	flag	C	0	1	0
	AL	Low temperature alarm threshold	MSYF	°C/°F	F	-50	200	0.0
	AH	High temperature alarm threshold	MSYF	°C/°F	F	-50	200	0.0
	Ad	Low and high temperature signal delay	MSYF	min	F	0	250	120
	A4	Digital input 1 configuration (DI1) 0: Input not active 1: Immediate external alarm 2: Delayed external alarm 3: If model M, probe selection 3: Other models enable defrost 4: Start defrost 5: Door switch with compressor and fan stop 6: Remote on/off 7: Curtain switch 8: Low pressure switch 9: Door switch with fan stop only 10: Direct/reverse 11: Light sensor 12: Activation of the AUX output 13: Door switch with compressor and fans off and light not managed 14: Door switch with fans only off and light not managed	SYF M	- -	C C	0 0	14 14	0 3
	A5	Digital input 2 configuration (DI2) As for A4	MSYF	-	C	0	14	0
	A6	Stop compressor from external alarm	SYF	min	C	0	100	0
	A7	External alarm detection delay	SYF	min	C	0	250	0
	A8	Enable alarms 'Ed1' and 'Ed2' 0: Alarm signals Ed1 and Ed2 enabled 1: Alarm signals Ed1 and Ed2 disabled	SYF	flag	C	0	1	0
	Ado	Light management mode with door switch	MSYF	flag	C	0	1	0
	Ac	High condenser temperature alarm	SYF	°C/°F	C	0.0	200	70.0
	AE	High condenser temperature alarm differential	SYF	°C/°F	C	0.1	20	10
	Acd	High condenser temperature alarm delay	SYF	min	C	0	250	0
	AF	Light sensor OFF time	SYF	sec	C	0	250	0
	ALF	Antifreeze alarm threshold	MSYF	°C/°F	C	-50	200	-5.0
	AdF	Antifreeze alarm delay	MSYF	min	C	0	15	1

Symbol	Code	Parameter	Models	UOM	Type	Min	Max	Def.
	F0	Fan management 0: Fans always on 1: Fans controlled according to the temperature difference between the virtual control probe and the evaporator temperature Fans controlled according to the evaporator 2: temperature	F	flag	C	0	2	0
	F1	Fan start temperature	F	°C/°F	F	-50	200	5.0
	F2	Fan OFF with compressor OFF 0: Fans always on 1: Fans off with compressor off	F	flag	C	0	1	1
	F3	Fans in defrost Fans operate during defrosts Fans do not operate during defrosts	F	flag	C	0	1	1 0 1
	Fd	Fan OFF after dripping	F	min	F	0	15	1
	F4	Condenser fan stop temperature	MSYF	°C/°F	C	-50	200	40
	F5	Condenser fan start differential	MSYF	°C/°F	C	0.1	20	5.0

Symbol	Code	Parameter	Models	UOM	Type	Min	Max	Def.
	H0	Serial address	MSYF	-	C	0	207	1
	H1	Function of AUX output 0: Alarm output usually energised 1: Alarm output usually de-energised 2: Auxiliary output 3: Light output 4: Auxiliary evaporator defrost output 5: Pump down valve output 6: Condenser fan output 7: Delayed compressor output 8: Auxiliary output with deactivation when OFF 9: Light output with deactivation when OFF 10: No function associated with the output 11: Reverse output in control with dead band 12: Second compressor step output 13: Second compressor step output with rotation	MSYF	flag	C	0	13	1
	H2	Disable keypad/IR	MSYF	flag	C	0	6	1
	H3	Remote control enabling code	MSYF	-	C	0	255	0
	H4	Disable buzzer Buzzer enabled Buzzer disabled	MSYF	flag	C	0	1	0 0 1
	H6	Lock keypad	MSYF	-	C	0	255	0
	H8	Select activation of output with time band Time band linked to output configured for light Time band linked to output configured for aux	MSYF	flag	C	0	1	0 0 1
	H9	Enable set point variation with time band Set point variation with time band disabled Set point variation with time band enabled	MSYF	flag	C	0	1	0 0 1
	Hdh	Anti-sweat heater offset	MSYF	°C/°F	C	-50	200	0.0

AUX

Parameter "H2"	LIGHT	ON/OFF	AUX	HACCP	PRG/MUTE (mute)	UP/CC	DOWN/DEF	SET	Parameter F modification	Set point modification	Remote control modification
0									•	•	
1											
2									•	•	•
3											•
4		•				•	•		•		
5		•				•	•		•	•	
6						•	•		•	•	

