

Models: Aran: 505/506L | 605/606L | 805/806L | 906L | 706L
Burren: 608/609L | 808/809L | 908L | 708L | 710L

Aran Range



Burren Range



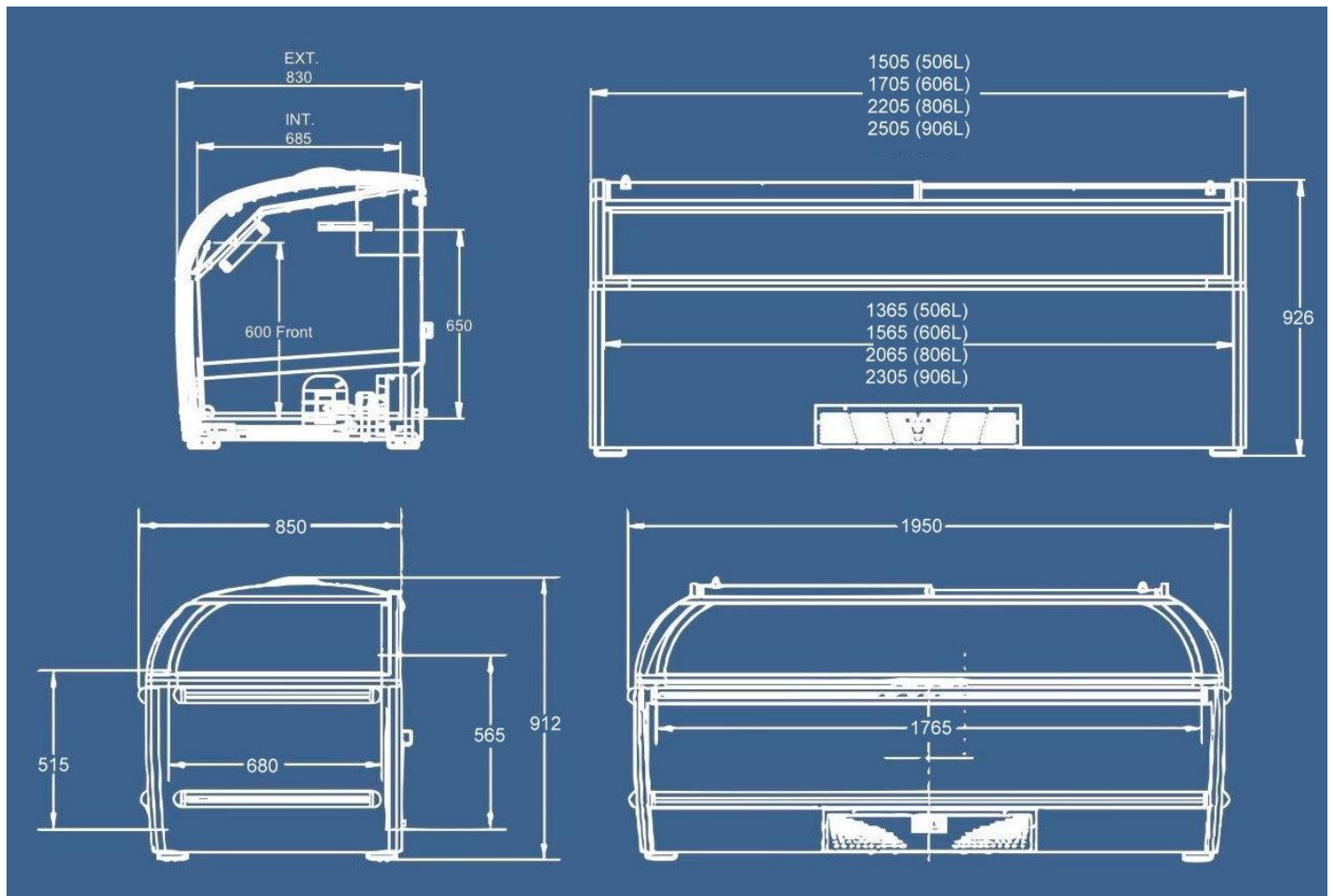
Specifications - Aran

	Model	306L	505L/506L	605L/606L	805L/806L	906L	706L
Gross content	litre	404	556	660	810	920	623
Net Content according to EN 23953	litre	300	480	570	742	843	565
Total Display Area (TDA)	m ²	0,6	0,97	1,13	1,46	1,66	1,25
Classification according to EN 23953		3L1	3L1	3L1	3L1	3L1	3L1
Ambient Temperature Range	°C	+16 to +25	+16 to +25	+16 to +25	+16 to +25	+16 to +25	+16 to +25
Inner Temperature Range	°C	-18 to -25	-18 to -25	-18 to -25	-18 to -25	-18 to -25	-18 to -25
Sound Pressure at 1m Distance	dB(A)	<43	<43	<43	<43	<43	<43
Nominal Voltage / Frequency	V / Hz	220-240/50	220-240/50	220-240/50	220-240/50	220-240/50	220-240/50
Nominal Power Cabinet	W	370	460	460	700	730	700
Nominal Power LED Light	W	24	24	24	24	24	24
Nominal Current	A	2	3	3	6	4	6
Fuse Protection	A	16	16	16	16	16	16
Energy consumption (at 25°C)	kWh/24h	5,9	6,9	7,1	7,8	9,8	8,6
Length of Power Supply Cord	mm	2000	2000	2000	2000	2000	2000
Refrigerant	Type	R290	R290	R290	R290	R290	R290
Gas Charge	g	100	110	110	100 x2	120 x2	100 x2
Maximum Operating Pressure	bar	30	30	30	30	30	30
Maximum Heat Output	W/h (Btu/h)	616 (2100)	855 (2915)	855 (2915)	1130 (3853)	1346 (4589)	1130 (3853)
Length Outside / Inside	mm	1005 / 865	1505 / 1365	1705 / 1565	2205 / 2065	2505 / 2365	1960 / 1765
Depth Outside / Inside	mm	830 / 685	830 / 685	830 / 685	830 / 685	830 / 685	850 / 680
Front Access Height Outside / Inside	mm	926 / 650	926 / 650	926 / 650	926 / 650	926 / 650	912 / 565
Stacking Height at the Front / Back	mm	600 / 650	600 / 650	600 / 650	600 / 650	600 / 650	515 / 565
Net Weight (excl. packaging, incl. internal accessories)	kg	134	134	152	191	210	187
Gross Weight (incl. packaging & internal accessories)	kg	167	167	185	224	240	220

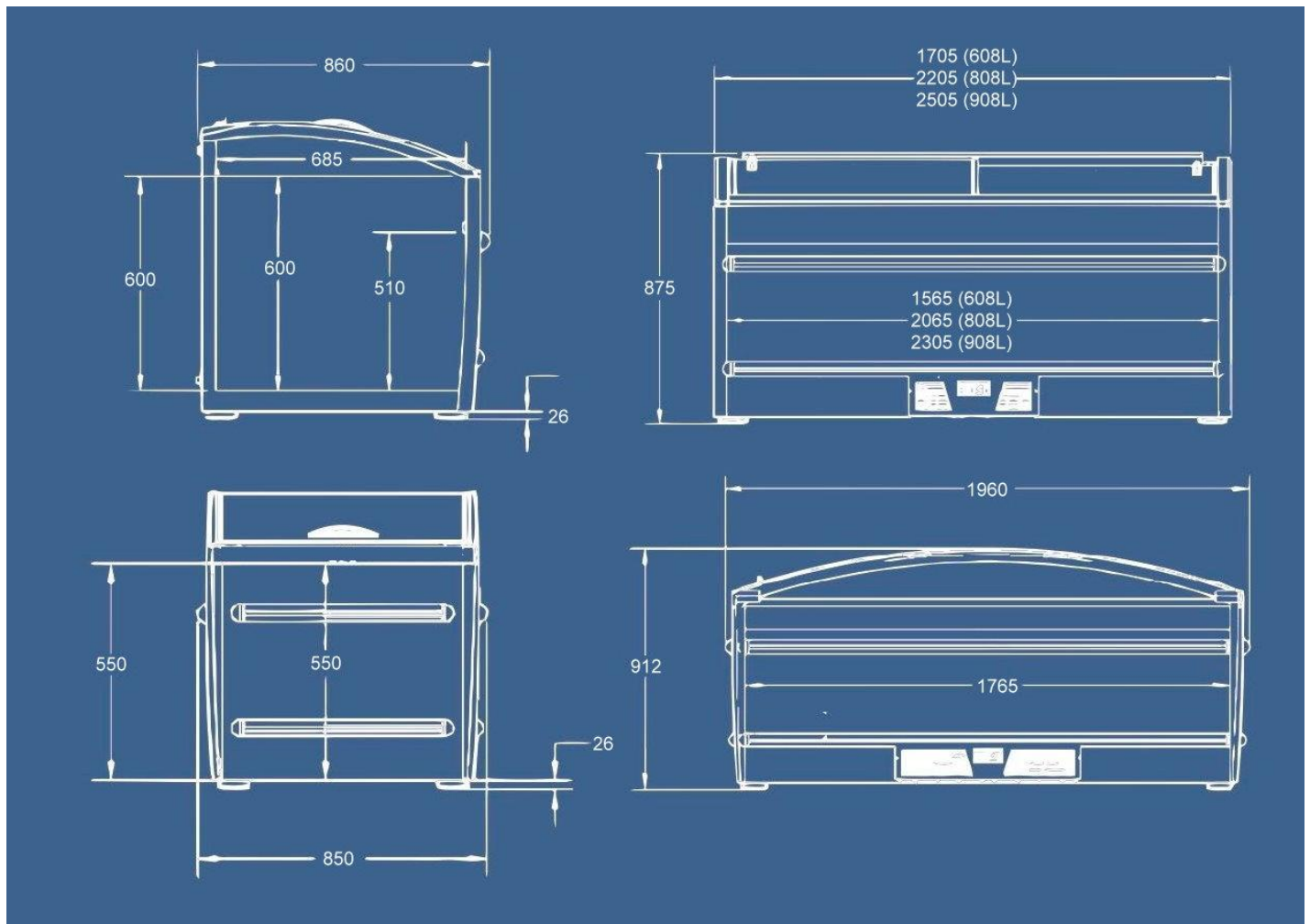
Specifications - Burren

	Model	608L/609L	808L/809L	908L	708L	710L
Gross content	litre	660	810	900	579	579
Net Content according to EN 23953	litre	573	698	817	650	650
Total Display Area (TDA)	m ²	1,13	1,46	1,73	1,27	1,27
Classification according to EN 23953		3L1	3L1	3L1	3L1	3L1
Ambient Temperature Range	°C	+16 to +25	+16 to +25	+16 to +25	+16 to +25	+16 to +25
Inner Temperature Range	°C	-18 to -25	-18 to -25	-18 to -25	-18 to -25	-18 to -25
Sound Pressure at 1m Distance	dB(A)	<43	<43	<43	<43	<43
Nominal Voltage / Frequency	V / Hz	220-240/50	220-240/50	220-240/50	220-240/50	220-240/50
Nominal Power Cabinet	W	370	400	750	400	400
Nominal Power LED Light	W	24	24	24	24	24
Nominal Current	A	3	3	3	3	3
Fuse Protection	A	16	16	16	16	16
Energy consumption (at 25°C)	kWh/24h	4,9	5,5	8,5	5,6	5,6
Length of Power Supply Cord	mm	2000	2000	2000	2000	2000
Refrigerant	Type	R290	R290	R290	R290	R290
Gas Charge	g	110	120	100 x 2	110	110
Maximum Operating Pressure	bar	30	30	30	30	30
Maximum Heat Output	W/h (Btu/h)	616 (2100)	616 (2100)	855 (2915)	616 (2100)	616 (2100)
Length Outside / Inside	mm	1705 / 1565	2205 / 2065	2505 / 2365	1960 / 1765	1960 / 1765
Depth Outside / Inside	mm	860 / 685	860 / 685	860 / 685	850 / 680	850 / 680
Front Access Height Outside / Inside	mm	875 / 600	875 / 600	875 / 600	912 / 550	912 / 550
Stacking Height at the Front / Back	mm	510 / 600	510 / 600	510 / 600	550 / 550	550 / 550
Net Weight (excl. packaging, incl. internal accessories)	kg	134	170	210	152	152
Gross Weight (incl. packaging & internal accessories)	kg	156	198	243	185	185

Dimensions - Aran



Dimensions – Burren



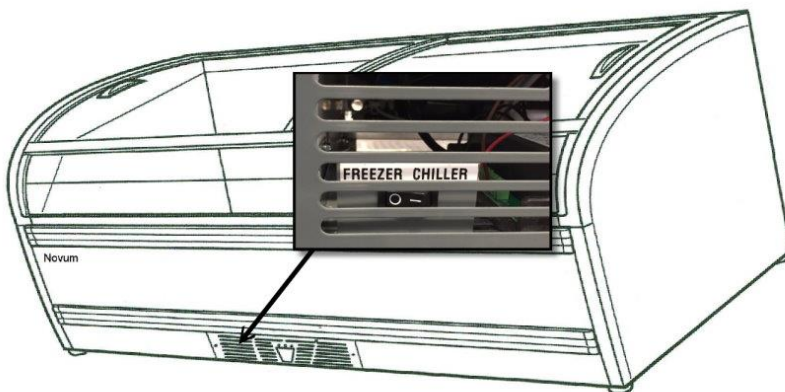
Product Loading

- Novum Cabinets are conservators in nature and can be used to store and display previously frozen food.
- NEVER merchandise product above the red load limit sticker.
- As soon as the Cabinet has reached a storage temperature of below -18°C (as indicated by the Electronic Controller display), it can be loaded with Frozen Foods up to the maximum of the Load Limit line.
- Do not load the Cabinet with non-frozen foods or try to freeze products in the Cabinet.
- DO NOT LEAVE LID OPEN for extended periods during merchandising.
- Exercise due care when loading heavy product, do not damage internal liner.
- Exercise due care when loading product so as not to damage liner, particularly heavy product.



Universal Cabinets (Freezer / Chiller)

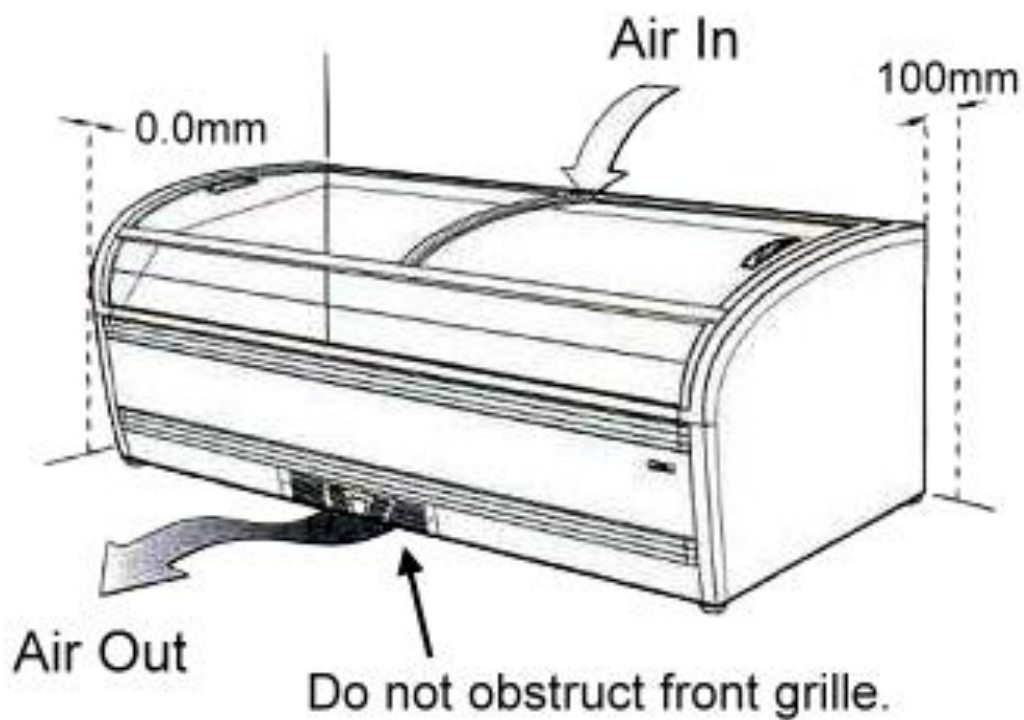
For universal cabinets (Freezer & Chiller), there is a manual switch in the front control panel to switch between freezer and chiller modes.



