PROFESSIONAL FOSTER REFRIGERATION

By Appointment to
Her Majesty Queen Elizabeth II
Suppliers of Commercial Refrigeration
Foster Refrigerator, King's Lynn

Original Service Manual

EcoPro G2 Cabinets & Counters

FD1-11 Controller & Display

English

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Service Manual Information:

The products and all information in this manual are subject to change without prior notice.
We assume by the information given that the person(s) working on these refrigeration units are fully trained and skilled in all aspects of their workings. Also that they will use the appropriate safety equipment and take or meet precautions where required.
The service manual does not cover information on every variation of this unit; neither does it cover the installation or every possible operating or maintenance instruction for the units.

Health & Safety Warnings and Information

Make sure the power supply is turned off before making any electrical repairs.

To minimise shock and fire hazards, please do not plug or unplug the unit with wet hands.

During maintenance and cleaning, please unplug the unit where required.

Care must be taken when handling or working on the unit as sharp edges may cause personal injury, we recommend the wearing of suitable PPE.

Ensure the correct moving and lifting procedures are used when relocating a unit.

Do NOT use abrasive cleaning products, only those that are recommended. Never scour any parts of the refrigerator. Scouring pads or chemicals may cause damage by scratching or dulling polished surface finishes.

Failure to keep the condenser clean may cause premature failure of the motor/compressor which will NOT be covered under warranty policy.

Do NOT touch the cold surfaces in the freezer compartment. Particularly when hands are damp or wet, skin may adhere to these extremely cold surfaces and cause frostbite.

Please ensure the appropriate use of safety aids or Personnel Protective Equipment (PPE) are used for you own safety.

Environmental Management Policy

Product Support and Installation Contractors.

Foster Refrigerator recognises that its activities, products and services can have an adverse impact upon the environment.
The organisation is committed to implementing systems and controls to manage, reduce and eliminate its adverse environmental impacts wherever possible, and has formulated an Environmental Policy outlining our core aims. A copy of the Environmental Policy is available to all contractors and suppliers upon request.
The organisation is committed to working with suppliers and contractors where their activities have the potential to impact upon the environment. To achieve the aims stated in the Environmental Policy we require that all suppliers and contractors operate in compliance with the law and are committed to best practice in environmental management.
Product Support and Installation contractors are required to:
1. Ensure that wherever possible waste is removed from the client's site, where arrangements are in place all waste should be returned to Foster Refrigerator's premises. In certain circumstances waste may be disposed of on the client's site; if permission is given, if the client has arrangements in place for the type of waste.

2. If arranging for the disposal of your waste, handle, store and dispose of it in such a way as to prevent its escape into the environment, harm to human health, and to ensure the compliance with the environmental law. Guidance is available from the Environment Agency on how to comply with the waste management 'duty of care'.

3. The following waste must be stored of separately from other wastes, as they are hazardous to the environment: refrigerants, polyurethane foam, and oils.

4. When arranging for disposal of waste, ensure a waste transfer note or consignment note is completed as appropriate. Ensure that all waste is correctly described on the waste note and include the appropriate six-digit code from the European Waste Catalogue. Your waste contractor or Foster can provide further information if necessary.

5. Ensure that all waste is removed by a registered waste carrier, a carrier in possession of a waste management licence, or a carrier holding an appropriate exemption. Ensure the person receiving the waste at its ultimate destination is in receipt of a waste management licence or valid exemption.

6. Handle and store refrigerants in such a way as to prevent their emission to atmosphere, and ensure they are disposed of safely and in accordance with environmental law.

7. Make arrangements to ensure all staff who handle refrigerants do so at a level of competence consistent with the City Guilds 2078 Handling Refrigerants qualification or equivalent qualification.

8. Ensure all liquid substances are securely stored to prevent leaks and spill, and are **not** disposed of into storm drains, foul drain, or surface water to soil.

Disposal Requirements

If not disposed of properly all refrigerators have components that can be harmful to the environment.
All old refrigerators must be disposed of by appropriately registered and licensed waste contractors, and in accordance with national laws and regulations.

General Electrical Safety

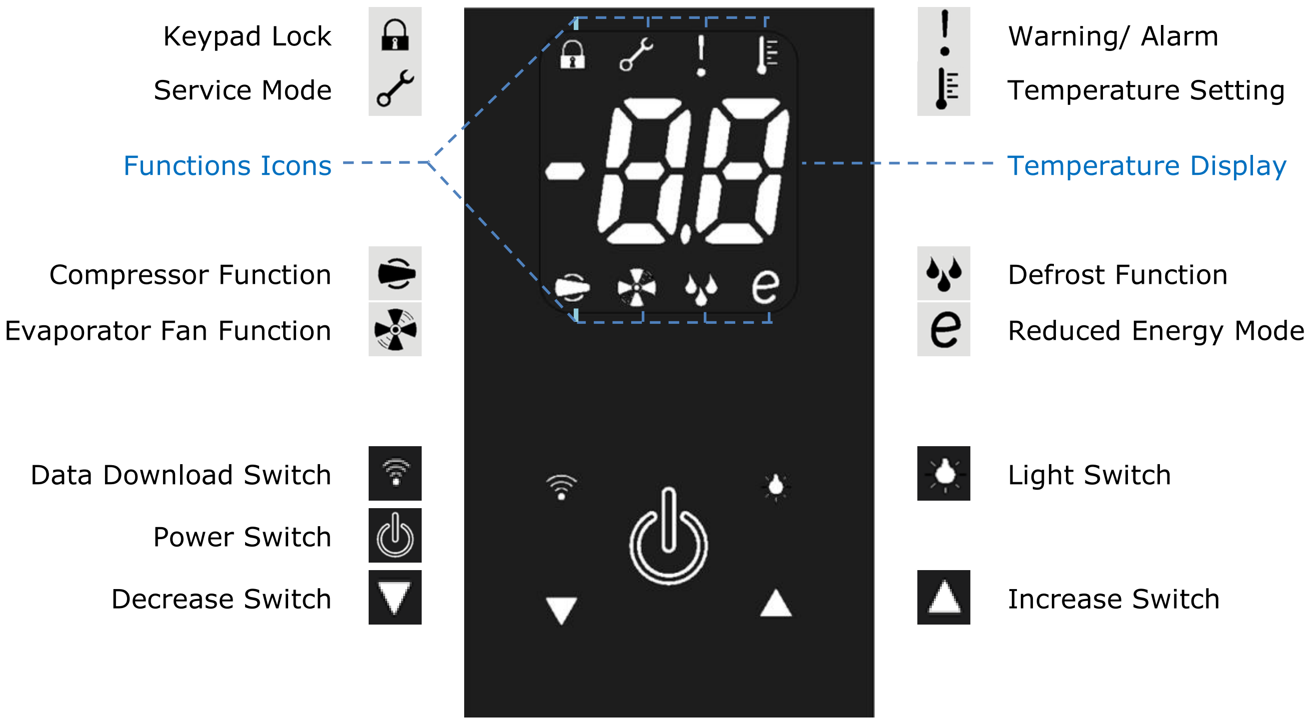
Foster Refrigerator recommends that the equipment is electrically connected via a Residual Current Device; such as a Residual Current Circuit Breaker (RCCB) type socket, or through a Residual Current Circuit Breaker with Overload Protection (RCBO) supplied circuit.

EcoPro G2 Cabinet Description

The EcoPro G2 range comes as a Full Gastronorm format in a variety of capacities and temperatures. A standard unit comes with 2/1 shelves (3 with a single model, 6 with a double model).
The fish model comes fitted with fixed racking to take 7 fish boxes (198kgs) as standard whereas the wine version comes with a racking assembly that holds either 140x75cl bottles (for a single model) or 280 x 75cl (for a double model).
The units are manufactured as a one piece shell with easy clean stainless steel exterior. Each conforms to the current legislation and exceeds the Montreal protocol by using zero ODP (ozone depleting substances) refrigerants and insulation. There is also the added option of having Hydrocarbon refrigerant with certain model variations.
Each unit's temperature is controlled by a microprocessor with digital temperature display. There are several temperature options available exceeding the Climate Class 5 operations by giving an ambient temperature to 43°C.
Each temperature display is also easy to read with a wipe clean finish.

The standard form of refrigeration system in this unit is integrated with an air-cooled condensing unit that allows cooled air to circulate through the evaporator, via the fan into storage areas. It does this by distributing the refrigerant into the evaporator controlled by a capillary.
Remote systems are also available as an option, the difference being, the evaporator is controlled by an expansion valve instead of capillary.
Other points to be made on these units are that they have coated coils to prevent corrosion and to help prolong the refrigerator's life.
Cabinets come with an easily removable plug box and lid.

Display Icons and Switches



(Some icons or switches are only visible during adjustment, when activated by parameters or through operation/manual selection).

Start-Up and Operation

Initial Set Up

After unpacking clean and allow the cabinet to stand for 2 hours <u>before</u> turning on.

Ensure the cabinet is situated where neither hot nor cold air sources will affect its performance. Make sure that a minimum clearance of 310mm above and 50mm around the cabinet is available for ventilation and effective operation.

Initial Start up

Connect the unit to a suitable mains power outlet and turn the supply on. Please do not plug or unplug the unit with wet hands.

The cabinet will energise briefly showing -- followed by the power switch slowly pulsing with a blank display. The unit is now in standby.

Standby

Pressing this switch for 3 seconds will turn the unit on (the switch backlight is static and the display shows the operating temperature) or put into standby (the switch backlight pulses slowly on & off). As the operating temperature has been pre-set no adjustments are required. Allow the cabinet to reach its normal/set operating temperature before loading.