Keypad function
"•" = Disabled

Symbol	Code	Parameter	Models	UOM	Type	Min	Max	Def.
	HAn	Number of HA events recorded	MSYF	-	C	0	15	0
	HA	Date/time of last HA event	MSYF	-	C		-	-
	y__	Year		years		0	99	0
	M__	Month		months		1	12	0
	d__	Day		days		1	7	0
	h__	Hour		hours		0	23	0
	n__	Minute		min.		0	59	0
	t__	Duration		hours		0	99	0
	HA1	Date/time of penultimate HA event	MSYF	-	C	-	-	-
	HA2	Date/time of third-to-last HA event	MSYF	-	C	-	-	-
	HFn	Number of HF events recorded	MSYF	-	C	0	15	0
	HF	Date/time of last HF event	MSYF	-	C	-	-	-
	y__	Year		years		0	99	0
	M__	Month		months		1	12	0
	d__	Day		days		1	7	0
	h__	Hour		hours		0	23	0
	n__	Minute		min.		0	59	0
	t__	Duration		hours		0	99	0
	HF1	Date/time of penultimate HF event	MSYF	-	C	-	-	-
	HF2	Date/time of third-to-last HF event	MSYF	-	C	0	-	-
	Htd	HACCP alarm delay	MSYF	min	C	0	250	0

HACCP

Symbol	Code	Parameter	Models	UOM	Type	Min	Max	Def.
	td1	Defrost time band 1	SYF	-	C	-	-	-
	d__	Day		days		0	11	0
	h__	Hour		hours		0	23	0
	n__	Minute		min.		0	59	0
	td2	Defrost time band 2	SYF	-	C	-	-	-
	td3	Defrost time band 3	SYF	-	C	-	-	-
	td4	Defrost time band 4	SYF	-	C	-	-	-
	td5	Defrost time band 5	SYF	-	C	-	-	-
	td6	Defrost time band 6	SYF	-	C	-	-	-
	td7	Defrost time band 7	SYF	-	C	-	-	-
	td8	Defrost time band 8	SYF	-	C	-	-	-
	ton	Light/aux on time band,set point varance	SYF	-	C	-	-	-
	d__	Day		days		0	11	0
	h__	Hour		hours		0	23	0
	n__	Minute		min.		0	59	0
	toF	Light/aux off time band, set point varance	SYF	-	C	-	-	-
	d__	Day		days		0	11	0
	h__	Hour		hours		0	23	0
	n__	Minute		min.		0	59	0
	tc	RTC date/time setting	MSYF	-	C	-	-	-
	y__	Year		years		0	99	0
	M__	Month		months		1	12	1
	d__	Day of the month		days		1	31	1
	u__	Day of the week		days		1	7	6
	h__	Hour		hours		0	23	0
	n__	Minute		min.		0	59	0

3.4 Table of alarms and signals: display, buzzer and relay

Code	Icon on the display	Alarm relay	Buzzer	Reset	Description
'rE'	flashing	active	active	automatic	virtual control probe fault
'E0'	flashing	OFF	OFF	automatic	room probe S1 fault
'E1'	flashing	OFF	OFF	automatic	defrost probe S2 fault
'E2'	flashing	OFF	OFF	automatic	probe S3 fault
'E3'	flashing	OFF	OFF	automatic	probe S4 fault
'E4'	flashing	OFF	OFF	automatic	probe S5 fault
'____'	no	OFF	OFF	automatic	probe not enabled
'LO'	flashing	active	active	automatic	low temperature alarm
'HI'	flashing	active	active	automatic	high temperature alarm
'AFr'	flashing	active	active	manual	antifreeze alarm
'IA'	flashing	active	active	automatic	immediate alarm from external contact
'dA'	flashing	active	active	automatic	delayed alarm from external contact
'dEF'	ON	OFF	OFF	automatic	defrost running
'Ed1'	no	OFF	OFF	autom./ man	defrost on evaporator 1 ended by timeout
'Ed2'	no	OFF	OFF	autom./ man.	defrost on evaporator 2 ended by timeout
'Pd'	flashing	active	active	autom./ man.	maximum time pump-down alarm
'LP'	flashing	active	active	autom./ man	low pressure alarm
'AtS'	flashing	active	active	autom./ man.	autostart in pump-down
'cht'	no	OFF	OFF	autom./ man.	high condenser temperature pre-alarm
'CHT'	flashing	active	active	manual	high condenser temperature alarm
'dor'	flashing	active	active	automatic	door open for too long alarm
'Etc'	flashing	OFF	OFF	autom./ man.	real time clock fault
'EE'	flashing	OFF	OFF	automatic	EEPROM error, unit parameters
'EF'	flashing	OFF	OFF	automatic parameters	EEPROM error, operating
'HA'	HACCP flashing	OFF	OFF	manual	HACCP alarm, type 'HA'
'HF'	HACCP flashing	OFF	OFF	manual	HACCP alarm, type 'HF'
'rCt'	Signal				Instrument enabled for programming from the remote control
'Add'Signal					Automatic address assignment procedure in progress
'Prt'	Signal				Printing report
'LrH'Signal					Activation of the of low relative humidity procedure
'HrH'Signal					Activation of the of high relative humidity procedure
'ccb'	Signal				Request to start continuous cycle
'ccE'Signal					Request to end continuous cycle
'dFb'Signal					Request to start defrost
'dFE'Signal					Request to end defrost
'On'	Signal				Switch ON
'OFF'Signal					Switch OFF
'rES'Signal					Reset alarms with manual reset Reset HACCP alarms Reset temperature monitoring
'n1'... 'n6'	flashing	active	active	automatic	Indicates an alarm on unit 1 to 6 present in the network
'dnL'	signal				signals download in progress
'd1'... 'd6'	flashing	OFF	OFF	automatic	Signals download with errors on unit 1 to 6