- The appliance is not to be used by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction.
- Children being supervised not to play with the appliance.

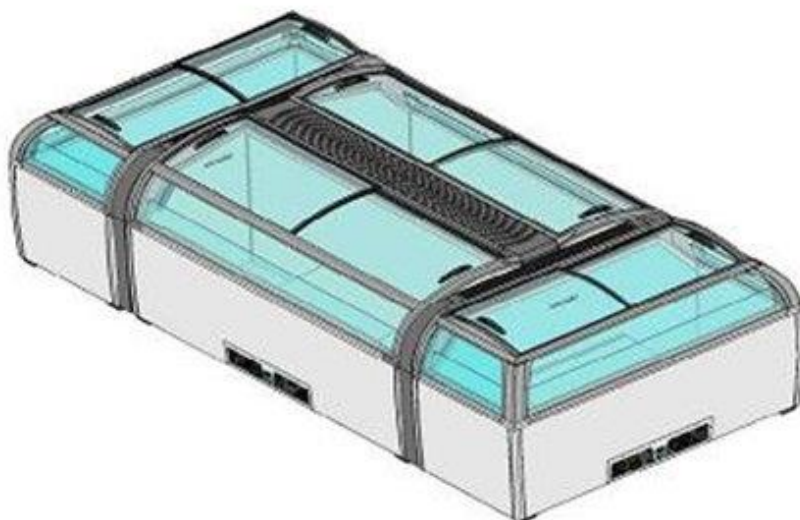
Stand Alone / Single Row Installation

When the case is installed as stand-alone unit against a wall a minimum distance of 100mm must be maintained between the back of the case and the wall to ensure air can enter the back of the case.



Back to Back Installation

If two Aran cases are to be installed back to back, a ventilation panel must be fitted to ensure adequate airflow. These are simply clipped into place. When an end of aisle case is fitted to an island configuration, an end of aisle ventilation kit must be fitted.



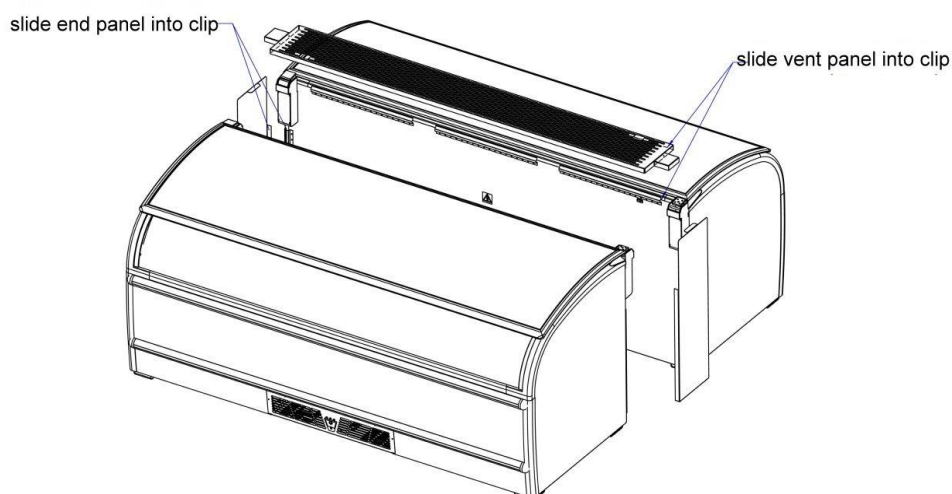
Vent System

Top Vent.

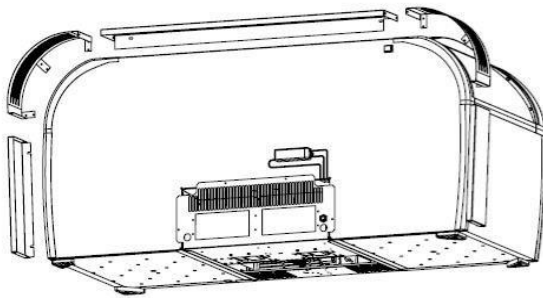
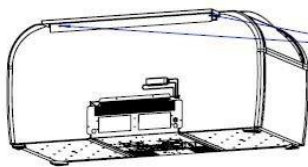
- Position cabinets back to back 250mm apart.
- Drop vent panel into factory fitted receiving brackets.

End Panel

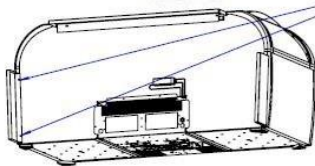
- Secure End wall brackets to back panel using screws provided.
- Push panel gently into brackets.



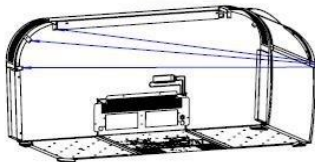
706 Vent System



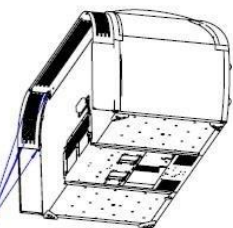
Fit vent panel with screws provided (slots)



Fit two end panels (left and right) with screws provided (2 slots per panel)



Fit two curved vent panels (left and right) with screws provided (3 slots per panel)



Secure all panels with screws and nuts provided.

Electrical Connections

All Cabinets must be wired as per international standards.

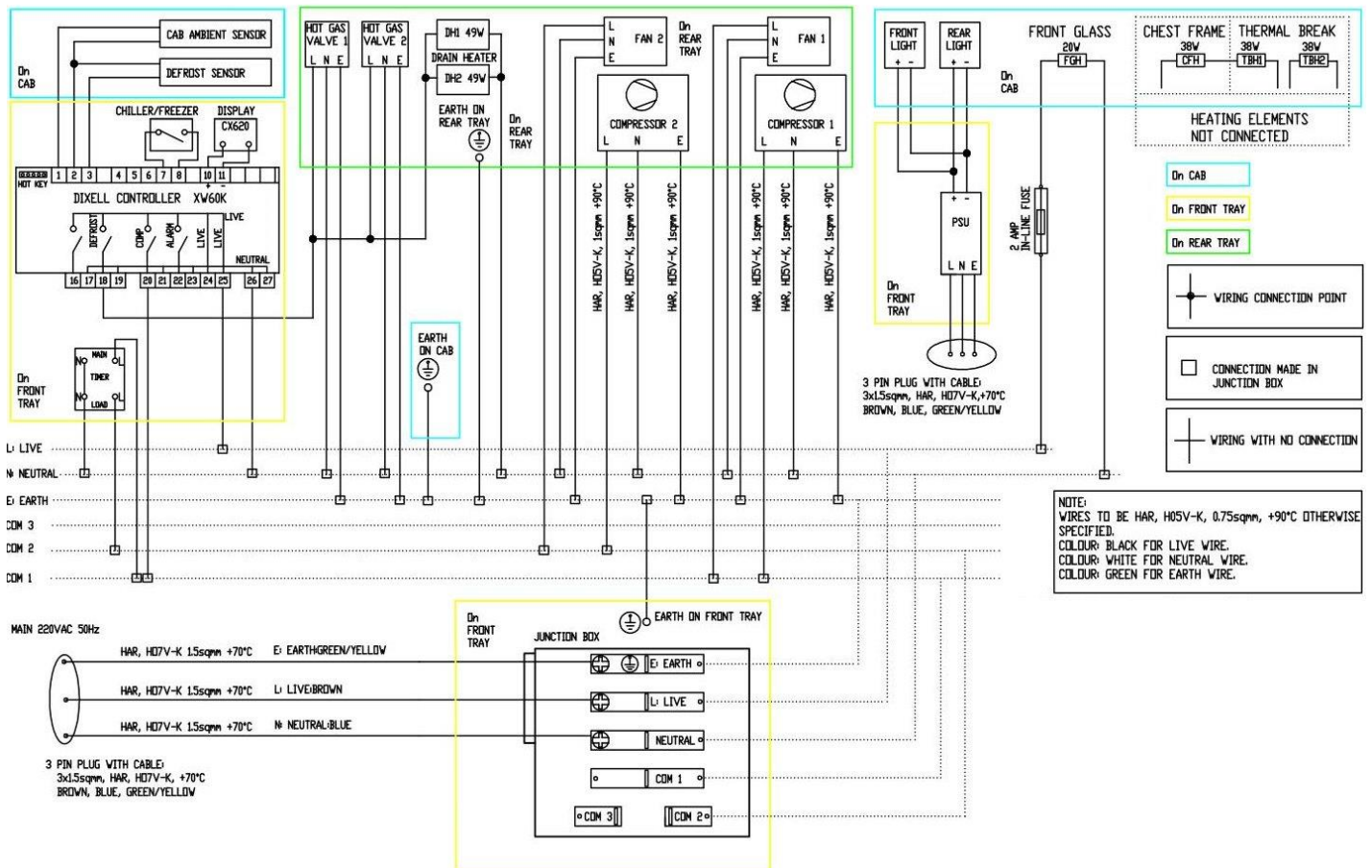
US Rating	
Black	Live
Light grey, white or silver	Neutral
Green	Earth

Europe Rating	
Brown	Live
Blue	Neutral
Green	Earth

Notes:

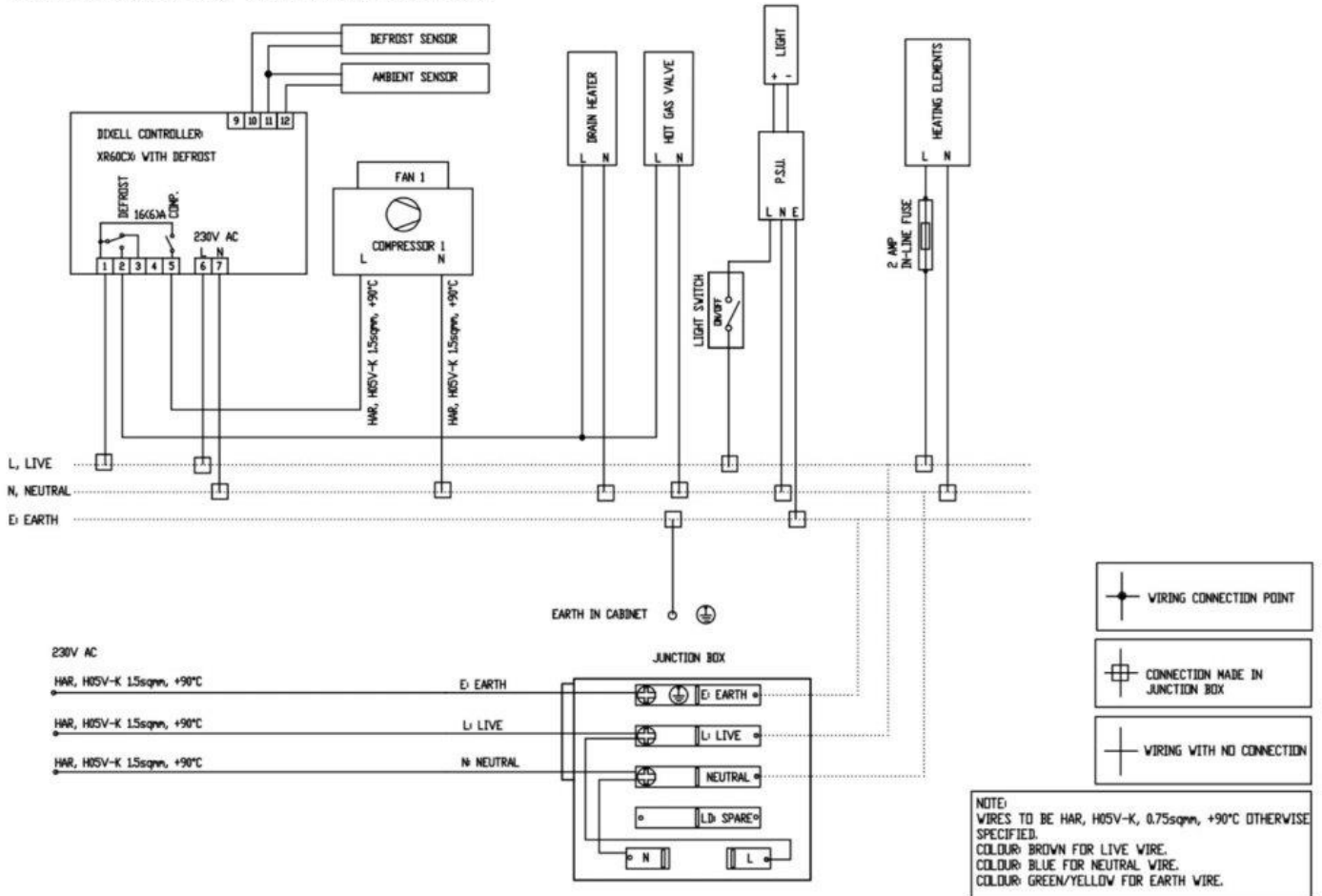
- If you are in any doubt concerning the electrical connection of your Novum Conservator we recommend that you contact a qualified Electrician.
- If the Supply Cord is damaged, it must be replaced by Novum, it's Service Agent or similarly qualified persons in order to avoid a hazard.

