

Cabinets & Counter Models

FD2-10 Controller with LCD55 Display

English



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March 2014 Issue 1

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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.

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 2079 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.

Start-Up and Operation

After unpacking, clean and allow the cabinet to stand for 2 hours **before** turning on.

For units that have been delivered outside the UK, please remove the compressor strap as instructed on the front of the unit, before connecting the unit to the mains supply.










Ensure the cabinet is situated away from both hot and cold air sources, as this will affect its performance. Make sure that a minimum clearance of 150mm above the cabinet is available for ventilation and effective operation. Connect the unit to a suitable mains power outlet and turn the supply on. Do not plug or unplug the unit with wet hands.

After connecting the unit to the mains the display will briefly show a dash in the centre of the screen. This will then show *off*

LCD55 Display Icons and Buttons



Indicators and Buttons

Symbol	Reason	Button	Use
	Alarm		Info / Set Point Button
	Thermostat Output		Manual Defrost / Decrease Button
	Fan Output		Increase Button / Manual Activation
	Defrost Output		Stand-by Button
	Activation of 2 nd parameter set		

Display & Information Icons

During normal operation, the display shows either the temperature measured or one of the following indications:


Symbol	Reason	Symbol	Reason
<i>def</i>	Defrost in progress	<i>hp</i>	Condenser high pressure alarm
<i>off</i>	Controller in stand-by	<i>h1</i>	Room high temperature alarm
<i>cl</i>	Condenser clean warning	<i>l1</i>	Room low temperature alarm
<i>do</i>	Door open alarm	<i>e1</i>	Probe T1 failure
<i>hc</i>	Condenser high temperature alarm	<i>e2</i>	Probe T2 failure
<i>t1</i>	Instant probe 1 temperature	<i>elo</i>	Minimum probe 1 temperature recorded
<i>t2</i>	Instant probe 2 temperature*	<i>cnw</i>	Compressor working weeks**
<i>t3</i>	Instant probe 3 temperature*	<i>loc</i>	Keypad state lock
<i>th1</i>	Maximum probe 1 temperature recorded		


* Displayed only if enabled (see configuration parameters)

** Displayed only if ACC > 0

Start Sequence


For normal operation

- Press and hold the  button for 3 seconds then release. The current cabinet temperature will be displayed.


If pressed and held for 5 seconds then released this will start the 'Test Sequence' .

The test function is a defined sequence of events that will follow a prescribed pattern (dependent upon parameter values) that will operate all electrical elements of the system, simulating a short operating pattern. It should enable an engineer to carryout basic function operations checks of all system parts including refrigeration.

This sequence can take, and the display will count up to, a maximum of 935 seconds before showing 'End'. The length of time the test is run will be dependent on the model type and conditions the unit is placed in. After showing 'End' the controller will wait for 1 min, then resume normal operation and show the current temperature of the unit.




To cancel the test sequence prior to completion, press and release .

Standby




When pressing the  button for 3 seconds, the unit will enter the standby mode and display *OFF* (unless already in standby and then this will energise the controller to show the current unit temperature).

This '*OFF*' indication will be displayed while the unit is not operating but the mains power is applied to the unit. This mode may be used for interval cleaning regimes and short periods when the unit is not required. For extended periods of inactivity the mains supply should be isolated.



Access the menu and information

- Press and immediately release the **i** button.
- Using the  and or  buttons select the data you wish to display
- Press the **i** button to display the current value.
- To exit press the  button or wait 10 seconds.

To reset the THI and TLO:

- Use the  and or  buttons to select the data to be reset
- Display the value with the **i** button
- While keeping the **i** button pressed, press the  button to reset.

Set Point and Display Modification

- Press button **i** and hold for half a second.
- By keeping button **i** pressed, use  and or  buttons to set the desired value (adjustment is within the minimum SPL and the maximum SPH limit)
- When button **i** is released, the new value is stored.

Keypad Security Settings

The keypad lock avoids undesired, potentially dangerous operations, which might be attempted when the controller is operating in a public place. In the INFO menu, set parameter *LOC* = YES to inhibit all functions of the button. To resume normal operation of keypad, adjust setting so that *LOC* = NO.

Internal Light Operation for Glass Door Models

Where fitted the light can be turned on or off by pressing and releasing the  button.

Defrost

Automatic Defrost

Defrost starts automatically as soon as the time set with parameter DFT has elapsed.

- **Time Defrost** With DFM = TIM defrost takes place at regular intervals when the timer reaches the value DFT. For example, with DFM = TIM and DFT = 06, a defrost will take place every 6 hours.
- **Defrost time count backup** At power restoration, if DFB = YES, the defrost timer resumes the time count from where it was prior to the power interruption. If DFB=NO, the time count re-starts from 0. In stand-by the accumulated time count is frozen.

Defrost Type – When defrost has started, compressor and defrost outputs are controlled according to the parameter DTY. If FID = YES, the evaporator fans are active during defrost.

Resuming Thermostatic Cycle

When defrost is complete, if DRN is greater than 0, all outputs will remain off for the DRN minutes.

Manual Defrost



To initiate a manual defrost press and hold the defrost button for 2 seconds.

FD2-10 Technical Data

Power Supply

230Vac±10%, 50/60Hz, 3W

Measurement Range

-50...120°C, -55...240°F

-50 / -9.9...19.9 / 80°C (NTC 10K Only)

Relay Output Max Load (230Vac)

Compressor – 16(8) A 240Vac

Defrost - 16(4) A 240Vac

Evap. Fan - 16(4) A 240Vac

Auxiliary Loads 1 - 8(2) A 240Vac

Measurement Accuracy

<0.5°C within the measurement range

Operating Conditions

-10 ... +50°C; 15% ... 80% r.H

Input – NTC 10KΩ @ 25°C

Controller Approvals

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 access the configuration menu by pressing **⏻ + i** together for 5 seconds.
- The first parameter will show on the display.
- Using the **▼** and or **▲** buttons select the required parameter.
- Press the **i** button to display its current value.
- While keeping **i** pressed, use the **▼** and or **▲** buttons to set the new desired value.
- On releasing **i** the new value will be stored and the next parameter will display.
- To exit this mode or revert to normal operating mode, press **⏻** or wait for 30 seconds.

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.

