

Manual Ref. Eliwell Digifrost IWP750LX

ZANOTTI UNIBLOCK



GM & AS RANGE

GM models with S/No.Ending Letter F & G
(2005 December – Mid December 2008)

GM models with S/No.Ending Letter H & K
(Mid December 2008 – Present)

AS models 235,335,340 with S/No.Ending Letter D
(2005 December - Present)

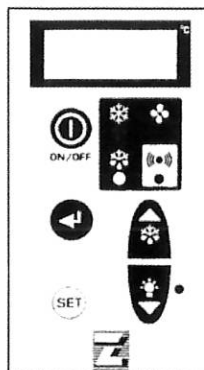
Electronic Panel Version
Eliwell Digifrost IWP750LX

USER & MAINTENANCE INSTRUCTIONS

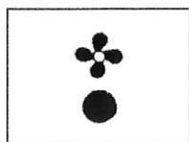
PLEASE TAKE THE TIME TO READ THIS MANUAL

Electric controls

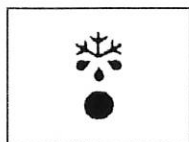
Control panel



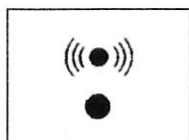
1. Control LED (GREEN)
ON : compressor is running, unit is refrigerating.
Flashing : compressor is in start delay mode.
OFF : compressor is off, room temperature is down to set value.



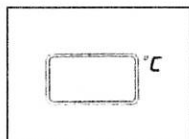
2. Control LED (GREEN)
ON : evaporator fan is running.
Flashing : evaporator fan is in start delay mode.
OFF : evaporator fan is off. Defrost is in course.



3. Control LED (YELLOW)
ON : Automatic defrost is in course.
Flashing : Manual defrost is in course



4. Alarm LED (RED)
ON : alarm has been activated because of a malfunctioning sensor, or pressure switch intervention, or cold room temperature exceeding allowed tolerances.
OFF : Unit is operating normally.



5. DISPLAY : on connection to the mains it shows OFF to indicate the condition of the unit. By pressing ON/OFF key for 5 seconds the unit is turned ON and the display shows the cold room temperature. In programming mode the parameters to be set are displayed; in alarm mode the alarm code is displayed.



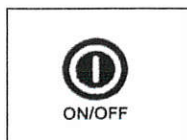
6. "SET" key : when pressed it lights up and allows room temperature to be set. During programming it is used to pass from a submenu to an upper one.



7. "DOWN/ROOM LIGHT" key: in programming mode or when setting room temperature it is used to reduce the value displayed; otherwise it is used to switch on/off the cold room light.



8. "SB.M./UP" key: in programming mode it is used to increase the values displayed. If pressed for more than 5 seconds it enables manual defrost to be carried out.



9. "ON/OFF" key: when pressed for 5 seconds it turns the unit on or off.



10. "Enter" key: it gives access to programming menu and submenus. Access to the programming mode requires the installer's assistance and should be effected only if necessary.

Checks, regulations and adjustments

Before turning the unit on, check that:

- locking screws are tight
- electrical connections have been carried out correctly.

In the event that the unit has been opened:

- no tools were left inside
- assembly is correct
- there are no gas leaks
- front cover is secured correctly

Starting

Before starting the unit act as follows:

- Connect the unit to the mains. The display is turned on and shows OFF.
- If the unit has a preheating cycle, leave it in this condition for at least 3 hours.
- If the unit has a voltage monitor, leave it in this condition for at least 7 minutes to have the counting phase carried out
- Set the required cold room temperature.
- Press ON/OFF key for 5 seconds to switch the unit on.



ATTENTION

Medium temperature range : +10 -5°C

Low temperature range : -15 -25°C

Setting room temperature:

- Connect the unit to the mains. OFF is displayed.
- Press SET key. The green led lights up and the previously set temperature is displayed.



UP to increase temperature



DOWN to decrease temperature

Press SET key or wait 5 seconds to have room temperature displayed.