ARAN Dual Universal with x2 Led



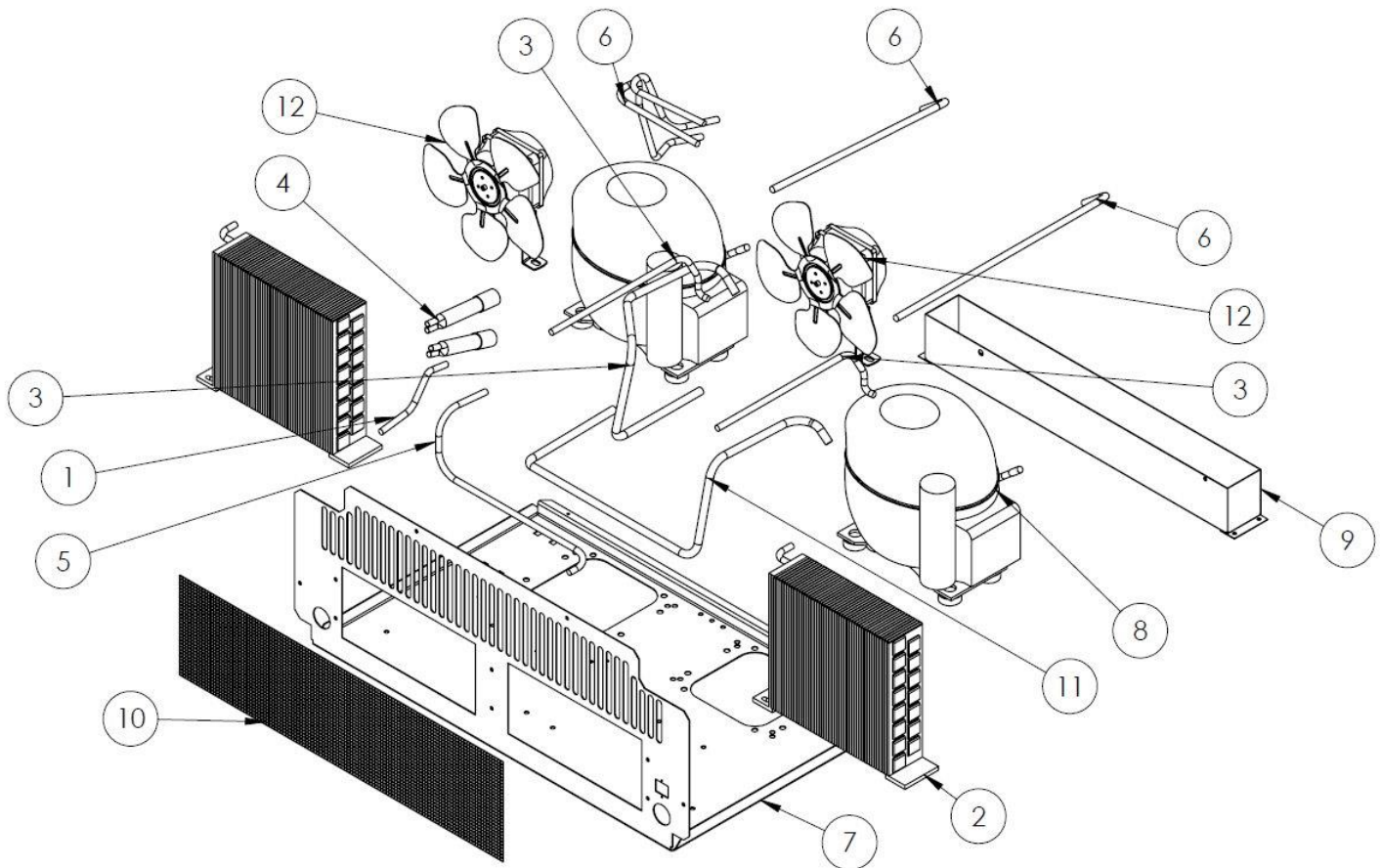
Electrical Connections

Burren 808/809 with Auto Defrost



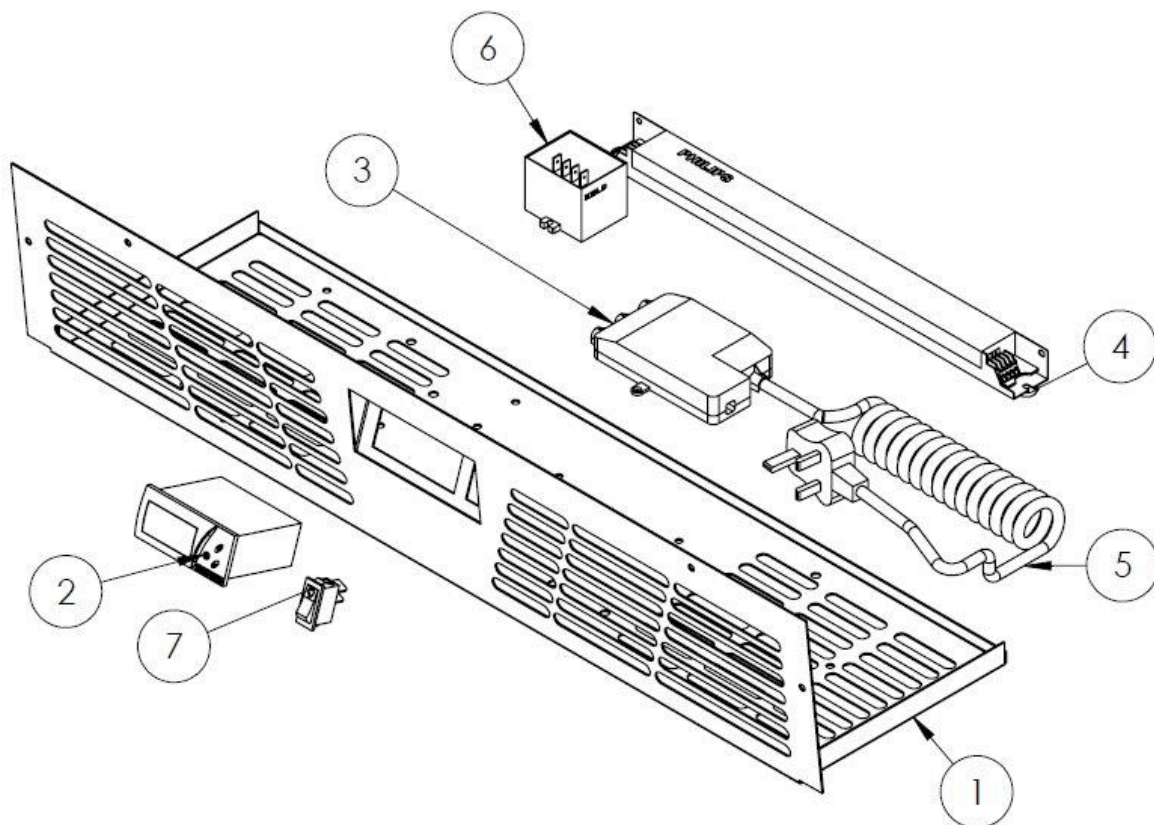
Compressor Assembly

Item No.	Part No.	Description
1	003.222.075	Copper Tube 220x6x0.71mm Condenser Outlet
2	003.603.005	603L Condenser Type STFT
3	003.610.375	Copper Tube 315x0.71mm Discharge & Suction
4	003.801.006	13.5GM Filter Dryer
5	003.805.031	Copper Tube 430x6x0.71mm Condenser Outlet
6	003.805.132	Copper 400x6x0.9mm Process Pipe Assembly
7	003.805.505	Compressor Tray (1.2mm Galv)
8	003.805.707	NEK 2150GK Compressor
9	006.8BM.012	Burn-Off Tray
10	012.805.422	30.5x580mm Woven Mesh

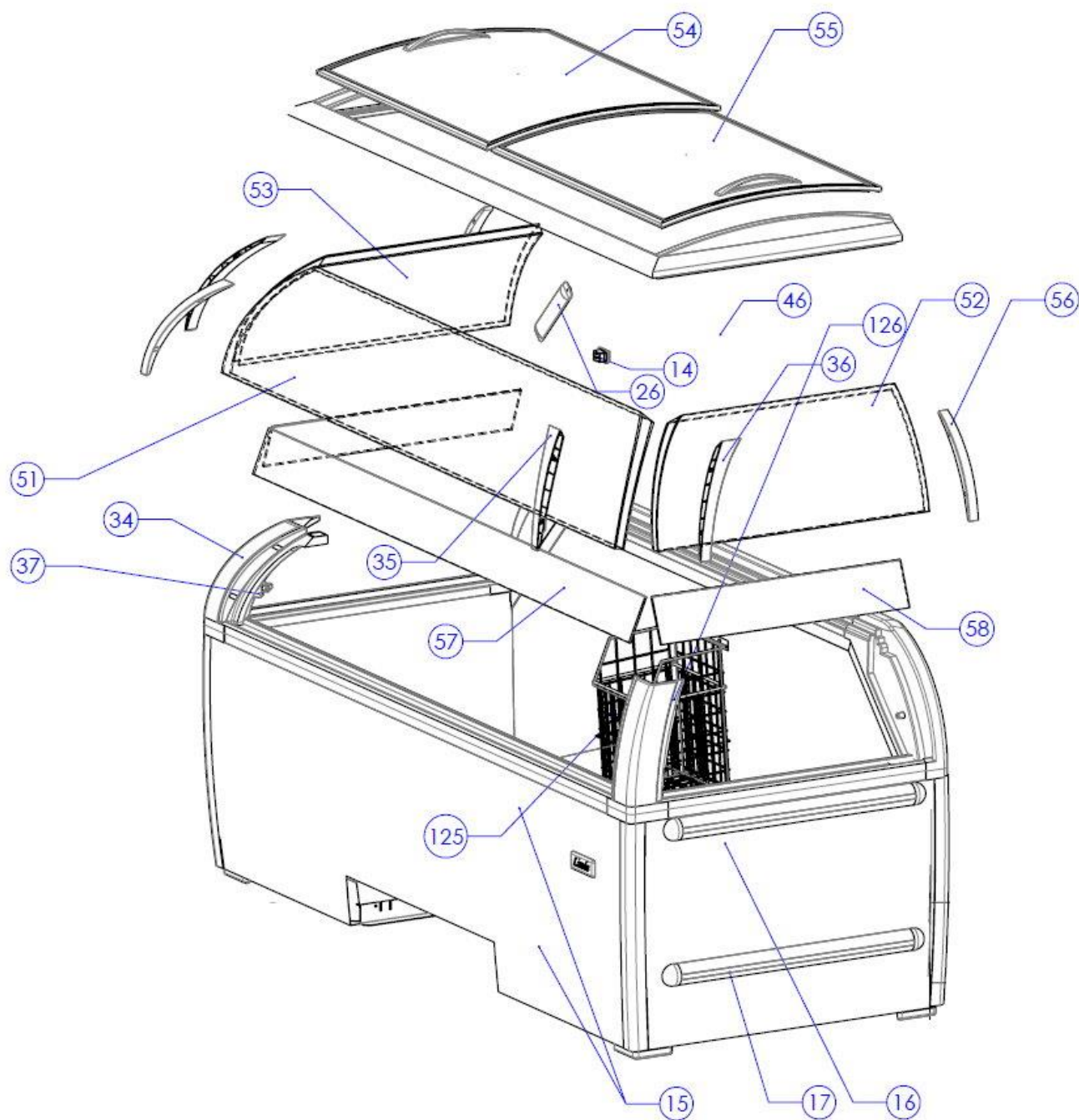


Control Panel Assembly

Item No.	Part No.	Description
1	006.805.813	Grille CW Recess & Switch
2	018.610.204	Digital Controller
3	018.805.015	Terminal Box
4	018.805.312	LED Driver
5	018.805.330	Moulded 3 Pin Plug
6	018.805.417	Keld Timer Unit
7	018.805.609	ON/OFF L/Switch

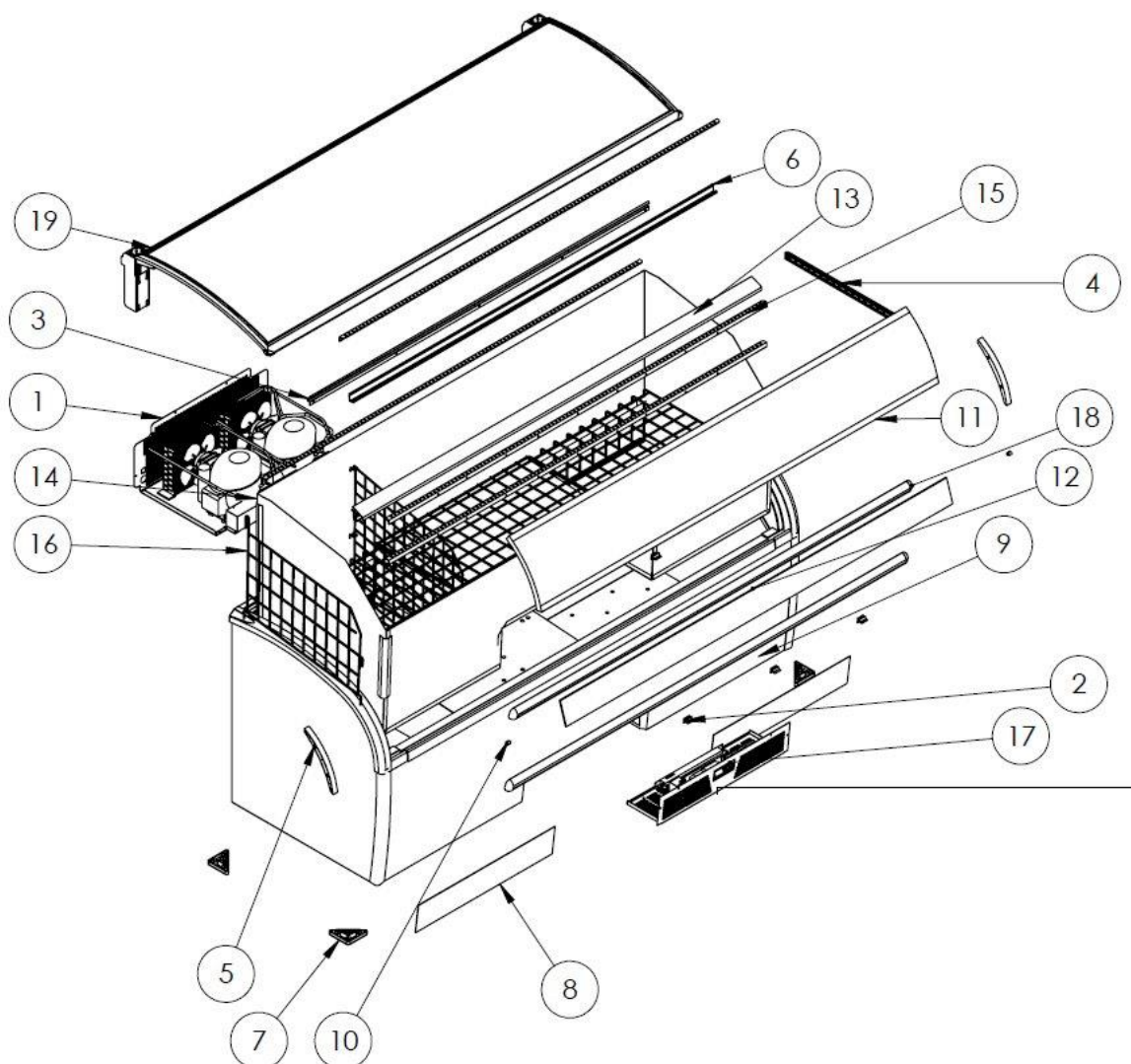


706L Cabinet Assembly



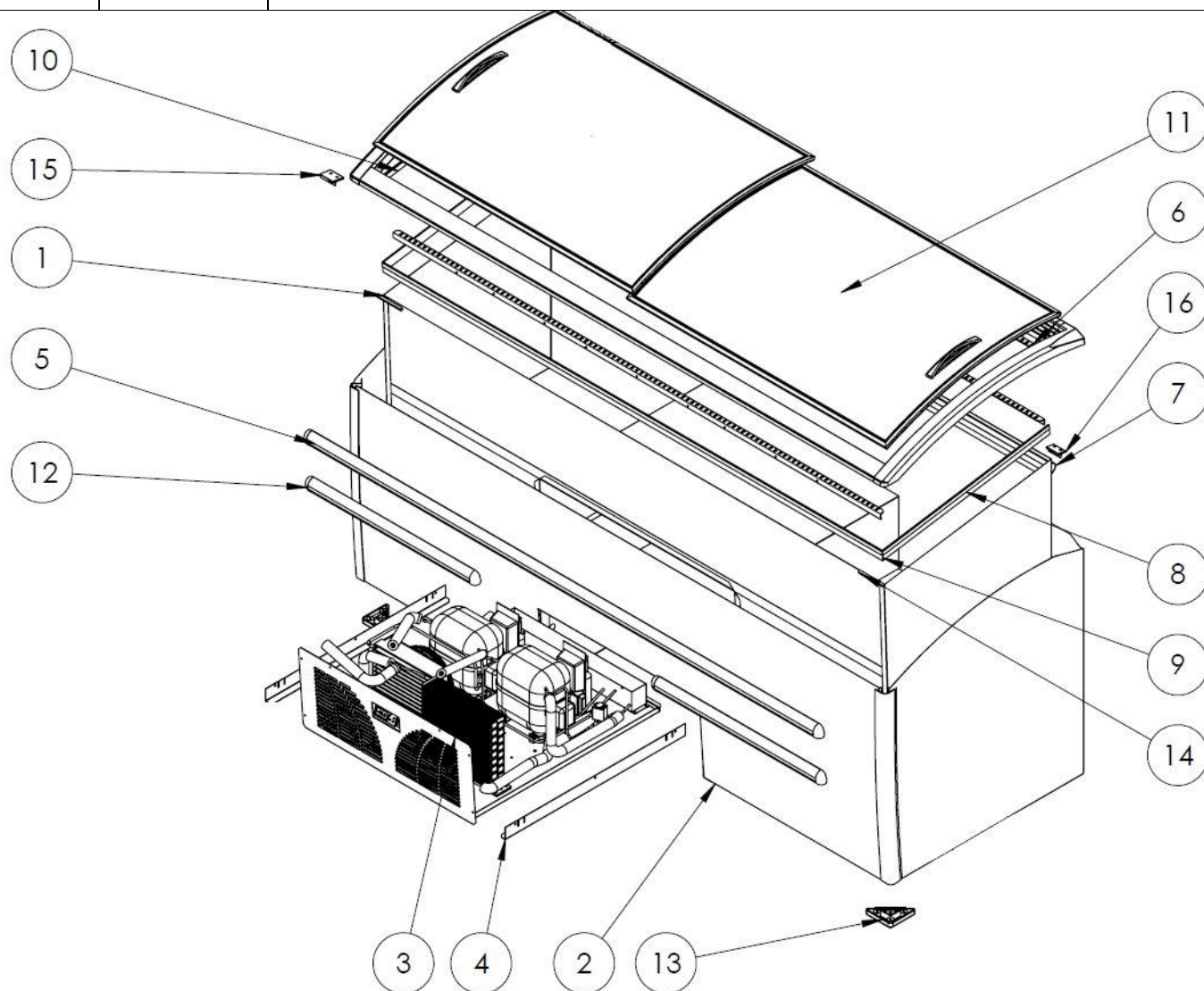
Aran Cabinet Assembly

Item No.	Part No.	Description
1	003.805.302	Compressor
2	006.154.105	Plastic Holder For Glass
3	006.601.249	Joiner Panel Bracket
4	006.610.259	Separator Profile White
5	006.805.011	Glass End Moulding
6	006.805.026	Ticket Strip Holder
7	006.805.125	Corner Foot
8	006.805.414	Dark Grey Kick Strip
9	006.805.620	(Fluorescent) White
10	009.805.005	Inner Glass Retainer
11	009.805.212	Double Glazed Unit
12	009.805.307	Internal Glass
13	009.805.614	Crossbeam Lens
15	012.805.215	Aluminium Inner Rail
16	015.805.501	Short Divider