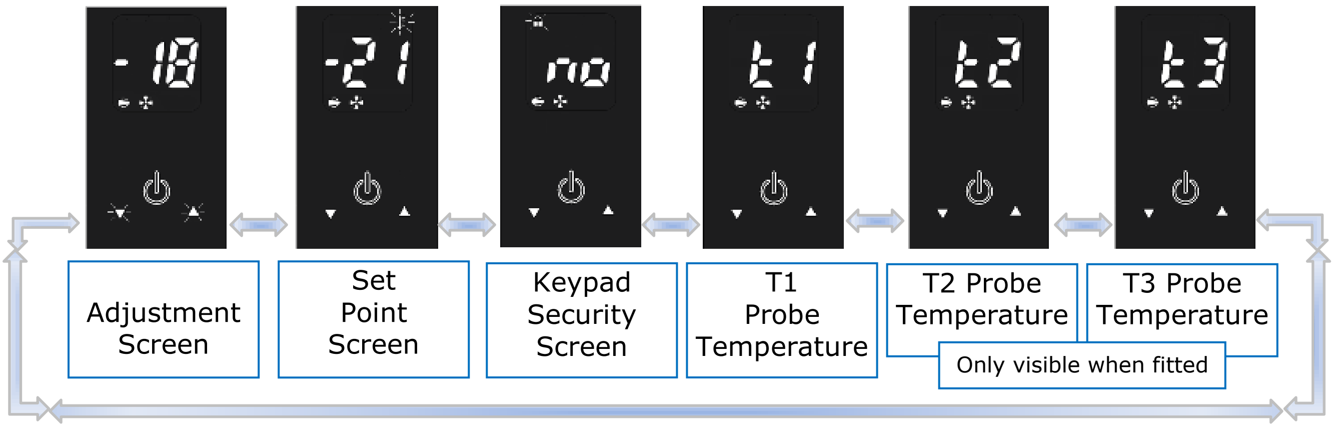
User Adjustments Mode

You are required to enter this mode to make any setup changes.

These include Set Point, Keypad Security, and display of T1, 2 or 3 probe temperatures.

Press and immediately release , after which the and switches will flash/pulse together.

Press to scroll through the following screens:



To exit this mode scroll back to the adjustment screen and press or wait for 30 seconds and the display will revert to the normal display showing the operating temperature.

Set Point and Other Mode Adjustments

Access the adjustment mode as described above. Using the or switches to scroll to the mode that requires adjustment i.e. 'Set Point' this is the minimum temperature the cabinet is allowed to cool down to (the display shows the temperature and flash/pulsing icon).

To adjust this press and release the icon will show constantly. Adjust the setting with the or switch. Confirm the change by pressing and releasing again, the next mode will automatically show. Scroll through the modes with the or switch until you return to the adjustment screen and press and release to exit and save.

If at any point the display is left for 30 seconds it will revert to the normal display and no changes will be saved.

Increased Sensitivity of Temperature Settings

If you require the cabinet to have a more accurate or increased sensitivity to temperature and the warnings this controls, the controller is able to measure temperature in 1/10ths of a degree (0.1°) instead of whole degrees.
With parameter ‘SC’ set to ‘1C’ the display will show the temperature as 1/10ths of a degree on the scale between -9.9°C to +9.9°C.
Also, with parameter ‘SC’ set to ‘1F’ the controller has the facility to show the temperature in Fahrenheit (between -58°F to 99°F). However if this is selected all other temperature related parameter values will have to be set accordingly to this change. (See ‘Configuration of Parameters’ for information on how to access this).

Keypad Security Settings

Access the ‘Keypad Security’ screen as described before.
The screen will show the current status, initially pre-set to ‘’, with flashing. Press and release and will show constantly. (If you modify this setting with to show ‘’ the keypad will be locked, will show constantly and the cabinet will not be able to be put into standby, carry out a manual defrost, adjust temperature set point, download data or switch on/off the units lights. To confirm any change you **must** press again so the next screen ‘’ shows).
Exit any of the ‘Adjustment Modes’ as described before.

Internal Light (where fitted)

To switch on the lights press and release so that the switch backlight is on continuously. To switch off press and release and the switch backlight will flash/pulse.

Downloading Data

This option is only available when enabled via parameters and the cabinet has the additional FCOM1 device available –this availability will be shown by the data switch being constantly illuminated.

To download the data the switch should be pressed and then released. The information will then begin downloading to the appropriate printer or PC and the backlight of the switch will flash. On completion the switch will return to constant state of illumination.

Defrost

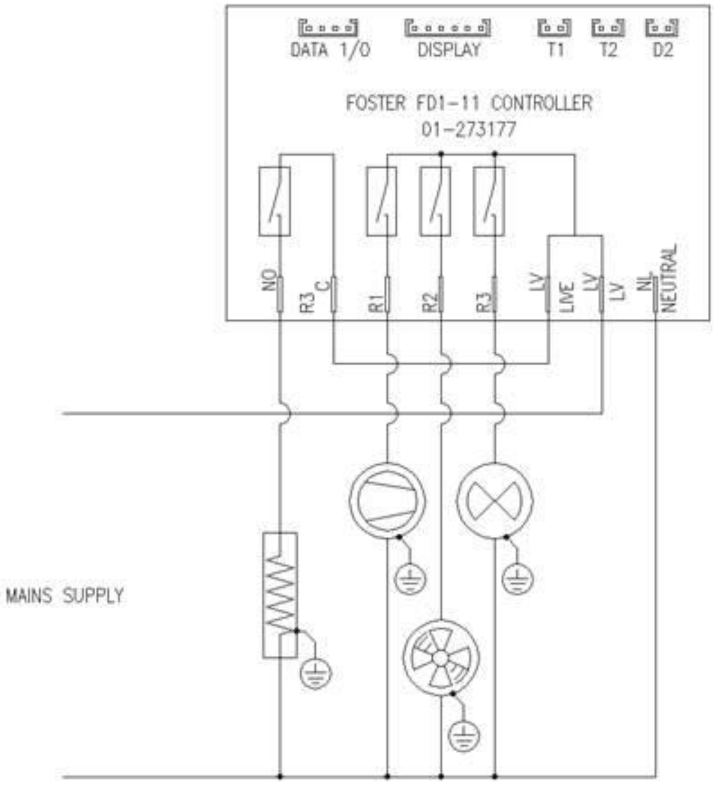
All Foster G2 cabinets are fitted with a fully automatic defrost system to ensure that the evaporator coil remains free from ice during normal use. Melt-water is evaporated using either the heat from the refrigeration system or a separate electric heater (dependent upon model and configuration).

To activate a manual defrost – while the cabinet is in ‘run’ mode press and hold for 5 seconds. After 3 seconds the display will go blank then return after a further 2 seconds. At this point a defrost will be performed (subject to underlying operating parameters), this will terminate automatically.

Reduced Energy Control Mode e

The reduced energy control mode (‘e’ mode) detects when the unit has reached the selected temperature set-point and the operating conditions (such as usage rate) have become less demanding.
When enabled, the controller will modify the compressor, evaporator fan and defrost operation in order to reduce the energy consumed. During the reduced energy control mode e is illuminated at the bottom right corner of the display.
Upon an increase in operating demand the controller reverts back to the standard operating settings with the e symbol extinguished. The ‘e’ mode is enabled by setting parameter ‘iiM’ to ‘Au’. Further parameter settings (‘iiS’, ‘iit’, ‘iiP’, ‘iiY’, ‘iiF’, ‘iid’, and ‘iiE’) control the temperature cycle during the reduced energy control mode. Setting parameter ‘iiM’ to ‘no’ disables the ‘e’ mode.

FD1-11 Controller Connection Drawing



FD1-11 Technical Data

Power Supply
FD1-11
230Vac±10%,
50/60Hz, Operating 3.2W, Standby 0.9W
Relay Output
Compressor - 16(8) A 240Vac
Defrost - 16(4) A 240Vac
Evap. Fan - 16(4) A 240Vac
Auxiliary Loads 1 - 8(2) A 240Vac
Input
NTC 10KΩ@25°C

Measurement Range
-50…120°C, -55…240°F
-50 / -9.9…19.9 / 80°C (NTC 10K Only)

Measurement Accuracy
<0.5°C within the measurement range

CE (Reference norms)
EN60730-1; EN60730-2-9
EN55022 (Class B)
EN50082-1

Configuration of Parameters

Parameters should not be changed unless you have an understanding of their purpose and the following instructions are fully understood.

- To gain access to the parameters use the 'Adjustment Mode'. This is accessed by pressing and releasing the ⏻ switch. After selecting this mode press and hold ▼ and ▲ together for 5 seconds. The first parameter will show on the display.
- Using the ▼ and ▲ switches you can scroll through all parameters and their values.
- If you wish to change a parameter value press and release the ⏻ switch when one the desired mnemonic. Once selected in this way use the ▼ and ▲ switches to modify. When the new reuired value is shown it will be saved by pressing and relaeasing the ⏻ switch. After which the display will show the next parameter.
- To exit this mode or revert to normal operating mode, press ▼ and ▲ together then release.

If at any point no buttons are pressed for 30 seconds without saving a new value the display will return to the standard temperature display without changes being made.

EcoPro G2 FD1-11 Controller Default Parameter Values

Para	Cond	Range	Description	Dim	FD1-11
SL		-50 … SH	Minimum limit for 'SP' setting	°C	1
SH		SL … 90°	Maximum limit for 'SP' setting	°C	3
SP		SL … SH	Temperature set point to be achieved	°C	1.5
CH		RF - HE	Refrigeration or Heating control mode	Flag	RF
HY		1 … 9.9°	Off/On thermostat differential	°K	3
CR		0 … 30min	Compressor Rest Time	Min	2
C1		0 … 30min	Thermostat run times with faulty T1 probe ('C' = 0 output with faulty T1 will always be off).	Min	6
C2		0 … 30min	Thermostat run times with faulty T1 probe ('C1' = '0' & 'C1' => '0' output with faulty T1 will always be on	Min	4
CS		0 … 30min	Compressor stop delay after door has been opened (only if 'DS' – '1')	Min	1
DM			**Defrost start mode:**	Func.	TM
		NO	Defrost is disabled (the following parameter will be 'FM')		
		TM	Regular time defrost		
		FR	Defrost time elapses only in condition of frost accumulation		
DB	'DM' = 'TM' or 'FR'	0 … 90 Hrs	Time interval between defrosts	Hrs	6
DF			**Defrost tmer clock:**	Flag	YS
		YS	Following mains interruption, timer resumes count		
		NO	Following mains interruption, timer restarts from zero		
DL		-50 … 90°	Defrost end temperature (only if 'T2' = '1')	°C	15
DT		1 … -0min	Maximum defrost duration	Min	20
DY			**Defrost type:**	Func.	OF
		OF	Timed off cycle defrost (compressor and heater off)		
		EL	Electric heater defrost (compressor and heater on).		
		GS	Hot gas defrost (compressor and heater on)		
DS			**Defrost synchronisation:**	Func.	HI
		OF	No synchronisation (defrost occurs immediately when scheduled).		
		LO	Defrost waits until T1 = lowest part of cycle (when compressor would normally 'cut-off').		
		HI	Defrost waits until T1 = highest part of cycle (when compressor would normally 'cut-in').		
ST		0 … 30min	Defrost synchronisation time out when 'DS' = 'LO' to provide maximum time defrost can be deferred.	Min	5
DP		0 … 90sec	Evaporator pump down. Timed pause at start of defrost	Sec	0
DR		0 … 20sec	Defrost pressure reduction. At end of de-frsot, time compressor continues running after hot gas solenoid valve shuts	Sec	3
DN		0 … 30min	Drain down period	Min	1