3.5 Parameter set points

PS	SET	rd	dI	dt	dP	dd	F2	F3	Fd
22	0	2,0	4	10	30	0	0	0	0

Parameter	Description	Type	Min	Max	UOM.	Default	Adjusted
PS	password	F	0	200	-	22	-
/2	probe measurement stability	C	1	15	-	4	-
/3	Probe display response	C	0	15	-	0	-
/4	virtual probe	C	0	100	-	0	-
/5	select °C/°F	C	0(°C)	1(°F)	flag	0	-
/6	disable decimal point	C	0	1	-	0	-
/tI	Display on internal terminal	C	1	7	-	1	-
/tE	Display on external terminal	C	0	6	-	0	-
/P	Select type of probe	C	0	2	-	0	-
/A2	Configuration of probe 2	C	0	4	-	2	-
/A3	Configuration of probe 3	C	0	4	-	0	-
/A4	Configuration of probe 4	C	0	4	-	0	-
/c1	Calibration of probe 1	C	-20.0	20.0	°C/°F	0	
/c2	Calibration of probe 2	C	-20.0	20.0	°C/°F	0	-
/c3	Calibration of probe 3	C	-20.0	20.0	°C/°F	0	-
/c4	Calibration of probe 4						
							-
St	SET point	S	r1	r2	°C/°F	0	0
rd	control delta	F	0,1	20.0	°C/°F	2	2
rn	dead band	C	0	60	°C/°F	4	-
rr	reverse differential for control with dead band	C	0,1	20	°C/°F	20	20
r1	minimuim SET point value	C	-50	r2	°C/°F	-50	0
r2	maximum SET point value	C	r1	200	°C/°F	200	4
r3	operating mode	C	0	2	-	0	-
r4	automatic night-time SET point variation	C	-20	20	°C/°F	3	-
r5	enable temperature monitoring	C	0	1	flag	1	-
rt	temperature monitoring interval	F	0	999	hours	-	-
rH	maximum temperature read	F	-	-	°C/°F	-	-
rL	minimum temperature read	F	-	-	°C/°F	-	-
c0	compressor fan and AUX delay on start-up in dead band	C	0	15	min	0	-
c1	minimum time between successive starts	C	0	15	min	0	-
c2	minimum compressor OFF time	C	0	15	min	0	-