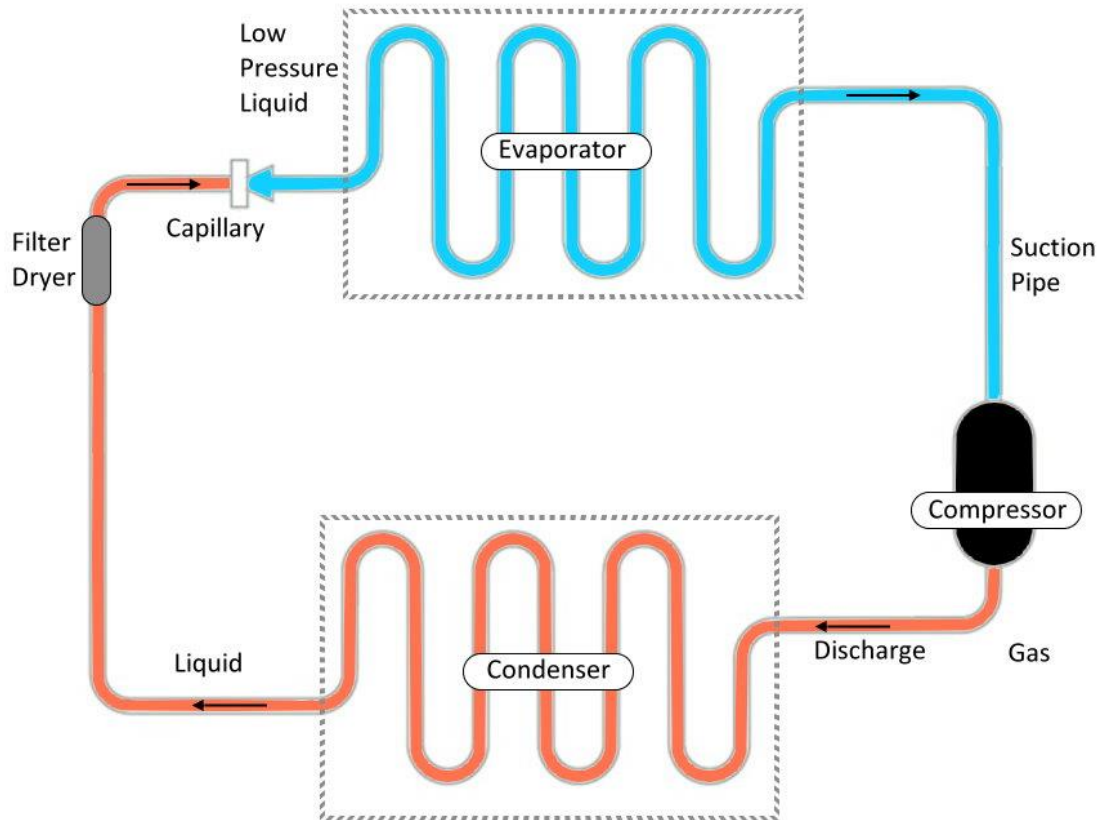


Burren Cabinet Assembly

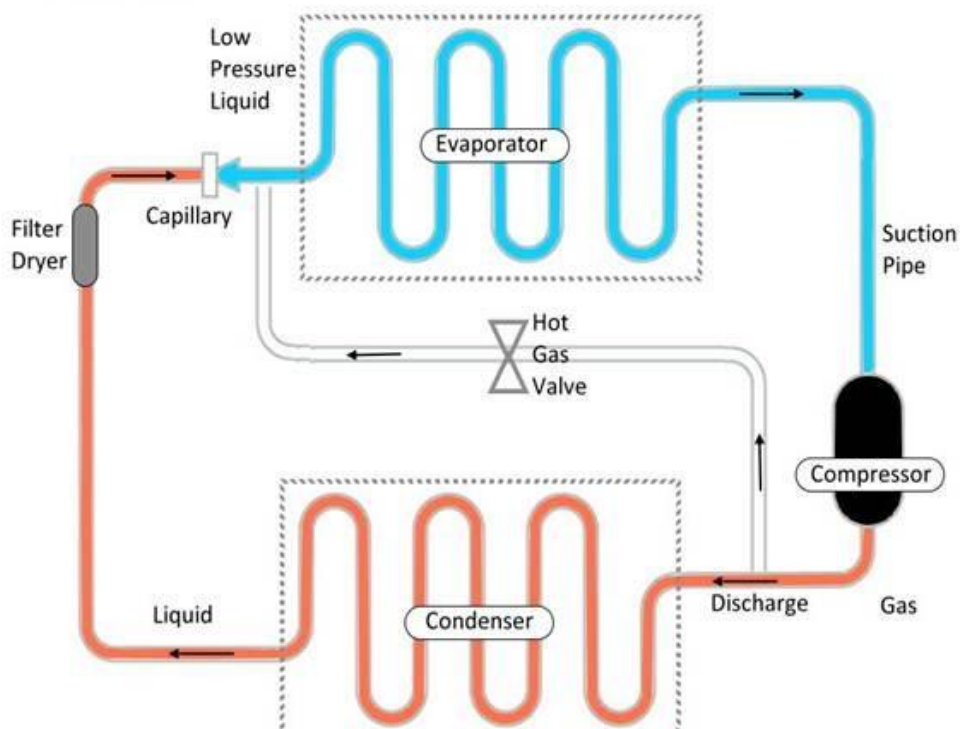
Item No.	Part No.	Description
3	003.8BM.200	Comp Tray Assy
4	006.805.237	Service Tray Runner
6	012.805.215	Aluminium Inner Rail
7	006.808.005	Light Holder
10	006.808.100	Chest Frame Assembly
11	009.808.100	Lid Upper /Lower Lid Assy
13	006.805.125	Injection Moulded Corner Foot
14	006.806.004	Aran Lid Stop Grey
15	009.808.003	Sliding Lid Retainer L/Hand
16	009.808.004	Sliding Lid Retainer R/Hand

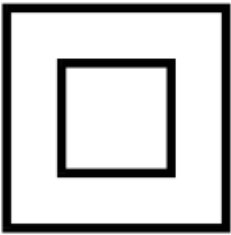


Refrigeration Circuit



Auto Defrost Circuit



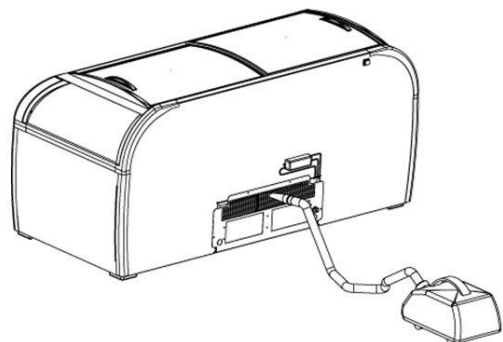
		<p>Warning: Do not use mechanical devices or other means to accelerate the defrosting process, other than those recommended by the manufacturer.</p> <p>Warning: Do not damage the refrigerant circuit.</p>
<p>Danger</p> <p>Electrical Shock Risk</p>	<p>R290 Refrigerant</p> <p>Risk of Fire or Explosion</p>	<p>Warning: Risk of Fire or Explosion. Dispose of properly in accordance with Federal or Local regulations.</p>
		<p>Maximum loading of each shelf: 25kg</p>
<p>Class II Appliance</p> <p>[IEC 60417-5172}</p>		

Care & Maintenance

Note! Always unplug your Conservator before beginning any maintenance work.

To ensure trouble free operation of your Novum Cabinet, the following routine should be instituted.

- Inspect the area behind Cabinets periodically and remove any debris.
- Clean the exterior and exterior plastic components of your cabinet with a mild detergent. (Never use bleach or abrasive material)
- Use proprietary glass cleaner with soft cloth to clean glass lid and front. (Never use abrasive materials to clean glass)
- Periodically inspect the finned Condenser for dust build up and remove with a non-metallic Brush or vacuum cleaner. The Condenser is located at the rear of the Cabinet. Monthly inspection is recommended.



Defrosting - Remove frozen food to a suitably refrigerated area

Manual Defrosting

For Novum Cabinets fitted with a manual defrost system, the following procedure should be followed:

- Remove frozen food to a suitably refrigerated area.
- Unplug Cabinet and open lid.
- When frost has melted and cleaning has been complete, use a clean, dry cloth to mop up excess condensate from the inside of the Cabinet.
- For units fitted with Drain Plugs, place a shallow tray below drains and remove Drain Plug. The condensate will then drain through the drain hole and into the tray.
- When condensate has drained, replace drain plug and re-connect Cabinet to electrical supply and then allow Cabinet to re-freeze.
- For units without Drain Plugs, condensate should be mopped clean.

- When digital display on the Electronic Controller displays -18°C, it is then safe to re-merchandise the Cabinet.

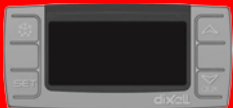
Note: Best practice demands that all Cabinets should be thoroughly cleaned three or four times per year.

Automatic Defrosting

For Novum Cabinets fitted with an automatic defrost system:

- Defrost Cycle will start and finish automatically – at Factory set intervals.
- No intervention is required as the Frost melts and the Water then flows through the Drain Channels, which is then evaporated in the Burn-off Tray (no fixed Land Drains required).
- All Drain Channels and Burn-off Tray should be cleaned and disinfected periodically.

Note: Best practice demands that all Cabinets should be thoroughly cleaned at least once per year.

Symptom	Status	Cause	Action
 <p>No Display</p>	Critical	No Power	<ol style="list-style-type: none"> 1. Check product temp, if above -12°C, move product. 2. Check plug connected to socket. 3. Check plug is connected to back of cabinet. 4. Check breaker is not tripped on distribution panel. 5. Check plug fuse. 6. Call Service Agent.
 <p>HA Alarm</p>	Critical	High Cabinet Temperature	<ol style="list-style-type: none"> 1. Check product temp, if above -12°C, move product. 2. Call Service Agent.
 <p>P1 Alarm</p>	Not Critical	Loose Temperature Probe	<ol style="list-style-type: none"> 1. Call Service Agent.
 <p>P2 Alarm</p>	Not Critical	Loose Temperature Probe	<ol style="list-style-type: none"> 1. Call Service Agent.

 <p>Temp Variation</p>	Not Critical	<p>Normal Operation.</p> <p>Temp varies between -16°C to -24°C</p>	<p>1. No Action required.</p>
Condensation on Glass	Not Critical	Excess Humidity	<p>1. Check Air conditioning is working.</p> <p>2. Check product not above load limit line.</p> <p>3. Check frozen product has not been placed on glass.</p> <p>4. Check lid is closed correctly</p> <p>5. Call service Agent.</p>

Controller Settings

Model : XW60K
Firmware : 12.9
Memo :

Group	Parameter	Description	Edit	Original	Vis. Level	Minimum	Maximum	Unit
Regulation	SEt	Set point	-22.0	-22.0		-25.0	-15.0	°C
Regulation	Hy	Differential	4.0	4.0	Pr1	0.1	25.5	°C
Regulation	LS	Minimum set point	-25.0	-25.0	Pr2	-55.0	-22.0	°C
Regulation	US	Maximum set point	-15.0	-15.0	Pr2	-22.0	150.0	°C
Probes	ot	Thermostat probe calibration	4.0	4.0	Pr1	-12.0	12.0	°C
Probes	P2P	Evaporator probe presence	yes	yes	Pr1			
Probes	oE	Evaporator probe calibration	0.0	0.0	Pr2	-12.0	12.0	°C
Probes	P3P	Third probe presence	no	no	Pr2			
Probes	o3	Third probe calibration	0.0	0.0	Pr2	-12.0	12.0	°C
Probes	P4P	Fourth probe presence	no	no	Pr2			
Probes	o4	Fourth probe calibration	0.0	0.0	Pr2	-12.0	12.0	°C
Regulation	odS	Outputs delay at start up	1	1	Pr2	0	255	min
Regulation	AC	Anti-short cycle delay	3	3	Pr1	0	50	min
Regulation	AC1	Second compressor start delay	10	10	Pr2	0	255	sec
Regulation	rtr	P1-P2 percentage for regulation	100	100	Pr2	0	100	
Regulation	CCt	Continuous cycle duration	00:00	00:00	Pr2			or

n			00					a
Regulation	CCS	Set point for continuous cycle	-5.0	-5.0	Pr2	-55.0	150.0	°C
Regulation	Con	Compressor ON time with faulty probe	15	15	Pr2	0	255	mi
Regulation	CoF	Compressor OFF time with faulty probe	10	10	Pr2	0	255	mi
Regulation	CF	Temperature measurement unit	°C	°C	Pr2			n
Regulation	rES	Resolution	dE	dE	Pr1			
Regulation	rEd	X-REP display	P1	P1	Pr2			
Regulation	dLy	Display temperature delay	00:00	00:00	Pr2			mi
Regulation	dtr	P1-P2 percentage for display	99	99	Pr2	1	99	n
Defrost	tdF	Defrost type	in	in	Pr1			
Defrost	dFP	Probe selection for first defrost	P2	P2	Pr2			
Defrost	dtE	Defrost termination temperature first defrost	8.0	8.0	Pr1	-55.0	50.0	°C
Defrost	idF	Interval between defrost cycles	48	48	Pr1	0	120	or
Defrost	MdF	(Maximum) length for first defrost	30	30	Pr1	0	255	a
Defrost	dSd	Start defrost delay	0	0	Pr2	0	255	mi
Defrost	dFd	Displaying during defrost	dEF	dEF	Pr2			n
Defrost	dAd	Max display delay after defrost	30	30	Pr2	0	255	mi
Defrost	Fdt	Draining time	0	0	Pr2	0	255	n
Defrost	dPo	First defrost after start-up	no	no	Pr2			
Defrost	dAF	Defrost delay after fast freezing	00:00	00:00	Pr2			or
Fan	FnC	Fan operating mode	C_Y	C_Y	Pr1			a
Fan	Fnd	Fan delay after defrost	0	0	Pr1	0	255	mi
Fan	FCt	Differential of temperature for forced activation of fans	10	10	Pr2	0	50	n
Fan	FSt	Fan stop temperature	50.0	-50.0	Pr1	-55.0	50.0	°C
Fan	Fon	Fan on time with compressor off	0	0	Pr2	0	15	mi
Fan	FoF	Fan off time with compressor off	0	0	Pr2	0	15	n
Fan	FAP	Probe selection for fan	P1	P1	Pr2			
Auxiliary	ACH	Kind of action for auxiliary relay	CL	CL	Pr2			
Auxiliary	SAA	Set point for auxiliary relay	0.0	0.0	Pr2	-55.0	150.0	°C

