FOSTER
REFRIGERATOR

FVINO400HW

Service Manual

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Contents

Environmental Management Policy for Service Manuals and Duets.

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 clients 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, 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 to storm drains, foul drain, surface water to soil.

DISPOSAL REQUIREMENTS

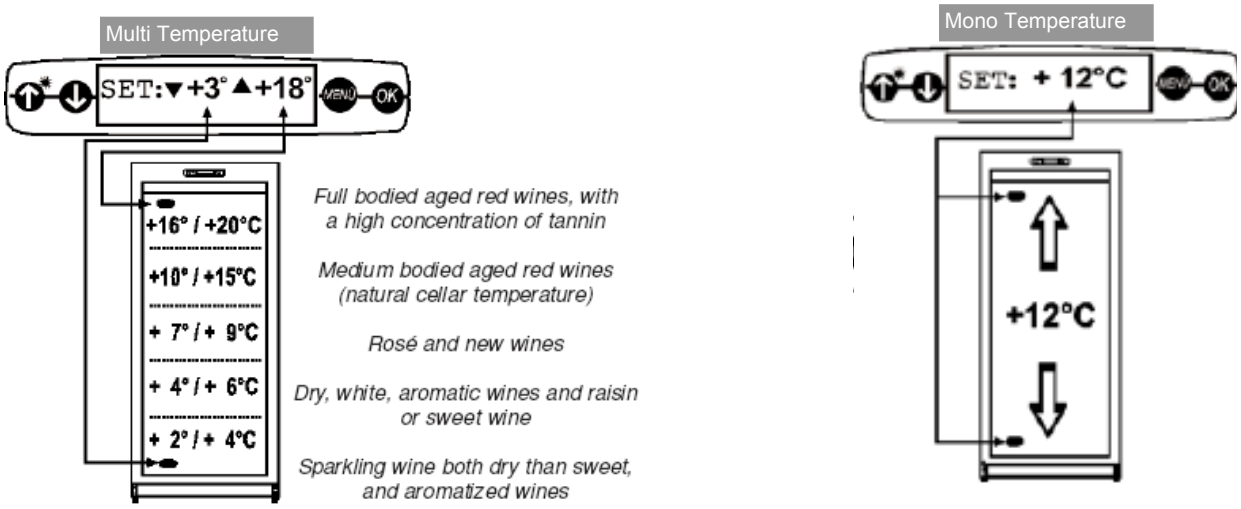
If not disposed of properly all refrigerators have components that can be harmful to the environment. All old refrigerators must be disposed of by appropriately registered and licensed waste contractors, and in accordance with national laws and regulations.

Technical Data

Refrigerant	Refigerant Charge	Compressor	Capillary	Defrost Type	Voltage	Power Consumption		Fuse Rating
						Watts	Amps	
R134A	120 grms	Embraco FG85HAK	3900mx 0.99mm	Timed Off Cycle	230-1-50	0.280	1.6	13 Amp

Wine Storage Options

Multi temperature offers the possibility to keep wines at the right service temperature. Please refer to the table below with the advised temperature for each wine category.
To preserve and age your wines choose the Mono Temperature option and set the temperature for 12ºC.



Setting the Controller

Press and hold for 5 seconds MENU

TURNING ON Will be displayed followed by (((((((( )))))))) and then **BACCHUS GENIUS**

Choose the Language

1/ **LANGUAGE ↑↓ ?** Will be displayed

2/ Select the language from **ITALIAN** **FRENCH** **ENGLISH** **GERMAN** **SPANISH**

3/ Select using the ↓ or ↑ arrows.

4/ Once the selection is made press OK to confirm.

Select the Mode of Operation

1/ **MODE ↑↓ ?** Will be displayed

2/ Use the ↓ or ↑ to select either **MONO TEMP** for the single temperature range or **MULTI TEMP** for the multi temperature range.

MONO TEMP Factory setting 8ºC as a default
Follow the instructions below to change the factory setting

1/ **Temperature ↑↓?** Will be displayed press OK to continue

2/ Select the required temperature by pressing ↓ or ↑ and then press OK to confirm.

3/ **Temperature? OK** Will be displayed press OK to confirm.

MULTITEMP Factory setting 3ºC to 18ºC as a default

Follow the instructions to change the factory setting

1/ **Temperature ↑↓?** Will be displayed press OK to continue

2/ Select the lower temperature required by pressing ↓ or ↑ once the preferred temperature has been selected press OK to confirm.

3/ Select the higher temperature required by pressing ↓ or ↑ once the preferred temperature has been selected press OK to confirm.