ATTENTION

24 hours after starting check evaporator state. If ice has formed, defrost frequency should be increased. In low temperature units the evaporator condition should be checked every week during the first month of operation.

Wiring

A wiring diagram, specific for the units of the GM series, is enclosed with these use and maintenance instructions.

Maintenance and repairs

Suitable maintenance is crucial for obtaining longer life, perfect working conditions and high efficiency of the unit as well as for ensuring the safety features provided by the manufacturer.

Routine maintenance

Good operation of the unit requires the condenser to be cleaned periodically (frequency of cleaning depends on the environment where the unit is installed).

Turn off the unit and clean it by blowing air from the inside outwards. Should no air jet be available, use a long-haired brush and work on the outside of the condenser.

In case of water-cooled condensers have the unit cleaned by a plumber with special descaling agents.



WARNING

Use safety gloves to protect your hands from possible cuts.



WARNING

Disconnect the unit before working on it.

Periodical maintenance

Periodically check wear condition of electrical contacts and remote switches; if necessary replace them.

Service operations to be carried out by qualified technicians or by the manufacturer

Following operations shall be carried out by qualified technicians or by the manufacturer exclusively. Under no circumstances the user is allowed to:

- replace electrical components
- work on the electric equipment
- repair mechanical parts
- work on the refrigerating system
- work on the control panel, ON/OFF and emergency switches
- work on protection and safety devices.

Troubleshooting

During operation following troubles may occur:

- 1 Compressor stops. The unit is equipped with an overtemperature device which stops the compressor every time the max. allowable temperature of motor windings is exceeded. Possible causes are:

- insufficient ventilation of the room where the unit is installed;
 - anomaly in mains voltage;
 - faulty operation of condenser fan.
- Device reset is automatic.

- 2 Ice forms on the evaporator preventing air from flowing regularly.

Possible causes are:

- the door is opened too frequently;
- faulty operation of evaporator fan;
- faulty solenoid valve (in models with hot gas defrost);

- faulty defrost heater (in models with electric defrost);
- faulty defrost process. In this case some measures can be taken:
increase defrost termination temperature by some degrees, increase number of defrosts.



ATTENTION

Do not use either hot water or any pointed, cutting, metal objects to remove ice blocks.

3. Display does not light up. Check:
 - if there is power to the unit;
 - if mains cable is connected properly;
 - fuses inside the electric panel
4. Unit does not start operating when pressing ON/OFF key (the display is turned on):
check microdoor connection keeping in mind that the switch contact must be closed when the door is closed.

Unsatisfactory efficiency of the unit:

If no defects are found in the unit check that: cold room doors are perfectly tight; there is no cold dispersion; the cold room is used wisely; no unfrozen liquids or foodstuffs are placed in the low temperature room; the evaporator is ice-free.

We recommend installation of the machines far from the doors especially when the cold room is expected to be opened many times a day.



WARNING:

Removal of protections during machine operation is absolutely forbidden. They have been developed to safeguard the operator's safety.

Alarms

When an alarm condition occurs the following warning devices are activated (depending on the nature of the alarm):

alarm led
buzzer
alarm relay.

The buzzer and the alarm relay can be muted by pressing any key. When a key is pressed, the led flashes as long as the alarm condition is present. To have the alarm code displayed, press ENTER key: AL appears. Press ENTER key. At this point a code is displayed indicating the cause of the alarm.

To leave the alarm menu wait 15 seconds or press SET as long as cold room temperature is displayed.

To lock / unlock display panel:

Press  "SET" &  "UP"

When panel is locked, a green led lights up next to the "SET" button.