Auxiliary	SHy	Differential for auxiliary relay	2.0	2.0	Pr2	0.1	25.5	°C
Auxiliary	ArP	Probe selection for auxiliary relay	P1	P1	Pr2			
Auxiliary	Sdd	Auxiliary relay switched off during defrost	no	no	Pr2			
Alarm	ALP	Probe selection for temperature alarms	P1	P1	Pr2			
Alarm	ALC	Temperature alarms configuration	Ab	Ab	Pr2			
			-					
			10.					
Alarm	ALU	Maximum temperature alarm	0	-10.0	Pr1	-30.0	150.0	°C
			-					
			30.					
Alarm	ALL	Minimum temperature alarm	0	-30.0	Pr1	-55.0	-10.0	°C
		Differential for temperature alarm						
Alarm	AFH	recovery	2.0	2.0	Pr2	0.1	25.5	°C
								mi
Alarm	ALd	Temperature alarm delay	15	15	Pr2	0	255	n
			01:					or
Alarm	dAo	Delay of temperature alarm at start up	30	01:30	Pr2			a
		Probe selection for condenser						
Alarm	AP2	temperature alarms	P4	P4	Pr2			
			-					
			40.					
Alarm	AL2	Condenser low temperature alarm	0	-40.0	Pr2	-55.0	150.0	°C
			110					
Alarm	AU2	Condenser high temperature alarm	.0	110.0	Pr2	-55.0	150.0	°C
		Differ. for condenser temp. alarm						
Alarm	AH2	recovery	5.0	5.0	Pr2	0.1	25.5	°C
								mi
Alarm	Ad2	Condenser temperature alarm delay	15	15	Pr2	0	255	n
		Delay of condenser temper. alarm at start	01:					or
Alarm	dA2	up	30	01:30	Pr2			a
		Compressor off for condenser low						
Alarm	bLL	temperature alarm	no	no	Pr2			
		Compressor off for condenser high						
Alarm	AC2	temperature alarm	no	no	Pr2			
Alarm	tbA	Alarm relay switched off by pushing a key	yes	yes	Pr2			
Configura								
tion	oA3	Third relay configuration	CP2	CP2	Pr2			
Alarm	AOP	Alarm relay polarity	CL	CL	Pr2			
Digital								
inputs	i1P	First digital input polarity	CL	CL	Pr1			
Digital								
inputs	i1F	First digital input configuration	Lnt	Lnt	Pr1			
Digital								mi
inputs	did	First digital input alarm delay	15	15	Pr1	0	255	n
Digital								
inputs	nPS	Number of activation of pressure switch	15	15	Pr2	0	15	
Digital								
inputs	OdC	Compress and fan status when open door	F-C	F-C	Pr2			
Alarm	rrd	Regulation restart with door open alarm	yes	yes	Pr2			
Probes	HES	Differential for Energy Saving	0	0	Pr2	-30	30	°C

Other	Adr	Serial address	1	1	Pr2	1	247	
Probes	PbC	Kind of probe	ntC	ntC	Pr1			
Configura tion	OnF	On/off key configuration	ES	ES	Pr2			
Configura tion	dun	Down key configuration	Lnt	Lnt	Pr2			
Other	dP1	Room probe display	0	0	Pr1			
Other	dP2	Evaporator probe display	0	0	Pr1			
Other	dP3	Third probe display	0	0	Pr1			
Other	dP4	Fourth probe display	0	0	Pr1			
Other	rSE	Real set point	0	0	Pr1			
Other	rEL	Software release	0	0	Pr2			
Other	Ptb	Map code	1	1	Pr2	0	65535	
Regulatio n	SEt_nt	Set point	2.0	2.0		0.0	4.0	°C
Regulatio n	Hy_nt	Differential	3.0	3.0	Pr1	0.1	25.5	°C
Regulatio n	LS_nt	Minimum set point	0.0	0.0	Pr2	-55.0	2.0	°C
Regulatio n	US_nt	Maximum set point	4.0	4.0	Pr2	2.0	150.0	°C
Probes	ot_nt	Thermostat probe calibration	4.0	4.0	Pr1	-12.0	12.0	°C
Probes	P2P_nt	Evaporator probe presence	yes	yes	Pr1			
Probes	oE_nt	Evaporator probe calibration	0.0	0.0	Pr2	-12.0	12.0	°C
Probes	P3P_nt	Third probe presence	no	no	Pr2			
Probes	o3_nt	Third probe calibration	0.0	0.0	Pr2	-12.0	12.0	°C
Probes	P4P_nt	Fourth probe presence	no	no	Pr2			
Probes	o4_nt	Fourth probe calibration	0.0	0.0	Pr2	-12.0	12.0	°C
Regulatio n	odS_nt	Outputs delay at start up	1	1	Pr2	0	255	mi n
Regulatio n	AC_nt	Anti-short cycle delay	3	3	Pr1	0	50	mi n
Regulatio n	AC1_nt	Second compressor start delay	10	10	Pr2	0	255	sec
Regulatio n	rtr_nt	P1-P2 percentage for regulation	100	100	Pr2	0	100	
Regulatio n	CCt_nt	Continuous cycle duration	00: 00	00:00	Pr2			or a
Regulatio n	CCS_nt	Set point for continuous cycle	2.3	2.3	Pr2	-55.0	150.0	°C
Regulatio n	Con_nt	Compressor ON time with faulty probe	5	5	Pr2	0	255	mi n
Regulatio n	CoF_nt	Compressor OFF time with faulty probe	10	10	Pr2	0	255	mi n
Regulatio n	CF_nt	Temperature measurement unit	°C	°C	Pr2			
Regulatio n	rES_nt	Resolution	dE	dE	Pr1			
Regulatio n	rEd_nt	X-REP display	P1	P1	Pr2			

Regulation	dLy_nt	Display temperature delay	00:00	00:00	Pr2			min
Regulation	dtr_nt	P1-P2 percentage for display	99	99	Pr2	1	99	
Defrost	tdF_nt	Defrost type	in	in	Pr1			
Defrost	dFP_nt	Probe selection for first defrost	P2	P2	Pr2			
Defrost	dtE_nt	Defrost termination temperature first defrost	8.0	8.0	Pr1	-55.0	50.0	°C
Defrost	idF_nt	Interval between defrost cycles	96	96	Pr1	0	120	or a min
Defrost	MdF_nt	(Maximum) length for first defrost	30	30	Pr1	0	255	min
Defrost	dSd_nt	Start defrost delay	0	0	Pr2	0	255	min
Defrost	dFd_nt	Displaying during defrost	dEF	dEF	Pr2			
Defrost	dAd_nt	Max display delay after defrost	30	30	Pr2	0	255	min
Defrost	Fdt_nt	Draining time	0	0	Pr2	0	255	min
Defrost	dPo_nt	First defrost after start-up	no	no	Pr2			
Defrost	dAF_nt	Defrost delay after fast freezing	00:00	00:00	Pr2			or a min
Fan	FnC_nt	Fan operating mode	O_n	O_n	Pr1			
Fan	Fnd_nt	Fan delay after defrost	1	1	Pr1	0	255	min
Fan	FCt_nt	Differential of temperature for forced activation of fans	20	20	Pr2	0	50	°C
Fan	FSt_nt	Fan stop temperature	0	-50.0	Pr1	-55.0	50.0	°C
Fan	Fon_nt	Fan on time with compressor off	0	0	Pr2	0	15	min
Fan	FoF_nt	Fan off time with compressor off	0	0	Pr2	0	15	min
Fan	FAP_nt	Probe selection for fan	P2	P2	Pr2			
Auxiliary	ACH_nt	Kind of action for auxiliary relay	CL	CL	Pr2			
Auxiliary	SAA_nt	Set point for auxiliary relay	3.2	3.2	Pr2	-55.0	150.0	°C
Auxiliary	SHy_nt	Differential for auxiliary relay	0.4	0.4	Pr2	0.1	25.5	°C
Auxiliary	ArP_nt	Probe selection for auxiliary relay	nP	nP	Pr2			
Auxiliary	Sdd_nt	Auxiliary relay switched off during defrost	no	no	Pr2			
Alarm	ALP_nt	Probe selection for temperature alarms	P1	P1	Pr2			
Alarm	ALC_nt	Temperature alarms configuration	Ab	Ab	Pr2			
Alarm	ALU_nt	Maximum temperature alarm	0	10.0	Pr1	-2.0	150.0	°C
Alarm	ALL_nt	Minimum temperature alarm	-2.0	-2.0	Pr1	-55.0	10.0	°C
Alarm	AFH_nt	Differential for temperature alarm recovery	1.0	1.0	Pr2	0.1	25.5	°C
Alarm	ALd_nt	Temperature alarm delay	15	15	Pr2	0	255	min
Alarm	dAo_nt	Delay of temperature alarm at start up	01:00	01:30	Pr2			or

			30					a
		Probe selection for condenser						
Alarm	AP2_nt	temperature alarms	P4	P4	Pr2			
Alarm	AL2_nt	Condenser low temperature alarm	-4.0	-4.0	Pr2	-55.0	150.0	°C
			23.					
Alarm	AU2_nt	Condenser high temperature alarm	0	23.0	Pr2	-55.0	150.0	°C
		Differ. for condenser temp. alarm						
Alarm	AH2_nt	recovery	1.0	1.0	Pr2	0.1	25.5	°C
								mi
Alarm	Ad2_nt	Condenser temperature alarm delay	15	15	Pr2	0	255	n
		Delay of condenser temper. alarm at start	01:					or
Alarm	dA2_nt	up	30	01:30	Pr2			a
		Compressor off for condenser low						
Alarm	bLL_nt	temperature alarm	no	no	Pr2			
		Compressor off for condenser high						
Alarm	AC2_nt	temperature alarm	no	no	Pr2			
Alarm	tbA_nt	Alarm relay switched off by pushing a key	yes	yes	Pr2			
Configura								
tion	oA3_nt	Third relay configuration	nu	nu	Pr2			
Alarm	AOP_nt	Alarm relay polarity	CL	CL	Pr2			
Digital								
inputs	i1P_nt	First digital input polarity	CL	CL	Pr1			
Digital								
inputs	i1F_nt	First digital input configuration	Lnt	Lnt	Pr1			
Digital								mi
inputs	did_nt	First digital input alarm delay	15	15	Pr1	0	255	n
Digital								
inputs	nPS_nt	Number of activation of pressure switch	15	15	Pr2	0	15	
Digital								
inputs	OdC_nt	Compress and fan status when open door	F-C	F-C	Pr2			
Alarm	rrd_nt	Regulation restart with door open alarm	yes	yes	Pr2			
Probes	HES_nt	Differential for Energy Saving	0	0	Pr2	-30	30	°C
Other	Adr_nt	Serial address			Pr2			
Probes	PbC_nt	Kind of probe	ntC	ntC	Pr1			
Configura								
tion	OnF_nt	On/off key configuration	OFF	OFF	Pr2			
Configura								
tion	dun_nt	Down key configuration	Lnt	Lnt	Pr2			
Other	dP1_nt	Room probe display	0	0	Pr1			
Other	dP2_nt	Evaporator probe display	0	0	Pr1			
Other	dP3_nt	Third probe display	0	0	Pr1			
Other	dP4_nt	Fourth probe display	0	0	Pr1			
Other	rSE_nt	Real set point	0	0	Pr1			
Other	rEL_nt	Software release	0	0	Pr2			
Other	Ptb_nt	Map code	1	1	Pr2	0	65535	

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XW60K AND T620T - T620 - V620 - CX620

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1 GENERAL WARNING

1.1 PLEASE READ BEFORE USING THIS MANUAL

- This manual is part of the product and should be kept near the instrument for easy and quick reference.
- The instrument shall not be used for purposes different from those described hereunder. It cannot be used as a safety device.
- Check the application limits before proceeding.
- Dixell Srl reserves the right to change the composition of its products, even without notice, ensuring the same and unchanged functionality.

1.2 Safety Precautions

- Check the supply voltage is correct before connecting the instrument.
- Do not expose to water or moisture: use the controller only within the operating limits avoiding sudden temperature changes with high atmospheric humidity to prevent formation of condensation.
- Warning: disconnect all electrical connections before any kind of maintenance.
- Fit the probe where it is not accessible by the End User. The instrument must not be opened.
- In case of failure or faulty operation send the instrument back to the distributor or to "Dixell S.r.l." (see address) with a detailed description of the fault.
- Consider the maximum current which can be applied to each relay (see Technical Data).
- Ensure that the wires for probes, loads and the power supply are separated and far enough from each other, without crossing or intertwining.
- In case of applications in industrial environments, the use of mains filters (our mod. FT1) in parallel with inductive loads could be useful.

2 GENERAL DESCRIPTION

Model **XW60K** is microprocessor based controller suitable for applications on medium or low temperature refrigerating units. It has to be connected by means of a two-wire cable (Ø 1mm) at a distance of up to 10 meters to the keyboard **T620T** or **T620** or **V620** or **CX620**. It is provided with four relay outputs to control compressor, defrost - which can be either electrical or hot gas - the evaporator fans and light. It is also provided with 4 NTC or PTC probe inputs, one for temperature control, one to control the defrost end temperature of the evaporator and the third and fourth to control condenser temperature or to display another temperature.

The **HOT KEY** output allows to connect the unit, by means of the external module XJ485-CX, to a network line **ModBUS-RTU** compatible such as the Dixell monitoring units of X-WEB family. It allows to program the controller by means of the **HOT KEY** programming keyboard.

The instrument is fully configurable through special parameters that can be easily programmed through the keyboard.

3 CONTROLLING LOADS

3.1 THE COMPRESSOR

The regulation is performed according to the temperature measured by the thermostat probe with a positive differential from the set point: if the temperature increases and reaches set point plus differential the compressor is started and then turned off when the temperature reaches the set point value again.

In case of fault in the thermostat probe the start and stop of the compressor are timed through parameters **Con** and **CoF**.

The relay of the second compressor is activated in parallel with the relay of the first compressor, with a possible delay set in the **AC1** parameter. Both the compressors are switched off at the same time.

3.2 FAST FREEZING

When defrost is not in progress, it can be activated by holding the **UP** key pressed for about 3 sec. The compressor operates to maintain the **CCS** set point for the time set through the **CCt** parameter. The cycle can be terminated before the end of the set time using the same activation key **UP** for 3 sec.

3.3 DEFROST

Two defrost modes are available through the **tdF** parameter: defrost through electrical heater (**tdF = EL**) and hot gas defrost (**tdF = in**).

The defrost interval depends on the presence of the RTC (optional). If the RTC is present is controlled by means of parameter **EdF**:

- **EdF=in**: a defrost starts after elapsing the **idf** time (standard way for controller without RTC). **EdF=rtC**: defrosts are scheduled by using a real time clock system, depending on the hours set in the parameters **Ld1...Ld6**, during workdays, and in **Sd1...Sd6** during holidays.

Other parameters are used to control defrost cycles: its maximum length (**MdF**) and two defrost modes: timed or controlled by the evaporator's probe (**P2P**).

At the end of defrost dripping time is started, its length is set in the **Fdt** parameter. With **Fdt=0** the dripping time is disabled.

3.4 CONTROL OF EVAPORATOR FANS

The fan control mode is selected by means of the **FnC** parameter:

FnC = C_n: fans will switch ON and OFF with the compressor and **not run** during defrost;
FnC = o_n: fans will run even if the compressor is off, and not run during defrost;
 After defrost, there is a timed fan delay allowing for drip time, set by means of the **Fnd** parameter.
FnC = C_Y: fans will switch ON and OFF with the compressor and **run** during defrost;
FnC = o_Y: fans will run continuously also during defrost.

An additional parameter **FSt** provides the setting of temperature, detected by the evaporator probe, above which the fans are always OFF. This is used to make sure circulation of air only if his temperature is lower than set in **FSt**.