Parameter	Range	Description	Foster FD2-10
SCL		Readout Scale:	2°C
	1°C	Range -50/-9.9.... 19.9/80°C (With INP = SN4 Only)	
	2°C	Range -50 120°C	
	°F	Range -55 240°F	
SPL	-50 ... SPH	Minimum Limit for SP setting	1
SPH	SPL ... 120°	Maximum limit for SP setting	3
SP	SPL ... SPH	Temperature set point to be achieved	2
C-H		Temperature Control mode:	REF
	REF	Refrigeration	
	HEA	Heating	
HYS	1 ... 10°	Off/On Thermostat differential	3
CRT	0 ... 30min	Compressor Rest Time	2
CT1	0 ... 30min	Thermostat run time with faulty T1 (CT1 = 0 output with faulty T1 will always be off)	6
CT2	0 ... 30min	Thermostat off time with faulty T1 probe. (CT2=0 & CT1 = >0 output with faulty T1 will always be on)	4
CSD	0 ... 30min	Compressor stop delay after door has been opened (Only if DS – YES)	1
DFM		Defrost Start Mode:	TIM
	Non	Defrost function is disabled	
	TIM	Regular time defrost	
	FRO	Defrost time elapses only in condition of frost accumulation	
DFT	0...99 Hours	Time interval between defrosts	6
DFB		Defrost timer clock	YES
	YES	Following mains interruption, timer resumes count	
	NO	Following mains interruption, timer restarts from zero	
DLI	-50.. 120°	Defrost end temperature (Only if T2 = EPO)	N/A
DTO	1 ... 120min	Maximum defrost duration	20
DTY		Defrost Type:	OFF
	OFF	Timed off cycle defrost (compressor and heater off)	
	ELE	Electric heater defrost (compressor off, heater on)	
	GAS	Hot gas defrost (compressor and heater on)	
DPD	0 ... 240 sec	Evaporator pump down. Timed pause at start of defrost	0
DRN	0 ... 30min	Drain down period	2
DDM		Defrost display mode:	DEF
	RT	Real (actual) air temperature	
	LT	Last temperature display before start of defrost	
	SP	The current set point value.	
	DEF	"DEF"	

DDY	0... 60 min	Defrost display delay period Time DDM is shown following defrost termination	10
FID	YES	Fans in defrost: Fans run during defrost	YES
	NO	Fans do not run during defrost	
FDD	-50 ... 120°	Evaporator fan restart temperature following defrost (Only if T2 = EPO)	5
FTO	0...120 min	Maximum evaporator fan stop period following defrost	3
FDS	0...120 sec	Minimum evaporator fan stops (following door opening etc.)	20
FCM		Evaporator fan mode during thermostatic control:	TIM
	NON	Fan(s) run continuously	
	TMP	Temperature based control. When compressor is on, fans are on. When compressor is of, fans run as long as temperature difference $T_e - T_a > FD$. Fans on again with FDH	
	Tim	Time based control. When compressor is on, fans are on. When compressor is off, fans in accordance to parameters FT1, FT2 and FT3.	
FDT	-120 ... 0°	$T_e - T_a$ difference for fans to turn off after compressor stopped. (Only if T2 = EPO and FCM = TMP)	-1
FDH	1 ... 120°	Temperature differential for evaporator fan restart. (Only if T2 = EPO and FCM = TMP)	3
FT1	0 ... 180 Sec	Fan stop delay after compressor stop.	15
FT2	0 ... 30min	Timed fan stop following T1 (With FT2 = 0 the fans remain on all the time).	3
FT3	0 .. 30min	Timed fan run following FT2 (With FT3 = 0 and FT2 >0 the fans remain off all the time).	2
ATM		Alarm threshold configuration:	REL
	NON	All temperature alarms are inhibited	
	ABS	The value set in ALA and AHA represent actual alarm set points	
	REL	The values set in ALR and AHR are alarm differentials which relate to SP and SP + HYS	
ALA	-50 ... 120°	Low temperature alarm threshold	
AHA	-50 ... 120°	High temperature alarm threshold	
ALR	-12 ... 0°	Low temperature alarm differential (With ALR = 0 the low temperature alarm is excluded)	-5
AHR	0 ... 12°	High temperature alarm differential (With AHR = 0 the low temperature alarm is excluded)	5
ATI		Alarm probe:	T1
	T1	Air temperature probe used for alarm detection	
	T2	Evaporator temperature probe used for alarm detection	
ATD	0... 120min	Delay before alarm temperature warning	90

ADO	0... 30min	Delay before door open alarm warning	8
AHM		Operation in case of high condenser alarm (T2 = CND)	NON
	NON	High condenser temperature alarm inhibited	
	ALR	Condenser warning – ‘HC’ displayed, alarm sounds	
	STP	As ‘ALR’ with compressor stopped and defrosts suspended	
AHT	-50 ... 120°	Condenser alarm temperature (T2 = CND)	65
ACC	0...52 Weeks	Condenser cleaning period. (With ACC = 0 condenser cleaning is disabled)	0
IISM		Switchover method to second parameter set:	HDD
	NON	Second parameter set is excluded	
	MAN	Second parameter set is activated/ deactivated by button II°	
	HDD	Second parameter activated by ‘heavy’ usage	
	D12	Second parameter set activated by D12 input (D12 = IISM)	
IISL	-50 . IISH	Minimum limit for IISP setting	1
IISH	IISL .. 120°	Maximum limit for IISP setting	1
IISP	IISP...IISH	Temperature set point to be achieved in ‘Mode 2’	1
IIHY	1 ... 10°	Off/on thermostat differential in ‘Mode 2’	3
IIFC		Evaporator fan mode during ‘Mode 2’ thermostatic control:	NON
	NON	Fans(s) run continuously	
	TMP	Temperature based control. When compressor is on, fans are on. When compressor is off, fans run as long as temperature difference $T_e - T_a > FDT$. Fans on again with FDH	
	TIM	Time based control. When compressor is on, fans are on. When compressor is off, fans in accordance to parameters FT1, FT2 and FT3.	
HDS	1 ... 5	Controller sensitivity for switch over between ‘Modes’ and 2. (1 = minimum, 5 = maximum)	3
IIDF	0 ... 99hours	Time interval between defrosts in ‘Mode 2’.	6
SB		Standby button operation:	YES
	YES	Standby button enabled	
	No	Standby button disabled	
DS		Door switch operation (switch made when door closed):	YES
	YES	Door switch enabled	
	NO	Door switch disabled	
DI2		Configuration digital input operation:	NON
	NON	Digital input 2 not activated	
	HPS	High pressure alarm when contact opens	
	IISM	‘Mode 2’ parameters active when contact closes	
	RDS	Defrost initiated when contact closes	
	DS2	Second door switch function (operated ‘in series’ with DS)	