ALARM CODES

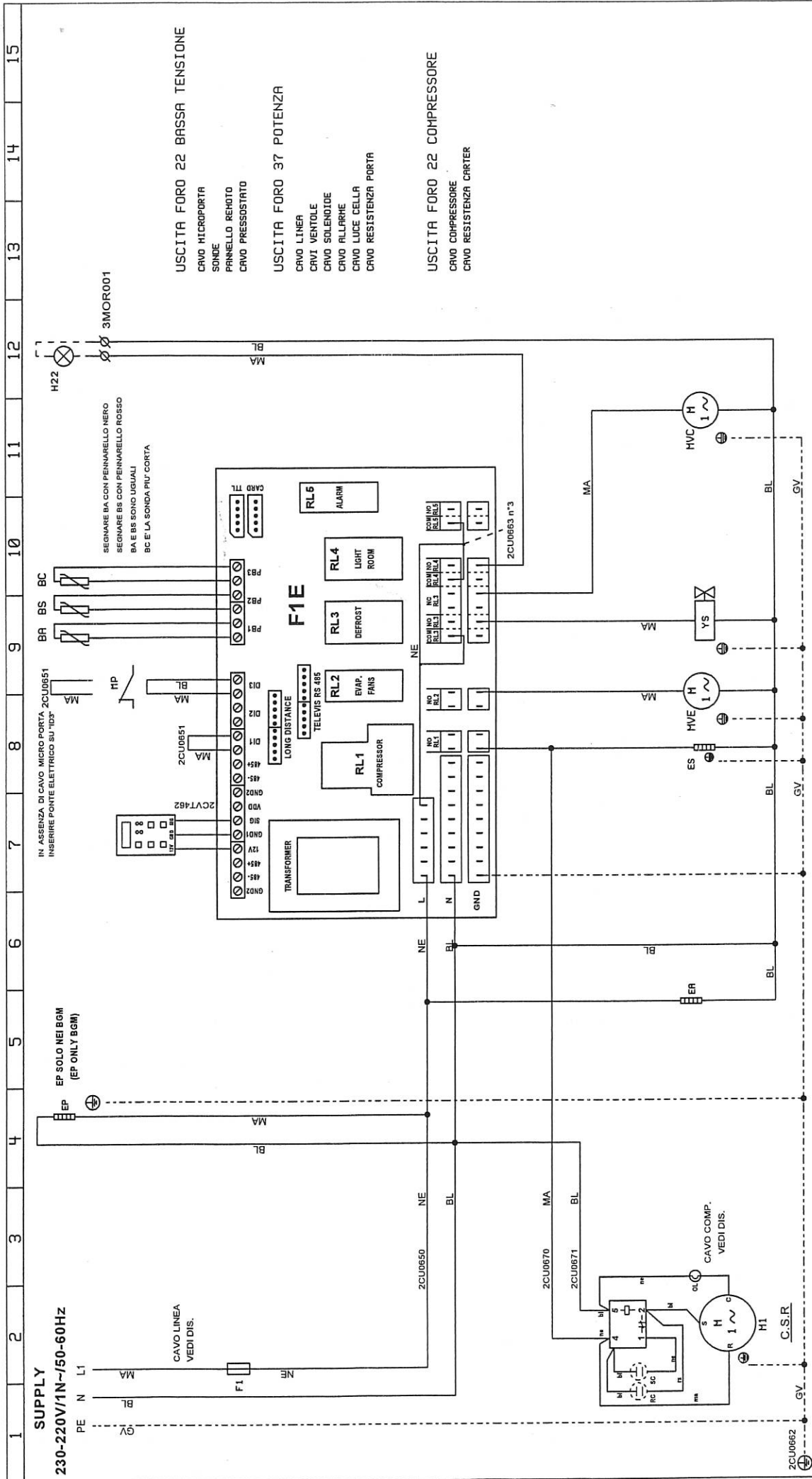
Label	Alarm	Cause	Effect	Solution
E1	Room Probe Fault	- measured temperature is out of range - probe fault	- Label "E1" is displayed - Compressor is activated according to the parameter settings of "Ont" and "Of" - disables HP/LP alarms	- check cable connection - change probe
E2	Defrost Termination Temperature Probe Fault	Same as E1	Label "E2" is displayed	Same as E1
E3	Condenser Probe Fault	Same as E1	Label "E3" is displayed	Same as E1
AH1	High temperature Alarm	value of Probe 1 > HAL after a delay set in tAO.	- Registration of the label AH1 in the sub menu "AL" (Alarms menu) - Does not affect unit function	Wait for the temperature to fall below the set point + HAL
AL1	Low temperature Alarm	value of Probe 1 > LAL after a delay set in tAO.	- Registration of the label AL1 in the sub menu "AL" (Alarms menu) - Does not affect unit function	Wait for the temperature to rise above the set point - LAL
AH3	High Condensing Temperature Alarm	value of probe 3 > SA3 after a delay set in tAO	- Registration of the label AH3 in the sub menu "AL" (Alarms menu) - Does not affect unit function	Wait for the temperature of probe 3 to fall below SA3-dA3
EA	External Alarm	to activate a digital input	- Registration of the label EA in the sub menu "AL" (Alarms menu) - All outputs blocked	- Manually mute the alarm buzzer - Outputs are enabled when the alarm condition is removed
Opd	Door Open Alarm	when the door remains open after time delay set in tdO. (if door switch is installed)	- LED flashes - Buzzer sounds after time delay tdO - Registration of the label Opd in the sub menu "AL" (Alarms menu)	- Manually mute the alarm buzzer - The led and registered fault remain active until the door is closed
PA	Pressure Fault	Tripping of a pressure switch	- Label PA is displayed - Registration of the label PA in the sub menu "AL" (Alarms menu)	Switch OFF & ON the unit or reset the alarm in the AL menu
LPA	Low Pressure Alarm	Tripping of a LP switch	- Label LPA is displayed - Registration of the label LPA in the sub menu "AL" (Alarms menu)	Switch OFF & ON the unit or reset the alarm in the AL menu
HPA	High Pressure Fault	Tripping of a HP switch. Each time it trips the buzzer and led flash. If it trips more than 10 times in 1 hour then HPA is displayed and Outputs are disabled.	- Label HPA is displayed - Registration of the label HPA in the sub menu "AL" (Alarms menu)	Switch OFF & ON the unit or reset the alarm in the AL menu
E7	Communication Fault	No communication between motherboard and display board	Label E7 is displayed	check connection