DD	'DM' = 'TM' or 'FR'		**Defrost display mode:**	Func.	SP
		RT	Real (actual) air temperature		
		LT	Last temperature display before start of defrost		
		SP	The current set point value		
		DF	Display will show 'dp'.		
DH		0 … 60min	Defrost display delay period. Time 'DD' is shown following defrost termination.	Min	3
FD			**Fans in defrost:**	Flag	YS
		YS	Fans run during defrost		
		NO	Fans do not run during defrost		
FR		-50 … 90°	Evaporator fan restart temperature following defrost. (Only if 'T2' = '1').	°C	5
FS		0 … 90min	Maximum evaporator fan stop period defrost (only when 'T1' = '1').	Min	3
FM			**Evaporator fan mode during thermostatic control:**	Func.	TM
		NO	Fan(s) run continuously (subject to door & defrost).		
		TP	Temperature based control. When compressor is on, fans are on.		
		TM	When compressor is off, fans run as long as temperature difference Te-Ta > 'FT'. Fans on again with 'FH'.		
FT		-9.9 … 0°	Te-Ta difference for fans to turn off after compressor stopped. (Only if 'T2' – 'YS' and 'FM' = 'TM')	°K	-1
FH		1 … 9.9°	Temperature differential for evaporator fan restart (Only if 'T2' – 'YS' and 'FM' = 'TM')	°K	3
F1		0 … 90sec	Evaporator fan stop delay after compressor stop	Sec	10
F2		0 … 90sec	Timed fan stop following 'F1' (With F2 = '0' the fans remain on all the time).	Sec	30
F3		0 … 90sec	Timed fan stop following 'F2' (With F3 = '0' & F2 > 0 the fans remain off all the time).	Sec	20
FP		0 … 90sec	Minimum evaporator fan stop period (following door opening etc.).	Sec	20
AT			**Alarm threshold configuration:**	Func.	RL
		NO	All temperature alarms are inhibited (the following parameter will be 'AO').		
		AB	The value set in 'AL' & 'AH' represent actual alarm set points		
		RL	The values set in 'AL' & 'AH' are alarm differentials which relate to 'SP' and 'SP' + 'HY' (the following parameter will be 'LD')		
AL	'AM' = 'AB'	-50 … 90°	Low temperature alarm threshold	°C	-3
AH		-50 … 90°	High temperature alarm threshold *the following parameter will be 'AI').	°C	8
LD	'AM' = 'RL'	-9.9 … 0°	Low temperature differential (With 'LD' = '0' the low temperature alarm is excluded)	°K	-5
HD		0 … 9.9°	High temperature differential (With 'HD' = '0' the low temperature alarm is excluded).	°K	5

AI	'AM' = 'AB' or 'RL'		**Alarm Probe:**	Func.	T1
		T1	Air temperature probe used for alarm detection		
		T2	Evaporator temperature probe used for alarm detection (if 'T2' = 'YS').		
		T3	Third temperature probe used for alarm detection (if 'D2' = 'T3').		
AD		0 … 90min	Delay before alarm temperature warning	Min	90
AO		0 … 30min	Delay before door open alarm warning (only when 'D1' or 'D2' = 'DS')	Min	5
PF		0 … 30°	Power failure alarm differential. (With 'PF' = '0' power failure alarm is disabled).	°K	10
AM			**Operation in case of high condenser alarm (if 'D2'='T3' and 'T3'='CD'):**	Func.	NO
		NO	High condenser temperature alarm inhibited		
		AP	Condenser warning – 'HC' displayed, alarm sounds, operation continues.		
		ST	As 'AP' above, but compressor stopped (R1 de-energised) and defrosts suspended.		
AS		-50 … 90°	Condenser alarm temperature (if 'D2' = 'T3').	°C	65
AF			**Operation in case of high pressure alarm (if 'D2' = 'HP'):**	Func.	ST
		AP	Pressure warning – 'HP' displayed, alarm sounds, operation continues.		
		ST	As 'AP' above, but compressor stopped (R1 de-energised) and defrosts suspended.		
		SA	All relays de-energised while condition exists.		
AC		0 … 52 wks.	Condenser cleaning period. (With 'AC' = '0' condenser cleaning alarm is disabled)	Wks.	0
IIM			**Switchover method to reduced energy mode:**	Func.	AU
		NO	Reduced energy model is excluded (the following parameter will be 'DC').		
		AU	Reduced energy mode is activated/ de-active automatically via 'IIS' and 'IIT'		
		D2	Second parameter set activated by 'D2' input ('D2' = 'IIM')		
IIS	IIM = 'AU' or 'D2'	1 … 90min	Minimum 'non activity' time for reduced energy mode	Min	20
IIT		1 … 10°	Maximum temperature 'addition' for reduced energy mode	°C	6
IIP		1 … 50°	Reduced energy mode temperature set point – differential above 'SP' (refrigerating) below 'SP' (heating).	°K	2
IIY		1 … 10°	Reduced energy mode 'off/on' thermostat differential.	°K	3

IIF	IIM = ‘AU’ or ‘D2’		**Evaporator fan control during ‘Reduced Energy’ operation:**	Func.	TM
		NO	Fan(s) run continuously		
		TP	Temperature based control. When compressor is on, fans are on. When compressor is off, fans run as long as temperature difference Te-Ta > ‘FT’. Fans on again with ‘FH’.		
		TM	Time based control. When compressor is on, fans are on. When compressor is off, fans in accordance to parameters ‘F1’, ‘F2’ and ‘F3’.		
IID		0 … 90 Hrs	Time interval between defrosts in reduced energy mode.	Hrs.	12
IIE			**Display during reduced energy mode**	Func.	LT
		RT	Real (actual) air temperature		
		LT	Last temperature display before reduced energy mode.		
		IIP	The calculated set point value (‘SP’ + ‘IIP’)		
DC			**Data collection and download function (FCOM fitted):**	Flag	NO
		YS	Data collection/download function enabled via switch (L3 illuminated)		
		NO	Data collection/download function disabled.		
SB			**Standby Button operation:**	Flag	YS
		YS	Standby button enabled		
		NO	Standby button disabled		
DO			**Configurable digital input operation:**	Func.	DS
		NO	Digital input not activated		
		DS	Door switch input		
		AO	Alarm (‘AL’ displayed) when contact opens.		
		AC	Alarm (‘AL’ displayed) when contact closes.		
D1			**Configurable digital input operation:**	Func.	NO
		NO	Digital input not activated		
		DS	Door switch input		
		AO	Alarm (‘AL’ displayed) when contact opens.		
		AC	Alarm (‘AL’ displayed) when contact closes.		
D2			**Configurable digital input operation:**	Func.	NO
		NO	Digital input not activated		
		DS	Door switch input		
		AO	Alarm (‘AL’ displayed) when contact opens.		
		AC	Alarm (‘AL’ displayed) when contact closes.		
		HP	High pressure switch input (normally closed/ alarm when open).		
		IIM	Operates reduced energy mode when contact closes.		
		T3	Allows for 3rd temperature probe function.		

T3	'D2' = 'T3'		**T3 probe function (only when 'D2' = 'T3'):**	Flag	DP
		DP	T3 probe temperature displayed		
		CD	Condenser temperature measurement		
O3		-9.9 … 9.9°C	T3 probe temperature offset (only when 'D2' = 'T3'):	°K	0
LM			**Light control mode (if 'R3' = 'LM'):**	Func.	NO
		NO	Light control mode disabled (always off)		
		MN	Light output operation is activated/deactivate by switch (L5 illuminated).		
		0O	Light output is switched on when door is opened (if 'D1' = 'DS').		
		1O	Light output is switched on when door is closed (if 'D1' = 'DS').		
		2O	Light output is switched on when door is opened (if 'D2' = 'DS').		
		2C	Light output is switched on when door is closed (if 'D2' = 'DS').		
R2			**Relay 2 operation:**	Func.	EF
		NO	Output disabled (always off).		
		EF	Control of evaporator fan.		
		DF	Control of defrost heater/device (activated when 'DY' = 'EL' or 'GS'),		
		LM	Output enabled for light control.		
		01	Contacts open/close with 'Standby'/'on' mode ('SB' = '1')		
		AO	Contacts open when an alarm condition occurs		
		AC	Contacts close when an alarm condition occurs		
			(Relay contacts open when in standby mode).		
R3			**Relay 3 operation:**	Func.	NO
		NO	Output disabled (always off).		
		EF	Control of evaporator fan.		
		DF	Control of defrost heater/device (activated when 'DY' = 'EL' or 'GS'),		
		LM	Output enabled for light control.		
		01	Contacts open/close with 'Standby'/'on' mode ('SB' = '1')		
		AO	Contacts open when an alarm condition occurs		
		AC	Contacts close when an alarm condition occurs		
			(Relay contacts open when in standby mode).		