LSM		Light control mode:	NON
	NON	Digital input 2 not activated	
	MAN	Light output operation is activated/deactivated by button II° (With OA1 = LGT)	
	DOR	Light output is switched on when door is opened (With OA1 = LGT and DS = YES)	
	NDR	Light output is switched off when door is opened. (With OA1 = LGT and DS = YES)	
OA1		Auxiliary relay operation:	NON
	NON	Output disabled (always off)	
	0-1	Contacts open/close with standby/on mode	
	LGT	Output enabled for light control	
	AL0	Contacts open when an alarm condition occurs	
	AL1	Contacts close when an alarm condition occurs (Relay contacts open when in standby mode)	
INP		Temperature sensor(s) type:	SN4
	SN4	10k NTC type thermistor (red writing)	
	ST1	1k PTC type thermistor (Black Writing)	
OS1	- 12.5...12.5°C	Air temperature probe (T1) offset.	0
T2		T2 Probe function:	NON
	NON	T2 Probe disabled	
	EPO	Evaporator temperature monitoring	
	CND	Condenser temperature monitoring	
OS2	- 12.5...12.5°C	T2 probe temperature offset	0
TLD	1 ... 30min	Delay for min (TLO) and max. (THI) temperature logging	10
SIM	0 ... 100	Display Slowdown	5
ADR	1... 255	FD2-10 address for PC communication	1

Parameter	FD2-10 Default	XR600H	XR1300H	XR600L	XR1300L	XR2H & XR3H
		AT	AW	AZ	BB	BD
SCL	2°C	2°C	2°C	2°C	2°C	2°C
SPL	1	1	1	-21	-21	1
SPH	3	3	3	-15	-15	3
SP	1	1	1	-21	-21	1
C-H	REF	REF	REF	REF	REF	REF
HYS	4	3	3	3	3	3
CRT	2	2	2	2	2	2
CT1	6	6	6	6	6	6
CT2	4	4	4	4	4	4
CSD	1	1	1	1	1	1
DFM	TIM	TIM	TIM	TIM	TIM	TIM
DFT	6	6	6	6	6	6
DFB	YES	YES	YES	YES	YES	YES
DLI	20	20	20	20	20	20
DTO	20	20	20	20	20	20
DTY	OFF	OFF	OFF	ELE	ELE	OFF
DPD	0	0	0	0	0	0
DRN	2	2	2	2	2	2
DDM	DEF	DEF	DEF	DEF	DEF	DEF
DDY	10	10	10	10	10	10
FID	YES	YES	YES	NO	NO	YES
FDD	5	5	5	5	5	5
FTO	3	3	3	3	3	3
FDS	20	20	20	20	20	20
FCM	TIM	NON	NON	NON	NON	NON
FDT	-1	-1	-1	-1	-1	-1
FDH	3	3	3	3	3	3
FT1	15	15	15	15	15	15
FT2	3	3	3	3	3	3
FT3	2	2	2	2	2	2
ATM	REL	REL	REL	REL	REL	REL
Only visible with ATM = ABS	ALA	-2	-2	-2	-2	-2
	AHA	8	8	8	8	8
Only visible with ATM = REL	ALR	-5	-5	-5	-5	-5
	AHR	5	5	5	5	5

		AT	AW	AZ	BB	BD
	ATI	T1	T1	T1	T1	T1
	ATD	90	90	90	90	90
	ADO	8	8	8	8	8
	AHM	NON	NON	NON	NON	NON
	AHT	65	65	65	65	65
	ACC	0	0	0	0	0
	IISM	HDD	NON	NON	NON	NON
Only visible when IISM is changed from NON	IISL	1	1	1	1	1
	IISH	1	1	1	1	1
	IISP	1	1	1	1	1
	IIHY	4	4	4	4	4
	IIFC	NON	NON	NON	NON	NON
	HDS	3	3	3	3	3
	IIDF	6	6	6	6	6
	SB	YES	YES	YES	YES	YES
	DS	YES	YES	YES	YES	NO
	DI2	NON	NON	DS2	DS2	NON
	LSM	NON	NON	NON	NON	NON
	OA1	0-1	NON	NON	NON	NON
	INP	SN4	SN4	SN4	SN4	SN4
	OS1	0	0	0	0	0
	T2	NON	NON	NON	EVP	EVP
Shows only if T2 is enabled	OS2	0	0	0	0	0
	TLD	10	10	10	10	10
	SIM	5	5	5	5	5
	ADR	1	1	1	1	1

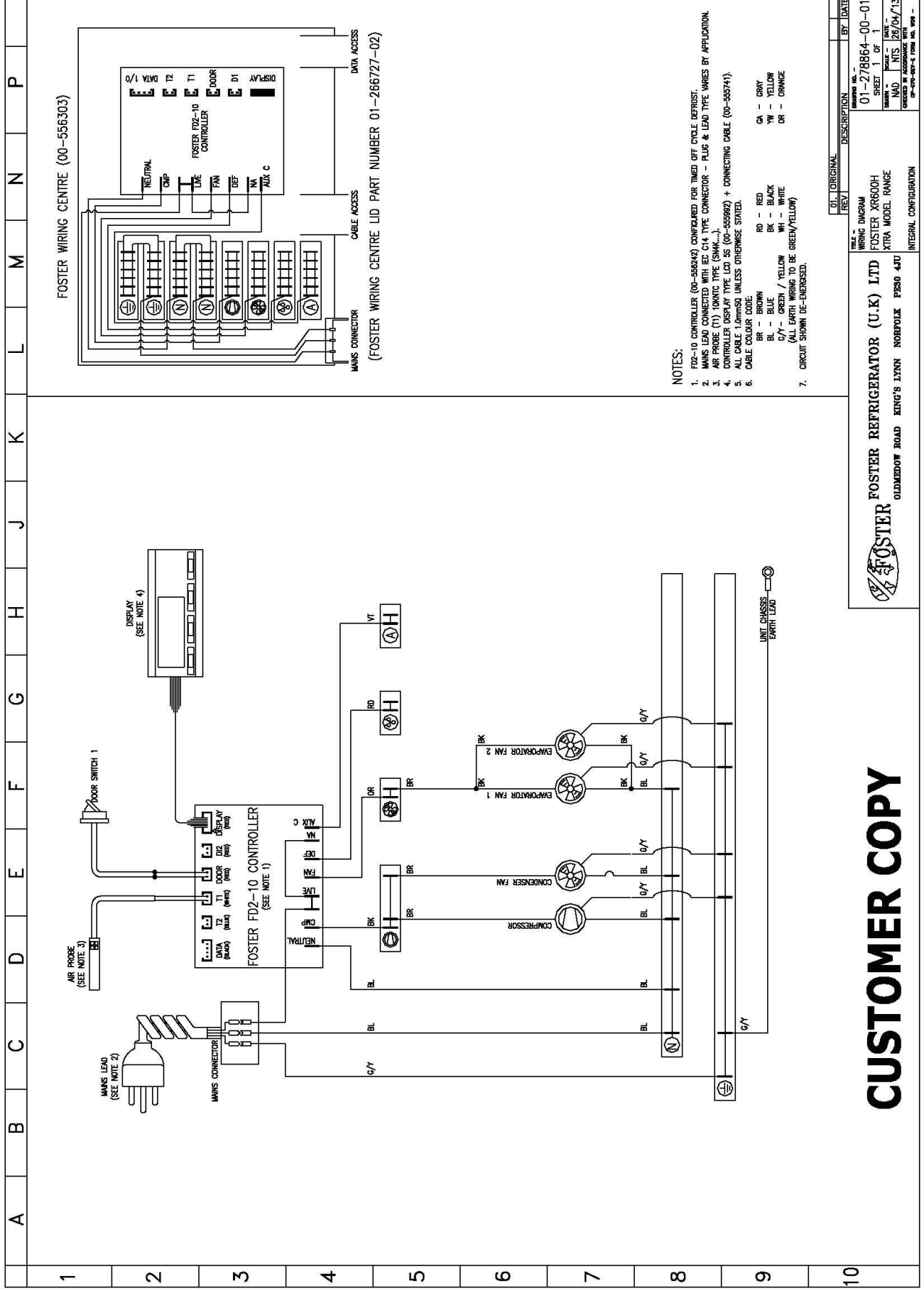
Yellow highlighted parameters show a difference from the default set parameter.

