VESTFROST SOLUTIONS

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Approved:		**Drawing No.:**	**7020234**	**Version:**	04
Supplyer:	Dixell				
Subject:	**Dixell - XW737K Bio Medical**				

Components must comply with the rules and restrictions stated in A/S Vestfrosts List of undesirable components/substances, and be free from silicone.

This component must comply with the European Directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS directive).

This drawing is the property of A/S Vestfrost and must not be copied, passed on to, or otherwise used by any person without the express consent of A/S Vestfrost.

Date:	Last modification:	Init:
140409	Ny parameterliste - OT ændret fra -6 til -1 / New parameter list - OT changed from -6 to -1	IMJ

Denne vare er specificeret ved nedenstående datablad. Med forudgående skriftlig tilladelse fra Vestfrost, kan alternativ type/fabrikat anvendes.

This product is specified according to the data sheet mentioned below. Alternative products/product types may only be used with the prior written consent of A/S Vestfrost.

DI1: pin 28/29   Dørkontakt / *Door switch*
Pb1: pin 25/26   TR3 – føler for regulering / *Sensor for regulation*
Pb2: pin 24/25   EVP – føler for afrimning / *Sensor for defrosting*
Pb3: pin 22/23   TL1 – føler for logning / S*ensor for logging*
Pb4: pin 21/22   TL2 – føler for logning / *Sensor for logging*

Se vedlagte dokumentation / *See attached documentation*

Attention:
This part is included in medical device!
No change or dispensation is allowed
before it is approved by the biomedical
team in the R&D department
Giv agt:
Denne del indgår i medicinsk udstyr!
Ændringer eller dispensationer er ikke tilladt
før dette er godkendt af biomedical teamet
i R&D afdelingen

DIXELL Wizmate	24-06-2013

DIXELL Wizmate 24-06-2013

File Name: no reply was received. Verify connection to the device.

Date : 24-06-2013 14:41:37

Model : XW737K

Firmware : 1.1

Memo : **Alarm delay tid ved opstart er ændret fra 0:30 time til 0:00 time da der også skal komme en alarm efter et strømafbrud.**

Group	Parameter	Description	Edit	Original	Vis. Lev.	Min.	Max	Unit
CLOCK AND RECORDING SETTING	itP	Recording interval	5	5	Pr1	1	255	min
CLOCK AND RECORDING SETTING	rC1	First probe recording enable	YES	YES	Pr2			
CLOCK AND RECORDING SETTING	rC2	Second probe recording	NO	NO	Pr2			
CLOCK AND RECORDING SETTING	rC3	Third probe recording enable	NO	NO	Pr2			
CLOCK AND RECORDING SETTING	rC4	Fourth probe recording enable	YES	YES	Pr1			
CLOCK AND RECORDING SETTING	rCb	Start recording SET key enabling	YES	YES	Pr1			
CLOCK AND RECORDING SETTING	EU	Date format	EU	EU	Pr1			
CLOCK AND RECORDING SETTING	rSd	Data erase	NO	NO	Pr2			
CLOCK AND RECORDING SETTING	rSA	Alarms erase	NO	NO	Pr2			
REGULATION	Set	Set point	-87	-87	Pr1	-95	-55	°C
REGULATION	Hy	Differential	1	1	Pr2	1	26	°C
REGULATION	LS	Minimum set point limit	-95	-95	Pr2	-100	-87	°C
REGULATION	US	Maximum set point limit	-55	-55	Pr2	-87	150	°C
PROBE INPUTS	ot	Regulation probe calibration (term. 1-2)	-1	-1	Pr2	-12	12	°C
PROBE INPUTS	P2P	Evaporator probe presence (term. 2-3)	NO	NO	Pr2			
PROBE INPUTS	oE	Evaporator probe calibration	0	0	Pr2	-12	12	°C
PROBE INPUTS	P3P	Third probe presence (term. 4-5)	NO	NO	Pr2			
PROBE INPUTS	o3	Third probe calibration	0	0	Pr2	-12	12	°C
PROBE INPUTS	P4P	Fourth probe presence (term. 5-6)	NO	NO	Pr2			
PROBE INPUTS	O4	Fourth probe calibration	0	0	Pr2	-12	12	°C
PROBE INPUTS	odS	Outputs activation delay at start up	0	0	Pr2	0	255	min
PROBE INPUTS	AC	Anti-short cycle delay	5	5	Pr2	0	30	min
PROBE INPUTS	Con	Compressor ON time with faulty probe	60	60	Pr2	0	255	min
PROBE INPUTS	COF	Compressor OFF time with faulty probe	5	5	Pr2	0	255	min
DISPLAY	CF	Temperature measurement unit	°C	°C	Pr1			
DISPLAY	rES	Resolution (for °C)	in	in	Pr1			
DISPLAY	rEd	Remote display	P1	P1	Pr2			
DISPLAY	dLy	Display delay	0.00	0.00	Pr2			min
DEFROST	dtE	Defrost termination temperature	4	4	Pr2	-100	150	°C
DEFROST	IdF	Interval between defrosts	1	1	Pr2	1	120	hour
DEFROST	MdF	(Maximum) duration of defrost	0	0	Pr2	0	255	min

DEFROST	dFd	Display during defrost	rt	rt	Pr2			
DEFROST	dAd	Defrost display time out	0	0	Pr2	0	255	min
FANS	Fnc	Fan operating mode	O-y	O-y	Pr2			
FANS	Fnd	Fan delay after defrost	0	0	Pr2	0	255	min
FANS	FSt	Fan stop temperature	0	0	Pr2	-100	150	°C
FANS	Fon	Fan ON time	0	0	Pr2	0	15	min
FANS	FoF	Fan OFF time	0	0	Pr2	0	15	min
TEMPERATURE ALARMS FOR REGULATION PROBE P1	A1C	Temperature alarm configuration	Ab	Ab	Pr2			
TEMPERATURE ALARMS FOR REGULATION PROBE P1	A1U	High temperature alarm for P1	-60	-60	Pr2	-100	150	°C
TEMPERATURE ALARMS FOR REGULATION PROBE P1	A1L	Low temperature alarm for P1	-100	-100	Pr2	-100	-60	°C
TEMPERATURE ALARMS FOR REGULATION PROBE P1	A1H	Differential for temperature alarm recovery	1	1	Pr2	1	26	°C
TEMPERATURE ALARMS FOR REGULATION PROBE P1	A1d	Temperature alarm delay	0	0	Pr2	0	255	min
TEMPERATURE ALARMS FOR REGULATION PROBE P1	d1o	Delay of temperature alarm at start-up	0.00	0.00	Pr2			hour
TEMPERATURE ALARMS FOR LOGGING PROBE P3	A3U	High temperature alarm for P3	-75	-75	Pr2	-100	150	°C
TEMPERATURE ALARMS FOR LOGGING PROBE P3	A3L	Low temperature alarm for P3	-100	-100	Pr2	-100	-75	°C
TEMPERATURE ALARMS FOR LOGGING PROBE P3	A3H	Differential for temperature alarm 3 recovery	1	1	Pr2	1	26	°C
TEMPERATURE ALARMS FOR LOGGING PROBE P3	A3d	Temperature alarm 3 delay	0	0	Pr2	0	255	min
TEMPERATURE ALARMS FOR LOGGING PROBE P3	d3o	Delay of temperature alarm 3 at start-up	0.30	0.30	Pr2			hour
TEMPERATURE ALARMS FOR LOGGING PROBE P4	A4U	High temperature alarm for P4	-75	-75	Pr2	-100	150	°C
TEMPERATURE ALARMS FOR LOGGING PROBE P4	A4L	Low temperature alarm for P4	-100	-100	Pr2	-100	-75	°C
TEMPERATURE ALARMS FOR LOGGING PROBE P4	A4H	Differential for temperature alarm 4 recovery	1	1	Pr2	1	26	°C
TEMPERATURE ALARMS FOR LOGGING PROBE P4	A4d	Temperature alarm 4 delay	0	0	Pr2	0	255	min
TEMPERATURE ALARMS FOR LOGGING PROBE P4	d4o	Delay of temperature alarm 4 at start-up	0.30	0.30	Pr2			hour
ALARM RELAY MANAGEMENT	tbA	Alarm relay disabling	YES	YES	Pr2			
ALARM RELAY MANAGEMENT	Aro	Alarm relay activation with power failure	YES	YES	Pr2			
ALARM RELAY MANAGEMENT	ALF	Alarm relay activation for all the alarms	YES	YES	Pr2			
ALARM RELAY MANAGEMENT	bon	Time of buzzer restart after muting, in case of alarm duration	30	30	Pr1	0	30	min
ALARM RELAY MANAGEMENT	AoP	Alarm relay polarity	CL	CL	Pr2			
DIGITAL INPUTS	i1P	Digital input polarity	oP	oP	Pr2			
DIGITAL INPUTS	i1F	Digital input configuration	dor	dor	Pr2			
DIGITAL INPUTS	did	with i1F= EAL or i1F = bAL digital input alarm delay (13-14)	1	1	Pr2	0	255	min
DIGITAL INPUTS	odc	Compressor and fan status when open door	no	no	Pr2			
DIGITAL INPUTS	rrd	Outputs restart after doA alarm	NO	NO	Pr2			
DIGITAL INPUTS	HES	Temperature increase during the Energy Saving cycle	0	0	Pr2	-30	30	°C
OTHER	Adr	Serrial address	1	1	Pr1	1	247	
OTHER	PbC	Type of probe	Pt1	Pt1	Pr2			
OTHER	rEL	Release software			Pr1			