On completion **CONFIRMED** will be displayed, followed by **HELLO WORLD**

User Operation Guidelines

The cabinet will start automatically and display the set temperature.

To display the cabinet air temperature press OK once.

Leave for two hours with the light off before loading

Main Menu Options

Only required if you need to change operation

To select a menu option press MENU and choose from the following, once selected press OK to access.

MODE m1	**TEMPERATURE m2**	**Defrost m3**	**Service m4**	**TURN OFF m5**

MODE m1
Allows the selection of MONO or MULTITEMP options

Press either ↓ or ↑ to select and OK to confirm.

TEMPERATURE m2
Allows the temperature to be adjusted

To change press OK followed by either ↓ or ↑ to select temperature option OK and then confirm

DEFROST m3
Allows a manual defrost
The refrigerator will defrost automatically but should an additional defrost be required press OK select this option and then press OK to start the defrost.

SERVICE m4
Service engineer access (See page 4)

SWITCH OFF m5
To switch off the refrigerator select this option and press OK

The screen will display **GOODBYE** followed by **STAND BY PUSH>>>**

Press MENU to start.

Interior Light Operation

To turn the light on press ↓ 'ON' will flash and the light will be on continuously.

To turn the light off press ↓ 'OFF' will flash and the light will illuminate when the door is opened.

Alarms

High Temperature Alarm
HT will be displayed.
In MONO TEMP mode the high temperature alarm is indicated by sensor 'A'.
In MULTITEMP mode the high temperature alarm can be indicated by either sensor 'A' or sensor 'B'.
The alarm will sound and can be silenced by pressing any button, however it will return after a pre-set period. If the unit returns to normal operating temperature the alarm will be cancelled automatically.

Low Temperature Alarm
LT will be displayed
In MONO TEMP mode the low temperature alarm is indicated by sensor 'A'.

In MULTITEMP mode the low temperature alarm can be indicated by either sensor ‘A’ or sensor ‘B’.
The alarm will sound and can be silenced by pressing any button, however it will return after a pre-set period. If the unit returns to normal operating temperature the alarm will be cancelled automatically.

Door Open Alarm
The alarm will sound and can be silenced by pressing any button, however it will return after a pre-set period if the door is left open. The alarm message will continue to be displayed until cancelled by closing the door.
If the alarm is not cancelled by doing this call your Foster authorised service company.

Air Probe Fault 1
Probe S1 will be displayed.
The message will be displayed intermittently between the temperature readout plus an audible alarm will sound.
The alarm can be cancelled by pressing any of the buttons on the display.
Action:
Replace probe.

Evaporator Probe Fault
Probe S2 will be displayed.
The message will be displayed intermittently between the temperature readout plus an audible alarm will sound.
The alarm can be cancelled by pressing any of the buttons on the display.
Action:
Replace probe.

Air Probe Fault 2
Probe S3 will be displayed.
The message will be displayed intermittently between the temperature readout plus an audible alarm will sound.
The alarm can be cancelled by pressing any of the buttons on the display.
Action:
Replace probe.

Overuse of the Compressor
COMPRES.WORK will be displayed.
If the compressor is running continuously the controller will switch it off.

Maximum Defrost Time
DEFROST TIME will be displayed.
The end of defrost temperature has not been reached within the time set.

Keyboard disconnection
PCD REMOVED will be displayed.
Communication has been lost between the front display and the printed circuit board

Service Engineer Access

To access the parameters select menu option 4 ‘SERVICE m4’ and press OK
The password will be requested.
Use the ↑ till ‘**07’** is displayed and then press OK
On completion the first menu option will be displayed press ↑ to pass through the options.

Service Menu List

INFO S1	Service Menu for the displaying of Operational Data

To enter the Info list press OK | KEYPAD ON 65355 | will be displayed.
This indicates the Keypad status
To move from one parameter to the next use the ↑ or ↓ arrow.

The next to be displayed will be | POWER ON 65355 |
This indicates the Power status
To move from one parameter to the next use the ↑ or ↓ arrow.

The next to be displayed will be | RESET 65355 : 23h |
Gives an indication of when the controller was last reset.

The next to be displayed will be | HTWL 65355 : 23h |
Gives an indication of how long the controller is switched on.

The next to be displayed will be | COMP 65355 : 23h |
This display the length of time the compressor has been running.

The next to be displayed will be **COMP% 1h = 40%**
Indicates the percentage of time during the last hour the compressor has been running.

The next to be displayed will be **COMP% 24h = 40%**
Indicates the percentage of time during the last 24 hours the compressor has been running.