R4			**Relay 4 operation:**	Func.	NO
		NO	Output disabled (always off).		
		EF	Control of evaporator fan.		
		DF	Control of defrost heater/device (activated when 'DY' = 'EL' or 'GS'),		
		LM	Output enabled for light control.		
		01	Contacts open/close with 'Standby'/'on' mode ('SB' = '1')		
		AO	Contacts open when an alarm condition occurs		
		AC	Contacts close when an alarm condition occurs		
			(Relay contacts open when in standby mode).		
O1		-9.9 … 9.9°C	Air temperature probe (T1) offset	°K	0
T2			**T2 probe enabling:**	Flag	0
		YS	T2 probe enabled		
		NO	T2 probe disabled		
O2		-9.9 … 9.9°C	Evaporator temperature probe (T2) offset	°K	0
SC			**Readout scale:**	Func.	2C
		1C	Range -50 … 99°C (0.1°C resolution within -9.9 to +9.9°C)		
		2C	Range -50 … 99°C		
		1F	Range -58 … 99°F		
SM		0 … 99	Display slowdown	Func.	5
AR		1 … 64	FD1-11 address for PC communication	Flag	1

Individual EcoPro G2 Cabinets Parameter Values

	FD1-11 Default	EP700F	EP700G	EP1440G & EP700PG	EP700GR	EP1440GR	EP700HH (H Bottom section)	EP700H & HL (H), G700H	EP700HB	EP700HL (H) (McDonalds Germany Top Section)	EP1440H, 700P, G1440H	EP700HR, EP820HUR	EP1440HR	EP700HU, EP820HU	EP700HL (L)
Version		1	2	3	4	5	6	7	8	9	10	12	13	14	16
Par															
SL	1	1	1	1	1	1	1	1	0	1	1	1	1	1	-21
SH	3	1	3	3	3	3	3	3	10	3	3	3	3	3	-19
SP	1.5	-1	1.5	1.5	1.5	1.5	1.5	1.5	2	1	1.5	1.5	1.5	1.5	-21
CH	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF
HY	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3
CR	2	2	2	2	0	0	2	2	2	4	2	0	0	2	2
C1	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
C2	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
CS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
DM	TM	NO	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM
DB	6	6	6	6	6	6	6	6	8	6	6	6	6	6	6
DF	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS
DL	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
DT	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
DY	OF	OF	OF	OF	OF	OF	OF	OF	OF	GS	OF	OF	OF	OF	EL
DS	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI
ST	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
DP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DN	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
DD	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP
DH	3	3	3	3	3	3	3	3	3	3	3	3	3	3	6
FD	YS	YS	YS	YS	YS	YS	YS	YS	YS	NO	YS	YS	YS	YS	NO
FR	5	5	5	5	5	5	5	5	10	5	5	5	5	5	-5
FS	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
FM	TM	TM	TM	TM	TM	TM	TM	TM	NO	TM	TM	TM	TM	TM	TM

	EP700L, G700L	EP700L (Spirit Spec.)	EP700LB	EP700LL (L) Top Section	EP1440L, G1440L	EP700LR, EP820LUR	EP1440LR	EP700LU, EP820LU	EP700LU (Weatherspoon Spec)	EP700M, G700M	EP1440M, G1440M	EP700MR	EP1440MR	EP700MU	EP820MU (Waitrose Spec)	EP700W	EP1440W	EP1440HU	EP1440LU	EP1440MU
Version	17	18	19	20	21	23	24	25	26	28	29	31	32	33	34	35	36	37	38	39
Par																				
SL	-21	-21	-30	-21	-21	-21	-21	-21	-21	-2	-2	-2	-2	-2	-2	8	8	1	-21	-2
SH	-19	-21	5	-19	-19	-19	-19	-19	-19	8	8	8	8	8	8	12	12	3	-19	8
SP	-21	-21	-18	-21	-21	-21	-21	-21	-21	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	10	10	1.5	-21	-1.5
CH	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF
HY	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
CR	2	5	2	2	2	0	0	2	2	2	2	0	0	2	2	2	2	2	2	2
C1	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
C2	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
CS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
DM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM
DB	6	6	8	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
DF	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS
DL	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
DT	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
DY	GS	GS	GS	EL	GS	EL	EL	EL	EL	GS	GS	EL	EL	EL	GS	OF	OF	OF	EL	EL
DS	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI
ST	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
DP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DN	1	1	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
DD	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP
DH	6	6	10	6	6	6	6	6	6	3	3	3	3	3	3	3	3	3	6	3
FD	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YS	YS	YS	NO	NO
FR	-5	10	-5	-5	-5	-5	-5	-5	-5	5	5	5	5	5	5	5	5	5	-5	5
FS	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
FM	TM	TM	NO	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM

GB

Individual EcoPro G2 Cabinets Parameter Values

Version		1	2	3	4	5	6	7	8	9	10	12	13	14	16	17	18	19	20	21	23	24	25	26	28	29	31	32	33	34	35	36	37	38	39
FT	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
FH	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
F1	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
F2	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
F3	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
FP	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
AT	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL
AL	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3
AH	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
LD	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
HD	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
AI	T1	T1	T1	T1	T1	T1	T1	T1	T1	T1	T1	T1	T1	T1	T1	T1	T1	T1	T1	T1	T1	T1	T1	T1	T1	T1	T1	T1	T1	T1	T1	T1	T1	T1	T1
AD	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
AO	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
PF	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
AM	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
AS	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65
AF	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST
AC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IIM	AU	NO	AU	AU	AU	AU	AU	AU	AU	NO	AU	AU	AU	AU	AU	AU	AU	NO	AU	AU	AU	AU	AU	NO	AU	AU	AU	AU	AU	NO	NO	NO	AU	AU	AU
IIS	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
IIT	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
IIP	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
IIY	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
IIF	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM
IID	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
IIE	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT
DC	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
SB	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS
D0	DS	DS	DS	DS	DS	DS	NO	DS	DS	DS	DS	DS	DS	DS	NO	DS	DS	DS	DS	DS	DS	DS	DS	DS	DS	DS	DS	DS	DS	DS	DS	DS	DS	DS	DS
D1	NO	NO	NO	DS	NO	DS	NO	NO	NO	NO	DS	NO	DS	NO	NO	NO	NO	NO	NO	DS	NO	DS	NO	NO	NO	DS	NO	DS	NO	NO	NO	DS	DS	DS	DS
D2	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
T3	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP
O3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

GB

Individual EcoPro G2 Cabinets Parameter Values

Version		1	2	3	4	5	6	7	8	9	10	12	13	14	16	17	18	19	20	21	23	24	25	26	28	29	31	32	33	34	35	36	37	38	39
LM	NO	NO	MN	MN	MN	MN	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	MN	MN	NO	NO	NO
R2	EF	NO	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF
R3	NO	NO	LM	LM	LM	LM	NO	NO	NO	DF	NO	NO	NO	NO	DF	DF	DF	DF	DF	DF	DF	DF	DF	DF	DF	DF	DF	DF	DF	DF	LM	LM	NO	DF	DF
R4	NO	NO	NO	NO	NO	NO	NO	NO	NO	01	NO	NO	NO	NO	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	NO	NO	NO	01	01
O1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T2	NO	NO	NO	NO	NO	NO	NO	NO	NO	YS	NO	NO	NO	NO	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	NO	NO	NO	YS	YS
O2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SC	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C
SM	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
AR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Technical Data EcoPro G2 Cabinets – EP models