XW737K – VGW870

1 GENERAL WARNING

1.1 PLEASE READ BEFORE USING THIS MANUAL

- This manual is part of the product and should be kept near the instrument for easy and quick reference.
- The instrument shall not be used for purposes different from those described hereunder. It cannot be used as a safety device.
- Check the application limits before proceeding.

1.2 ERROR! OBJECTS CANNOT BE CREATED FROM EDITING FIELD CODES. SAFETY PRECAUTIONS

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

2 TECHNICAL FEATURES

Power module XW737K
Case: 8 DN: 140X176X148
Connections:
    Disconnectable screw terminal blocks ≤ 2.5 mm² for probes and digital input.nad back up battery
    6.3mm Faston for loads and power supply
Power supply: 230Vac ± 10% 50/60Hz or. 110Vac ± 10% 50/60Hz
Power absorption: 10VA max
Inputs: 4 NTC or PT1000 probes
Digital input: 1 free voltage
Relay outputs: *Total current on loads MAX. 20A*
    Compressor: relay SPST 20(8) A, 250Vac
    Fan: relay SPST 8(3) A, 250Vac
    Light: relay SPST 8A, 250Vac
    Alarm: relay SPST 8A, 250Vac
Serial DATA output/input: USB connector
Serial output for monitoring: TTL type
Communication protocol: Modbus - RTU

Data storing: on the non-volatile memory (EEPROM)
Kind of action: 1B
Pollution degree: normal
Software class: A

Operating temperature: 0 to 60°C (32 to 140°F)
Storage temperature: -25 to 60°C (-13 to 140°F)
Relative humidity: 20 to 85% (no condensing)
Measuring and regulation range:
    NTC probe: -40 to 50°C (-58 to 122°F)
    PT1000 probe: -100 to 50°C (-148 to 122°F)
Resolution: 0.1°C or 1°C or 1°F (selectable)
Accuracy (ambient temp. 25°C): ±0.5°C ±1 digit

Internal real time clock with rechargeable battery
Clock battery back up: 5 months
Data memory capacity: 35500 samples

3 GENERAL DESCRIPTION

Model **XW737K** is microprocessor based controller suitable for applications on medium or low temperature refrigerating units. It has to be connected by means of a 3-wire cable (∅ 1mm) at a distance of up to 30 meters to the keyboard **VGW870**.
For the connections use shielded cable AWG 18 or less.

It is provided with four relay outputs to control compressor, evaporator fans light and alarm.
It is also provided with 4 NTC or PT1000 probe inputs, one for temperature control, one to control the defrost end temperature of the evaporator and the third and fourth to log temperatures or to display another temperature.
The HOT KEY output allows to connect the unit, by means of the external module XJ485-CX, to a network line **ModBUS-RTU** compatible such as the dIXEL monitoring units of X-WEB family. It allows to program the controller by means the HOT KEY programming keyboard.
The instrument is fully configurable through special parameters that can be easily programmed through the keyboard.

Furthermore it is capable of logging a temperatures detected by the probes and its status.
It is provided with USB output to download the data. The data are collected into a .txt file to be easily read with a standard spreadsheet program such as Excel ®.

4 USER INTERFACE

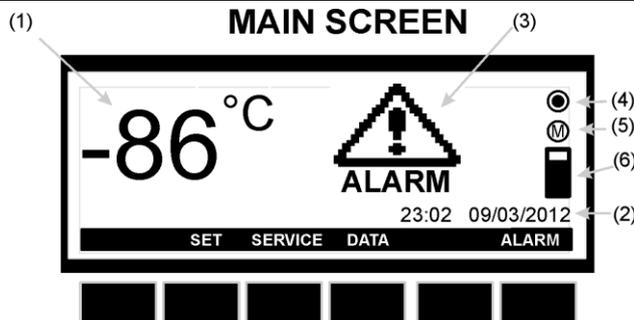### 4.1 WHAT IS DISPLAYED WHEN THE KEYBOARD IS CONNECTED

Where:
rel: Rel Firmware XW737K / release OS Visograph / release Program Visograph (date)
ptb: internal code for map

PUSH THE ENTER KEY TO ENTER THE STANDARD VISUALIZATION

4.2 DISPLAY VISUALIZATION – STANDARD MODE

(1)   Temperature misured by the TR3 probe
(2)   Time (hh:mm) and date dd/mm/yyy
(3)   Alarm: it's display when an alarm happens; This icon is flashing
(4)   Logging on or off

(5)   This icon appears when the memory available for log is less than 10%.
    It's flashing when the memory is completely full and the controller has entered the FIFO mode
**(6)**   Bar of memory status

Keys

ALARM	**Alarm:** to enter the alarm menu
SERVICE	**Service:** to enter the Service menu
DATA	**Service:** to enter the Service menu
SET	**Set point:** to enter the Set point modification menu

5 HOW TO SEE AND MODIFY THE SETPOINT

5.1 HOW TO SEE AND MODIFY THE SETPOINT

1. Push and immediately release the **SET** key: the display will show the Set point value, the label of the loads will be switched off ;
2. While the SET label will be displayed as for the following picture:

-86

SET

23:02 09/03/2012

▲   ▼   SET   HOME
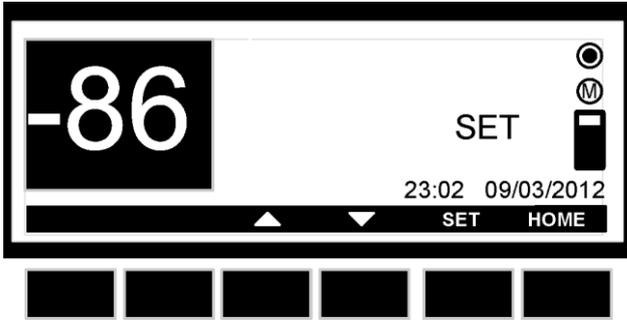
3. To modify the value: push the **SET** key, the set point start flashing.
4. Use the **UP and DOWN** keys to modify the value.
5. To memorize the new set point value push the **SET** key again or wait 30s..

6   SERVICE MENU

The **SERVICE** menu collects the main functions of the controller.
From the **SERVICE** menu is possible to:
- See the values of the probes
- Enter the PARAMETER programming MENU
- Set the password and enable it for some menu
- Start the self test function
- Set the instrument language.
- Set the real time clock
- Upload the memory map of the controller into a HotKey.