3.4.1 Forced activation for fans

This function, managed by the **Fct** parameter, is designed to avoid short cycles of fans, that could happen when the controller is switched on or after a defrost, when the room air warms the evaporator. If the difference between the evaporator temperature and the room temperature is higher than the **Fct** value, the controller will activate the fans. This function is disabled if **Fct=0**.

3.4.2 Timed activation of the fans when the compressor is off.

When **FnC=C-n** or **C-Y** (fans in parallel to the compressor), the fans will be able to carry out on and off cycles even if the compressor is switched off. The on and off interval of time follow the **Fon** and **FoF** parameters. When the compressor is stopped the fans will go on working for the **Fon** time. On the other side, with **Fon=0** the fans will stay always off when the compressor is off.

4 SPECIAL FUNCTIONS

By means of the parameter **oA3**, it's possible to configure the functions of the light relay (22-23), as described in the following paragraphs:

4.1 LIGHT RELAY (FACTORY SETTING, OA3 = LIG)

By setting **oA3=Lig** the relay will work as light relay, it is switched on and off by the light button on the keyboard and is affected by status of the digital input when **l1F=doR**.

4.2 SECOND COMPRESSOR MANAGEMENT (OA3 = CP2)

By setting **oA3=CP2**, the relay at terminals 22-23 will operate as "second compressor". It will be activated in parallel with the relay of the first compressor, with a possible delay set in the **AC1** parameter (seconds). Both the compressors are switched off at the same time.

4.3 ON-OFF RELAY (OA3 = ONF)

By setting **oA3=onF**, the relay will operate as "on-off" relay: it will be activated when the controller is switched on and it will be switched off when the controller is in stand-by status.

4.4 AUXILIARY RELAY (OA3 = AUS)

By setting **oA3=AUS**, the relay 22-23 will work as auxiliary thermostat (ex. anti condensing heater).

Parameters involved:

- **ACH (cL, Ht)**: Kind of regulation for the auxiliary relay: **Ht** = heating / **CL** = cooling;
- **SAA (-50+150)** Set point for auxiliary relay
- **SHy (0+25.5°C)** Differential for auxiliary output.
 With **ACH = CL**: aux relay **cut in** is **SAA+SHy**, cut out **SAA**.
 With **ACH = Ht**: aux relay **cut in** is **SAA-SHy**, cut out **SAA**.
- **ArP (nP, P1, P2, P3, P4)** Probe for auxiliary relay
- **Sdd (n, Y)** Auxiliary output working during defrost

4.5 ALARM RELAY (OA3 = ALR)

By setting **oA3=ALr** the relay will work as alarm relay, it is switched on when an alarm happens.

Parameters involved:

- **tBA (n, y)** Alarm relay silencing
- **AOp (cL, oP)** Alarm relay polarity

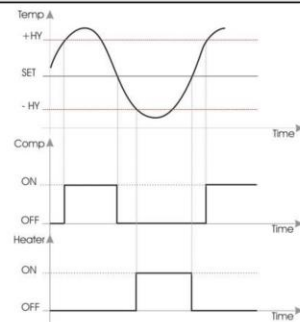
4.6 NEUTRAL ZONE (OA3 = DB)

By setting **oA3=db** the controller will perform a "neutral zone" regulation.

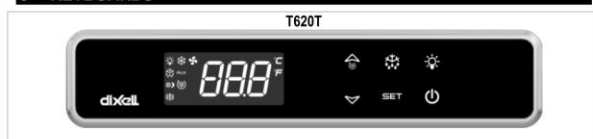
The heating element has to be connected to the **oA3** relay (22-23)

If the temperature increases and reaches set point plus differential (**HY**) the **compressor** is started and then turned off when the temperature reaches the set point value again.

If the temperature decreases and reaches the set point minus differential (**HY**) the **oA3** output (heater) is switched on and then turned OFF when the temperature reaches again the set point.



5 KEYBOARDS



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SET

To display and modify target set point; in programming mode it selects a parameter or confirm an operation. By holding it pressed for 3 sec when max or min temperature is displayed it will be erased.



(UP) To see the max stored temperature; in programming mode it browses the parameter codes or increases the displayed value. By holding it pressed for 3s the fast freezing cycle is started.



(DOWN) To see the min stored temperature; in programming mode it browses the parameter codes or decreases the displayed value.



(DEF) By holding it pressed for 3 sec the defrost is started.



(LIG) Switch ON and OFF the cold room light.



(ONOFF) Switch ON and OFF the instrument.

KEY COMBINATIONS



To lock and unlock the keyboard.



To enter the programming mode.



To exit the programming mode.

5.1 USE OF LEDS

Each LED function is described in the following table.

LED	MODE	Function
	ON	The compressor is running
❄️	FLASHING	- Programming Phase (flashing with LED ❄️) - Anti-short cycle delay enabled
🌀	ON	The fan is running
	FLASHING	Programming Phase (flashing with LED 🌀)
❄️	ON	The defrost is enabled
	FLASHING	Drip time in progress
❄️	ON	The Fast Freezing cycle is enabled
🔊	ON	- ALARM signal - In "Pr2" indicates that the parameter is also present in "Pr1"
🕒	ON	Continuous cycle is running
🌙	ON	Energy saving enabled
💡	ON	Light on
⚡	ON	Auxiliary relay on (CX620 only)
°C/°F	ON	Measurement unit (CX620 only)

6 AUTOMATIC KEYBOARD LOCK (ONLY FOR T620T)

To avoid accidental modifications of the controller settings, the T620T keyboard will be locked automatically if no key will be touched for 60 seconds. The T620T will show "LoC" flashing for few seconds when it's locking. The touch key is operating even if the keyboard is locked.

6.1 TO UNLOCK THE T620T

1. Touch any key.
2. The keys will be lighted.
3. Keep a key pushed for few seconds till the "on" message is displayed.

7 CONTROLLER INTERFACE

SET THE CURRENT TIME AND DAY (ONLY WITH RTC)

When the instrument is switched on, it's necessary to program the time and day.

1. Enter the Pr1 programming menu, by pushing the SET+DOWN keys for 3 sec.
2. The rTc parameter is displayed. Push the SET key to enter the real time clock menu.
3. The Hur (hour) parameter is displayed.
4. Push the SET and set current hour by the UP and DOWN keys, then push SET to confirm the value.
5. Repeat the same operations with Min (minutes), dAy (day), dYM (day of month), Mon (month) and YAr (year) parameters.

To exit: Push both SET+UP keys or wait for 15 sec without pushing any keys.

7.1 HOW TO SEE THE MIN TEMPERATURE

1. Press and release the DOWN key.
2. The "Lo" message will be displayed followed by the minimum temperature recorded.
3. By pressing the DOWN key or waiting for 5 sec the normal display will be restored.

7.2 HOW TO SEE THE MAX TEMPERATURE

1. Press and release the UP key.
2. The "Hi" message will be displayed followed by the maximum temperature recorded.
3. By pressing the UP key or waiting for 5 sec the normal display will be restored.

7.3 HOW TO RESET THE MAX AND MIN TEMPERATURE RECORDED

To reset the stored temperature, when max or min temperature is displayed:

1. Press SET key until "rST" label starts blinking.

Note: after the installation remember to RESET the temperature stored.

7.4 HOW TO SEE AND MODIFY THE SET POINT

1. Push and immediately release the SET key: the display will show the Set point value;
2. To change the SET value, push the UP or DOWN arrows within 10 sec.
3. To memorise the new set point value push the SET key again or wait for 10 sec.

7.5 TO START A MANUAL DEFROST



1. Push the DEF key for more than 2 sec and a manual defrost will start.

7.6 TO ENTER IN PARAMETERS LIST "Pr1"

To enter the parameter list "Pr1" (user accessible parameters) operate as follows:

1. Enter the Programming mode by pressing the Set and DOWN key for few seconds (❄️ and 🌀 start blinking).
2. The instrument will show the first parameter present in "Pr1"

7.7 THE HIDDEN MENU

In the hidden menu there are all the parameters of the instrument.

7.7.1 ENTERING THE HIDDEN MENU

1. Enter the Programming mode by pressing the SET+DOWN keys for 3 sec (the "°C" or "°F" LED will start blinking).
2. Release the keys and then push again the SET+DOWN keys more than 7 sec. The "Pr2" label will be displayed immediately, followed from the HY parameter.

NOW THE HIDDEN MENU IS DISPLAYED

3. Select the required parameter.
4. Press SET key to display its actual value
5. Use UP or DOWN keys to change its value.
6. Press SET to store the new value and move to the following parameter.

To exit: Press SET+UP or wait for 15 sec without pressing any key.

NOTE1: if no parameter is present in the "Pr1" level, after the first 3 sec the "noP" message will be displayed. Keep SET+DOWN keys pushed till the "Pr2" message will be displayed.

NOTE2: the new set value will be stored even if the procedure is exited by waiting for the time-out to expire.

7.7.2 HOW TO: MOVE A PARAMETER FROM THE HIDDEN MENU TO THE FIRST LEVEL AND VICEVERSA.

Each parameter present in the HIDDEN MENU can be moved or put into "THE FIRST LEVEL" (user level) by pressing SET+DOWN keys. In HIDDEN MENU, if a parameter is present also in the First Level (Pr1), the decimal point will be lit.

7.7.3 HOW TO CHANGE THE PARAMETER VALUE

1. Enter the Programming mode.
2. Select the required parameter with UP or DOWN.
3. Press the "SET" key to display its value (❄️ and 🌀 LED starts blinking).
4. Use UP or DOWN to change its value.
5. Press SET to store the new value and move to the following parameter.

To exit: Press SET+UP or wait for 15 sec without pressing any key.

NOTE: the new programming is stored even when the procedure is exited by waiting the time-out.

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7.8 HOW TO LOCK THE KEYBOARD (MANUALLY)

1. Keep the **UP** and **DOWN** keys pressed together for more than 3 sec the **UP** and **DOWN** keys.
2. The "PoF" message will be displayed and the keyboard is locked. At this point it is only possible the viewing of the set point or the MAX o Min temperature stored and to switch ON and OFF the light, the auxiliary output and the instrument.



TO UNLOCK THE KEYBOARD

Keep the **UP** and **DOWN** keys pressed together for more than 3 sec.

7.9 ON/OFF FUNCTION (STAND BY)

By pushing the **ON/OFF** key, the instrument shows "OFF" for 5 sec. and the ON/OFF LED is switched ON.
During the OFF status, all the relays are switched OFF and the regulations are stopped; if a monitoring system is connected, it does not record the instrument data and alarms.
When the instrument is in stand by the keyboard displays "oFF".

N.B. During the OFF status the Light and AUX buttons are active.

7.10 TO SEE THE PROBE VALUES

1. Enter in "Pr1" level.
2. Parameters "dP1", "dP2", "dP3" and "dP4" display the value of probes 1, 2, 3 and 4.

8 PARAMETER LIST

rtC	Real time clock menu (only for controller with RTC): to set the time, date and defrost start time.
-----	--

REGULATION

HY	Differential: (0.1 to 25.5°C; 1 to 45°F) intervention differential for set point. Compressor Cut IN is Set Point + differential (HY). Compressor Cut OUT is when the temperature reaches the set point.
LS	Minimum set point: (-55°C to SET; -67°F to SET) sets the minimum value for the set point.
US	Maximum set point: (SET to 150°C; SET to 302°F) set the maximum value for set point.
ot	Thermostat probe calibration: (-12.0 to 12.0°C; -21 to 21°F) allows to adjust possible offset of the thermostat probe.
P2P	Evaporator probe presence: (n; Y) n = not present, the defrost stops by time; Y = present, the defrost stops by temperature.
oE	Evaporator probe calibration: (-12.0 to 12.0°C; -21 to 21°F) allows to adjust possible offset of the evaporator probe.
P3P	Third probe presence (P3): (n; Y) n = not present, the terminals 18-20 operate as digital input; Y = present, the terminals 18-20 operate as third probe.
o3	Third probe calibration (P3): (-12.0 to 12.0°C; -21 to 21°F) allows to adjust possible offset of the third probe.
P4P	Fourth probe presence: (n; Y) n = Not present; Y = present. NOTE: only for XW60LT models.
o4	Fourth probe calibration: (-12.0 to 12.0°C; -21 to 21°F) allows to adjust possible offset of the fourth probe. NOTE: only for XW60LT models.
odS	Outputs activation delay at start up: (0 to 255min) this function is enabled at the initial start up of the instrument and inhibits any output activation for the period of time set in the parameter.
AC	Anti-short cycle delay: (0 to 50min) minimum interval between the compressor stop and the following restart.
rtr	Percentage of the second and first probe for regulation: (0 to 100; 100=P1, 0=P2) it allows to set the regulation according to the percentage of the first and second probe, as for the following formula $(rtr(P1-P2)/100 + P2)$.
CCt	Compressor ON time during continuous cycle: (0.0 to 24h00min, res. 10min) allows to set the length of the continuous cycle. Compressor stays on without interruption during CCt time. This is useful, for instance, when the room is filled with new products.
CCS	Set point for continuous cycle: (-55 to 150°C; -67 to 302°F) it sets the set point used during the continuous cycle.
Con	Compressor ON time with faulty probe: (0 to 255min) time during which the compressor is active in case of faulty thermostat probe. With Con=0 compressor is always OFF.
CoF	Compressor OFF time with faulty probe: (0 to 255min) time during which the compressor is OFF in case of faulty thermostat probe. With CoF=0 compressor is always active.

DISPLAY

CF	Temperature measurement unit: (°C; °F) °C = Celsius; °F = Fahrenheit. WARNING: When the measurement unit is changed the SET point and the values of the parameters HY, LS, US, ot, ALU and ALL have to be checked and modified (if necessary).
rES	Resolution (for °C): (in=1°C; dE=0.1°C) allows decimal point display.
Lod	Instrument display: (P1; P2; P3; P4; SET, dtr) it selects which probe is displayed by the instrument. P1 = Thermostat probe; P2 = Evaporator probe; P3 = Third probe (only for model with this option enabled); P4 = Fourth probe, SET = set point; dtr = percentage of visualization.
rEd	X-REP display (optional): (P1; P2; P3; P4; SET, dtr) it selects which probe is displayed by X-REP. P1 = Thermostat probe; P2 = Evaporator probe; P3 = Third probe (only for model with this option enabled); P4 = Fourth probe, SET = set point; dtr = percentage of visualization.
dLY	Display delay: (0 to 20min00s; res. 10s) when the temperature increases, the display is updated of 1°C or 1°F after this time.
dtr	Percentage of the second and first probe for visualization when Lod=dtr: (0 to 99; 100=P1, 0=P2) if Lod=dtr it allows to set the visualization according to the percentage of the first and second probe, as for the following formula $(dtr(P1-P2)/100 + P2)$.

DEFROST

EdF	Defrost mode (only for controller with RTC): - rtC: Real Time Clock mode. Defrost time follows Ld1 to Ld6 parameters on workdays and Sd1 to Sd6 on holidays. - in: interval mode. The defrost starts when the time idf is expired.
tdF	Defrost type: (EL; in) EL = electrical heater; in = hot gas.
dFP	Probe selection for defrost termination: (nP; P1; P2; P3; P4) nP = no probe; P1 = thermostat probe; P2 = evaporator probe; P3 = configurable probe; P4 = Probe on Hot Key plug.
dtE	Defrost termination temperature: (-55 to 50°C; -67 to 122°F) (enabled only when EdF=Pb) sets the temperature measured by the evaporator probe, which causes the end of defrost.
idf	Interval between defrost cycles: (0 to 120hours) determines the interval of time between two defrost cycles.
MdF	(Maximum) length for defrost: (0 to 255min) when P2P=n, (not evaporator probe: timed defrost) it sets the defrost duration. When P2P=Y (defrost end based on temperature) it sets the maximum length for defrost.
dSd	Start defrost delay: (0 to 99min) this is useful when different defrost start times are necessary to avoid overloading the plant.
dFd	Temperature displayed during defrost: (rt; it; SET; dFt) rt = real temperature; it = temperature at defrost start; SET = set point; dFt = "dEF" label.
dAd	MAX display delay after defrost: (0 to 255min) sets the maximum time between the end of defrost and the restarting of the real room temperature display.
Fdt	Drip time: (0 to 120min) time interval between reaching defrost termination temperature and the restoring of the control's normal operation. This time allows the evaporator to eliminate water drops that might have formed due to defrost.
dPo	First defrost after start-up: (n; Y) n = after the idf time, Y = immediately.
dAf	Defrost delay after continuous cycle: (0.0 to 24h00min, res. 10min) time interval between the end of the fast freezing cycle and the following defrost related to it.