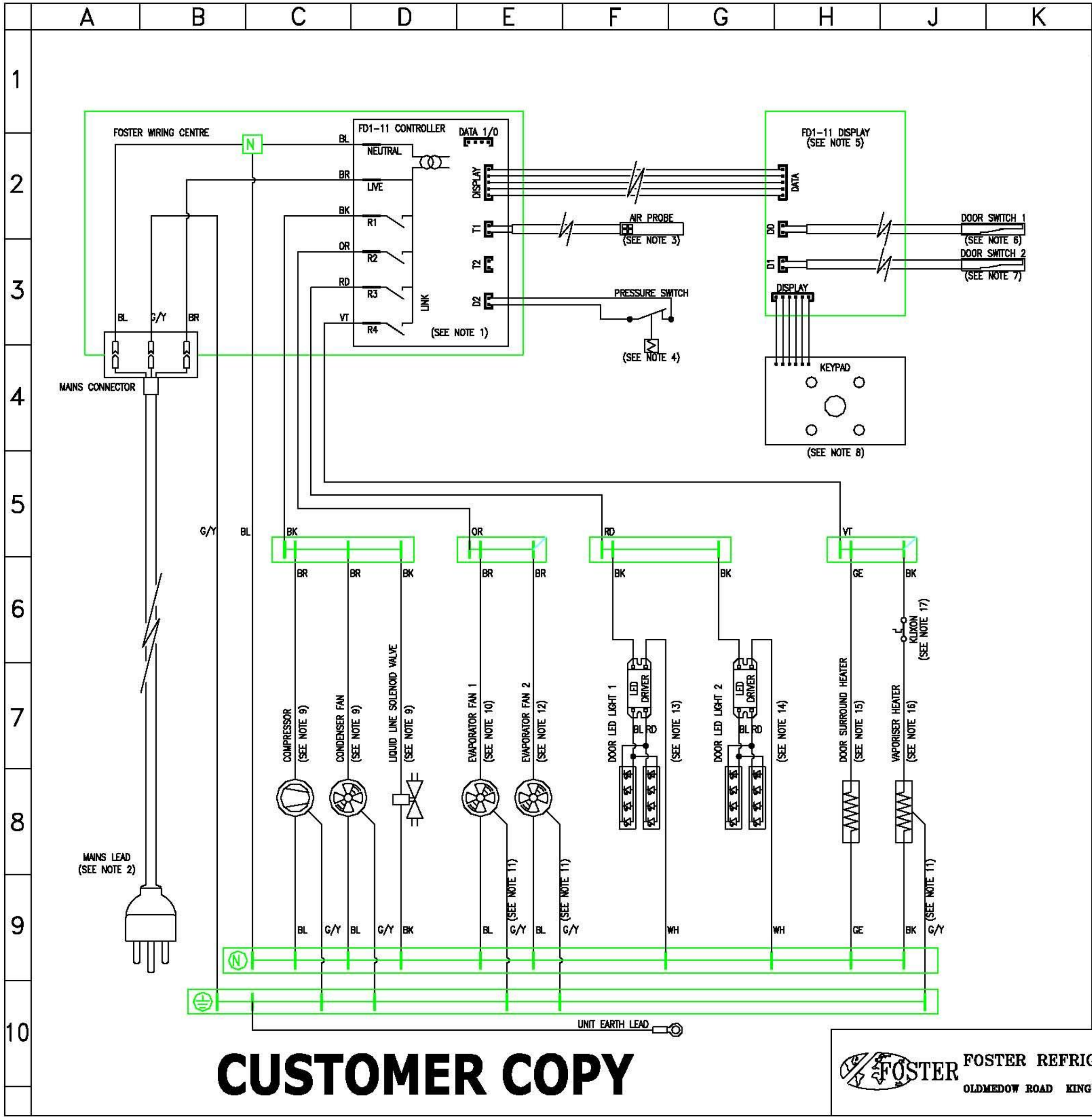
Cabinet Models	Gas	Hertz	Gas Charge	Compressor	Capillary	Defrost Type	Power Consumption Watts	Power Consumption Amps	Fuse Rating
EP700H & EP700H2	R134a	50	265 grms	EMT6160Z	0.042" ID x 0.93" OD x 3.5m	Timed Off Cycle	262	1.8	10 Amp
	R134a	60	TBC	NEK6160Z	0.042" ID x 0.93" OD x 3.5m	Timed Off Cycle	TBC	TBC	10 Amp
	R290	50	95 grms	EMT6144U	0.042" ID x 0.93" OD x 3.5m	Timed Off Cycle	TBC	TBC	10 Amp
	R404	50	TBC	TBC	TBC	Timed Off Cycle	262	1.8	10 Amp
EP700L & EP700L2	R404	50	275 grms	NEK2168GK	0.047" ID x 0.085" OD x 2.5m	Hot Gas	548	3.7	10 Amp
	R404	60	TBC	NT2168GK	0.047" ID x 0.085" OD x 2.5m	Hot Gas	TBC	TBC	10 Amp
	R290	50	120 grms	NEK2150U	0.042" ID x 0.93" OD x 3.5m	Hot Gas	TBC	TBC	10 Amp
	R134	50	TBC	TBC	TBC	Hot Gas	548	3.7	10 Amp
EP700M & EP700M2	R134a	50	265 grms	EMT6160Z	0.042" ID x 0.93" OD x 3.5m	Hot Gas	262	1.8	10 Amp
	R134a	60	TBC	NEK6160Z	0.042" ID x 0.93" OD x 3.5m	Hot Gas	TBC	TBC	10 Amp
	R290	50	95 grms	EMT6144U	0.042" ID x 0.93" OD x 3.5m	Hot Gas	TBC	TBC	10 Amp
EP700G	R134a	50	TBC	EMT6160Z	0.042" ID x 0.93" OD x 3.5m	TBC	310	2.0	10 Amp
	R290	50	TBC	EMT6144U	0.042" ID x 0.93" OD x 3.5m	TBC	TBC	TBC	10 Amp
EP700W	R134a	50	TBC	EMT6160Z	0.042" ID x 0.93" OD x 3.5m	TBC	310	2.0	10 Amp
	R290	50	95 grms	EMT6144U	0.042" ID x 0.93" OD x 3.5m	TBC	TBC	TBC	10 Amp
EP1440H & EP1440H4	R134a	50	340 grms	NEK6214Z	0.054" Bore x 22 SWG x 3.0m	Timed Off Cycle	611	4.4	10 Amp
	R134a	60	TBC	NEK6214Z	0.054" Bore x 22 SWG x 3.0m	Timed Off Cycle	TBC	TBC	10 Amp
	R404	50	TBC	TBC	0.054" Bore x 22 SWG x 3.0m	Timed Off Cycle	611	4.4	10 Amp
	R290	50	150 grms	NEK6213U	0.054" Bore x 22 SWG x 3.0m	Timed Off Cycle	TBC	TBC	10 Amp
EP1440L & EP1440L4	R404	50	610 grms	NT2192GK	0.047" Bore x 22 SWG x 4.0m	Hot Gas	734/ 611	3.7/ 4.4	10 Amp
	R404	60	TBC	NT2192GK	0.047" Bore x 22 SWG x 4.0m	Hot Gas	TBC	TBC	10 Amp
	R290	50	135 grms	NT2180U	0.047" Bore x 22 SWG x 4.0m	Hot Gas	TBC	TBC	10 Amp
EP1440M & EP1440M4	R134a	50	340 grms	NEK6214Z	0.054" Bore x 22 SWG x 3.0m	Hot Gas	611/ 734	4.4/ 3.7	10 Amp
	R134a	60	TBC	NEK6214Z	0.054" Bore x 22 SWG x 3.0m	Hot Gas	TBC	TBC	10 Amp
	R404	50	TBC	TBC	TBC	Hot Gas	611/ 734	4.4/ 3.7	10 Amp
	R290	50	150 grms	NEK6213U	0.054" Bore x 22 SWG x 3.0m	Hot Gas	TBC	TBC	10 Amp
EP1440G	R134a	50	TBC	NEK6214Z	0.054" Bore x 22 SWG x 3.0m	TBC	611	4.4	10 Amp
	R290	50	TBC	NEK6213U	0.054" Bore x 22 SWG x 3.0m	TBC	TBC	TBC	10 Amp
EP1440W	R134a	50	340 grms	NEK6214Z	0.054" Bore x 22 SWG x 3.0m	TBC	711	4.8	10 Amp
	R290	50	TBC	NEK6213U	0.054" Bore x 22 SWG x 3.0m	TBC	TBC	TBC	10 Amp
EP700 & 1440 HU	TBC	TBC	TBC	TBC	TBC	Timed Off Cycle	TBC	TBC	10 Amp
EP700 & 1440 MU	TBC	TBC	TBC	TBC	TBC	Electric	TBC	TBC	10 Amp
EP700 & 1440 LU	TBC	TBC	TBC	TBC	TBC	Electric	TBC	TBC	10 Amp

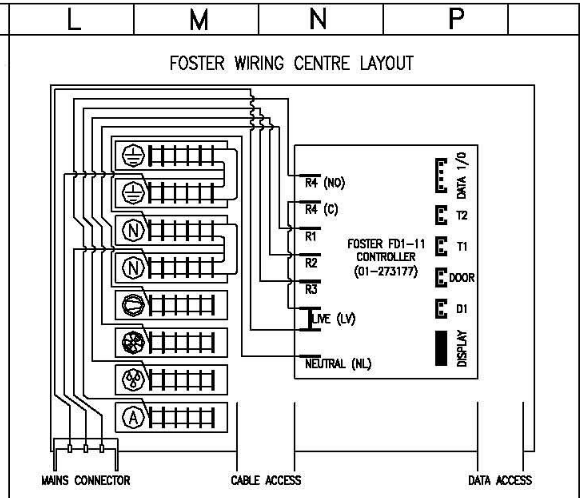
Technical Data EcoPro G2 Cabinets – G models

Cabinet Models	Gas	Hertz	Gas Charge	Compressor	Capillary	Defrost Type	Power Consumption		Fuse Rating
							Watts	Amps	
G700H	R134A	50	265 grms	EMT6160Z	0.042″ ID x 0.93″ OD x 3.5m	Timed Off Cycle	TBC	TBC	10 Amp
	R290	50	95 grms	EMT6144U	0.042″ ID x 0.93″ OD x 3.5m	Timed Off Cycle	TBC	TBC	10 Amp
G700L	R404	50	TBC	NEK2168GK	0.047″ ID x 0.085″ OD x 2.5m	Hot Gas	TBC	TBC	10 Amp
	R290	50	120 grms	NEK2150U	0.042″ ID x 0.93″ OD x 3.0m	Hot Gas	TBC	TBC	10 Amp
G700M	R134a	50	TBC	EMT6160Z	0.042″ ID x 0.93″ OD x 3.5m	Hot Gas	TBC	TBC	10 Amp
	R290	50	95 grms	EMT6144U	0.042″ ID x 0.93″ OD x 3.5m	Hot Gas	TBC	TBC	10 Amp
G1440H	R134a	50	340 grms	NEK6214Z	0.054″ Bore x 22 SWG x 3.0m	Timed Off Cycle	TBC	TBC	10 Amp
	R290	50	150 grms	NEK6213U	0.054″ Bore x 22 SWG x 3.0m	Timed Off Cycle	TBC	TBC	10 Amp
G1440L	R404	50	TBC	NT2192GK	0.047″ Bore x 22 SWG x 4.0m	Hot Gas	TBC	TBC	10 Amp
	R290	50	135 grms	NT2180U	0.047″ Bore x 22 SWG x 4.0m	Hot Gas	TBC	TBC	10 Amp
G1440M	R134a	50	TBC	NEK6214Z	0.054″ Bore x 22 SWG x 3.0m	Hot Gas	TBC	TBC	10 Amp
	R290	50	150 grms	NEK6213U	0.054″ Bore x 22 SWG x 3.0m	Hot Gas	TBC	TBC	10 Amp

Note: The Power Consumption values referred to as tested are to the ECA test standard. Actual power consumption will be greatly affected by ambient temperature, loading, usage and cabinet maintenance.