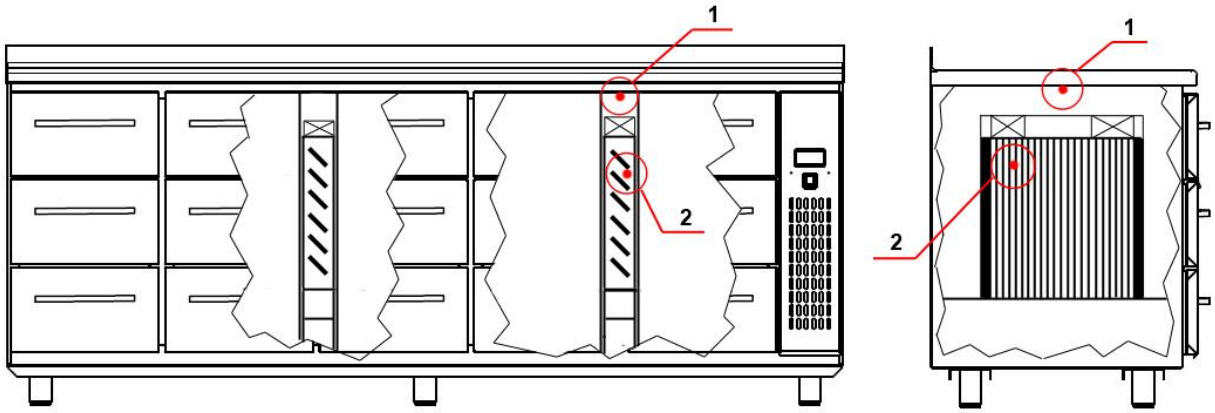
c3	minimum compressor ON time	C	0	15	min	0	-
c4	duty setting	C	0	100	min	0	-
cc	continous cycle duration	C	0	15	hours	0	-
c6	alarm bypass after continous cycle	C	0	250	hours	2	-
c7	maximum pump down time	S	0	900	s	0	-
c8	comp. start delay after open PD valve (factory default=0, not visible from display)	C	-	-	C	-	-
c9	enable autostart function in PD	C	0	1	flag	0	-
c10	select pump down by time or pressure	C	0	1	flag	0	-
c11	second compressor delay	C	0	250	s	4	-
d0	type of defrost	C	0	4	flag	0	-
dI	interval between defrosts	F	0	250	hours	8	4
dt1	end defrost temperature evaporator	F	-50	200	°C/°F	4	8
dt2	end defrost temperature aux. evaporator	F	-50	200	°C/°F	4	-
dP1	maximum defrost duration, evaporator	F	1	250	min	30	30
dP2	maximum defrost duration, aux. evaporator	F	1	250	min	30	-
d3	Defrost start delay	C	0	250	min	0	-
d4	enable defrost on start-up	C	0	1	flag	0	-
d5	defrost delay on start-up	C	0	250	min	0	-
d6	display on hold during defrost	C	0	2	-	1	-
dd	dripping time after defrost	F	0	15	min	2	0
d8	alarm bypass after defrost	F	0	250	h	1	-
d8d	alarm bypass after door open	C	0	250	h	0	-
d9	defrost priority over compressor protectors	C	0	1	-	0	-
d/1	display of defrost probe 1	F	-	-	°C/°F	-	-
d/2	display of defrost probe 2	F	-	-	°C/°F	-	-
dC	time base for defrost	C	0	1	flag	0	-
d10	compressor running time	C	0	250	hours	0	-
d11	running time temperature threshold	C	-20	20	°C/°F	1.0	-
d12	advanced defrost	C	0	3	-	0	-
dn	nominal defrost duration	C	1	100	-	65	-
dH	proportional factor, variation in dI	C	0	100	-	50	-
A0	alarm and fan differential	C	0.1	20.0	°C/°F	2.0	-
A1	type of threshold “AL” and “AH”	C	0	1	flag	0	-
AL	low temperature alarm threshold	F	-50	200	°C/°F	0.0	-
AH	high temperature alarm threshold	F	-50	200	°C/°F	0.0	-
Ad	low and high temperature signal delay	F	0	250	min	120	-
A4	digital input 1 configuration (DI1)	C	0	14	-	0	-
A5	digital input 2 configuration (DI2) as for A4	C	0	14	-	0	-
A6	stop compressor from external alarm	C	0	100	min	0	-
A7	external alarm detection delay	C	0	250	min	0	-
A8	enable alarms “Ed1” and “Ed2”	C	0	1	flag	0	-
Ado	light management mode with door switch	C	0	1	flag	0	-
Ac	high condenser temperature alarm	C	0.0	200	°C/°F	70.0	-
AE	high condenser temperature alarm differential	C	0.1	20	°C/°F	10	-
Acd	high condenser temperature alarm delay	C	0	250	min	0	-
AF	light sensor OFF time	C	0	250	sec	0	-
ALF	antifreeze alarm threshold	C	-50	200	°C/°F	-5.0	-
AdF	antifreeze alarm delay	C	0	15	min	1	-
F0	fan management	C	0	2	flag	0	-
F1	fan start temperature	F	-50	200	°C/°F	5.0	-
F2	fan OFF with compressor OFF	C	0	1	flag	1	0
F3	fans in defrost	C	0	1	flag	1	0
Fd	fan OFF after dripping	F	0	15	min	1	0
F4	condenser fan stop temperature	C	-50	200	°C/°F	40	-
F5	condenser fan start differential	C	0.1	20	°C/°F	5.0	-
H0	serial address	C	0	207	-	1	-
H1	funcion of AUX output	C	0	13	flag	1	-