Technical Data of Individual Models

Cabinet Models	Gas	Hertz	Gas Charge	Compressor	Capillary	Defrost Type	Power Consumption		Fuse Rating
							Watts	Amps	
XR600H	R134a	50Hz	150 grams	EMT6160Z	0.042" ID x 2.7m	Off Cycle	510	2.6	13
	R134a	60Hz	150 grams	NEK6160Z	0.042" ID x 2.7m	Off Cycle	510	2.6	13
XR600L	R404	50Hz	280 grams	NEK2168Z	0.042" ID x 2.7m	Hot Gas	610	3.2	13
	R404	60Hz	280 grams	NEK2168GK	0.042" ID x 2.7m	Hot Gas	610	3.2	13
XR1300H	R134a	50Hz	420 grams	NEK6212Z	0.042" ID x 2.8m	Off Cycle	780	3.7	13
	R134a	60Hz	420 grams	NEK62102	0.042" ID x 2.8m	Off Cycle	780	3.7	13
XR1300L	R404	50Hz	435 grams	NT2180GK	0.054" ID x 2.6m	Hot Gas	970	5.1	13
	R404	60Hz	435 grams	NT2192GK	0.042" ID x 2.8m	Hot Gas	970	5.1	13

Counter Models	Gas	Hertz	Gas Charge	Compressor	Capillary	Defrost Type	Power Consumption		Fuse Rating
							Watts	Amps	
XR2H	R134a	50Hz	240 grams	EMT6160Z	0.047" ID x 3.0m	Off Cycle	425	2.1	13
	R134a	60Hz	240 grams	NEK61602	0.047" ID x 3.0m	Off Cycle	425	2.1	13
XR3H	R134a	50Hz	240 grams	EMT6160Z	0.047" ID x 3.0m	Off Cycle	515	2.6	13
	R134a	60Hz	240 grams	NEK61602	0.047" ID x 3.0m	Off Cycle	425	2.1	13

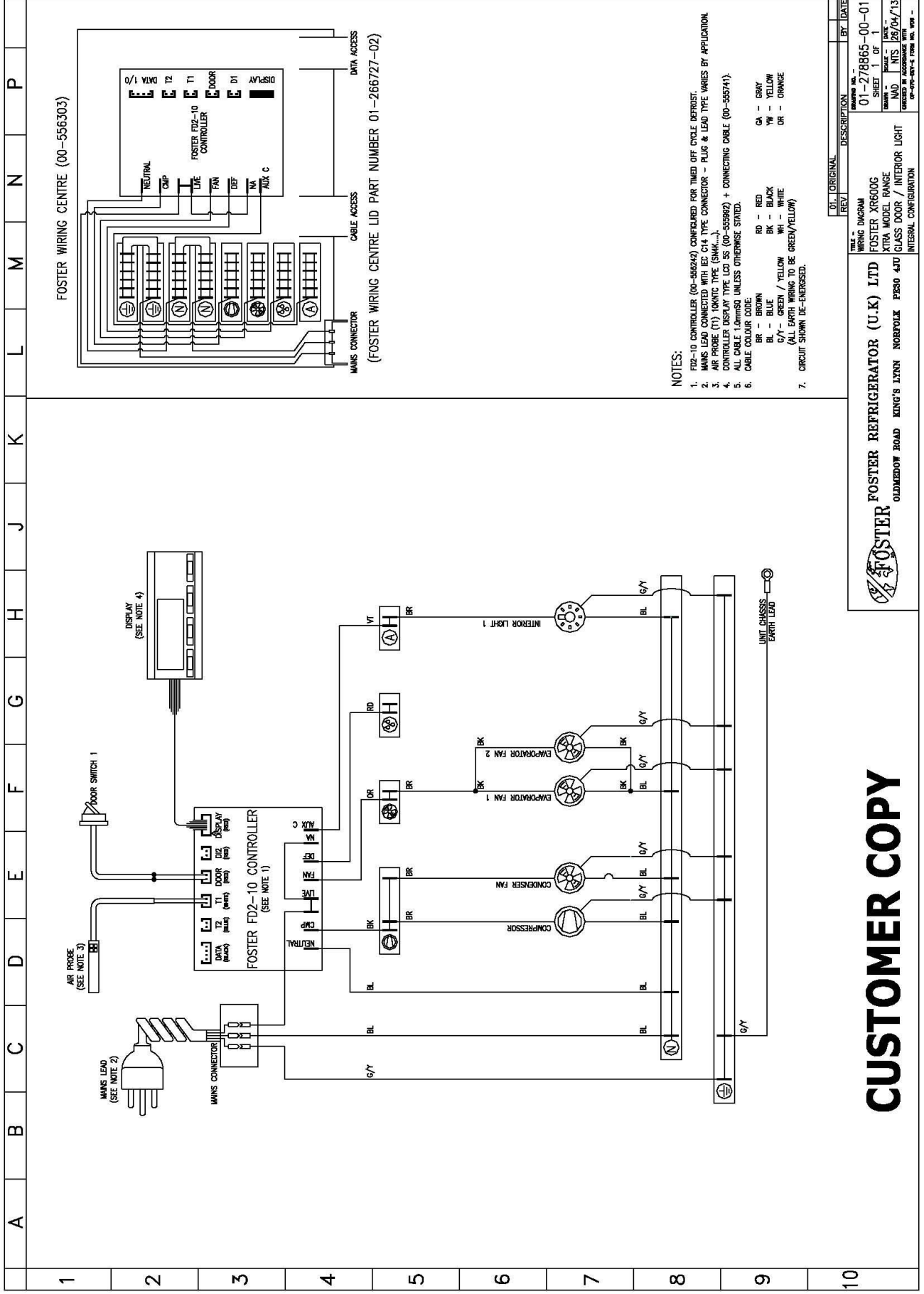
Note: The Power Consumption values referred to as tested are to the ECA test standard. Actual power consumption will be greatly affected by ambient temperature, loading, usage and cabinet maintenance.