The next to be displayed will be **COMP ON 4' 01"**
Indicates the length of time the compressor has been on.

The next to be displayed will be **COMP OFF 9' 17"**
Indicates the length of time the compressor has been off.

The next to be displayed will be **Fw 5102.77 B.01**
Indicates the soft ware version of the controller.

The next to be displayed will be **S/N 255. 255. 255.**
Indicates the controller serial number.

NOTE: the figures in the box are representative and for indication only.

DEFROST LIST s2 Service Menu for the displaying of Defrosting Data

FAILURE LIST s3 Service Menu for the displaying of Failure Data

To enter the Info list press OK the screen will display the last fault i.e. Probe S1 indicating an air probe fault.

PARAMETERS s4 Service Menu for Parameter Programming (For the Parameter List go to page 6 to 7)

To enter the parameter list press OK and the first parameter will be displayed.

The parameter number will start blinking. To move from one parameter to the next use the ↓ or ↑ arrow or press OK to display the value.

The value of the parameter selected will start blinking. To change the value use the ↓ or ↑ arrow then press OK to confirm the change.

INFOTEST DATA s5 Service Menu for the Infotest Data
Diagnostic check of the outputs from the controller

TEST START s6 Service Menu for the Infotest Enabling

To start the diagnostic check press OK followed by OK to start the test.

LANGUAGE s7 Service Menu for changing the display Language

To enter the parameter list press OK **ITALIANA** will be displayed.

Press the ↑ or ↓ arrow to scroll through the following options:- **ITALIANA** **FRANCHAISE** **ESPANOL** **DEUTSCH** **ENGLISH**

To select the language press OK followed by OK to confirm.

MEMORY RESET s8 Service Menu for Deleting Memories
Allows for the deletion of all stored fault codes. These are stored memories relating to menu s1, operational data, s2, defrost data, s3, and failure data.

PARAM. RESTORE s9 Service Menu for the Restoring of Parameters

Press OK **← Esc Confirm →** will be displayed press OK to confirm.
The default parameters will be restored.

PASWORD s10 Service Menu for Setting the Service Access Password
It is not recommended that the password is changed as it may restrict access by other service engineers.

INPUT/OUTPUT s11 Service Menu for Displaying the Sensor and Output States

Press OK to display the various probe temperatures and relay outputs.

Use the ↑ or ↓ keys to scroll through the displays.

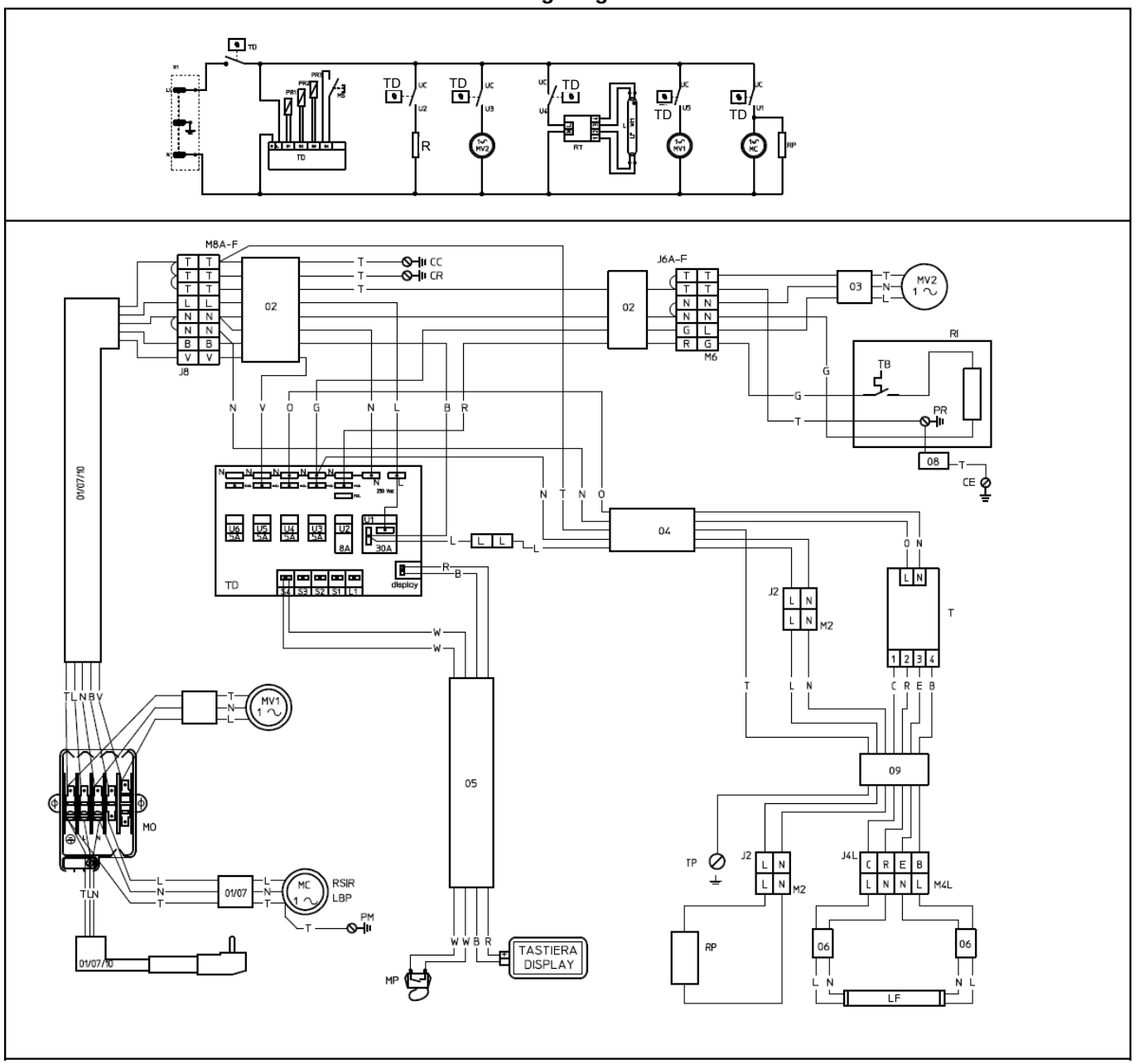
NOTE: if the temperature is set for MONO only one probe temperature will be displayed where as if MULTITEMP is selected the temperature as detected by all of the probes will be displayed.