Wiring Diagram for High, Wine and Fish Temperature Cabinets





NOTES:

1. FD1-11 CONTROLLER CONFIGURED FOR TIME OFF CYCLE ON HIGH & WINE TEMPERATURE MODELS. NO DEFROST SET ON FISH TEMPERATURE MODEL.
2. MAINS LEAD CONNECTED WITH IEC C14 TYPE CONNECTOR – PLUG & LEAD TYPE VARIES BY APPLICATION.
3. AIR PROBE (T1) 10KNTC TYPE (SN4K....).
4. PRESSURE SWITCH ONLY FITTED TO SPECIFIC MODELS, ENABLED THROUGH PARAMETERS.
5. FD1-11 DISPLAY (01-273167) IN REAR COVER (01-272808) WITH CONNECTING CABLE (01-273176).
6. DOOR SWITCH 1 FITTED ONLY TO SPECIFIC CABINET MODELS – ENABLED VIA CONTROLLER PARAMETERS.
7. DOOR SWITCH 2 FITTED TO DOUBLE SECTION AND PASS THROUGH MODELS.
8. KEYPAD TYPE DEPENDENT UPON MODEL.
9. COMPRESSOR, CONDENSER FAN AND LIQUID SOLENOID Vv FITTED TO INTEGRAL MODELS. ONLY LIQUID LINE SOLENOID Vv IS FITTED ON REMOTE MODELS.
10. EVAPORATOR FAN 1 NOT FITTED TO FISH TEMPERATURE MODEL.
11. COMPONENT PEC (EARTH) CABLE FITTED DEPENDENT UPON MODEL / APPLICATION.
12. EVAPORATOR FAN 2 FITTED TO DOUBLE SECTION CABINETS ONLY.
13. DOOR LED 1 FITTED TO WINE TEMPERATURE AND SPECIFIC HIGH TEMPERATURE MODELS ONLY. NOT AVAILABLE ON FISH TEMPERATURE MODEL. LED DRIVER 20W 24V TYPE PHILLIPS K09-W47.
14. DOOR LED 2 FITTED TO DOUBLE SECTION CABINETS ONLY. LED DRIVER 20W 24V TYPE PHILLIPS K09-W47.
15. DOOR SURROUND HEATER ONLY FITTED ON FISH TEMPERATURE MODELS.
16. VAPORISER HEATER FITTED TO REMOTE CONDENSING UNIT MODELS.
17. HEATER KLIXON NORMALLY CLOSED – OPENS AT 60°C, RESET 45°C.
18. ALL CABLE 1.0mmSQ UNLESS OTHERWISE STATED.
19. CABLE COLOUR CODE:

BR	–	BROWN	RD	–	RED	GE	–	GREY
BL	–	BLUE	BK	–	BLACK	YW	–	YELLOW
G/Y	–	GREEN / YELLOW	WH	–	WHITE	OR	–	ORANGE

(ALL EARTH WIRING TO BE GREEN/YELLOW)

20. CIRCUIT SHOWN DE-ENERGISED.

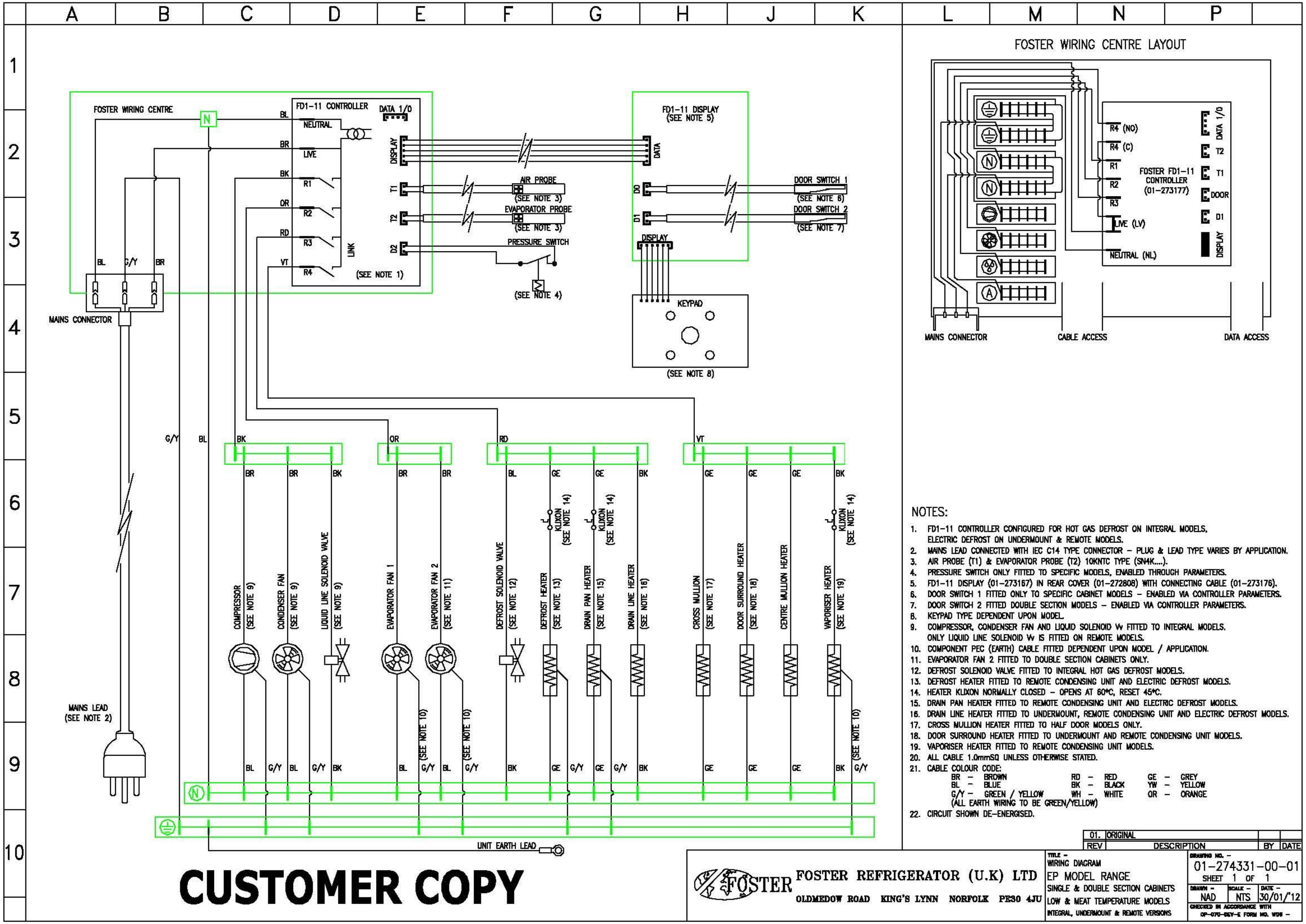
REV	DESCRIPTION	BY	DATE
01.	ORIGINAL		

FOSTER REFRIGERATOR (U.K) LTD
OLDMEDOW ROAD KING'S LYNN NORFOLK PE30 4JU

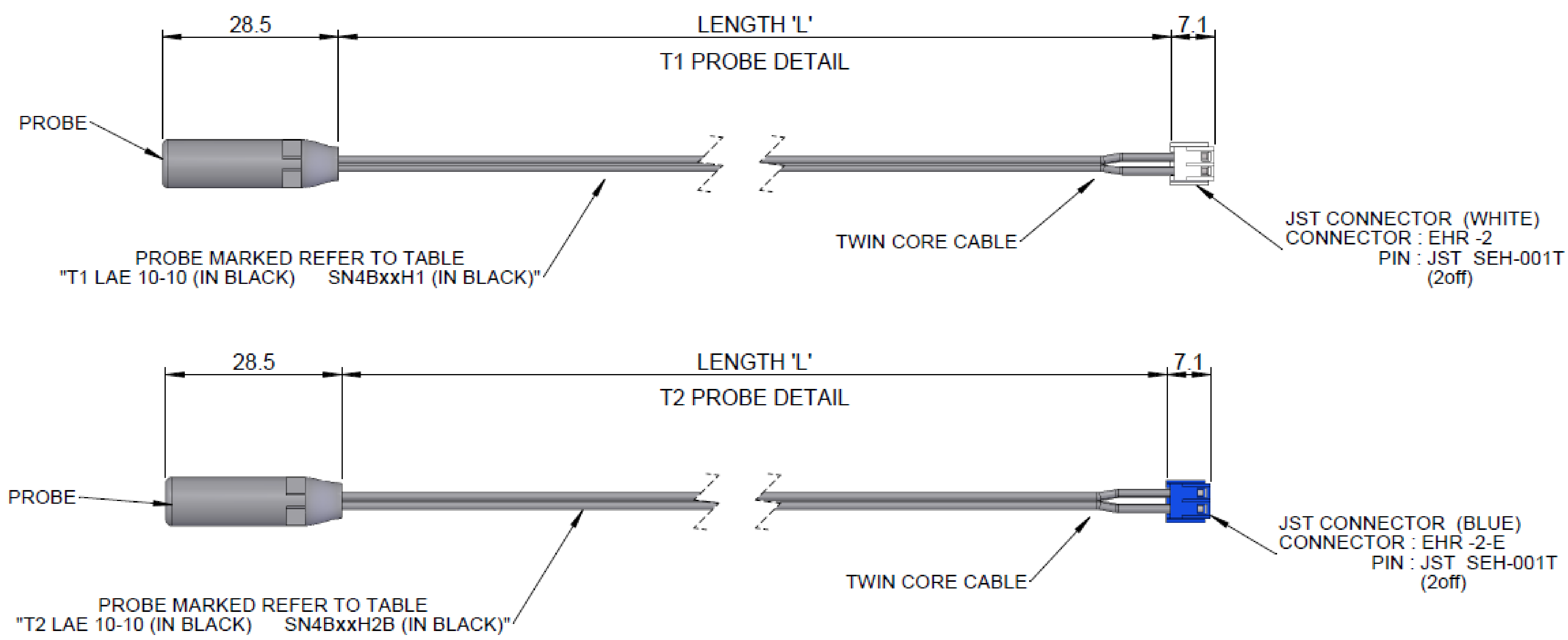
TITLE – WIRING DIAGRAM
EP MODEL RANGE
SINGLE & DOUBLE SECTION CABINETS
WINE, HIGH & FISH TEMPERATURE MODELS
INTEGRAL, UNDERMOUNT & REMOTE VERSIONS

DRAWING NO. – 01-274330-00-01
SHEET 1 OF 1
DRAWN – NAD
SCALE – NTS
DATE – 30/01/'12
CHECKED IN ACCORDANCE WITH OP-070-SEV-5 FORM NO. WD8 –