6.1   HOW TO ENTER THE SERVICE MENU

From the main display screen push the SERVICE button and the SERVICE menu is entered.
See below picture:

PROBES   PASSWORD
PARAMETERS   LANGUAGE
SELF TEST
CLOCK   1

UPL   ▲   ▼   ENTER HOME
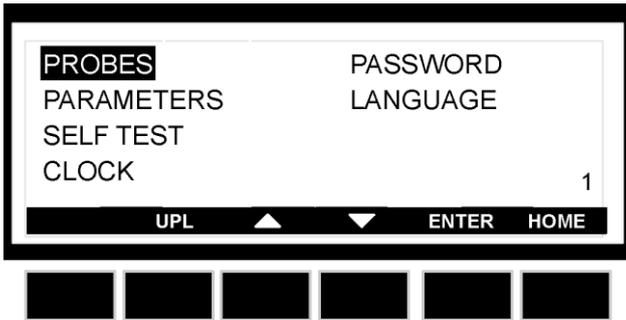
The Service sub-menu are the following:
The Service sub-menu are the following:

```
PROBES
PARAMETERS
SELF TEST
CLOCK
PASSWORD
LANGUAGE
```

Select one of them with the UP or DOWN keys then push the SET key to enter the sub-menu

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

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

1. Turn OFF the instrument.
2. Insert a **pre-programmed** "**HOT-KEY**" **into the 5-PIN receptacle** and then turn the Controller ON.
3. The parameter list of the "**HOT-KEY**" will be automatically downloaded into the Controller memory.
   a) **Hot download completed** will be displayed if everything goes well..
   b) **Hot download error** will be displayed if it was a problem
4. Remove the "**HOT-KEY**".

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

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

1. Program one controller with the front keypad.
2. When the controller is <u>ON</u>, enter SERVICE menu, insert the "**HOT-KEY**" and push **UPL** button;
3. The following messages will be displayed:
   a) **Hot Key upload completed** if everything went well..

b) **Hot Key upload error** will be displayed if it was a problem
4. Remove the "**HOT-KEY**".

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

6.3   HOW TO SET TIME AND DATE

Procedure:
1. Enter the **SERVICE** menu
2. Select **CLOCK** sub-menu
3. Push the **ENTER** key.
The **CLOCK** sub-menu displays time and date, with the following layout:

Date 20 /09 /2011
Time 15:15
Day Tuesday

▲   ▼   SET BACK HOME
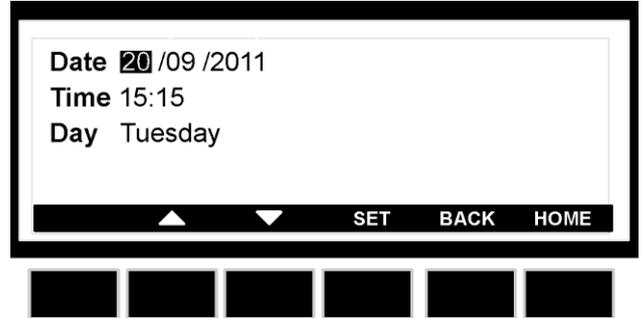
1. Set the day by means of the **UP** and **DOWN** keys.
2. Push the **SET** key, to confirm and pass to the setting of time.
3. Use the same procedure for the date.
4. Then confirm the selection by means of the SET key.

NOTE: to memorize, data, alarms and to enable the automatic energy saving cycle the real time clock has to be set.

6.4   HOW TO SEE THE VALUES OF THE PROBES

Procedure:
1. Enter the **SERVICE** menu
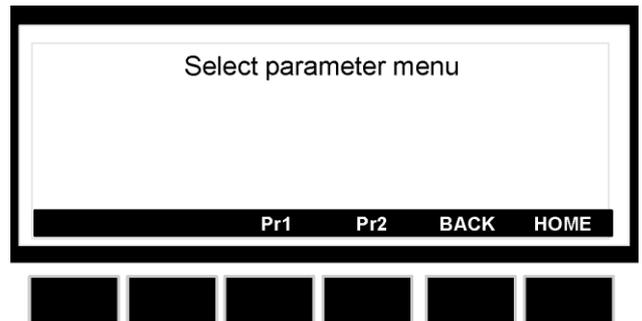2. Select **PROBES** sub-menu
3. Push the **ENTER** key.

The **PROBES** sub-menu displays the probe values, with the following layout:

TL1: -86.5 °C
TL2: -85.2 °C
TR3: -85.0 °C
EVP: -90.0 °C

BACK HOME
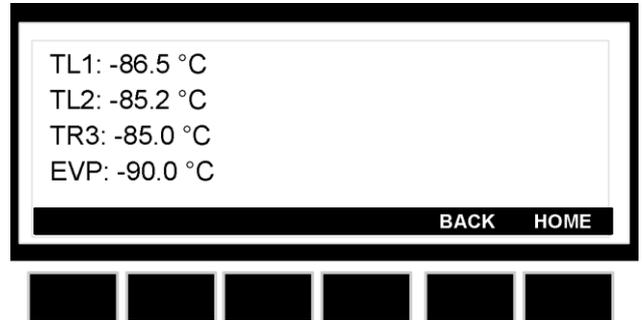
6.5   PROGRAMMING

Procedure:
1. Enter the **SERVICE** menu
2. Select **PARAMETERS** sub-menu
3. Push the **ENTER** key and the programming menu is entered..

Select parameter menu

Pr1   Pr2 BACK HOME

Parameters are collected in two menu:
Pr1: menu of parameters without password. Press the Pr1 key to enter.
**Pr2**: menu of all the parameters. Can be protected by password. If the password is enabled, use the following procedure to insert it.

6.5.1 PASSWORD INTRODUCTION TO ENTER PR2

If the password is enabled, by pushing the **Pr2** key the following interface is displayed:
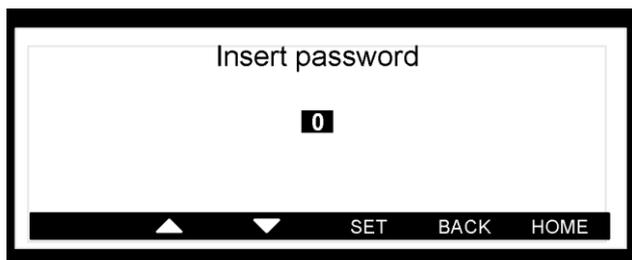
```
Insert password

        0

        ▲      ▼      SET   BACK   HOME
```

1. Push the **SET** key.
2. Use the **UP** and **DOWN** keys to set the password
3. Push the **SET** key to confirm it
4. The following message is displayed

```
Insert password

       12
       OK

ENTER   ▲      ▼      SET   BACK   HOME
```
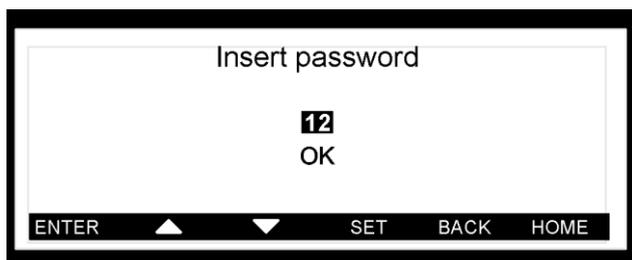
5. Push the **ENTER** key to enter in Pr2 menu

6.5.2 PARAMETERS GROUPING

The parameters are collected in sub-menu according to the following interface.

```
Clock and recording setting
Regulation
Probe input
Display

  ▲▲    ▼▼    ▲      ▼     ENTER  BACK
```

The parameters sub menu are the following:

CLOCK AND RECORDIONG SETTING

REGULATION

PROBE INPUT

DISPLAY

DEFROST

FANS

TEMPERATURE ALARMS FOR REGULATION PROBE TR3

TEMPERATURE ALARMS FOR LOGGING PROBE TL1
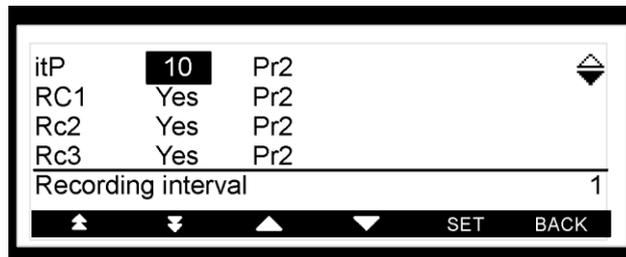
TEMPERATURE ALARMS FOR LOGGING PROBE TL2

ALARM RELAY MANAGEMENT *(– ONLY WITH BATTERY-BACKUP CONNECTED)*

DIGITAL INPUTS

OTHER

NOTE: some sub menu could be absent depending on the model.