FANS

FnC	Fans operating mode: (C-n; o-n; C-Y; o-Y) C-n = runs with the compressor, OFF during defrost; o-n = continuous mode, OFF during defrost; C-Y = runs with the compressor, ON during defrost; o-Y = continuous mode, ON during defrost.
Fnd	Fans delay after defrost: (0 to 255min) interval between end of defrost and evaporator fans start.
FCt	Temperature differential to avoid fan short cycles: (0 to 59°C; 0 to 90°F) (N.B.: FCt=0 means function disabled) if the difference of temperature between the evaporator and the room probes is higher than FCt value, the fans will be switched on.
FSt	Fans stop temperature: (-55 to 50°C; -67 to 122°F) setting of temperature, detected by evaporator probe, above which fans are always OFF.
Fon	Fan ON time: (0 to 15min) with Fnc=C_n or C_Y, (fan activated in parallel with compressor) it sets the evaporator fan ON cycling time when the compressor is off. With Fon=0 and FoF=0 the fan are always off, with Fon=0 and FoF=0 the fan are always off.
Fof	Fan OFF time: (0 to 15min) With Fnc=C_n or C_Y, (fan activated in parallel with compressor) it sets the evaporator fan off cycling time when the compressor is off. With Fon=0 and FoF=0 the fan are always off, with Fon=0 and FoF=0 the fan are always off.
FAP	Probe selection for fan management: (nP; P1; P2; P3; P4) nP = no probe; P1 = thermostat probe; P2 = evaporator probe; P3 = configurable probe; P4 = Probe on Hot Key plug.

OA3 = AUS: AUXILIARY THERMOSTAT CONFIGURATION (terms. 22-23)

ACH	Kind of regulation for auxiliary relay: (Ht; CL) Ht = heating; CL = cooling.
SAA	Set Point for auxiliary relay: (-55.0 to 150.0°C; -67 to 302°F) it defines the room temperature set point to switch auxiliary relay.
SHY	Differential for auxiliary output: (0.1 to 25.5°C; 1 to 45°F) intervention differential for auxiliary output set point. • ACH=CL, AUX Cut in is [SAA+SHY]; AUX Cut out is SAA. • ACH=Ht, AUX Cut in is [SAA-SHY]; AUX Cut out is SAA.
ArP	Probe selection for auxiliary: (nP; P1; P2; P3; P4) nP = no probe, the auxiliary relay is switched only by the digital input; P1 = Probe 1 (Thermostat probe); P2 = Probe 2 (evaporator probe); P3 = Probe 3 (display probe); P4 = Probe 4.
Sdd	Auxiliary relay off during defrost: (n; Y) n = the auxiliary relay operates during defrost. Y = the auxiliary relay is switched off during defrost.

ALARMS

ALP	Probe selection for alarm: (nP; P1; P2; P3; P4) nP = no probe, the temperature alarms are disabled; P1 = Probe 1 (Thermostat probe); P2 = Probe 2 (evaporator probe); P3 = Probe 3 (display probe); P4 = Fourth probe.
ALC	Temperature alarms configuration: (Ab; rE) Ab = absolute temperature, alarm temperature is given by the ALL or ALU values. rE = temperature alarms are referred to the set point. Temperature alarm is enabled when the temperature exceeds the [SET+ALU] or [SET-ALL] values.
ALU	MAXIMUM temperature alarm: • If ALC=Ab: [ALL to 150.0°C or ALL to 302°F] • If ALC=rE: [0.0 to 50.0°C or 0 to 90°F] when this temperature is reached the alarm is enabled, after the ALd delay time.
ALL	Minimum temperature alarm: • If ALC=Ab: [-55°C to ALU; -67 to ALU] • If ALC=rE: [0.0 to 50.0°C or 0 to 90°F] when this temperature is reached the alarm is enabled, after the ALd delay time.
AFH	Differential for temperature alarm recovery: (0.1 to 25.5°C; 1 to 45°F) intervention differential for recovery of temperature alarm.
ALd	Temperature alarm delay: (0 to 255 min) time interval between the detection of an alarm condition and alarm signalling.
dAo	Exclusion of temperature alarm at start-up: (0.0 to 24h00min, res. 10min) time interval between the detection of the temperature alarm condition after instrument power on and alarm signalling.

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CONDENSER TEMPERATURE ALARM

AP2	Probe selection for temperature alarm of condenser: (nP; P1; P2; P3; P4) nP = no probe; P1 = thermostat probe; P2 = evaporator probe; P3 = configurable probe; P4 = Probe on Hot Key plug.
AL2	Low temperature alarm of condenser: (-55 to 150°C; -67 to 302°F) when this temperature is reached the LA2 alarm is signalled, possibly after the Ad2 delay.
Au2	High temperature alarm of condenser: (-55 to 150°C; -67 to 302°F) when this temperature is reached the HA2 alarm is signalled, possibly after the Ad2 delay.
AH2	Differential for temperature condenser alarm recovery: 0.1 to 25.5°C; 1 to 45°F.
Ad2	Condenser temperature alarm delay: (0 to 255 min) time interval between the detection of the condenser alarm condition and alarm signalling.
dA2	Condenser temperature alarm exclusion at start up: 0.0 to 24h00min, res. 10min.
bLL	Compressor off with low temperature alarm of condenser: (n; Y) n = compressor keeps on working; Y = compressor is switched off till the alarm is present, in any case regulation restarts after AC time at minimum.
AC2	Compressor off with high temperature alarm of condenser: (n; Y) n = compressor keeps on working; Y = compressor is switched off till the alarm is present, in any case regulation restarts after AC time at minimum.

RELAY OA3 (22-23) CONFIGURATION

tbA	Alarm relay silencing (with oAx =ALr): (n; Y) n = silencing disabled: alarm relay stays on till alarm condition lasts. Y = silencing enabled: alarm relay is switched OFF by pressing a key during an alarm.
oA3	Third relay configuration (X60LT: terminals 1-3, XW60LRT: terminals 5-6): (dEF; FAn; ALr; LiG; AUS; onF; db; dEF2; HES) dEF = defrost; FAn = do not select it; ALr = alarm; LiG = light; AUS = Auxiliary relay; onF = always on with instrument on; db = neutral zone; dEF2 = do not select it; HES = night blind.
oAP	Alarm relay polarity: (CL; oP) it set if the alarm relay is open or closed when an alarm occurs. CL = terminals closed during an alarm; oP = terminals open during an alarm.

DIGITAL INPUT

i1P	First digital input polarity: (oP; CL) oP = the digital input is activated by opening the contact; CL = the digital input is activated by closing the contact.
i1F	First digital input configuration: (EAL; bAL; PAL; dor; dEF; ES; AUS; Htr; FAn; HdF; onF; Sbt) EAL = external alarm: "EA" message is displayed; bAL = serious alarm "CA" message is displayed; PAL = pressure switch alarm, "CA" message is displayed; dor = door switch function; dEF = activation of a defrost cycle; ES = energy saving; AUS = auxiliary relay activation with oA2=AUS; Htr = type of inverting action (cooling or heating); FAn = fan; HdF = Holiday defrost (enable only with RTC); onF = to switch the controller off; Sbt = to activate Sabbath mode.
did	Digital input 1 alarm delay: (0 to 255 min) delay between the detection of the external alarm condition and its signalling. When i1F= PAL, it is the interval of time to calculate the number of pressure switch activation.
nPS	Number of pressure switch activation: (0 to 15) Number of activation, during the did or d2d interval, before signalling an alarm event (i1F, i2F=PAL). If the nPS activation during did or d2d time is reached, switch off and on the instrument to restart normal regulation.
odC	Compressor status when open door: (no; FAn; CP; F.C.) no = normal; FAn = normal; CP = compressor OFF; F.C = compressor OFF.
rrd	Outputs restart after door open alarm: (n; Y) n = outputs follow the odC parameter. Y = outputs restart with a door open alarm.
LES	Light off during Energy Saving status: n; Y.
HES	Delta temperature during an Energy Saving cycle: (-30.0 to 30.0°C; -54 to 54°F) it sets the increasing value of the set point [SET+HES] during the Energy Saving cycle.

CURRENT TIME AND WEEKLY HOLIDAYS (ONLY FOR MODELS WITH RTC)

Hur	Current hour: 0 to 23h.
Min	Current minute: 0 to 59min.
dAY	Current day: Sun to SAT.
dYM	Day of the month: 1 to 31.
Mon	Month: 1 to 12.
YAr	Year: 00 to 99.
Hd1	First weekly holiday: (Sun to nu) set the first day of the week which follows the holiday times.
Hd2	Second weekly holiday: (Sun to nu) set the second day of the week which follows the holiday times.

N.B.: Hd1, Hd2 can be set also as "nu" value (Not Used).

ENERGY SAVING TIMES (ONLY FOR MODELS WITH RTC)

ILE	Energy Saving cycle start during workdays: (0 to 23h50min) during the Energy Saving cycle the set point is increased by the value in HES so that the operation set point is SET+HES.
dLE	Energy Saving cycle length during workdays: (0 to 24h00min) sets the duration of the Energy Saving cycle on workdays.
ISE	Energy Saving cycle start on holidays: 0 to 23h50min.
dSE	Energy Saving cycle length on holidays: 0 to 24h00min.

TO SET DEFROST TIMES (ONLY FOR MODELS WITH RTC)

Ld1...Ld6	Workday defrost start: (0 to 23h50min) these parameters set the beginning of the 6 programmable defrost cycles during workdays. Ex: when Ld2=12.4 the second defrost starts at 12.40 during workdays.
Sd1...Sd6	Holiday defrost start: (0 to 23h50min) these parameters set the beginning of the 6 programmable defrost cycles on holidays. Ex: when Sd2=3.4 the second defrost starts at 3.40 on holidays.

N.B.: to disable a defrost cycle set it to "nu" (not used).

OTHER

Adr	Serial address: (1 to 247) identifies the instrument address when connected to a ModBUS compatible monitoring system.
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PbC	Type of probe: (PtC; nTC) it allows to set the kind of probe used by the instrument: - PtC = PTC probe; - nTC = NTC probe.
onF	On/Off key enabling: (nU; oFF; ES) nU = disabled; oFF = enabled; ES = not set it.
dP1	Thermostat probe display.
dP2	Evaporator probe display.
dP3	Third probe display.
dP4	Fourth probe display (only for XW60LT models).
rSE	Real set point: it shows the set point used during the energy saving cycle or during the continuous cycle.
rEL	Software release for internal use.
Ptb	Parameter table code: readable only.

9 DIGITAL INPUT

The free voltage digital input is programmable in different configurations by the i1F parameter.

9.1 DOOR SWITCH INPUT (i1F = DOR)

It signals the door status and the corresponding relay output status through the odC parameter: no = normal (any change); Fan = Fan OFF; CP = Compressor OFF; F.C = Compressor and fan OFF. Since the door is opened, after the delay time set through parameter did, the door alarm is enabled, the display shows the message "dA" and the regulation restarts is rtr = YES. The alarm stops as soon as the external digital input is disabled again. With the door open, the high and low temperature alarms are disabled.

9.2 GENERIC ALARM (i1F = EAL)

As soon as the digital input is activated the unit will wait for did time delay before signalling the "EAL" alarm message. The outputs status doesn't change. The alarm stops just after the digital input is deactivated.

9.3 SERIOUS ALARM MODE (i1F = BAL)

When the digital input is activated, the unit will wait for did delay before signalling the "CA" alarm message. The relay outputs are switched OFF. The alarm will stop as soon as the digital input is deactivated.

9.4 PRESSURE SWITCH (i1F = PAL)

If during the interval time set by did parameter, the pressure switch has reached the number of activation of the nPS parameter, the "CA" pressure alarm message will be displayed. The compressor and the regulation are stopped. When the digital input is ON the compressor is always OFF. If the nPS activation in the did time is reached, switch off and on the instrument to restart normal regulation.

9.5 AUXILIARY OUTPUT SWITCHING (i1F = AUS)

With oA3=AUS and i1F=AUX it switches the fourth relay (22-23).

9.6 START DEFROST (i1F = DFR)

It starts a defrost if there are the right conditions. After the defrost is finished, the normal regulation will restart only if the digital input is disabled otherwise the instrument will wait until the MdF safety time is expired.

9.7 KIND OF ACTION: HEATING OR COOLING (i1F = HTR)

This function allows to invert the regulation of the controller: from cooling to heating and viceversa.

9.8 ENERGY SAVING (i1F = ES)

The Energy Saving function allows to change the set point value as the result of the SET+HES (parameter) sum. This function is enabled until the digital input is activated.

9.9 DIGITAL INPUTS POLARITY

The digital input polarity depends on the i1P parameter:

i1P=CL: the input is activated by closing the contact.

i1P=OP: the input is activated by opening the contact

10 INSTALLATION AND MOUNTING

T620 keyboard shall be mounted on vertical panel, in a 150x31 mm hole, and fixed using two screws Ø 3 x 2mm. To obtain an IP65 protection grade use the front panel rubber gasket (mod. RG-L).

V620 keyboard shall be mounted on vertical panel, in a 72x56 mm hole, and fixed using two screws Ø 3 x 2mm. To obtain an IP65 protection grade use the front panel rubber gasket (mod. RG-V).

CX620 keyboard shall be mounted on vertical panel, in a 29x71 mm hole, and fixed using the special bracket supplied.

The controller XW60K shall be mounted in a din rail

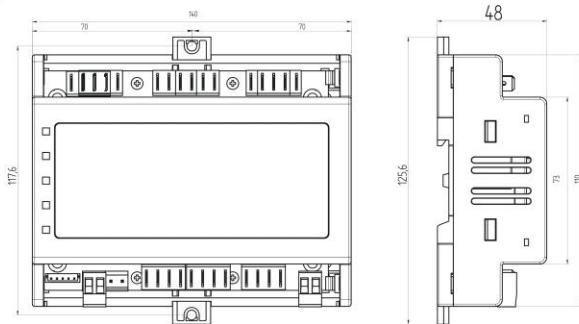
It must be connected to the keyboard by means of a two-wire cable (Ø 1mm). The temperature range allowed for correct operation is 0 to 60°C. Avoid places subject to strong vibrations, corrosive gases, excessive dirt or humidity. The same recommendations apply to probes. Let the air circulate by the cooling holes.

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10.1 XW60K – 8 DIN CASE - DIMENSIONS



11 ELECTRICAL CONNECTIONS

XW60K is provided with screw terminal blocks to connect cables with a cross section up to 2.5 mm² for the RS485 (optional) and the keyboard. To connect the other inputs, power supply and relays, **XW60K** is provided with Faston connections (6.3mm). Heat-resistant cables have to be used. Before connecting cables make sure the power supply complies with the instrument's requirements. Separate the probe cables from the power supply cables, from the outputs and the power connections. Do not exceed the maximum current allowed on each relay, in case of heavier loads use a suitable external relay.

NOTE: the maximum current allowed for all the loads is 20A.

11.1 PROBE CONNECTIONS

The probes shall be mounted with the bulb upwards to prevent damages due to casual liquid infiltration. It is recommended to place the thermostat probe away from air streams to correctly measure the average room temperature. Place the defrost termination probe among the evaporator fins in the coldest place, where most ice is formed, far from heaters or from the warmest place during defrost, to prevent premature defrost termination.

12 TTL/RS485 SERIAL LINE

The TTL connector allows, by means of the external module TTL/RS485 (**XJ485CX**), to connect the unit to a network line **ModBUS-RTU** compatible as the Dixell monitoring system. The same TTL connector is used to upload and download the parameter list of the "HOT-KEY".