Wiring Diagram for Low and Meat Temperature Cabinets



Air and Evaporator Probe Details / Diagram



Individual EcoPro G2 Counters Parameter Values

	FD2-11 Default	EP1/2G (High Temp/ Glass door/ Internal Light)	EP1/2H	EP1/2HR	EP1/2L	EP1/2LR	EP1/2M	EP1/2MR	EP1/3G (High Temp/ Glass door/ Internal Light)	EP1/3H	EP1/3HP	EP1/3HR	EP1/3L	EP1/3LR	EP1/3M	EP1/3MR	EP1/4G (High Temp/ Glass door/ Internal Light)	EP1/4H	EP1/4HR	EP1/4L	EP1/4LR	EP1/4M	EP1/4MR	EP2/2HY	EP2/3HY
Version		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**
Par																									
SL	**1**	1	1	1	-21	-21	-2	-2	1	1	1	1	-21	-21	-2	-2	1	1	1	-21	-21	-2	-2	1	1
SH	**3**	3	3	3	-19	-19	8	8	1	1	1	1	-21	-21	-2	-2	3	3	3	-21	-21	-2	-2	3	3
SP	**1.5**	1.5	1.5	1.5	-21	-21	-1.5	-1.5	1.5	1.5	1.5	1.5	-21	-21	-1.5	-1.5	1.5	1.5	1.5	-21	-21	-1.5	-1.5	1.5	1.5
CH	**RF**	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF
HY	**3**	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3.5	3.5
CR	**2**	2	2	0	2	0	2	0	2	2	2	0	2	0	2	0	2	2	0	2	0	2	0	2	2
C1	**6**	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
C2	**4**	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
CS	**1**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
DM	**TM**	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM
DB	**6**	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
DF	**YS**	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS
DL	**15**	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
DT	**20**	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
DY	**OF**	OF	OF	OF	GS	EL	GS	EL	OF	OF	OF	OF	GS	EL	GS	EL	OF	OF	OF	GS	EL	GS	EL	OF	OF
DS	**HI**	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	HI	LO	LO
ST	**5**	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	20	20
DP	**0**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DR	**3**	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
DN	**1**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
DD	**SP**	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP
DH	**3**	3	3	3	6	6	3	3	3	3	3	3	6	6	3	3	3	3	3	6	6	3	3	3	3
FD	**YS**	YS	YS	YS	NO	NO	NO	NO	YS	YS	YS	YS	NO	NO	NO	NO	YS	YS	YS	NO	NO	NO	NO	YS	YS
FR	**5**	5	5	5	-5	-5	5	5	5	5	5	5	-5	-5	5	5	5	5	5	-5	-5	5	5	5	5
FS	**3**	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3

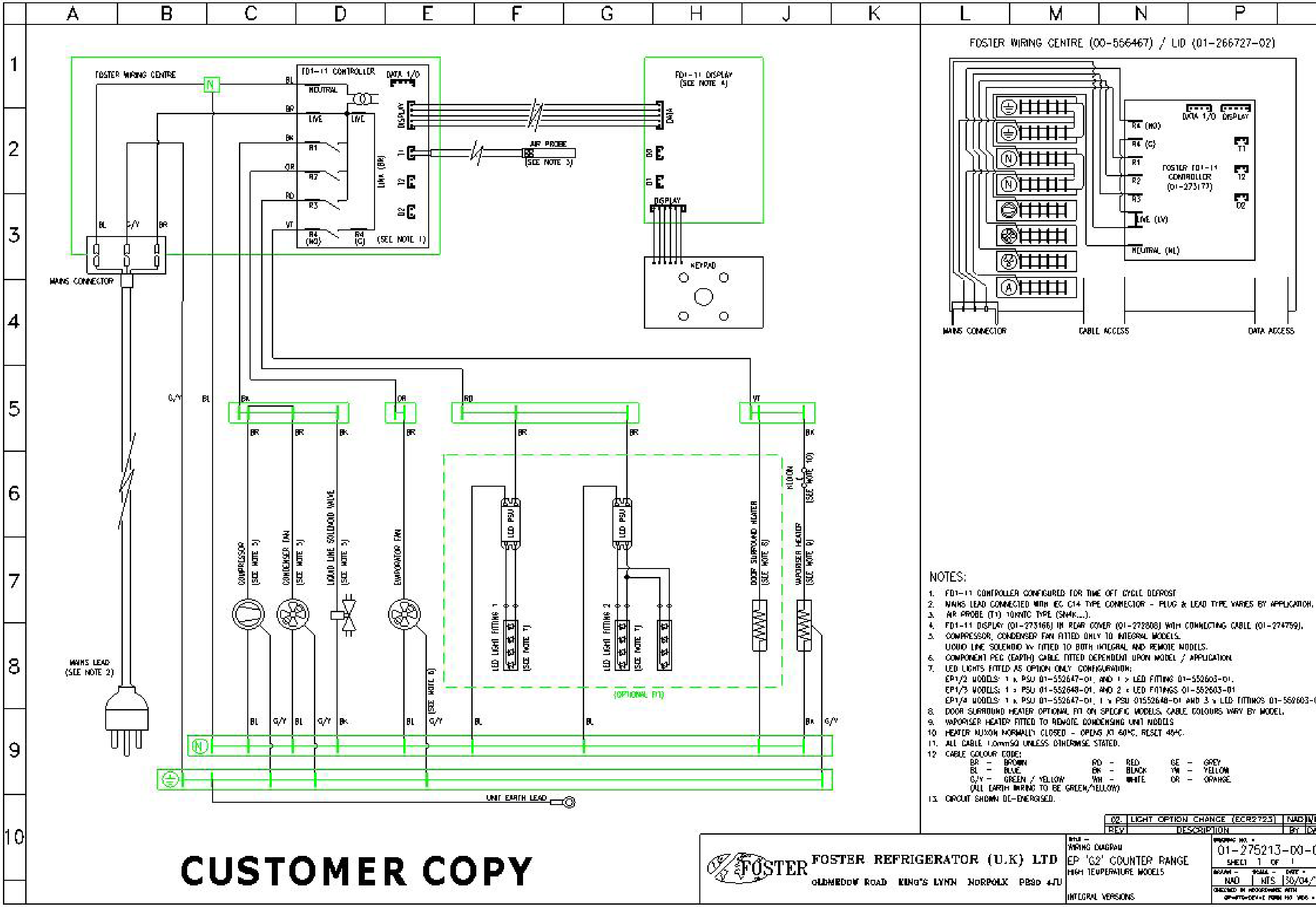
Individual EcoPro G2 Counters Parameter Values

Version		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Par																									
FM	TM	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
FT	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
FH	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
F1	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
F2	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
F3	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
FP	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
AT	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL
AL	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3
AH	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
LD	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
HD	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
AI	T1	T1	T1	T1	T1	T1	T1	T1	T1	T1	T1	T1	T1	T1	T1	T1	T1	T1	T1	T1	T1	T1	T1	T1	T1
AD	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
AO	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
PF	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
AM	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
AS	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65
AF	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST	ST
AC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IIM	AU	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
IIS	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
IIT	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
IIP	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
IIY	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
IIF	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM
IID	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
IIE	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT
DC	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
SB	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS	YS
D0	DS	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
D1	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
D2	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

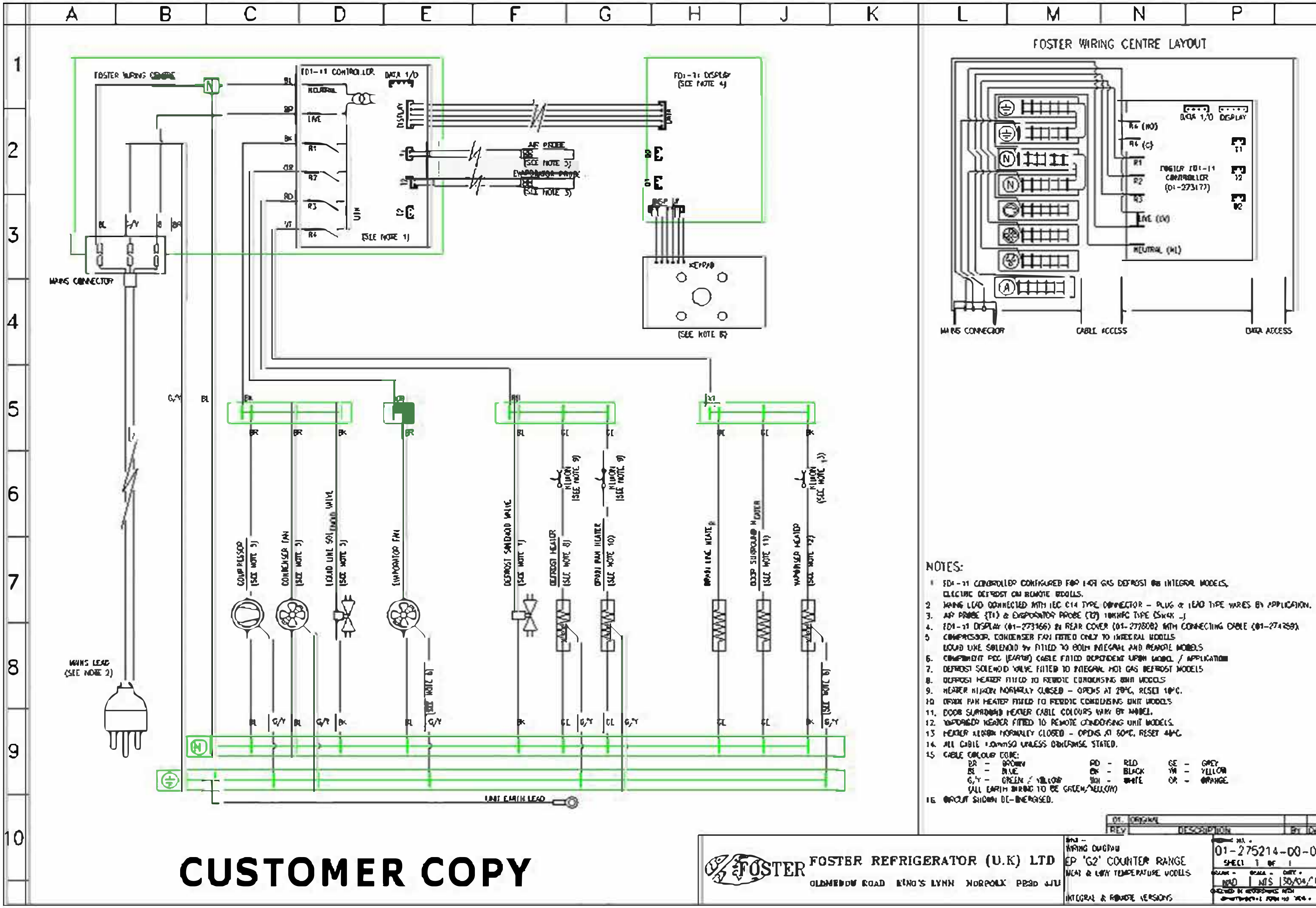
Individual EcoPro G2 Counters Parameter Values