Push the **ENTER** key to enter a menu and the parameter with their value will be displayed: see below picture.

```
itP      10      Pr2                    ⬍
RC1      Yes     Pr2
Rc2      Yes     Pr2
Rc3      Yes     Pr2
Recording interval                     1

  ▲▲    ▼▼    ▲      ▼     SET    BACK
```

Where:
- **First column** contains the label of the parameters
- **Second column** contains their value
- **Third column** explain if the parameters are in Pr1 or Pr2 level, this column is present ONLY in Pr2 level
- **Last row contains** the parameter description
- **The number on the down right angle:** is the number of the page
- **The symbol** ⬍ indicates that there are other pages below this one.

6.5.3 TO MODIFY A PARAMETER

Push the **SET** key and use the **UP** and **DOWN** keys to modify the value.
Then push the **SET** key to store the new value and move to the following parameter.

NOTE: the Pr2 or Pr1 message is present only in Pr2 menu.
It is possible to modify the level of each parameter changing Pr2 → Pr1 or vice versa.

NOTE: Pushing the **EXIT** button the initial screen shot is displayed.

7   PASSWORD MENU

In the PASSWORD MENU it's possible to set the PASSWORD and set it the
- Pr2 Parameter level
- SELF TEST function is protected by the password.

The PASSWORD MENU is accessible without password if the PW = 0, otherwise the password is required.

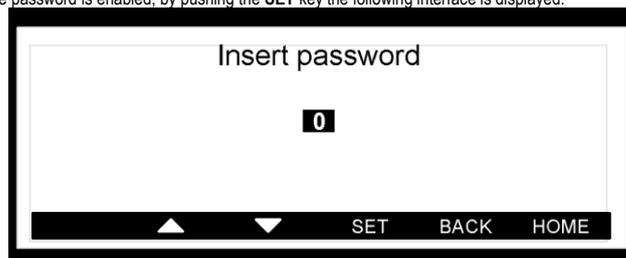**THE DEFAULT PASSWORD IS 12**

7.1 HOW TO ENTER THE PASSWORD MENU

Procedure:
1. Enter the **SERVICE** menu
2. Select **PASSWORD** sub-menu
3. Push the **ENTER** key and the programming menu is entered..
4. If the password is different from 0, the password is required to enter it.
5. See procedure

7.1.1 PASSWORD INTRODUCTION TO ENTER PASSWORD SUB-MENU

If the password is enabled, by pushing the **SET** key the following interface is displayed:

```
Insert password

        0

        ▲      ▼      SET   BACK   HOME
```
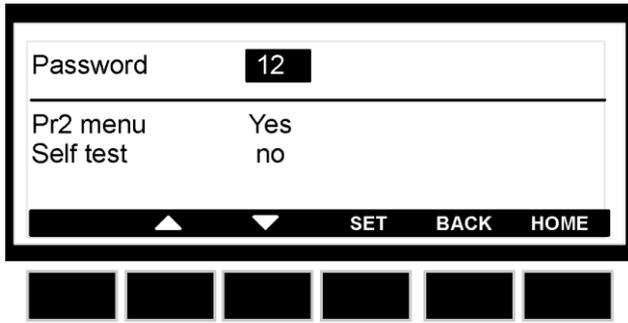
1. Push the **SET** key.
2. Use the **UP** and **DOWN** keys to set the password
3. Push the **SET** key to confirm it
4. The following message is displayed

```
Insert password

       12
       OK

ENTER   ▲      ▼      SET   BACK   HOME
```

5. Push the **ENTER** key to enter in **PASSWORD** sub-menu

7.2 PASSWORD MENU STRUCTURE

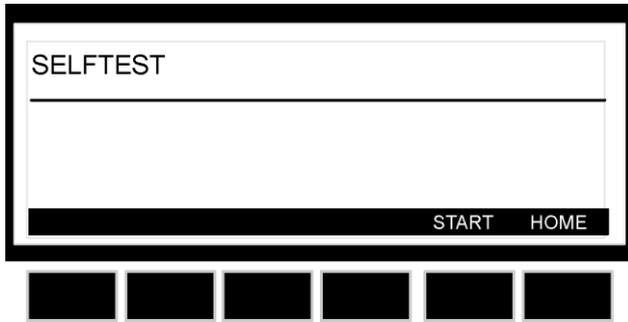| Password	12
Pr2 menu	Yes
Self test	no

▲ ▼ SET BACK HOME

In the first row it's possible to set the Password
In the other 2 rows it's possible to protect the Pr2 and Self test menu with password.
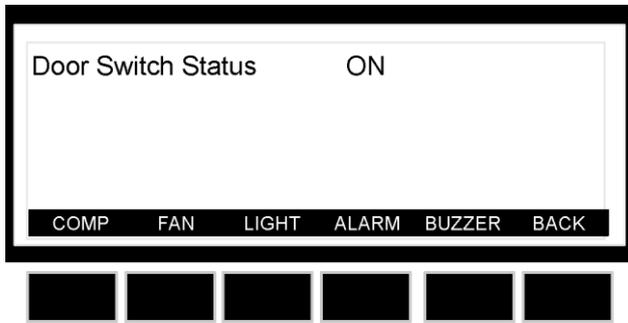
8   SELF TEST MENU

8.1 TO ENTER THE SELF TEST MENU

Procedure:
1. Enter the **SERVICE** menu
2. Select **SEFL TEST** sub-menu
3. Push the **ENTER** key,
4. If PASSWORD is required, insert it as for the above description,
5. OTHERWISE the SELF TEST menu is entered directly.

8.2 SELF TEST PROCEDURE

SELFTEST

START HOME

1. Push the **START** key.

Door Switch Status	ON

COMP FAN LIGHT ALARM BUZZER BACK

2. Then push the keys to activate the correspondent loads:
    1. Compressor
    2. Light
    3. Fan
    4. Alarm
    5. Buzzer
3. While the display shows the status of the digital input (ON or OFF)
4. Wait 30s or push the **BACK** key to come back to the previous screen.

9   LANGUAGE MENU

Procedure:
1. Enter the **SERVICE** menu
2. Select **LANGUAGE** sub-menu
3. Push the **ENTER** key and the LANGUAGE menu is entered.

SELECT LANGUAGE
ENGLISH

▲ ▼ SET BACK HOME

4. Push the **SET** key and then use the **UP** and **DOWN** keys to select the language and then the SET key to confirm it.

10   DATA MENU

The data menu is immediately accessible by the main screen, by pushing the **DATA** key.

The data menu contains 3 submenu:
1. **LOG**: contains data recorded by the controller
2. **GRAPH**: it contains the graphs of the temperatures in the last 24h, with a recording interval of 15min.
    NOTE: The graph is erased every time the controller is switched off.
3. **EXPORT**: to export the data to an USB pen drive.

LOG
EXPORT
GRAPH

▲ ▼ ENTER HOME

10.1 DATA LOG SELECTION

LOG: contains data recorded by the controller.
Procedure:
1. Enter the **DATA** menu
2. Select **LOG** sub-menu
3. Push the **ENTER** key and the LOG menu is entered.
4. By **UP and DOWN** keys chose the data interval to display
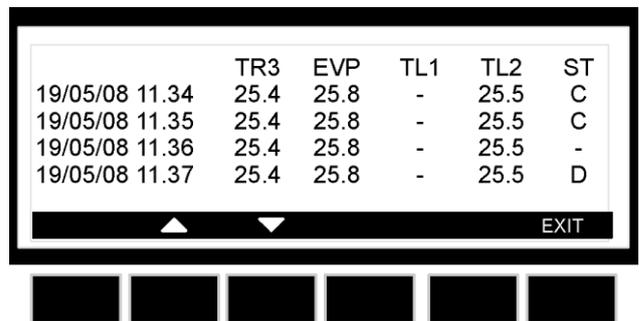5. Push the **ENTER** key to display the selected data.