Parameter Settings

No	Title	Parameter Definitions	Min	Max	Dim	Setting
1	ADR	Serial Network Address	0	99	flag	1
2	MOD	Function Mode Super Parameter	0	3	flag	3
3	ISP	Input Setup	0	255	flag	0
4	OSP	Output Setup	0	255	flag	1
5	VOP	Display Contrast	0	255	flag	138
6	MES	Description Display Time Interval	0	255	sec	255
7	DIN	Microdoor Option	0	2	flag	2
8	DOO	Door Open Alarm Delay	2	60	min	4
9	OMA	S1 Probe Offset Mono Temp	-15.0	15.0	ºC/ºF	0
10	OMB	S3 Probe Offset Mono Temp	-15.0	15.0	ºC/ºF	0
11	DTX	Maximum Allowable Temperature Differential (Sb-Sa)	1.0	20.0	ºC/ºF	7
12	DTD	Recirculate Alarm Delay Time	1.0	250.0	min	250
13	SPO	Set Point (Mono Temperature Option)	-30	30	ºC/ºF	12
14	HOS	Refrigeration Option Hysteresis (Single Temperature Option)	0.0	15.0	ºC/ºF	1
15	HOC	Heated Option Hysteresis (Single Temperature Option)	0.0	15.0	ºC/ºF	1.5
16	SLO	Minimum Temperature Set Point of SET 0	-30	30	ºC/ºF	2
17	SHO	Maximum Temperature Set Point of SET 0	-30	30	ºC/ºF	20
18	ODA	S1 Probe Offset Multi Temp	-15.0	15.0	ºC/ºF	0
19	ODB	S3 Probe Offset Multi Temp	-15.0	15.0	ºC/ºF	0
20	SP1	Temperature Set Point (cold zone)	-30	30	ºC/ºF	3
21	H1S	Refrigeration Option Hysteresis Zone1 (cold zone)	0.0	15.0	ºC/ºF	1
22	H1C	Heated Option Hysteresis Zone 1 (cold zone)	0.0	15.0	ºC/ºF	4
23	SL1	Minimum Temperature Set Point of SET 1	-30	30	ºC/ºF	2
24	SH1	Maximum Temperature Set Point of SET 1	-30	30	ºC/ºF	8
25	SP2	Temperature Set Point (warm zone)	-30	30	ºC/ºF	18
26	H2S	Refrigeration Option Hysteresis Zone2 (warm zone)	0.0	15.0	ºC/ºF	3
27	H2C	Heated Option Hysteresis Zone 2 (warm zone)	0.0	15.0	ºC/ºF	1
28	SL2	Minimum Temperature Set Point of SET 2	-30	30	ºC/ºF	12
29	SH2	Maximum Temperature Set Point of SET 2	-30	30	ºC/ºF	20
30	HPO	Humidity Sensor Setting	-30	30	%	0
31	URM	Humidification/Dehumidification Setting Mode	0	15	flag	0
32	RH%	Humidity Set Point	20	90	%	60
33	HRH	Starting Dehumidification Out Let Hysteresis	0	20	%	0
34	HRL	Starting Humidification Out Let Hysteresis	0	20	%	0
35	CND	Condenser Fan Start Delay Time	0	240	min	15
36	ADL	Minimum Time between Compressor Starts	15	240	sec	240
37	ADS	Setting Delay Time after switching On	15	240	sec	60
38	CCD	Setting Delay	1	120	sec	30
39	CON	Compressor ON Time During Compressor Failure	2	255	min	6
40	COF	Compressor OFF Time During Compressor Failure	2	255	min	5
41	CPH	Compressor Working Operation Percentage (starting Time CON-COF)	20	99	%	98