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FOSTER
FOSTER REFRIGERATOR (U.K) LTD
OLDMEDWAY ROAD KING'S LYNN NORFOLK PE30 4JD
INTEGRAL CONFIGURATION

01 - ORIGINAL	DESCRIPTION	REV	DATE
	WIRING DIAGRAM		
	01-278864-00-01		
	SHEET 1 OF 1		
	ISSUED		
	DATE		
	26/04/13		
	00-556303-1 FROM REV. 000 -		



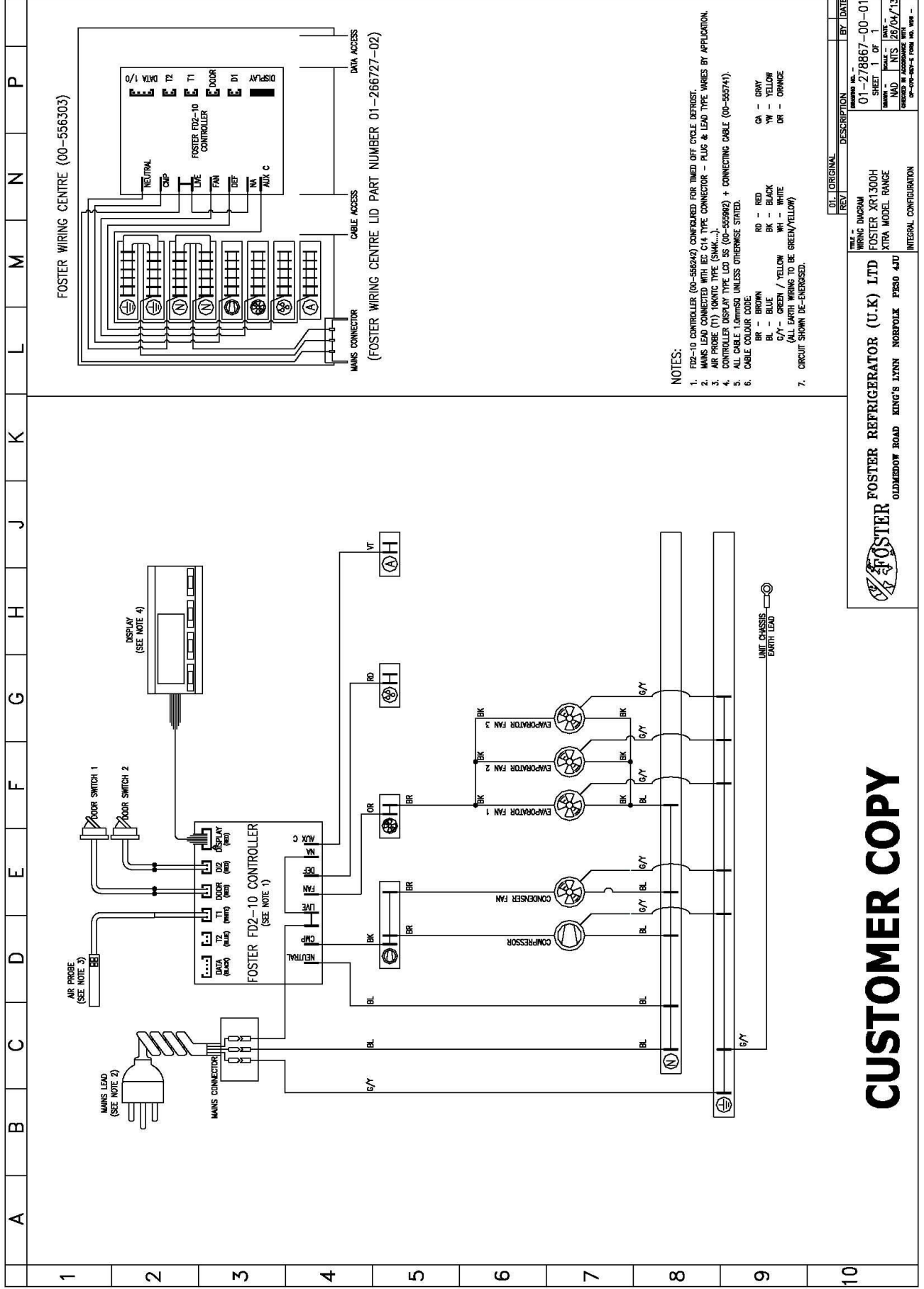
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REV	DESCRIPTION	DATE	BY
01	ORIGINAL		

WIRING DIAGRAM	01-278865-00-01
FOSTER XR600G	OF
XTRA MODEL RANGE	SHEET
GLASS DOOR / INTERIOR LIGHT	NO. NTS 26/04/13
INTERNAL CONFIGURATION	OF-00-001-1 FROM NO. 000 -