RECORD	1	
INTERVAL FROM	18:38	09/03/12
INTERVAL TO	10:27	12/03/12

◉ ▲ ▼ ENTER BACK HOME
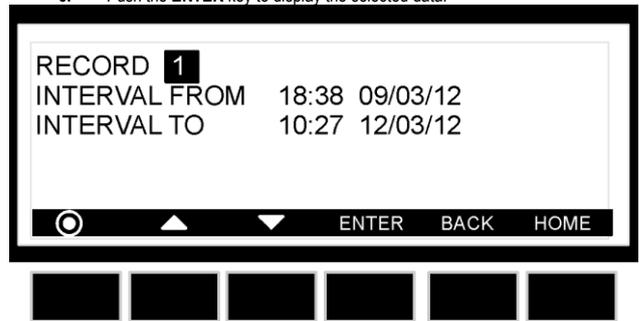
NOTE

THE ◉ KEY: IS USED TO STOP AND START LOGGING WITH rCb = YES. Push it for 3s to enable or disable the logging.

10.1.1   DATA DISPLAY

Logged data will have this layout

	TR3	EVP	TL1	TL2	ST
19/05/08 11.34	25.4	25.8	-	25.5	C
19/05/08 11.35	25.4	25.8	-	25.5	C
19/05/08 11.36	25.4	25.8	-	25.5	-
19/05/08 11.37	25.4	25.8	-	25.5	D

▲ ▼ EXIT

Where
TR3, EVP, TL1, TL2, = Value of probe 1, 2, 3, 4 if present and operating.
With probe failure or absence:" - " symbol is displayed
ST: status of the controller/load
- - : operating, without any load activated;
- **D** = defrost running
- **C**: compressor working

10.2 EXPORT MENU - HOW TO EXPORT THE LOGGED DATA OR ALARM TO AN USB PEN DRIVE

1. Insert an **APPROVED USB** pen drive supplied by Vestfrost.
2. Push the "**DATA**" key to enter the Data menu.
3. Select the **EXPORT** row.
4. Push the **ENTER** key

```
EXPORT
Insert USB and press Alarm or Data



          ALARM   ENTER   BACK   HOME
```

5. Select **ALARM** or **DATA,** the controller starts sending data to the pen drive, when the export is finished the message: **EXPORT - Copy completed** is displayed.

**IMPORTANT**: during the download don't remove the USB pen drive: this action could damage the data files and USB pen drive itself.

**WARNING**: leave the USB pen inserted only for the time necessary to export data then remove.

**WARNING**: if a not compatible USB pen drive is used it can cause a reset of the controller

10.3 HOW TO SEE THE GRAPH OF THE TEMPERATURES

The GRAPH menu contains graph of the recorded temperature.
A GRAPH is made by about the last 100 recorded temperatures, the interval time is given by the itP parameter.
A graph is erased when the controller is switched off.

Procedure:
1. Enter the **DATA** menu
2. Select **GRAPH** sub-menu
3. Push the **ENTER** key and the **GRAPH** menu is entered.
4. By **UP and DOWN** keys chose the probe that has to be displayed.
5. Push the **HOME** key to back to the MAIN screen.
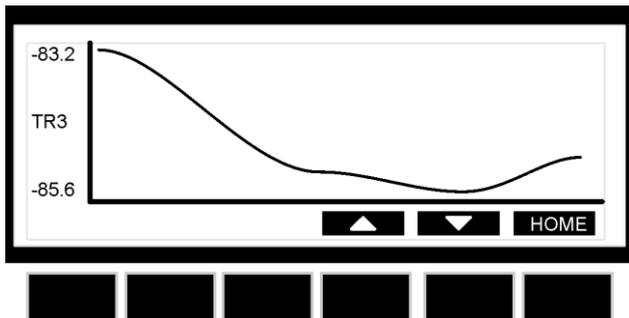
11   ALARMS

The controller memorizes the last 100 alarms happened, together with their start and finish time. To see the alarms follow the following procedure.
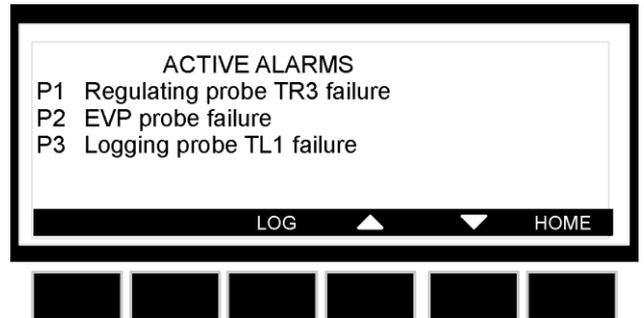
11.1 MENU ACTIVE ALARMS
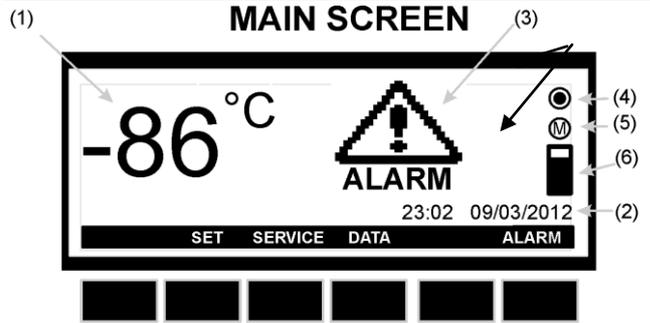
If the alarm icon is **flashing** on the main display, an alarm is occurring.
If the alarm icon is **displayed not flashing** on the main display, an alarm is occurred and recovered.

Push the **ALARM** key to enter the alarm menu.
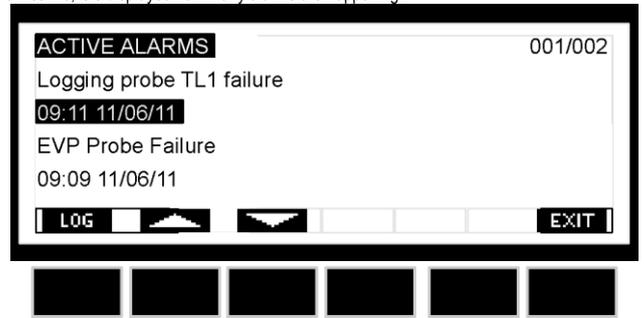
11.2 ALARM SCREEN WITH ACTIVE ALARMS

```
ACTIVE ALARMS
P1   Regulating probe TR3 failure
P2   EVP probe failure
P3   Logging probe TL1 failure


          LOG    ▲      ▼    HOME
```

The alarm menu displays the active alarm with the following layout:
First column: alarm code
Second column= alarm description

Push the **LOG button** to enter the **ACTIVE ALARM LOG.**

11.3 ACTIVE ALARM LOG MENU
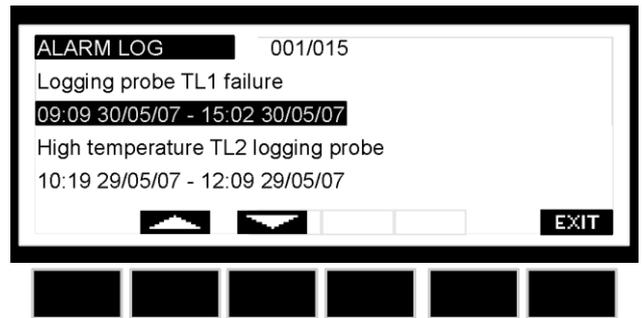
This menu contains all the information concerning the active alarms.
In the first line, it is displayed how many alarms are happening.

```
ACTIVE ALARMS                    001/002
Logging probe TL1 failure
09:11 11/06/11
EVP Probe Failure
09:09 11/06/11
  LOG      ▲        ▼            EXIT
```

It's possible to move through the alarms by the UP and DOWN keys.