H2	disable keypad/IR	C	0	6	flag	1	-
H3	remote control enabling code	C	0	255	-	0	-
H4	diable buzzer	C	0	1	flag	0	-
H6	lock keypad	C	0	255	-	0	-
H8	select activation of output with time band	C	0	1	flag	0	-
H9	enable set point variation with time band	C	0	1	flag	0	-
Hdh	anti-sweat heater offset	C	-50	200	°C/°F	0.0	-
HAn	number of HA events recorded	C	0	15	-	0	-
HA	date/time of last HA event	C	-	-	-	-	-
y_	year	years	C	0	99	0	-
M_	month	months		1	12	0	-
d_	day	days		1	7	0	-
h_	hour	hours		0	23	0	-
n_	minute	min		0	59	0	-
t_	duration	hours		0	99	0	-
HA1	date/time of penultimate HA event	C	-	-	-	-	-
HA2	date/time of third to-last HA event	C	-	-	-	-	-
HFn	number of HF events recorded	C	0	15	-	0	-
HF	date /time of last HF event	C	-	-	-	-	-
y_	year	years	C	0	99	0	-
M_	month	months		1	12	0	-
d_	day	days		1	7	0	-
h_	hour	hours		0	23	0	-
n_	minute	min		0	59	0	-
t_	duration	hours		0	99	0	-
HF1	date/time of penultimate HF event	C	-	-	-	-	-
HF2	date/time of third-to-last HF event	C	-	-	-	-	-
Htd	HACCP alarm delay	C	0	250	min	0	-
td1	defrost time band 1	C	-	-	-	-	-
d_	day		0	11	days	0	
h_	hours		0	23	hours	0	
n_	minute		0	59	minutes	0	
td2	defrost time band 2	C					
d_	day		0	11	days	0	
h_	hours		0	23	hours	0	
n_	minute		0	59	minutes	0	
td3	defrost time band 3	C					
d_	day		0	11	days	0	
h_	hours		0	23	hours	0	
n_	minute		0	59	minutes	0	
td4	defrost time band 4	C					
d_	day		0	11	days	0	
h_	hours		0	23	hours	0	
n_	minute		0	59	minutes	0	
td5	defrost time band 5	C	-	-	-	-	-
td6	defrost time band 6	C	-	-	-	-	-
td7	defrost time band 7	C	-	-	-	-	-
td8	defrost time band 8	C	-	-	-	-	-
ton	light/aux on time band set point varance	C	-	-	-	-	-
d_	day	C	0	11	days	0	-
h_	hours	C	0	23	hours	0	-
n_	minute	C	0	59	minutes	0	-
toF	light/aux off time band, set point varance	C	-	-	-	-	-
d_	day	C	0	11	days	0	-
h_	hours	C	0	23	hours	0	-
n_	minute	C	0	59	minutes	0	-
tc	RTC date/time setting	C	-	-	-	-	real date/time
y_	year		0	99	years	0	
M_	month		1	12	months	1	
d_	day of the month		1	31	days	1	

u_	day of the week		1	7	days	6	
h_	hour		0	23	hours	0	
n_	minute		0	59	minutes	0	

4. Component placement

4.1 Sensor places



1 – probe for Controller thermometer. Attached above evaporator cover.