FOSTER
OLDMEDWAY ROAD KING'S LYNN NORFOLK PE30 4JU

FOSTER REFRIGERATOR (U.K.) LTD



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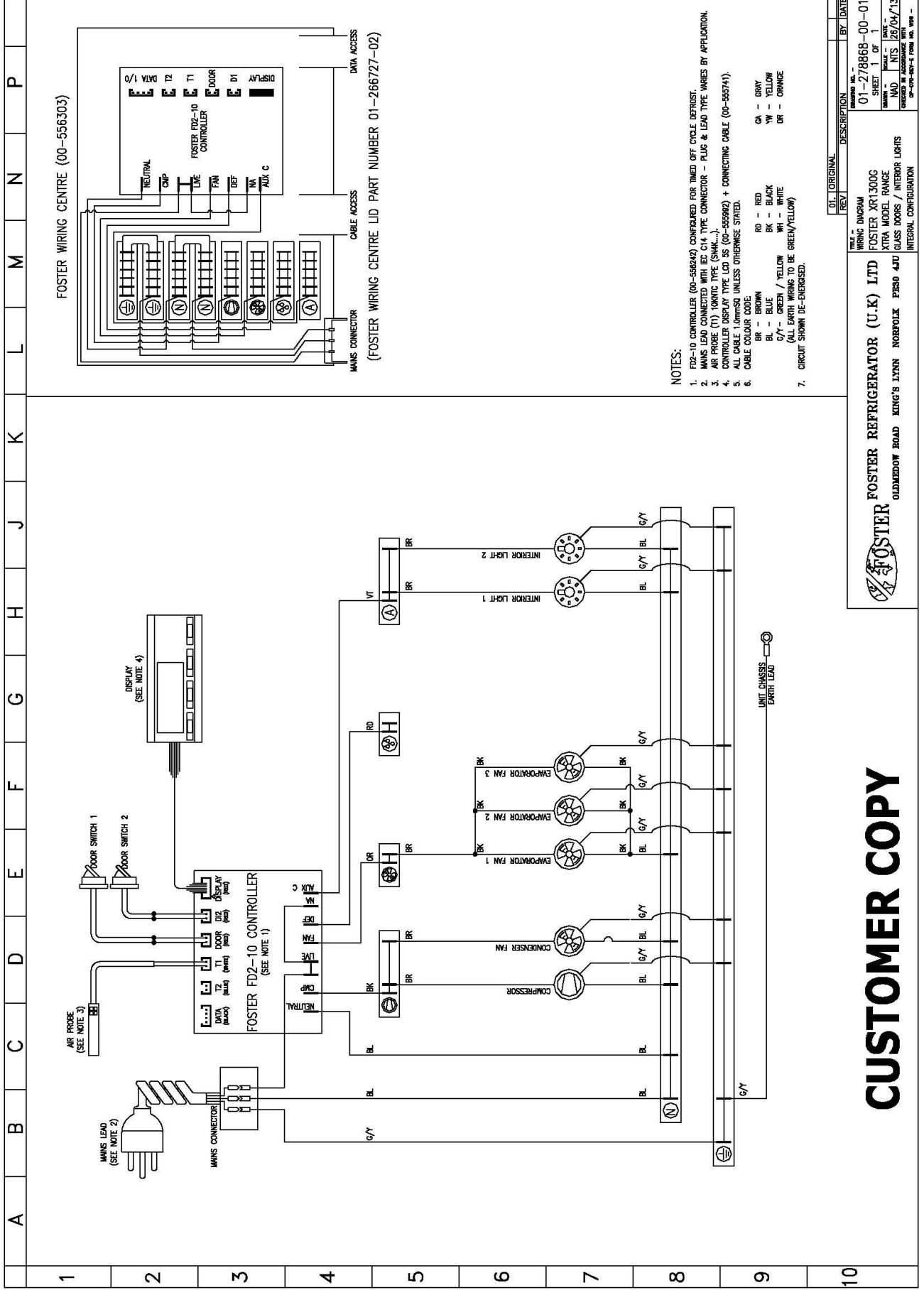
FOSTER
OLDMEDWAY ROAD KING'S LYNN NORFOLK PE30 4JQ