11.4 ALARM LOG MENU

Push the **LOG button** to enter the **ALARM LOG.**

```
ALARM LOG       001/015
Logging probe TL1 failure
09:09 30/05/07 - 15:02 30/05/07
High temperature TL2 logging probe
10:19 29/05/07 - 12:09 29/05/07
        ▲       ▼            EXIT
```

This menu contains all the memorised alarms. For each alarm the starting time and date and the finish time and date are recorded.

12 CONTROLLING LOADS

12.1 THE COMPRESSOR

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

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

12.2 DEFROST

Defrost is performed through a simple stop of the compressor.

Parameter "**IdF**" controls the interval between defrost cycles, while its length depends on the temperature detected by the evaporator probe **P2**, when it reaches the **dtE** value, the defrost is stopped. In any case the defrost is stopped after the "**MdF**" time

If the evaporator probe is not present (P2P = n), the defrost length is defined by the parameter MdF.

12.3 CONTROL OF EVAPORATOR FANS

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

FnC = C_n fans will switch ON and OFF with the compressor and **not run** during defrost;

FnC = o_n fans will run even if the compressor is off, and not run during defrost;

After defrost, there is a timed fan delay allowing for drip time, set by means of the **Fnd** parameter.

FnC = C_Y fans will switch ON and OFF with the compressor and **run** during defrost;

FnC = o_Y fans will run continuously also during defrost.

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

12.3.1 TIMED ACTIVATION OF THE FANS WHEN THE COMPRESSOR IS OFF.

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

12.4 LIGHT

The light status depends on the status of the door switch.

13 SPECIAL FUNCTIONS

DEVICE OPERATIONS IN CASE OF POWER FAILURE, IF A BACK UP BATTERY IS CONNECTED

13.1.1 POWER FAILURE WITHOUT TEMPERATURE ALARM

If the controller is connected to the battery, during a power failure:
1. The alarm LED icon will be lit.
2. The alarm relay will be activated according to the **Aro** parameter.
3. Every 5s the buzzer will ring 3 times during 1s.

The buzzer will be muted after pressing any button. It will restart ringing after the **bon** time if the power failure keeps on lasting. After pushing **SET** button, the controller will display the temperature for 5s.

13.1.2 POWER FAILURE AND TEMPERATURE ALARMS

If a temperature alarm happens during a power failure:
5. The alarm LED icon will be lit.
6. The buzzer will ring continuously.
7. The displays will shows: real temperature for 1s, alarm label for 1s and remains off for 5s.

The buzzer will be muted for the **bon** time after pressing any button.

14 PARAMETER LIST

CLOCK AND RECORDING SETTING

itP Recording interval (1÷255min)

rC1 First probe recording enable
y = recording enabled; **n** = recording disabled

rC2 Second probe recording enable
y = recording enabled; **n** = recording disabled

rC3 Third probe recording enable
y = recording enabled; **n** = recording disabled

rC4 Fourth probe recording enable
y = recording enabled; **n** = recording disabled

rCb Start recording SET key enabling
y = by the SET key is possible to start/stop recording.
n = recording is always enabled

Hur Hour (1÷24h)
Min Minutes (0÷60min)
dAy Day (1÷31)
Mon Month (1÷12)
yEA Year (0÷99)
EU Date format
  EU = European: dd/mm/yyyy
  US = USA: mm/dd/yyyy

rSd Data erase (no÷yes:)
To erase the logged data, set **rSd = YES** and then switch the controller off and on. To cancel the data a power down and up it's necessary.

rSA Alarms erase (no÷y)
To erase the logged alarm, set **rSA = YES** and then switch the controller off and on. To cancel the alarm a power down and up it's necessary.

REGULATION

SET Set point temperature: (LS÷US) it's the temperature the cabinets has to maintain.

Hy Differential: (0.1 to 25.5°C; 1 to 45°F) differential for set point, always positive. Compressor Cut IN is Set Point plus Differential (**HY**). Compressor Cut OUT is when the temperature reaches the set point.

LS Minimum set point limit: (-55.0°C to SET; -67°F to SET) Sets the minimum acceptable value for the set point.

US Maximum set point limit: (SET to 150°C; SET to 302°F) Set the maximum acceptable value for set point.

PROBE INPUTS

ot Regulation probe calibration (term. 1-2): (-12.0 to 12.0°C; -21 to 21°F) allows to adjust possible offset of the thermostat probe.

P2P Evaporator probe presence (term. 2-3): **n** = not present: the defrost stops only by time; **y =** present: the defrost stops by temperature and time.

oE Evaporator probe calibration: (-12.0 to 12.0°C; -21 to 21°F) allows to adjust possible offsets of the evaporator probe.

P3P Third probe presence (term. 4-5): **n**= not present; **y**= present.

o3 Third probe calibration: (-12.0 to 12.0°C; -21 to 21°F) allows to adjust possible offsets of the third probe.

P4P Fourth probe presence (term. 5-6): **n**= not present; **y**= present.

o4 Fourth probe calibration: (-12.0 to 12.0°C; -21 to 21°F) allows to adjust possible offsets of the fourth probe.

odS Outputs activation delay at start up: (0 to 255 min) this function is enabled at the initial start up of the instrument and inhibits any output activation for the period of time set in the parameter. (AUX and Light can work)

AC Anti-short cycle delay: (0 to 30 min) interval between the compressor stop and the following restart.

Con Compressor ON time with faulty probe: (0 to 255 min) time during which the compressor is active in case of faulty thermostat probe. With **Con=0** compressor is always OFF.

COF Compressor OFF time with faulty probe: (0 to 255 min) time during which the compressor is off in case of faulty thermostat probe. With **CoF=0** compressor is always active.

DISPLAY

CF Temperature measurement unit: °C = Celsius; °F = Fahrenheit. When the measurement unit is changed the SET point and the values of the regulation parameters have to be modified

rES Resolution (for °C): (in = 1°C; de = 0,1°C) allows decimal point display.
  dE = 0.1°C; **in** = 1 °C.

rEd Remote display: it select which probe is displayed by the Visograph (P1, P2, P3, P4)

dLy Display delay: (0.0 to 20min00sec; res. 10 sec) when the temperature changes, the display is updated of 1°C or 1°F after this time.

DEFROST

dtE Defrost termination temperature: (-55.0 to 150.0°C; -67 to 302°F) (Enabled only when the evaporator probe is present) sets the temperature measured by the evaporator probe which causes the end of defrost.

IdF Interval between defrosts: (1 to 120 h) determines the time interval between two defrost cycles.

MdF (Maximum) duration of defrost: (0 to 255 min) When **P2P = n**, no evaporator probe, it sets the defrost duration, when **P2P = y**, defrost end based on temperature, it sets the maximum length for defrost.

dFd Display during defrost:
  rt = real temperature;
  it = temperature reading at the defrost start;
  Set = set point;
  dEF = "dEF" label;

dAd Defrost display time out: (0 to 255 min) sets the maximum time between the end of defrost and the restarting of the real room temperature display.

FANS

FnC Fan operating mode:
  C-n = running with the compressor, OFF during the defrost;
  C-y = running with the compressor, ON during the defrost;
  O-n = continuous mode, OFF during the defrost;
  O-y = continuous mode, ON during the defrost;

Fnd Fan delay after defrost: (0 to 255 min) this is time interval between the defrost end and evaporator fans start.

FSt Fan stop temperature: (-55 to 150°C; -67 to 302°F) setting of temperature, detected by evaporator probe, above which the fan is always OFF.

Fon Fan ON time: (0 to 15 min) with **FnC=C_n** or **C_y**, (fan activated in parallel with compressor). it sets the evaporator fan ON cycling time when the compressor is off. With **Fon=0** and **FoF≠0** the fan are always off, with **Fon=0** and **FoF=0** the fan are always off.

FoF Fan OFF time: (0 to 15 min) with **FnC=C_n** or **C_y**, (fan activated in parallel with compressor). It sets the evaporator fan off cycling time when the compressor is off. With **Fon=0** and **FoF≠0** the fan are always off, with **Fon=0** and **FoF=0** the fan are always off.