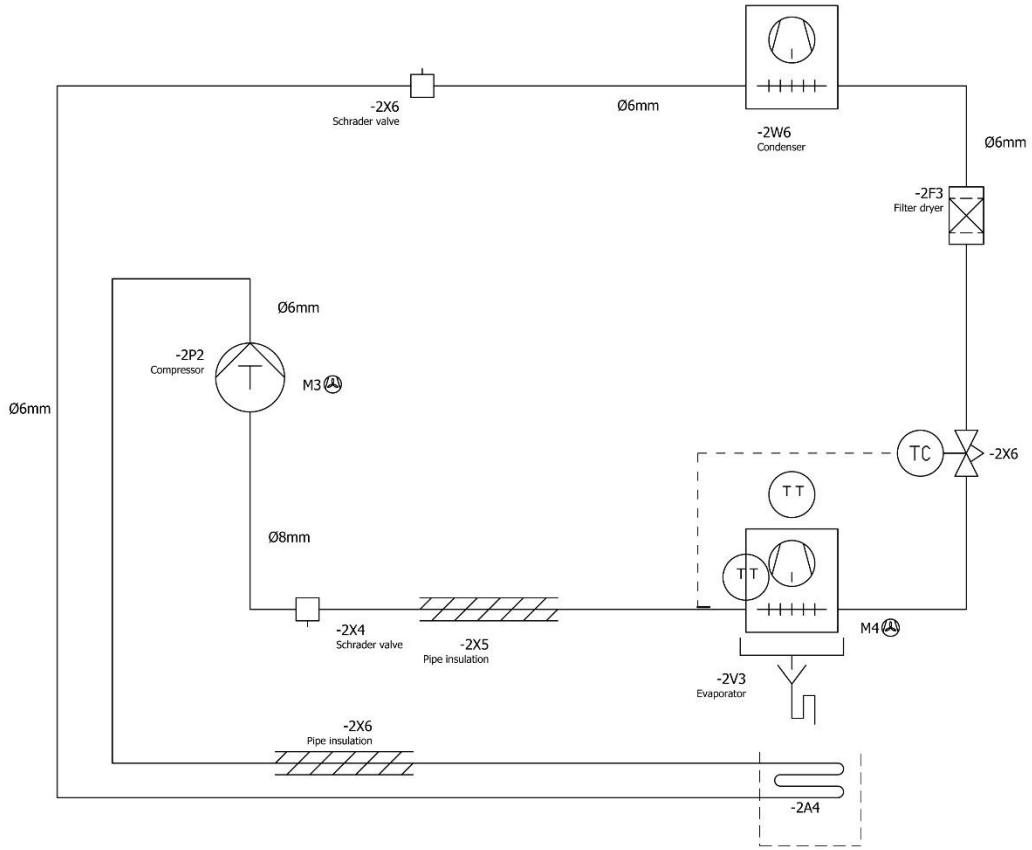
2 – probe for defrost. Placed at the coldest place in evaporator plates.

4.2 Cooling system and electrical parts list

Part	Description	Part number	Order part number	Quantity										
				Plug-In R290							Remote R448			
				800	900, 1000	1200	1600	1800	2400N (with column of neutral drawers)	2600 v1	1200	1600	1800 - 2200	2600 v2
Compressor	R290, 190 W	EMT6144U	4001766	1	1	1	1	1	1	1	-	-	-	-
Condenser Unit	1x5W motor, Ø172 mm blade, 250 m^3/h	TK0750	4009189	1	1	1	1	1	1	1	-	-	-	-
Evaporator	280x250x50mm			1	-	-	-	-	-	-	-	-	-	-
Evaporator	350x300x50mm		4008490	-	1	1	2	2	3	2	1	2	2	3
Evaporator Fan	40x40, 12V, 2,38W, 26 m^3/h	PF40281B3-A99	4006735	2	2	2	4	4	6	4	2	4	4	6
Solenoid valve + Coil connector	Castel	1068/m10A6 + PG9	4002073 + 4005729	-	-	-	-	-	-	-	1	1	1	1
TEV R448	Danfoss TES2 + insert 0X	068Z3729 + 068-2002	4006703 + 4005908	-	-	-	-	-	-	-	1	2	2	3
TRV valve R290	Danfoss TUB-X	068U3711	4000097	1	1	1	2	2	3	2	-	-	-	-
Sensor Probe	-50...+105°C, 3m	NTC030HP00	4006337	2	2	2	2	2	2	2	2	2	2	2
Controller	Carel	IR33F0EN00 or IR33F0EHEM	4004556 or 4006428	1	1	1	1	1	1	1	1	1	1	1
Switch	ON/OFF. 16A, 250V	-	4013668	1	1	1	1	1	1	1	1	1	1	1
Circuit breaker	230/400V, 1 POLE, 6A	SCH.A9F74106	4005880	-	-	-	-	-	-	-	1	1	1	1
Circuit breaker	230/400V, 1 POLE, 10A	SCH.A9F74110	4005868	1	1	1	1	1	1	1	-	-	-	-
Contactor	25A, 230V	SCH.A9C20732	4005069	1	1	1	1	1	1	1	-	-	-	-
Evaporator Fan Power	12V, 1.34A	XLG-75-12-A	4001423	1	1	1	1	1	1	1	1	1	1	1
Machinery room fan	230 VAC, 112 m3/h, 120x120x25mm	DP201AT	4005252	1	1	1	1	1	1	1	-	-	-	-