FOSTER REFRIGERATOR (U.K) LTD
FOSTER XR1300H
XTRA MODEL RANGE

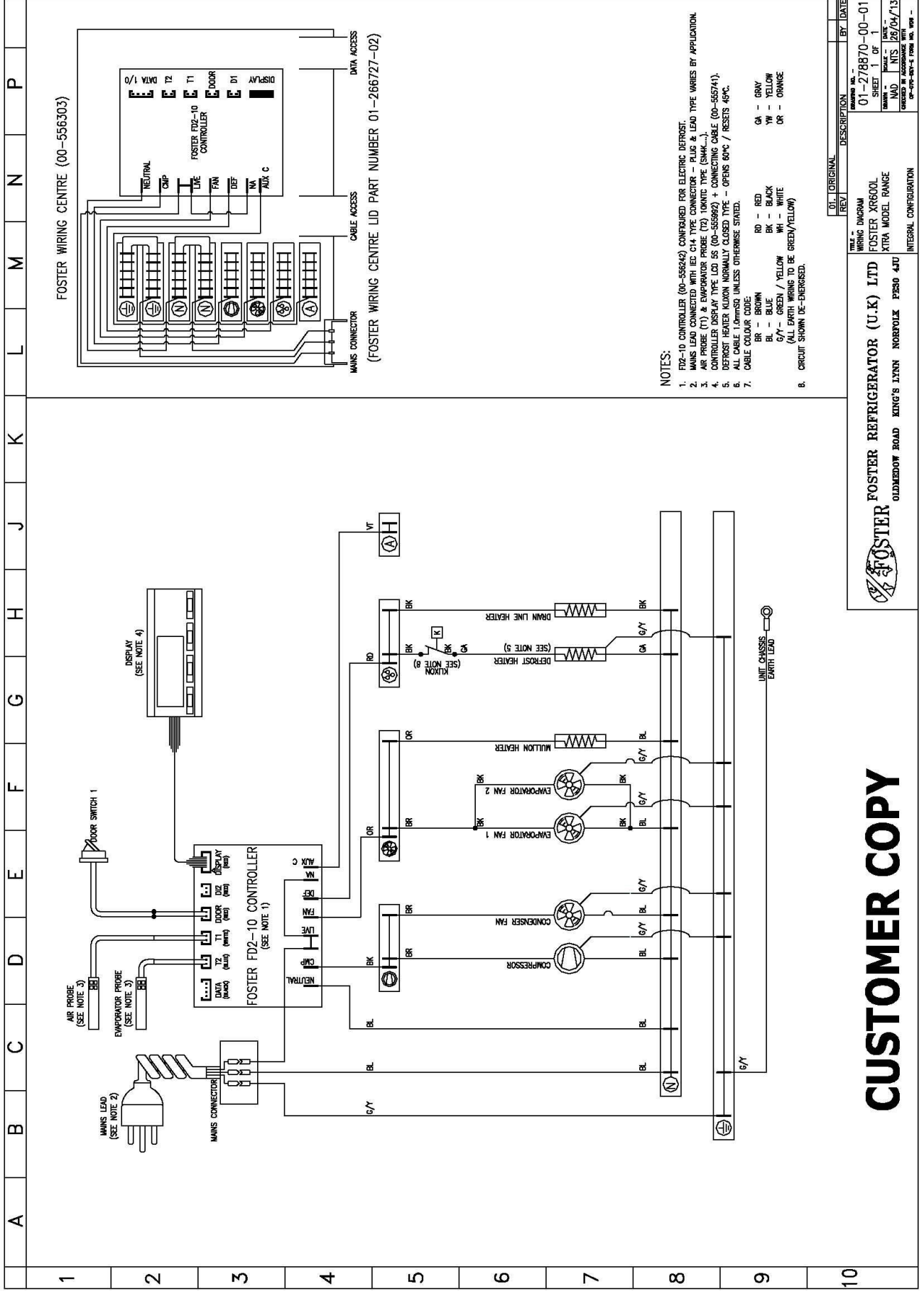
INTERNAL CONFIGURATION

REV	DESCRIPTION	DATE	BY
01	ORIGINAL		

WIRING NO.	01-278867-00-01
SHEET	1 OF 1
ISSUE NO.	1
ISSUE DATE	29/04/13
ISSUE BY	MS
ISSUE FOR	01-470-REV-4 FROM NO. 000 -



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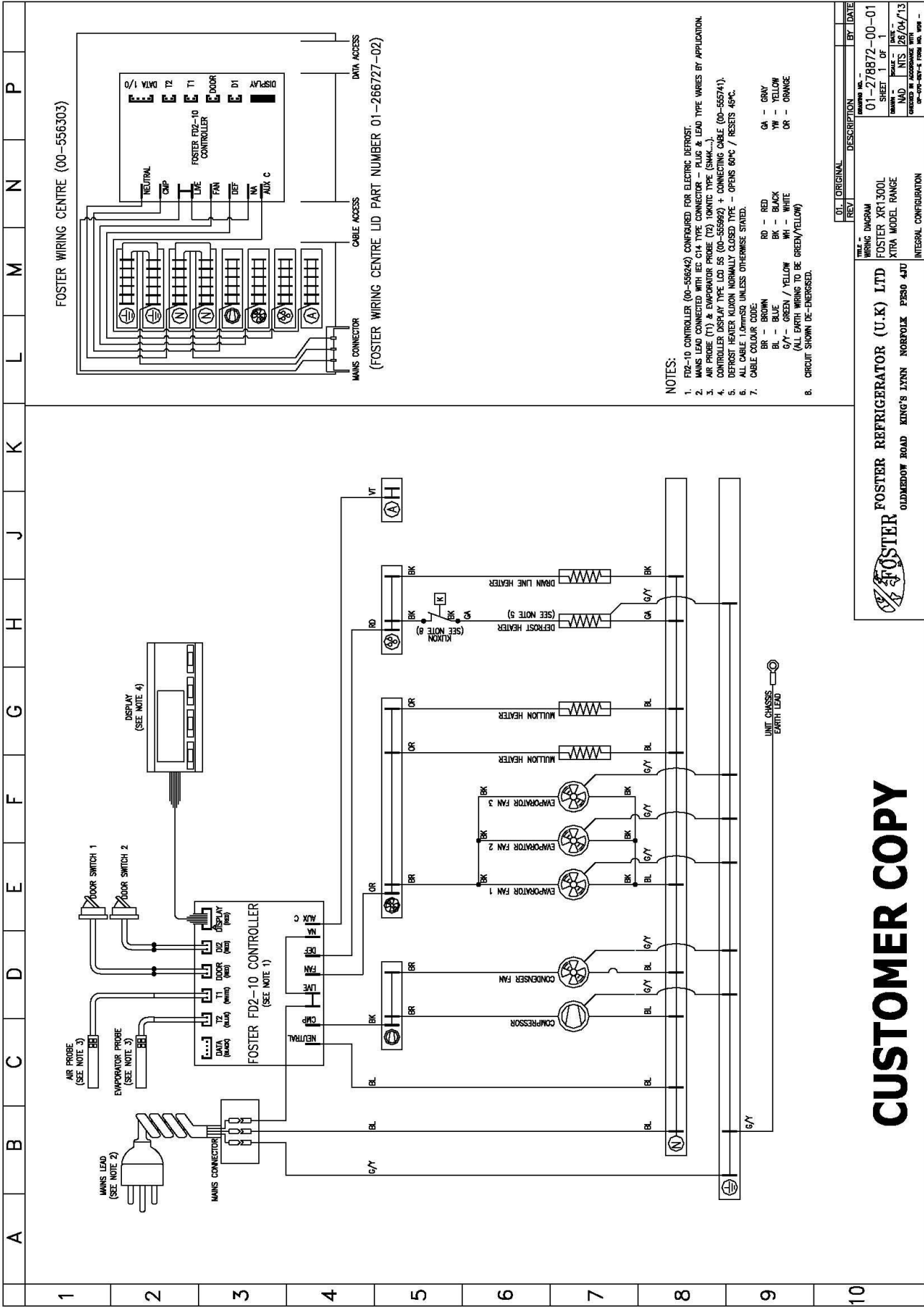