TEMPERATURE ALARMS FOR REGULATION PROBE TR3

A1C Temperature alarm configuration:
  rE = High and Low alarms related to Set Point
  Ab = High and low alarms related to the absolute temperature.

A1U High temperature alarm for P1:
  A1C = rE, 0 to 50°C or 0 to 90°F.
  A1C = Ab, A1L to 150°C or A1L to 302°F.
  When this temperature is reached and after the **A1d** delay time the **HA1** alarm is enabled.

A1L Low temperature alarm for P1:
  A1C = rE, 0 to 50°C or 0 to 90°F;
  A1C = Ab, -55°C to A1U or -67°F to A1U.
  When this temperature is reached and after the **A1d** delay time, the **LA1** alarm is enabled.

A1H Differential for temperature alarm recovery: (0.1 to 25.5°C; 1 to 45°F) differential for temperature alarm recovery..

A1d Temperature alarm delay: (0 to 255 min) time interval between the detection of an alarm condition and the corresponding alarm signalling.

d1o Delay of temperature alarm at start-up: (0.0 to 23h50min, res. 10 min) time interval between the detection of the temperature alarm condition after the instrument power on and the alarm signalling.

TEMPERATURE ALARMS FOR LOGGING PROBE TL1

A3U High temperature alarm for P3: (A3L to 150°C or A3L to 302°F)
When this temperature is reached and after the **ALd** delay time the **HA3** alarm is enabled.
A3L Low temperature alarm for P3: (-55°C to A3U or -67°F to A3U)
When this temperature is reached and after the **A3d** delay time, the **LA3** alarm is enabled.
A3H Differential for temperature alarm 3 recovery: (0.1 to 25.5°C; 1 to 45°F) differential for temperature alarm recovery..
A3d Temperature alarm 3 delay: (0 to 255 min) time interval between the detection of an alarm condition and the corresponding alarm signalling.
d3o Delay of temperature alarm 3 at start-up: (0.0 to 23h50min, res. 10 min) time interval between the detection of the temperature alarm condition after the instrument power on and the alarm signalling.

TEMPERATURE ALARMS FOR LOGGING PROBE TL2

A4U High temperature alarm for P4: (A4L to 150°C or A4L to 302°F)
When this temperature is reached and after the **ALd** delay time the **HA3** alarm is enabled.
A4L Low temperature alarm for P4: (-55°C to A4U or -67°F to A4U)
When this temperature is reached and after the **A3d** delay time, the **LA3** alarm is enabled.
A4H Differential for temperature alarm 4 recovery: (0.1 to 25.5°C; 1 to 45°F) differential for temperature alarm recovery..
A4d Temperature alarm 4 delay: (0 to 255 min) time interval between the detection of an alarm condition and the corresponding alarm signalling.
d4o Delay of temperature alarm 4 at start-up: (0.0 to 23h50min, res. 10 min) time interval between the detection of the temperature alarm condition after the instrument power on and the alarm signalling.

ALARM RELAY MANAGEMENT – ONLY WITH BATTERY-BACKUP CONNECTED

tbA Alarm relay disabling (n, Y)
  n = silencing disabled; alarm relay stays on till alarm condition lasts.
  Y = silencing enabled; alarm relay is switched OFF by pressing a key during an alarm.
Aro Alarm relay activation with power failure: (n, Y)
  n = the alarm relay is never activated during a power failure.
  Y = the alarm relay is activated during a power failure.
ALF Alarm relay activation for all the alarms: (n, Y)
  n = the alarm relay is activated only in case of a temperature alarm or regulation probe failure.
  Y = the alarm relay is activated for all the alarms.
bon Time of buzzer restart after muting, in case of alarm duration: (0÷30min) when 0 the buzzer is always off after muting.
AoP Alarm relay polarity: it set if the alarm relay is open or closed when an alarm happens. **CL**= terminals closed during an alarm; **oP** = terminals open during an alarm

DIGITAL INPUT

i1P Digital input polarity: **oP** = the digital input is activated by opening the contact; **CL** = the digital input is activated by closing the contact.
i1F Digital input configuration: **EAL** = external alarm: "EA" message is displayed; **bAL** = serious alarm "CA" message is displaye; **dor** = door switch function;
did Digital input delay: (0 to 255 min)
  With i1F= EAL or i1F = bAL digital input alarm delay: delay between the detection of the external alarm condition and its signalling.
  With i1F= dor: door open signalling delay.
odc Compressor and fan status when open door: no = normal; **FAn** = Fan OFF; **CPr** = Compressor OFF; **F_C** = Compressor and fan OFF.
rrd Outputs restart after doA alarm: no = outputs not affected by the doA alarm; **YES** = outputs restart with the doA alarm.
HES Temperature increase during the Energy Saving cycle : (-30,0°C÷30,0°C/-22÷86°F) it sets the increasing value of the set point during the Energy Saving cycle.

OTHER

Adr RS485 serial address: (1 to 247) identifies the instrument address when connected to a ModBUS compatible monitoring system.
PbC Type of probe: it allows to set the kind of probe used by the instrument. **Pt1** = Pt1000 probe, **ntC** = NTC probe.

15   DIGITAL INPUT

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

15.1 DOOR SWITCH INPUT (I1F = DOR)

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

15.2 GENERIC ALARM (I1F = EAL)

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

15.3 SERIOUS ALARM MODE (I1F = BAL)

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

15.4 DIGITAL INPUTS POLARITY

The digital input polarity depends on the **i1P** parameter:
i1P=CL: the input is activated by closing the contact.

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

16   INSTALLATION AND MOUNTING

The controller **XW737K** shall be mounted in a din rail
It must be connected to the keyboard by means of a two-wire cable (∅ 1mm). The temperature range allowed for correct operation is 0 to 60°C. Avoid places subject to strong vibrations, corrosive gases, excessive dirt or humidity. The same recommendations apply to probes. Let the air circulate by the cooling holes.

16.1 XW737K – 8 DIN CASE - DIMENSIONS
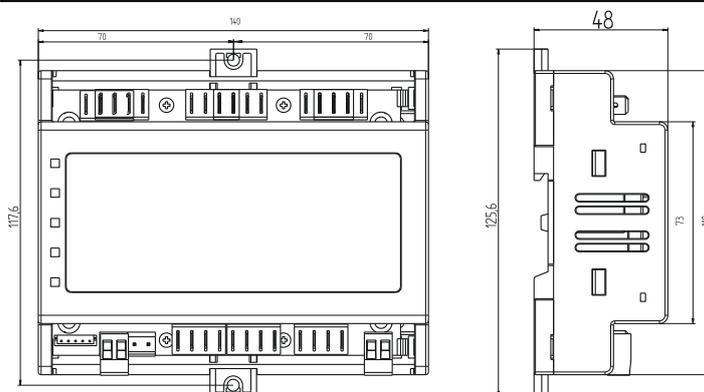
17   ELECTRICAL CONNECTIONS

XW737K is provided with disconnect-able screw terminal blocks for probes digital input and keyboard. To connect, power supply and relays, **XW737K** is provided with Faston connections (6.3mm). Heat-resistant cables have to be used.
Before connecting cables make sure the power supply complies with the instrument's requirements. Separate the probe and digital input cables from the power supply cables, from the outputs and the power connections. Do not exceed the maximum current allowed on each relay, in case of heavier loads use a suitable external relay.
NOTE: the maximum current allowed for all the loads is 20A.

17.1 PROBE CONNECTIONS

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

18   TTL/RS485 SERIAL LINE

The TTL connector allows, by means of the external module TTL/RS485 (**XJ485CX**), to connect the unit to a network line **ModBUS-RTU** compatible as the **d**IXEL monitoring system XJ500 (Version 3.0). The same TTL connector is used to upload and download the parameter list of the "**HOT-KEY**". The instruments can be ordered wit the serial output RS485 (Optional).