Version		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Par																									
T3	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP	DP
O3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LM	NO	MN	NO	NO	NO	NO	NO	NO	MN	NO	NO	NO	NO	NO	NO	NO	MN	NO	NO	NO	NO	NO	NO	NO	NO
R2	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF	EF
R3	NO	LM	NO	NO	DF	DF	DF	DF	LM	NO	NO	NO	DF	DF	DF	DF	LM	NO	NO	DF	DF	DF	DF	NO	NO
R4	NO	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01
O1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T2	NO	NO	NO	NO	YS	YS	YS	YS	NO	NO	NO	NO	YS	YS	YS	YS	NO	NO	NO	YS	YS	YS	YS	NO	NO
O2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SC	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C	2C
SM	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
AR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Wiring Diagram for High Temperature Counters



Wiring Diagram for Low and Meat Temperature Counters



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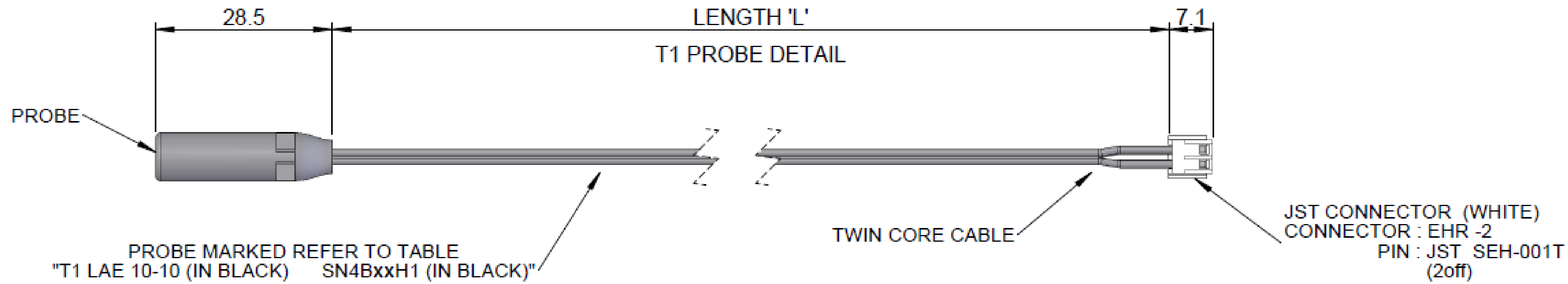
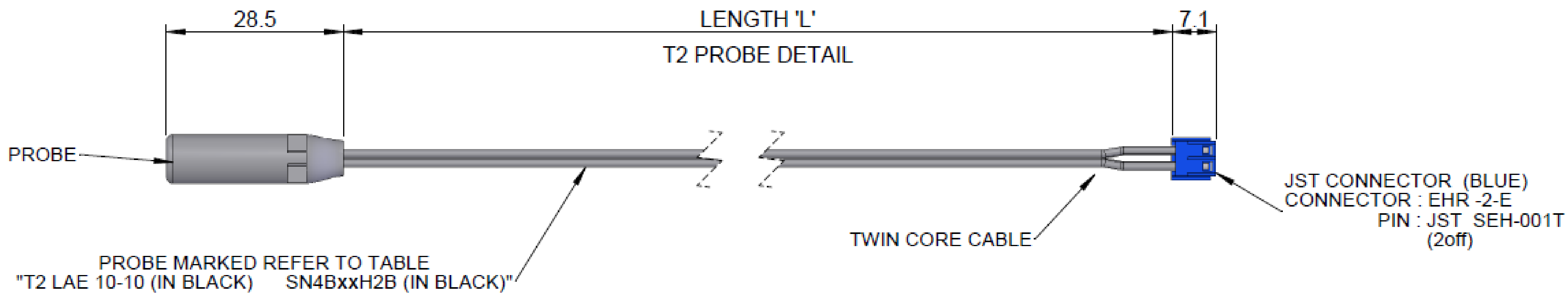
Air and Evaporator Probe Details / Diagram





Troubleshooting

Problem		Possible Cause	Solution
Audible & Visual Alarms/Warnings	Lo	> Low temperature alarm	> Cancel audible alarm and investigate cause.
	hi	> High temperature alarm	> Cancel audible alarm and investigate cause.
	E1	> T1 Air probe failure	> Check and replace the air probe
	E2	> T2 Evaporator probe failure#	> Check and replace the evaporator probe
	E3	> T3 Condenser probe failure#	> Check and replace the condenser probe.
	cL	> Condenser clean warning#	> Carry out cleaning regime on the condenser. The timer is reset when power is removed and reset.
	hc	> Condenser high temperature alarm#	> Clean condenser and ensure ambient temperature is not too high.
	hP	> High pressure alarm#	> Check ambient temperature and refrigeration system.
	do	> Door open alarm#	> Press to silence alarm and close the door. If the alarm persists and the door is closed check and replace the door switches.
	PF	> Mains power failure#	> 'PF' will be displayed, the alarm will sound and ! will show when there has been a mains power failure that has affected the internal air temperature of the cabinet (only if the unit was not in standby mode). When mains power is restored the cabinet will continue to operate, and adjust the temperature as required. The warning will sound & show ! until has been pressed and released, to cancel the alarm. We would recommend the contents of the unit are inspected.

 # only displayed if applicable to model and enabled through parameters

Problem	Possible Cause	Solution
Compressor will not start	> No voltage in socket	> Use voltmeter to check
	> Electrical conductor or wires may be cut	> Use ohmmeter to check for continuity
	> Defective electrical component: thermostat, relay, thermal protector etc.	> Replace defective component

	> Compressor motor has a winding open or shorted	> Measure ohmic resistance of main and auxiliary winding using ohmmeter. Compare with correct values
	> Compressor stuck	> Change compressor
	> Temperature control contacts are open	> Repair or replace the contacts
	> Incorrect wiring	> Check wiring diagram and correct
	> Fuse blown or circuit breaker tripped.	> Replace fuse or reset circuit breaker
	> Power cord unplugged	> Plug in power cord.
	> Controller set too high	> Set controller to lower temperature.
	> Cabinet in defrost cycle	> Wait for defrost cycle to finish
The temperature is too cold	> Controller is set at a very cold position	> Set to warmer position and check if the compressor stops according to controllers operating range.
	> Controller does not disconnect the condensing unit	> Check the insulation of the thermostat. If problem persists, change the thermostat
	> Control contacts are stuck closed	> Change the control. Check amperage load
	> Defective or incorrect temperature control	> Determine correct control and replace.
The temperature is not cold enough	> Controller is set at a very warm position	> Adjust to colder setting
	> Condenser is dirty	> Clean condenser
	> The refrigerator has been placed at an inadequate location	> The unit must not be near stoves, walls that are exposed to the sun, or places that lack sufficient air flow.
	> Compressor is inefficient or there is a high pressure due to the air in the system	> If there is air in the system, purge and recharge
	> Iced up evaporator coil	> Check temperature control, refrigerant charge, and defrost mechanism. Remove all ice manually and start over.
	> Restriction in system	> Locate exact point of restriction and correct
	> The refrigerator has been used improperly	> The shelves must never be covered with any type of plastic or other material that will block the circulation of cold air within the refrigerator.

	> Too many door openings	> Advise user to decrease if possible
	> Excessive heat load placed in cabinet	> Advise user not to put in products that are too hot.
	> The refrigerator has been overcharged with the refrigerant gas	> Check to see if condensation or ice crystals have formed on the suction line. If so, charge with the correct amount of gas.
	> The refrigerant gas is leaking	> Find the location of gas leak in order to seal and replace the defective component. Change the drier. Perform a good vacuum and recharge unit.
	> The evaporator and/or condenser fans are not working	> Check electrical connections and make sure that the fan blade isn't stuck. Replace the fan motor if it doesn't work.
	> Blocking air flow	> Re-arrange product to allow for proper air flow. Make sure there is at least four inches of clearance from evaporator.
	> Fuse blown or circuit breaker tripped	> Replace fuse or reset circuit breaker.
Electrical Shocks	> Wires or electrical components are in direct contact with metallic parts.	> Check for appropriate insulation on the connections of each component.
Noise	> The refrigerator is not properly levelled	> Check if the noise goes away after you level the refrigerator
	> The condenser is not fastened correctly. Copper tubing is in contact with metal	> While the compressor is working, check to see if metal parts are in contact with one another and/or if the screws that fasten the condenser are tightened.
	> The evaporator and/or condenser fans are loose	> Check if the fans are securely fastened. Also, check if the fan blades are loose, broken or crooked. If so, change the faulty blade.
	> Compressor has an internal noise	> If the noise persists after all other measures have been taken, it may be originating from the compressor.
	> Loose part(s)	> Locate and tighten loose part(s)

Extreme condensation inside the refrigerator	> Controller is set at a very cold position	> Set the controller to a warmer position & check to see if compressor stops as should.
	> The outside environment's relative humidity is very high (over 75%)	> This type of occurrence is caused by local climatic conditions and not by the refrigeration unit.
	> The refrigerator door won't shut completely	> Check the door and/or the magnetic gasket. Adjust the door hinges if needed; replace the gasket if broken.
	> The refrigerator had been placed at an inadequate location	> The unit must not be near sources that produce too much heat.
Condensing unit runs for long periods of time	> Excessive amount of warm product placed in cabinet	> Advise user to leave adequate time for products to cool down
	> Prolonged door opening or door ajar	> Advise user to ensure doors are closed when not in use and to avoid opening doors for long periods of time.
	> Door gasket(s) not sealing properly	> Ensure gaskets are snapped in completely. Remove gasket and wash with soap and water. Check condition of gasket & replace if necessary
	> Dirty condenser coil	> Clean condenser coil
	> Evaporator coil iced over	> Unplug unit and allow coil to defrost. Make sure thermostat is not set too cold. Ensure that door gasket(s) are sealing properly. Select manual defrost and ensure system works.

Notes

Foster European Operations

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