FOSTER REFRIGERATOR (U.K) LTD
OLDMEDWAY ROAD KING'S LYNN NORFOLK PE30 4JU

REV	DESCRIPTION	BY	DATE
01	ORIGINAL		

REV	DESCRIPTION	BY	DATE
01	ORIGINAL		

REV	DESCRIPTION	BY	DATE
01	ORIGINAL		



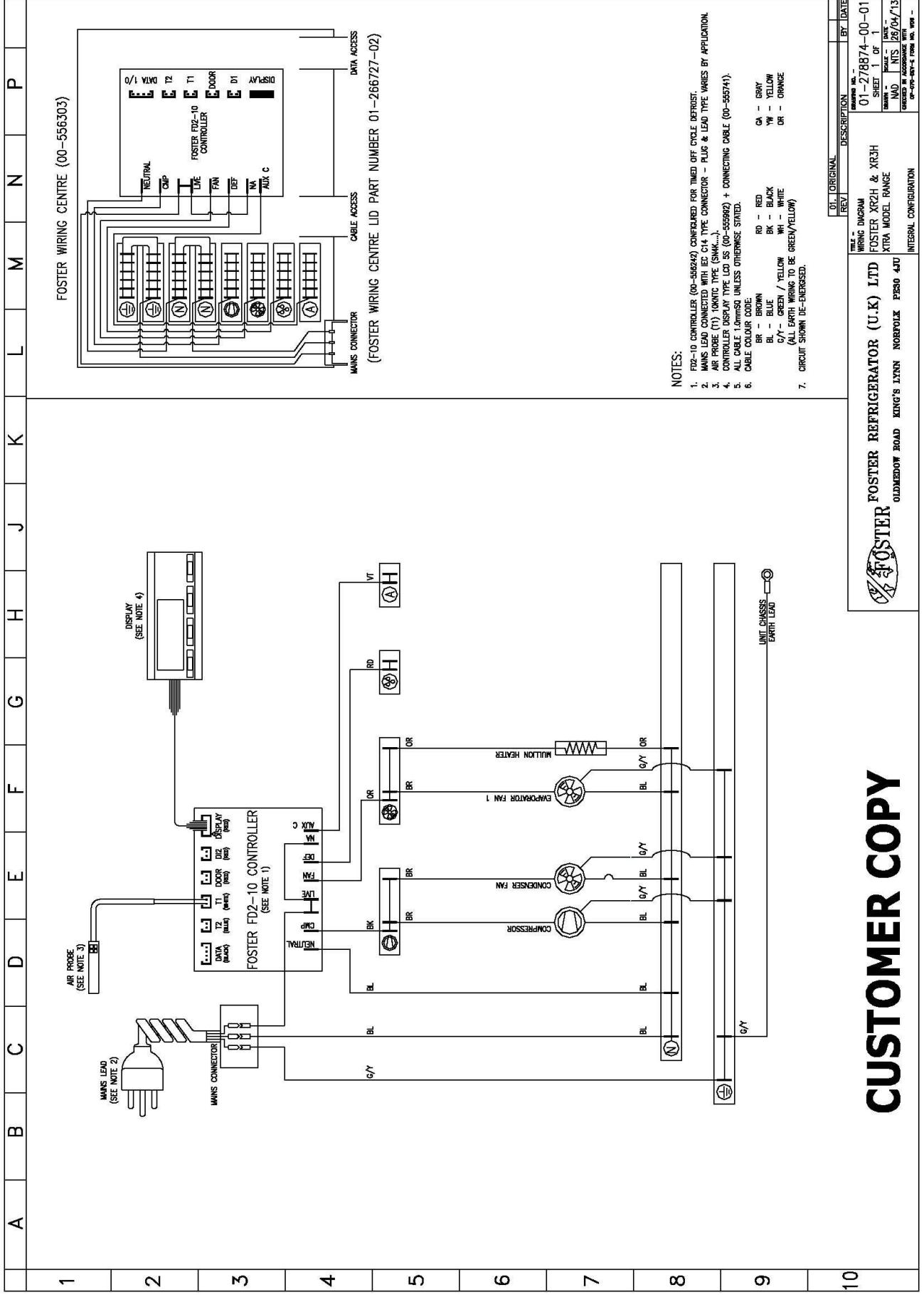
- NOTES:**
- FD2-10 CONTROLLER (00-556303) CONFIGURED FOR ELECTRIC DEFROST.
 - MAINS LEAD CONNECTED WITH EC C14 TYPE CONNECTOR - PLUG & LEAD TYPE VARIES BY APPLICATION.
 - AIR PROBE (T1) & EVAPORATOR PROBE (T2) TORQUE TYPE (SHAK...).
 - CONTROLLER DISPLAY TYPE LID 55 (00-556962) + CONNECTING CABLE (00-55574).
 - DEFROST HEATER Klixon NORMALLY CLOSED TYPE - OPENS 80VC / RESETS 45PC.
 - ALL CABLE TERMINALS UNLESS OTHERWISE STATED.
 - CABLE COLOUR CODE:
RD - RED
OR - ORANGE
BL - BLUE
G/Y - GREEN / YELLOW
WH - WHITE
(ALL EARTH WIRING TO BE GREEN/YELLOW)
 - CIRCUIT SHOWN DE-ENERGISED.

REV	DESCRIPTION	DATE
01	ORIGINAL	

TITLE - WIRING DIAGRAM FOSTER XR1300L XTRA MODEL RANGE INTERNAL CONFIGURATION		DRAWING NO. - 01-278872-00-01 SHEET 1 OF 1
MADE IN CHINA	DATE 29/04/13	DRAWN BY JMS

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



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REV	DESCRIPTION	DATE
01	ORIGINAL	
WIRING DIAGRAM		
ISSUE NO.	01-278874-00-01	
SHEET	1 OF 1	
DATE	28/04/13	
BY	MS	
CHECKED BY	MS	
APPROVED BY	MS	
00-000-00-0	FORM NO. 000	

FOSTER REFRIGERATOR (U.K) LTD
FOSTER XR2H & XR3H
XTRA MODEL RANGE

OLDMEDWAY ROAD KING'S LYNN NORFOLK PE30 4JU

INTEGRAL CONFIGURATION

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	
	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.	
	<i>[#] only displayed if applicable to model and enabled through parameters</i>		
	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
- > Controller does not disconnect the condensing unit
- > Control contacts are stuck closed
- > Defective or incorrect temperature control
- > Set to warmer position and check if the compressor stops according to controllers operating range.
- > Check the insulation of the thermostat. If problem persists, change the thermostat
- > Change the control. Check amperage load
- > Determine correct control and replace.

The temperature is not cold enough

- > Controller is set at a very warm position
- > Condenser is dirty
- > The refrigerator has been placed at an inadequate location
- > Compressor is inefficient or there is a high pressure due to the air in the system
- > Iced up evaporator coil
- > Restriction in system
- > The refrigerator has been used improperly
- > Too many door openings
- > Excessive heat load placed in cabinet
- > The refrigerator has been overcharged with the refrigerant gas
- > The refrigerant gas is leaking
- > The evaporator and/or condenser fans are not working
- > Adjust to colder setting
- > Clean condenser
- > The unit must not be near stoves, walls that are exposed to the sun, or places that lack sufficient air flow.
- > If there is air in the system, purge and recharge
- > Check temperature control, refrigerant charge, and defrost mechanism. Remove all ice manually and start over.
- > Locate exact point of restriction and correct
- > 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.
- > Advise user to decrease if possible
- > Advise user not to put in products that are too hot.
- > Check to see if condensation or ice crystals have formed on the suction line. If so, charge with the correct amount of gas.
- > 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.
- > 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.
- > Replace fuse or reset circuit breaker.

> Fuse blown or circuit breaker tripped

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



> Dirty condenser coil

> Evaporator coil iced over

> Ensure gaskets are snapped in completely. Remove gasket and wash with soap and water. Check condition of gasket & replace if necessary

> Clean condenser coil

> 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

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