42	DRP	Dripping Time After Defrost	0	255	sec	180
43	DCM	Compressor Working Operation During Defrost	0	60	min	0
44	DOP	Defrost switch ON Option	0	255	flag	5
45	ITD	Time Interval Between Defrosts	1	255	hrs	6
46	DTO	Defrost Time Out	2	255	min	90
47	DTE	Defrost Termination Temperature	-50	50	ºC/ºF	6
48	DEO	Extra Defrost Time	0	60	min	0
49	FOP	Evaporator/Condenser Switch ON Option	0	255	flag	3
50	FAS	Evaporator Fan set Point	-50	50	ºC/ºF	45
51	FAD	Evaporator Fan Delay Time After Defrost	0	255	sec	15
52	FSD	Evaporator Fan Set Point During Defrost	-50	50	ºC/ºF	1
53	HYW	Warm-Air-Lock Fan Evaporator Turn ON/OFF Hysteresis	0.5	5.0	ºC/ºF	1.5
54	ALL	Low Temperature Alarm Differential	-30	-2	ºC/ºF	-5
55	ALH	High Temperature Alarm Differential	2	60	ºC/ºF	5
56	ALD	Alarm Delay at Start Up	2	255	min	90
57	ADD	Alarm Delay After Turning ON, Defrosting and Loading Goods Inside of Cabinet	2	255	min	120
58	LOG	Temperature Recording Setting Option	0	9	flag	0
59	SPT	Temperature Record Test Time Interval	1	120	min	1
60	CYC	Number of Cycles to Perform in the INFOTEST Phase 1 and 7	1	5	flag	3

61	STA	Number of Stabilization Cycles in the INFOTEST Phase 0 and 6	1	5	flag	3
62	ETT	Pull-Up Phase_4 in INFOTEST Temperature	-30	30	ºC/ºF	15
63	PRT	Print Mode	0	3	flag	0
64	PU1	Setting Let out U1 (relay 30A) – one temp. working	0	255	flag	1
65	PU2	Setting Let out U2 (relay 8A) – one temp. working	0	255	flag	4
66	PU3	Setting Let out U3 (relay 5A) – one temp. working	0	255	flag	13
67	PU4	Setting Let out U4 (relay 5A) – one temp. working	0	255	flag	18
68	PU5	Setting Let out U5 (relay 5A) – one temp. working	0	255	flag	29
69	PU6	Setting Let out U6 (relay 5A) – one temp. working	0	255	flag	0
70	PV1	Setting Let out U1 (relay 30A) – multi temp. working	0	255	flag	1
71	PV2	Setting Let out U2 (relay 8A) – multi temp. working	0	255	flag	9
72	PV3	Setting Let out U3 (relay 5A) – multi temp. working	0	255	flag	32
73	PV4	Setting Let out U4 (relay 5A) – multi temp. working	0	255	flag	18
74	PV5	Setting Let out U5 (relay 5A) – multi temp. working	0	255	flag	29
75	PV6	Setting Let out U6 (relay 5A) – multi temp. working	0	255	flag	0
76		Password	0	255	flag	7

Wiring Diagram



Wiring Diagram Item Code Identification

R1(S1)	Low Zone Probe	MP	Microswitch	T	Ballast	MV1	Condenser Fan
PR2 (S2)	Defrost End Probe	TD	Controller	LF	Light	MV2	Evaporator Fan
PR3 (S3)	High Zone Probe	R	Heater	MC	Compressor	KA	Relay