GM WIRING DIAGRAM

BA	Room Sensor
BC	Condenser Alarm Sensor
BS	Defrost Sensor
BVR	Speed Regulator
BVRS	Speed Regulator Sensor
E	Defrost Heater
E1	Compressor Crankcase Heater
EP	Door Heater Circuit
ER1	Control board Heater
ER2	Voltage Regulator Heater
ES	Condensate Drain Heater
F13	Voltage Regulator Fuse
F1	Compressor Fuse
F1E	Electronic Control Cab
F20	Auxiliary Fuse
FL	Room Light Fuse
FM	Voltage Regulator
FTE	Emergency 'Stat'
H22	Coldroom Light
HA	Alarm
HI	Acoustic Temperature Alarm
K1	Compressor M1 Contactor
K11	Defrost Contactor
M1	Compressor Motor Nr.1
MP	Door Microswitch (room)
MVC	Condenser Fan Motor
MVE	Evaporator Fan Motor
P1MX	Condenser Fan Starting Pressure Switch
PMI	L/P Switch
PMX	H/P Switch
Q1	Main Switch
Q3	Condenser Fan Speed Regulator "Off" Switch
T	Transformer
X	Terminal Board Connector
YG	Refrigerant Solenoid
YS	Hot Gas Solenoid

COLOUR KEY FOR WIRING DIAGRAM

Bi = White	ne = Black	bl = Blue	vi = Violet	ce = Grey
Ma = Brown	ar = Orange	rs = Red	ra = Pink	



	MODELLO MGM106260F-106260F/ANM MGM107260F-260F/ANM-263F BGM110260F/ANM MGM110520F	DISEGNO nr. GM1040		FOGLIO nr.: 1 DI 1	
		REV./nr.	Disegnato Soncini		Approvato Soncini
		DATA:	Approvato		DATA: 05-12-2005

SUPPLY
220-230V/1N~/50-60Hz

PE N L1

CAVO LINEA
VEDI DIS.