4.3 Hydraulic Scheme. Remote R448

4.4 Hydraulic Scheme. Plug-In R290



Solenoid valve

Pipe insulation

Pipes isnsulation

Capilary tube

Filter dryer

Schrader valve

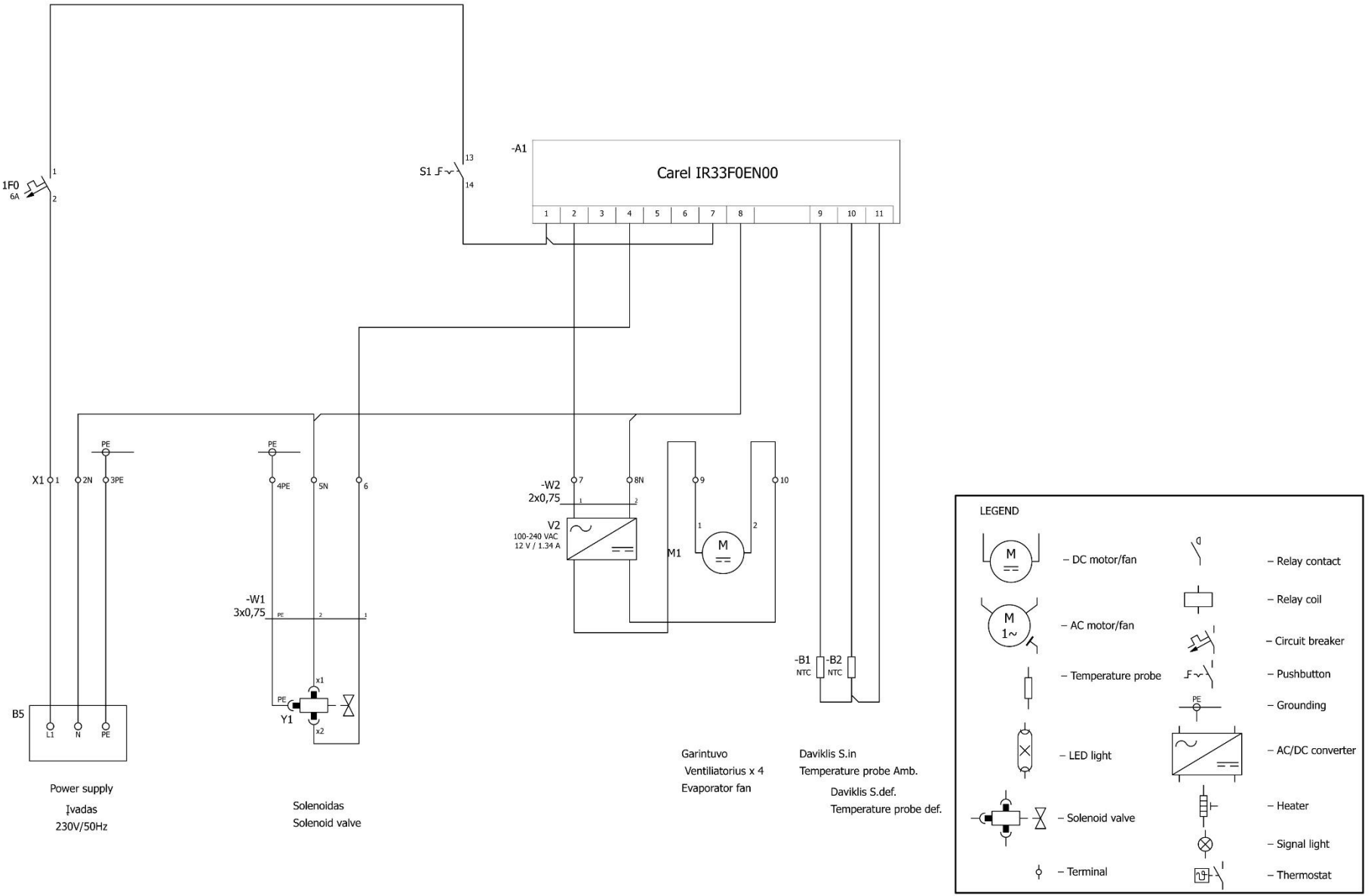
Compressor

TC

Thermostatic expansion valve

			Date	Project	Back wall counter 1200	= Hydraulic diagram + Hydro	
			2022-10-06			4009516	Page 2 Total pages 9