13 HOW TO: USE OF THE PROGRAMMING "HOT KEY"

13.1 PROGRAM A HOT-KEY FROM AN INSTRUMENT (UPLOAD)

1. Program one controller with the front keypad.
2. When the controller is **ON**, insert the "HOT-KEY" and push **UP** button; the "uPL" message appears followed a by a flashing "End" label.
3. Push **SET** button and the "End" will stop flashing.
4. Turn **OFF** the instrument, remove the "HOT-KEY" and then turn it **ON** again.

NOTE: the "Err" message appears in case of a failed programming operation. In this case push again button if you want to restart the upload again or remove the "HOT-KEY" to abort the operation.

13.2 PROGRAM AN INSTRUMENT BY USING A HOT-KEY (DOWNLOAD)

1. Turn **OFF** the instrument.
2. Insert a pre-programmed "HOT-KEY" into the 5-PIN receptacle and then turn the Controller **ON**.
3. The parameter list of the "HOT-KEY" will be automatically downloaded into the Controller memory. The "doL" message will blink followed a by a flashing "End" label.
4. After 10 seconds the instrument will restart working with the new parameters.
5. Remove the "HOT-KEY".

NOTE: the message "Err" is displayed for failed programming. In this case turn the unit off and then on if you want to restart the download again or remove the "HOT-KEY" to abort the operation.

14 ALARM SIGNALS

Message	Cause	Outputs
P1	Thermostat probe failure	Alarm output ON; Compressor output according to parameters Con and CoF .
P2	Evaporator probe failure	Alarm output ON; Other outputs unchanged
P3	Probe 3 probe failure	Alarm output ON; Other outputs unchanged
P4	Probe 4 probe failure	Alarm output ON; Other outputs unchanged
HA	Maximum temperature alarm	Alarm output ON; Other outputs unchanged
LA	Minimum temperature alarm	Alarm output ON; Other outputs unchanged
HA2	Condenser high temperature	It depends on the AC2 parameter
LA2	Condenser low temperature	It depends on the bLL parameter
dA	Door open	Compressor and fans restarts
EA	External alarm	Output unchanged.
CA	Serious external alarm (i1F=bAL)	All outputs OFF.
CA	Pressure switch alarm (i1F=PAL)	All outputs OFF.
EE	Data or memory failure	Alarm output ON; Other outputs unchanged

The alarm message is displayed until the alarm condition is recovery. All the alarm messages are showed alternating with the room temperature except for the "P1" which is flashing. To reset the "EE" alarm and restart the normal functioning press any key, the "rSt" message is displayed for about 3 sec.

14.1 SILENCING BUZZER

Once the alarm signal is detected the buzzer can be silenced by pressing any key. Buzzer is mounted in the keyboard and it is an option.

14.2 "EE" ALARM

The Dixell instruments are provided with an internal check for the data integrity. The "EE" alarm flashes when a failure in the memory data occurs. In such cases the alarm output is enabled.

14.3 ALARM RECOVERY

Probe alarms: "P1" (probe1 faulty), "P2", "P3" and "P4"; they automatically stop 10 sec after the probe restarts normal operation. Check connections before replacing the probe.

Temperature alarms "HA", "LA", "HA2" and "LA2" automatically stop as soon as the temperature returns to normal values.

Alarms "EA" and "CA" (with i1F=bAL) recover as soon as the digital input is disabled.

Alarm "CA" (with i1F=PAL) recovers only by **switching off and on** the instrument.

15 Technical data

Keyboards

Housing: self extinguishing ABS

Case: **T620** and **T620T**: facia 38x185 mm; depth 23mm

V620: facia 72x56 mm; depth 23mm

CX620: facia 75x36 mm; depth 23mm

Mounting: **T620T** panel mounting in a 150x31 mm panel cut-out with the 2 metal brackets supplied. **T620**: panel mounting in a 150x31 mm panel cut-out with two screws. Ø 3 x 2mm. Distance between the holes 165mm

V620: panel mounting in a 56x72 mm panel cut-out with two screws. Ø 3x2mm. Distance between the holes 40mm

CX620: panel mounting in a 71x29mm panel cut-out

Protection: IP20; Frontal protection: IP65 with frontal gasket

Connections: Screw terminal block ≤ 2.5 mm²

Power supply: from **XW60K** power module

Display: 3 digits, red LED, 14.2 mm high

Optional output: buzzer.

Power module XW60K

Case: 8 DN: 140X176X148

Connections: Screw terminal block ≤ 2.5 mm² heat-resistant wiring and 6.3mm Faston

Power supply: 230Vac or: 110Vac ± 10% or 24Vac

Power absorption: 10VA max

Inputs: 4 NTC or PTC probes

Digital inputs: 1 free voltage

Relay outputs: **Total current on loads MAX. 20A**

Compressor: relay SPST 20(8) A, 250Vac; EN60730: 100K cycles

Fan: relay SPST 8(3) A, 250Vac

Defrost: relay SPST 16(5) A, 250Vac

Light (oA3): relay SPST 16(5) A, 250Vac

Serial output: TTL standard

Communication protocol: Modbus - RTU

Data storing: on the non-volatile memory (EEPROM)

Kind of action: 1B

Pollution degree: normal

Software class: A

Operating temperature: 0 to 60°C (32 to 140°F)

Storage temperature: -25 to 60°C (-13 to 140°F)

Relative humidity: 20 to 85% (no condensing)

Measuring and regulation range:

NTC probe: -40 to 110°C (-58 to 230°F)

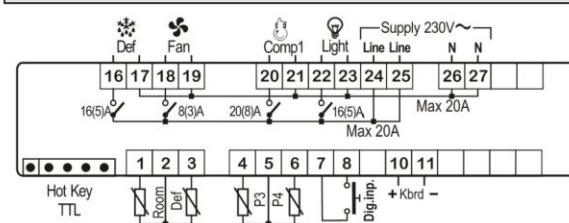
PTC probe: -50 to 150°C (-58 to 302°F)

Resolution: 0.1°C or 1°C or 1°F (selectable)

Accuracy (ambient temp. 25°C): ±0.5°C ±1 digit

16 CONNECTIONS

16.1 XW60K



17 Default setting values

Label	Name	Range	Default	Level
REGULATION				
SEt	Set point	LS; US	-5.0	---
rtC*	Real time clock menu	-	-	Pr1
Hy	Differential	[0.1 to 25.5°C] [1 to 45°F]	2.0	Pr1
LS	Minimum set point	[-55.0°C to SET] [-67°F to SET]	-50.0	Pr2
US	Maximum set point	[SET to 150°C] [SET to 302°F]	110	Pr2
ot	Thermostat probe calibration	[-12 to 12°C] [-21 to 21°F]	0.0	Pr1

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Label	Name	Range	Default	Level	Label	Name	Range	Default	Level	Label	Name	Range	Default	Level
P2P	Evaporator probe presence	n=not present; Y=pres.	Y	Pr1	AC2	Compr. off for condenser high temperature alarm	n(0); Y(1)	n	Pr2	AUXILIARY OUTPUT				
oE	Evaporator probe calibration	[-12 to 12°C] [-21 to 21°F]	0.0	Pr2	tbA	Alarm relay disabling	n=no; Y=yes	Y	Pr2	DIGITAL INPUT				
P3P	Third probe presence (1st cond. probe)	n=not present; Y=pres.	n	Pr2	oA3	Fourth relay configuration	ALr = alarm; dEF = do not select it; Lig = Light; AUS = AUX; onF=always on; Fan= do not select it; db = do not select it; dF2 = do not select it	Lig	Pr2	i1P	Digital input polarity	oP=opening; CL=closing	CL	Pr1
o3	Third probe calibration	[-12 to 12°C] [-21 to 21°F]	0	Pr2	AoP	Alarm relay polarity (oA3=ALr)	oP; CL	CL	Pr2	i1F	Digital input configuration	EAL; bAL; PAL; dor; dEF; Htr; AUS	dor	Pr1
P4P	Fourth probe presence (2nd cond. probe)	n=not present; Y=pres.	n	Pr2	did	Digital input alarm delay	0 to 255 min	15	Pr1	nPS	Number of activation of pressure switch	0 to 15	15	Pr2
o4	Fourth probe calibration	[-12 to 12°C] [-21 to 21°F]	0	Pr2	odC	Compress and fan status when open door	no; FAn; CPr; F_C	F-C	Pr2	rrd	Regulation restart with door open alarm	n; Y	Y	Pr2
odS	Outputs activation delay at start up	0 to 255 min	0	Pr2	LES	Light off during energy saving status	n; Y	Y	Pr2	HES	Differential for Energy Saving	[-30 to 30°C] [-54 to 54°F]	0	Pr2
AC	Anti-short cycle delay	0 to 30 min	1	Pr1	RTC					Hur*	Current hour	read only	-	rtc
AC1	Second compressor delay	0 to 255 sec	5	Pr2	Min*	Current minute	read only	-	rtc	dAY*	Current day	read only	-	rtc
rtr	P1-P2 percentage for regulation	0 to 100 (100=P1, 0=P2)	100	Pr2	dYM*	Day of the month	read only	-	rtc	Mon	Month	read only	-	rtc
CCt	Compressor ON time during fast freezing	0.0 to 23h50min, res. 10 min	0.0	Pr2	YAR	Year	read only	-	rtc	Hd1*	First weekly holiday	Sun to SAT; nu	nu	rtc
CCS	Set point for continuous cycle	[-55.0 to 150.0°C] [-67 to 302°F]	-5	Pr2	Hd2*	Second weekly holiday	Sun to SAT; nu	nu	rtc	ILE*	Energy Saving cycle start during workdays	0.0 to 23h50min	0	rtc
Con	Compressor ON time with faulty probe	0 to 255 min	15	Pr2	dLE*	Energy Saving cycle length during workdays	0.0 to 24h00min	0	rtc	ISE*	Energy Saving cycle start on holidays	0.0 to 23h50min	0	rtc
CoF	Compressor OFF time with faulty probe	0 to 255 min	30	Pr2	dSE*	Energy Saving cycle length on holidays	0.0 to 24h00min	0	rtc	Ld1*	1st workdays defrost start	0.0 to 23h50min; nu	6.0	rtc
DISPLAY					Ld2*	2nd workdays defrost start	0.0 to 23h50min; nu	13.0	rtc	Ld3*	3rd workdays defrost start	0.0 to 23h50min; nu	21.0	rtc
CF	Temperature measurement unit	°C; °F	°C	Pr2	Ld4*	4th workdays defrost start	0.0 to 23h50min; nu	0.0	rtc	Ld5*	5th workdays defrost start	0.0 to 23h50min; nu	0.0	rtc
rES	Resolution (integer/decimal point)	in; dE	dE	Pr1	Ld6*	6th workdays defrost start	0.0 to 23h50min; nu	0.0	rtc	Sd1*	1st holiday defrost start	0.0 to 23h50min; nu	6.0	rtc
rEd	Remote display	P1; dtr	P1	Pr2	Sd2*	2nd holiday defrost start	0.0 to 23h50min; nu	13.0	rtc	Sd3*	3rd holiday defrost start	0.0 to 23h50min; nu	21.0	rtc
dLy	Display temperature delay	0.0 to 20min00sec, res. 10 sec	0	Pr2	Sd4*	4th holiday defrost start	0.0 to 23h50min; nu	0.0	rtc	Sd5*	5th holiday defrost start	0.0 to 23h50min; nu	0.0	rtc
dtr	P1-P2 percentage for display	1; 100	50	Pr2	Sd6*	6th holiday defrost start	0.0 to 23h50min; nu	0.0	rtc	OTHER				
DEFROST					Adr	Serial address	1 to 247	1	Pr1	PbC	Kind of probe	PtC; nC	nC	Pr2
tdF	Defrost type	EL; in	EL	Pr1	onF	on/off key enabling	nu; oFF; ES	oFF	Pr2	dP1	Room probe display	read only	-	Pr1
dFP	Probe selection for defrost termination	nP; P1; P2; P3; P4	P2	Pr2	dP2	Evaporator probe display	read only	-	Pr1	dP3	Third probe display	read only	-	Pr1
dtE	Defrost termination temperature	[-50.0 to 150°C] [-58 to 302°F]	8.0	Pr1	dP4	Fourth probe display	read only	-	Pr1	rSE	Current set point	read only	-	Pr1
idf	Interval between defrost cycles	1 to 120 h	6	Pr1	rEL	Software release	read only	-	Pr2	Ptb	Map code	read only	-	Pr2
MdF	(Maximum) length for 1st defrost	0 to 255 min	30	Pr1	ALARMS					ALP	Probe setting for temperature alarm	P1; P2; P3; P4	P1	Pr2
dSd	Start defrost delay	0 to 99 min	0	Pr2	ALC	Temperature alarms configuration	rE; Ab	rE	Pr2	ALU	MAXIMUM temperature alarm	[-55.0 to 150.0°C] [-67 to 302°F]	10.0	Pr1
dFd	Displaying during defrost	rt; it; SET; dEF; dEG	it	Pr2	ALL	minimum temperature alarm	[-55.0 to 150.0°C] [-67 to 302°F]	10.0	Pr1	AFH	Temperature alarm and fan differential	[0.1 to 25.5°C] [1 to 45°F]	2.0	Pr2
dAd	MAX display delay after defrost	0 to 255 min	30	Pr2	ALd	Temperature alarm delay	0 to 255 min	15	Pr2	dAo	Delay of temperature alarm at start up	0.0 to 23h50min, res. 10 min	1.3	Pr2
Fdt	Draining time	0 to 60 min	0	Pr2	AP2	Probe for temperat. alarm of condenser	nP; P1; P2; P3; P4	P4	Pr2	AL2	Condenser for low temperat. alarm	[-55.0 to 150.0°C] [-67 to 302°F]	-40	Pr2
dPo	First defrost after start up	n; Y	n	Pr2	AU2	Condenser for high temperat. alarm	[-55.0 to 150.0°C] [-67 to 302°F]	110	Pr2	AH2	Differential for condenser temperature alarm recovery	[0.1 to 25.5°C] [1 to 45°F]	5	Pr2
dAF	Defrost delay after fast freezing	0.0 to 23h50min, res. 10 min	0.0	Pr2	Ad2	Condenser temperature alarm delay	0 to 254 min, 255=nU	15	Pr2	dA2	Delay of cond. temper. alarm at start up	0.0 to 23h50min, res. 10 min	1.3	Pr2
FANS					bLL	Compressor off because of condenser low temperature alarm	n(0); Y(1)	n	Pr2					
FnC	Fans operating mode	C-n; C-y; O-n; O-y	o-n	Pr1	AUXILIARY THERMOSTAT									
Fnd	Fans delay after defrost	0 to 255 min	10	Pr1	ACH	Kind of action for auxiliary relay	CL; Ht	CL	Pr2					
FCt	Differential of temperature for forced activation of fans	[0 to 50°C] [0 to 90°F]	10	Pr2	SAA	Set Point for auxiliary relay	[-55.0 to 150°C] [-67 to 302°F]	0.0	Pr2					
FSt	Fans stop temperature	[-55.0 to 50°C] [-67 to 302°F]	2	Pr1	SHy	Differential for auxiliary relay	[0.1 to 25.5°C] [1 to 45°F]	2.0	Pr2					
Fon	Fan on time with compressor off	0 to 15 min	0	Pr2	ArP	Probe selection for auxiliary relay	nP; P1; P2; P3	nP	Pr2					
Fof	Fan off time with compressor off	0 to 15 min	0	Pr2	Sdd	Aux.output working during defrost	n; Y	n	Pr2					
FAP	Probe selection for fan management	nP; P1; P2; P3; P4	P2	Pr2										

* Only for model with real time clock




Dixell S.r.l. - Z.I. Via dell'Industria, 27 - 32010 Pieve d'Alpago (BL) ITALY
 Tel. +39.0437.98333 r.a. - Fax +39.0437.983313 - EmersonClimate.com/Dixell - dixell@emerson.com