2CU0681

2CU0673

F20

K1

2CU0683

2CU0682

NE

BL

GV

MA

EP

EP SOLO NEI BGM
(EP ONLY BGM)

2CU0651

MA

BS

BC

HP

SEGNARE BA CON PENNARELLO NERO
SEGNARE BS CON PENNARELLO ROSSO
BA E BS SONO UGUALI
BC E' LA Sonda PIU' CORTA

3MOR001

H22

MA

BL

GV

NE

BL

GV

EP

EP SOLO NEI BGM
(EP ONLY BGM)

2CU0651

MA

BS

BC

HP

SEGNARE BA CON PENNARELLO NERO
SEGNARE BS CON PENNARELLO ROSSO
BA E BS SONO UGUALI
BC E' LA Sonda PIU' CORTA

3MOR001

H22

MA

BL

GV

NE

BL

GV

MA

BS

BC

HP

SEGNARE BA CON PENNARELLO NERO
SEGNARE BS CON PENNARELLO ROSSO
BA E BS SONO UGUALI
BC E' LA Sonda PIU' CORTA

3MOR001

H22

MA

BL

GV

NE

BL

GV

MA

2CU0651

MA

BS

BC

HP

SEGNARE BA CON PENNARELLO NERO
SEGNARE BS CON PENNARELLO ROSSO
BA E BS SONO UGUALI
BC E' LA Sonda PIU' CORTA

3MOR001

H22

MA

BL

GV

NE

BL

GV

MA

BS

BC

HP

SEGNARE BA CON PENNARELLO NERO
SEGNARE BS CON PENNARELLO ROSSO
BA E BS SONO UGUALI
BC E' LA Sonda PIU' CORTA

3MOR001

H22

MA

BL

GV

NE

BL

GV

MA

BS

BC

HP

2CU0651

MA

BS

BC

HP

SEGNARE BA CON PENNARELLO NERO
SEGNARE BS CON PENNARELLO ROSSO
BA E BS SONO UGUALI
BC E' LA Sonda PIU' CORTA

3MOR001

H22

MA

BL

GV

NE

BL

GV

MA

BS

BC

HP

SEGNARE BA CON PENNARELLO NERO
SEGNARE BS CON PENNARELLO ROSSO
BA E BS SONO UGUALI
BC E' LA Sonda PIU' CORTA

3MOR001

H22

MA

BL

GV

NE

BL

GV

MA

BS

BC

HP

2CU0651

MA

BS

BC

HP

SEGNARE BA CON PENNARELLO NERO
SEGNARE BS CON PENNARELLO ROSSO
BA E BS SONO UGUALI
BC E' LA Sonda PIU' CORTA

3MOR001

H22

MA

BL

GV

NE

BL

GV

MA

BS

BC

HP

SEGNARE BA CON PENNARELLO NERO
SEGNARE BS CON PENNARELLO ROSSO
BA E BS SONO UGUALI
BC E' LA Sonda PIU' CORTA

3MOR001

H22

MA

BL

GV

NE

BL

GV

MA

BS

BC

HP

2CU0651

MA

BS

BC

HP

SEGNARE BA CON PENNARELLO NERO
SEGNARE BS CON PENNARELLO ROSSO
BA E BS SONO UGUALI
BC E' LA Sonda PIU' CORTA

3MOR001

H22

MA

BL

GV

NE

BL

GV

MA

BS

BC

HP

SEGNARE BA CON PENNARELLO NERO
SEGNARE BS CON PENNARELLO ROSSO
BA E BS SONO UGUALI
BC E' LA Sonda PIU' CORTA

3MOR001

H22

MA

BL

GV

NE

BL

GV

MA

BS

BC

HP

2CU0651

MA

BS

BC

HP

SEGNARE BA CON PENNARELLO NERO
SEGNARE BS CON PENNARELLO ROSSO
BA E BS SONO UGUALI
BC E' LA Sonda PIU' CORTA

3MOR001

H22

MA

BL

GV

NE

BL

GV

MA

BS

BC

HP

SEGNARE BA CON PENNARELLO NERO
SEGNARE BS CON PENNARELLO ROSSO
BA E BS SONO UGUALI
BC E' LA Sonda PIU' CORTA