4.5 Wiring diagram. Remote R448 (if used IR33F0EN00 controller)



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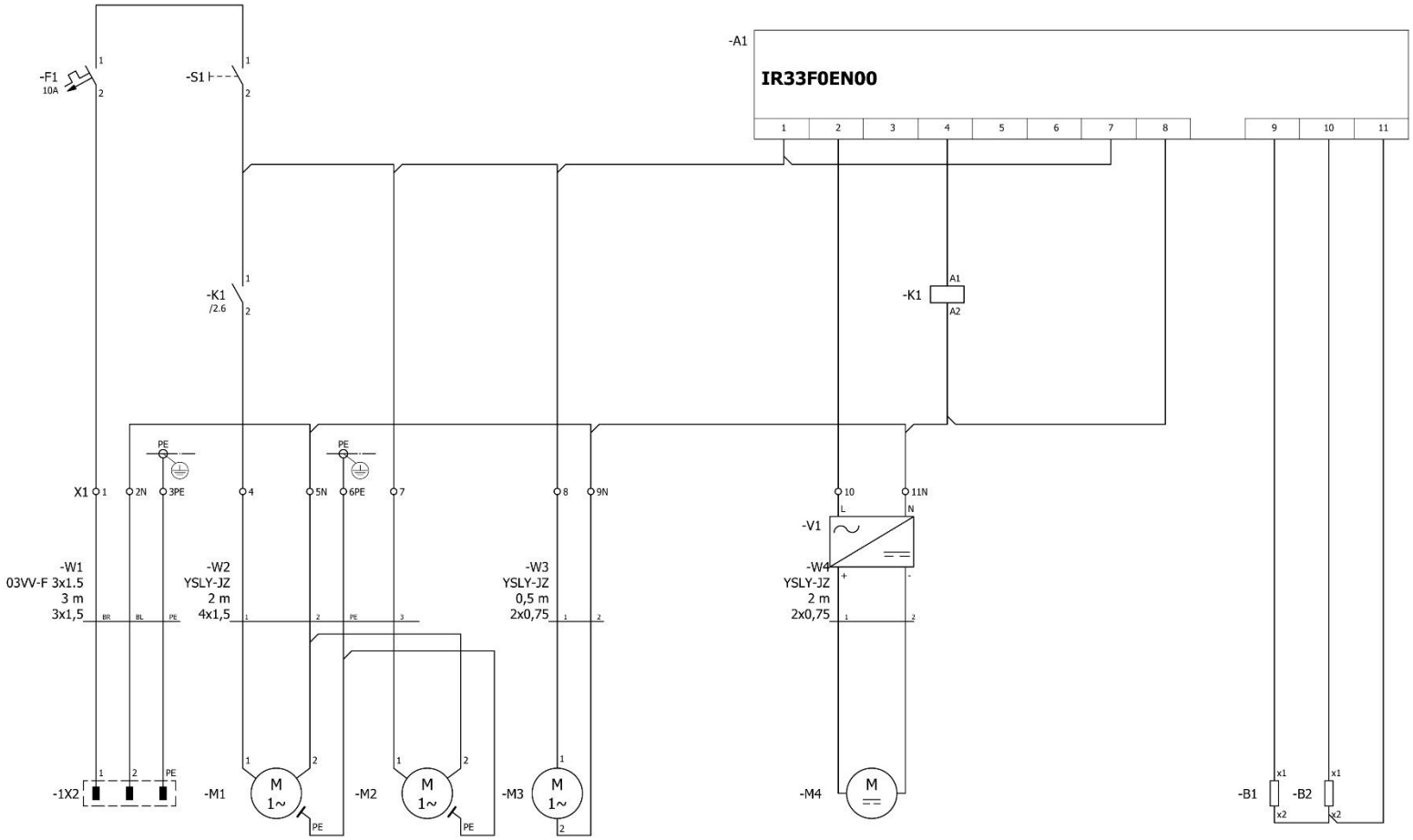
			Date		Šaldomas stalas 1800 el. schema		Controll	= Schema
			Ed.	VIKTORAS				+
			Appr					0.0
Modification	Date	Name	Original		Replaced by			Page 2 / Page 6

4.6 Wiring diagram. Plug-In R290 (if used IR33F0EN00 controller)



Legend

AC motor/fan	Heater	LED Light	Thermostat	Relay coil	Circuit breaker	Temperature probe	AC/DC converter
DC motor/fan	Solenoid valve	Signal light	Push-button	Relay contacts	Fuse	Terminal	Grounding

			Date				= Electronics
			2022-10-03	Project	Back wall counter 1200	Wirring	+ Wiring+Wiring
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