19   ALARM SIGNALS

Message	Cause	Outputs
"P1"	Regulating probe TR3 failure	Alarm output ON; Compressor output according to parameters **Con** and **CoF**.
"P2"	EVP Probe Failure	Alarm output ON; Other outputs unchanged
"P3"	Logging probe TL1 failure	Alarm output ON; Other outputs unchanged
"P4"	Logging probe TL2 failure	Alarm output ON; Other outputs unchanged
"HA1"	TR3 High Alarm	Alarm output ON; Other outputs unchanged
"LA1"	TR3 Low Alarm	Alarm output ON; Other outputs unchanged
"HA3"	High temperature alarm probe TL1	Alarm output ON; Other outputs unchanged
"LA3"	Low temperature alarm probe TL1	Alarm output ON; Other outputs unchanged
"HA4"	High temperature alarm probe TL2	Alarm output ON; Other outputs unchanged
"LA4"	Low temperature alarm probe TL2	Alarm output ON; Other outputs unchanged
"dA"	Door Open Alarm	Compressor and fans depend on "**rrd**"
"EA"	External Alarm	Output unchanged.
"CA"	Serious Alarm	All outputs OFF.

The alarm message is displayed until the alarm condition is recovery.
All the alarm messages are showed alternating with the room temperature except for the "P1" which is flashing.

19.1 SILENCING BUZZER

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

19.2 "EE" ALARM

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

19.3 ALARM RECOVERY

Probe alarms: "**P1**" (probe1 faulty), "**P2**", "**P3**" and "**P4**"; they automatically stop 10 sec after the probe restarts normal operation. Check connections before replacing the probe.
Temperature alarms "**HA1**", "**LA1**", "**HA3**", "**LA3**", "**HA4**" and "**LA4**" automatically stop as soon as the temperature returns to normal values.
Alarms "**EA**" and "**CA**" (with **i1F=bAL**) recover as soon as the digital input is disabled.

20 CONNECTIONS

20.1 XW737K
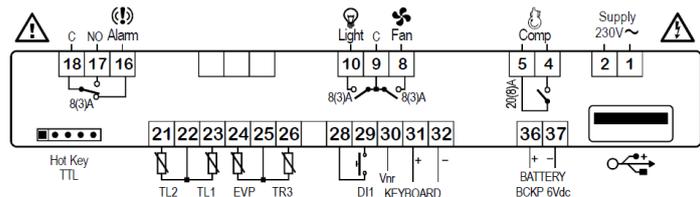
21 DEFAULT SETTING VALUES

Label	Name	Range	Value	Level
Clock and recording setting				
itP	Recording interval	1-255 min	5	Pr1
rC1	First probe recording enable	Yes / No	Yes	Pr2
rC2	Second probe recording enable	Yes / No	No	Pr2
rC3	Third probe recording enable	Yes / No	NO	Pr2
rC4	Forth probe recording enable	Yes / No	No	Pr2
rCb	Start recording SET key enabling	Yes / No	Yes	Pr1
EU	Date formate	EU/US	EU	Pr1
rSd	Data erase	Yes / No	Yes	Pr2
rSA	Alarm erase	Yes / No	Yes	Pr2
Regulation				
Set	Set point	Between LS og US	-86	Pr1
Hy	Hysterese	0,1-25,5 °C / 1-45 °F	1	Pr2
LS	Min setting	-100 - 25	-95	Pr2
US	Max setting	+25 - +150	-55	Pr2
Probe input				
ot	Offset på TR3	12°C to -12°C	-4	Pr2
P2P	Evap. sensor on / off	Yes / No	no	Pr2
oE	Offset på evap. Sensor	12°C to -12°C	0	Pr2
P3P	TL1 on / off	Yes / No	no	Pr2
o3	Offset på TL1	12°C to -12°C	0	Pr2
P4P	TL2 on / off	Yes / No	no	Pr2
O4	Offset på TL2	12°C to -12°C	0	Pr2
odS	Outputs activation delay at start up	0-255 min	0	Pr2
AC	Forced stop time after compressor run	0-30 min	5	Pr2
Con	Run time with error on temperature sensor	0-255 min	60	Pr2
COF	Stop time with error on temperature sensor	0-255 min	5	Pr2
Display				
CF	Temperature measurement unit	°C / F	°C	Pr1
rES	Resolution (in=1°C, dE=0,1°C)	in / dE	in	Pr2
rEd	Remote display	TR3/TL1/TL2/ Evap.	TR3	Pr2
dLy	Display delay	0-22min	0	Pr2
Defrost				
dtE	Defrost terminate temperature	-55 - +150 °C	4	Pr2
IdF	Time between defrost	1-120 hour	1	Pr2
MdF	Max defrost time	0-255 min	0	Pr2
dFd	Displaying during defrost (rt=real temperature, it= intial temperature, Set=set point, dEF=dEF label)	rt/it/Set/dEF	rt	Pr2
dAd	Max dispaly delay after defrost	0-255 min	0	Pr2
Fans				
Fnc	Fans operating mode (C-n=run comp. Off defrost, C-y=run comp. On defrost, O-n=continous.Off defrost, O-y=continous. On defrost)	C-n/C-y/O-n/O-y	O-y	Pr2
Fnd	Fan delay after defrost end	0-255 min	0	Pr2
Fst	Fan stop temperature Fan stop above the spcified temperature	-55 - +150 °C	0	Pr2
Fon	Fan ON time. Only function if FNC is C-n or C-y	0-15 min	0	Pr2
FoF	Fan OFF time. Only function if FNC is C-n or C-y	0-15 min	0	Pr2
Temperature alarms for regulation probe TR3				
A1C	Temperature alarm configuration. Ab=Absolut - rE=alarm + set	Ab / rE	Ab	Pr2
A1U	Alarm for max temperature	°C	-75	Pr2
A1L	Alarm for min temperature	°C	-100	Pr2
A1H	Differential for temperature alarm recovery	0,1 - 25,5°C	1	Pr2
A1d	Temperature alarm delay	0-255 min	0	Pr2
d1o	Cancelling time of temperature alarm at start up	0-23h 50min	0.30	Pr2
Temperature alarms for logging temperature P3				
A3U	Alarm for max temperature	°C	-75	Pr2
A3L	Alarm for min temperature	°C	-100	Pr2
A3H	Differential for temperature alarm recovery	0,1 - 25,5°C	1	Pr2
A3d	Temperature alarm delay	0-255 min	0	Pr2
d3o	Cancelling time of temperature alarm at start up	0-23h 50min	0.30	Pr2
Temperature alarms for logging temperature P4				
A4U	Alarm for max temperature	°C	-75	Pr2
A4L	Alarm for min temperature	°C	-100	Pr2
A4H	Differential for temperature alarm recovery	0,1 - 25,5°C	1	Pr2
A4d	Temperature alarm delay	0-255 min	0	Pr2
d4o	Cancelling time of temperature alarm at start up	0-23h 50min	0.30	Pr2
Alarm relay management				
tbA	Alarm relay disabling	Yes / No	Yes	Pr2
Aro	Alarm relay activation with power failure	Yes / No	Yes	Pr2
ALF	Alarm relay activation for all the alarms	Yes / No	Yes	Pr2
bon	Time of buzzer restart after muting	0-30 min	30	Pr1
AoP	Alarm relay polarity	CL/OP	CL	Pr2
Digital inputs				
i1P	Digital input polarity. Activated when opening or when closing	oP / CL	oP	Pr2
i1F	Digital input configuration (EAL=ext. Alarm, bAL=serious alarm, dor=door switch)	EAL/bAL/dor	dor	Pr2
did	Digital input delay. i1F=dor: door opening signalling delay	0-255 min	1	Pr2
odc	Compressor status when door is open (No= normal, FAn=Fan off, CPr=Compr. Off, F_C=Fan and compr. off)	no/FAn/CPr/F_C	No	Pr2
rrd	Outputs restart after doA alarm	Yes / no	no	Pr2
HES	Temperature increase during energi saving cycle	-30 - +30°C	0	Pr2
Other				
Adr	Serial address	1-247	1	Pr1
PbC	Probe type	Pt1 / NtC	Pt1	Pr2