3MOR001

H22

MA

BL

GV

NE

BL

GV

MA

BS

BC

HP

2CU0651

MA

BS

BC

HP

SEGNARE BA CON PENNARELLO NERO
SEGNARE BS CON PENNARELLO ROSSO
BA E BS SONO UGUALI
BC E' LA Sonda PIU' CORTA

3MOR001

H22

MA

BL

GV

NE

BL

GV

MA

BS

BC

HP

SEGNARE BA CON PENNARELLO NERO
SEGNARE BS CON PENNARELLO ROSSO
BA E BS SONO UGUALI
BC E' LA Sonda PIU' CORTA

3MOR001

H22

MA

BL

GV

NE

BL

GV

MA

BS

BC

HP

2CU0651

MA

BS

BC

HP

SEGNARE BA CON PENNARELLO NERO
SEGNARE BS CON PENNARELLO ROSSO
BA E BS SONO UGUALI
BC E' LA Sonda PIU' CORTA

3MOR001

H22

MA

BL

GV

NE

BL

GV

MA

BS

BC

HP

SEGNARE BA CON PENNARELLO NERO
SEGNARE BS CON PENNARELLO ROSSO
BA E BS SONO UGUALI
BC E' LA Sonda PIU' CORTA

3MOR001

H22

MA

BL

GV

NE

BL

GV

MA

BS

BC

HP

2CU0651

MA

BS

BC

HP

SEGNARE BA CON PENNARELLO NERO
SEGNARE BS CON PENNARELLO ROSSO
BA E BS SONO UGUALI
BC E' LA Sonda PIU' CORTA

3MOR001

H22

MA

BL

GV

NE

BL

GV

MA

BS

BC

HP

SEGNARE BA CON PENNARELLO NERO
SEGNARE BS CON PENNARELLO ROSSO
BA E BS SONO UGUALI
BC E' LA Sonda PIU' CORTA

3MOR001

H22

MA

BL

GV

NE

BL

GV

MA

BS

BC

HP

2CU0651

MA

BS

BC

HP

SEGNARE BA CON PENNARELLO NERO
SEGNARE BS CON PENNARELLO ROSSO
BA E BS SONO UGUALI
BC E' LA Sonda PIU' CORTA

3MOR001

H22

MA

BL

GV

NE

BL

GV

MA

BS

BC

HP

SEGNARE BA CON PENNARELLO NERO
SEGNARE BS CON PENNARELLO ROSSO
BA E BS SONO UGUALI
BC E' LA Sonda PIU' CORTA

3MOR001

H22

MA

TO ACCESS PARAMETERS ON ZANOTTI GM RANGE

Units with serial no. suffix F & G & H & K

Ref:-IWP750LX

- 1) Press the  ENTER key until **CP** (compressor parameters) is displayed.
 - 2) Press the  UP/defrost key to visualise the required sub-folder:
CP = compressor parameters dEF = defrost parameters
FAn = fan parameters AL = alarm parameters
PrE = pressure switch input parameters DiS = display parameters
CnF = configuration parameters
 - 3) Press  ENTER to enter the selected sub-folder. The first parameter is displayed.
 - 4) Use  UP or  DOWN keys to select the parameter to be changed
 - 5) Press  ENTER to see the current value.
 - 6) Modify it by pressing the  Up or  DOWN key.
 - 7) Press  ENTER to confirm.
 - 8) Press  SET once to go to another subfolder, or twice to exit programming.
- NOTE:** If no key is pressed for a period of 10 seconds then programming mode will be automatically terminated.

To VIEW PROBE TEMPERATURES

- 1) Press & hold both the  SET &  ENTER keys together.
- 2) SET is displayed
- 3) Use  Up or  DOWN keys to reach required Probe. (PB1 = room probe, PB2 = defrost termination probe, PB3 = Condenser probe)
- 4) Press  SET to go back to normal display.

PARAMETER LIST

		2SCH106	2SCH107	2SCH108	2SCH109	
Lbl.	Description	Medium hot gas	Low hot gas	Medium electric	Low electric	UM
CP	Compressor parameters					
diF	Differential	2	2	2	2	°/1
HSE	Max. temp. allowed setpoint	10	-15	10	-15	°/1
LSE	Min. temp. allowed setpoint	-5	-25	-5	-25	°/1
Ont	ON time if faulty room sensor	10	10	10	10	min
OFt	OFF time if faulty room sensor	20	20	20	20	min
dOF	Time between comp. OFF and next start	2	2	2	2	min
dbi	Time between 2 compresor starts	2	2	2	2	min
dEF	Defrost parameters					
dtY	Defrost operating mode: 1=gas 0=electric	1	1	0	0	num
dit	Time interval between 2 defrosts	3	3	3	3	hours
dCt	Defrost interval time count mode	0	0	0	0	num
dEt	Defrost time override	20	20	30	30	min
dSt	Defrost Termination Temperature	15	15	8	8	°/1
FAn	Fans parameters					
FSt	Fans stop temperature	50	50	50	50	°/1
Fdt	Fans ON delay	3	3	3	3	min
dt	Drain Down Time	2	2	2	2	min
dFd	Fans OFF during defrost	Y	Y	Y	Y	flag
FCO	Fans ON during compressor OFF	n	n	n	n	flag
Fod	Fans OFF during door open	n	n	n	n	flag
AL	Alarms parameters					
AFd	Alarm differential	2	2	2	2	°/1
HAL	High temperature alarm setpoint	5	5	5	5	°/1
LAL	Low temperature alarm setpoint	-5	-5	-5	-5	°/1
PAO	Alarm delay after start-up	3	6	3	6	hours
dAo	Alarm delay after defrost	60	60	60	60	min
OAo	Alarm delay after door opening	1	1	1	1	hours
SA3	High temperature alarm setpoint	55	55	55	55	°/1
dA3	Differential	2	2	2	2	°/1
PrE	Pressure alarms parameters					
PEn	Number of pressure trips	10	10	10	10	Num
PEI	Time period for pressure trips	60	60	60	60	min
diS	Display parameters					
CA1	Calibration room sensor	0	0	0	0	°C
dro	Selection Celsius/Fahrenheit (0 = °C, 1 = °F)	0	0	0	0	flag
CnF	Configuration parameters					

Terminal board comparison between Powerfrost and Digifrost controllers		
OLD CARD POWERFROST TERMINALS	USER	NEW CARD IW750LX TERMINALS
+12V	KEYBOARD	12V
SIG		SIG
GND		GND1
DI1	DIGITAL INPUTS	DI1
DI2		DI2
DI3		DI3
LINE	VOLTAGE	L
NEUTRAL		N
GROUND		GND
NO RL1	COMPRESSOR (K1)	NO RL1
NEUTRAL		N
COM RL2	EVAPORATOR FANS (MVE)	COM RL2
NO RL2		NO RL2
NEUTRAL		N
COM RL3	CONDENSER FANS (MVC)	COM RL3
NC RL3		NC RL3
NEUTRAL		N
COM RL3	DEFROSTING (YS)	COM RL3
NO RL3		NO RL3
NEUTRAL		N
COM RL4	COLD ROOM LIGHT (H22)	COM RL4
NO RL4		NO RL4
NEUTRAL		N
COM RL5	EXTERNAL ALARM (RL5)	COM RL5
NO RL5		NO RL5
NEUTRAL		N
PB1	COLD ROOM SENSOR (BA)	PB1
PB2	END DEFROSTING SENSOR (BC)	PB2
PB4	CONDENSER SENSOR (BC)	PB3

