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User Instructions

Pro* Frost

 **Elcold**

Low Temperature Freezers Model PRO/XLT

SAFETY INFORMATION



The PRO/XLT freezers contains environmentally friendly but flammable refrigerants. It means danger of explosion if for any reason the refrigerants are allowed to escape from the system. The refrigeration system must never be accessed by unauthorized personal. When transporting and installing the unit, ensure that no part of the tubing system is damaged. If the tubing is damaged and leak occurs, avoid any ignition sources and naked flames near the unit, and ventilate the room immediately.

In order to avoid formation of flammable gas/air mixtures in case of a leak from the refrigeration system, the room where the unit is placed must have a volume of minimum 40 m³ corresponding to a surface area of approx. 4 m² in a room with normal ceiling height.

WARNING!!!

The ventilation openings must never be covered or blocked.

Never use a steam or water cleaning device during cleaning or defrosting in order to avoid short circuits in the electrical system.

Do not place any electrical devices in the freezer.

Products containing flammable gasses and explosives must not be stored in the freezer.

USER INSTRUCTIONS

Congratulations on your new low temperature freezer. We trust that it will serve you for many years to come. In order to gain optimum benefit from your freezer, please read the following instructions thoroughly and act accordingly. The low-temperature freezers are used for freezing and long-term storing of food products, medical preparations (vaccines, blood plasma, etc.) and other biological products.

1. Environmental protection and disposal.

The packaging is designed to protect the appliance and its components during transportation, and it is made of recyclable materials.

- Please return the packaging to an official collection point for recycling.
- Old appliances contain reusable materials and should not be disposed of together with household refuse.
- Remove the spring-action hinges from the appliance, in order to prevent children from being entrapped in the appliance.
- Ensure that no part of the refrigeration tubing is damaged as the refrigerant in the appliance risks escaping to the environment.
- Information about refrigerant type and amount will be found on the type plate on the rear of the appliance (Fig. 1).

2. Safety instructions.

- In order to prevent injuries and or damage to the appliance, it should be unpacked and set up by min. two people.
- If upon unpacking the appliance is found damaged, do not connect to the mains, but contact the supplier.
- **Interference with or repair to the appliance should only be carried out by authorized personnel, in order to avoid any injuries. (contact the supplier for further information).**
- Never put naked flames or other ignition sources inside the appliance.

- Never touch the freezers interior or products in the freezer when the freezer is operating. Use gloves or alike in order to avoid injuries (frost-bite).
- Keep the key to the appliance away from the appliance and out of the reach of children.

3. IMPORTANT NOTE !!!

- **The type of refrigerant in the -60°C freezers, is a mixture of different flammable hydrocarbons. These freezers are designed and tested according to the EN 378 standard, under clause A3 room and L3 refrigerants, this means that the volume of the room where the freezers is placed must have a volume of minimum 40m³ corresponding to approx. 4m² in a room with a normal floor height.**

4. Connection to the mains.

- For safety reasons the appliance must be earthed. If you are in any doubt, please contact an authorized electrician.
- The appliance should be left for 5 hours before it is connected to the mains. If the appliance is connected before that, there is a risk of damaging the compressor.
- If for any reason the appliance is disconnected from the mains, please wait 10 minutes before re-connecting. The electronic starting device needs this time to cool down, before a safe re-start can be made.

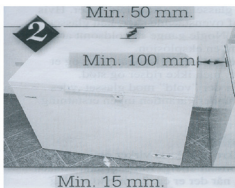
5. Before use.

- Before use, the interior of the appliance should be cleaned with a mild soap solution, and wiped off with a dry clean cloth. Never use any kind of solvent or other chemicals.



6. Setting up the freezer.

The freezer should not be placed where it might be splashed with water, in extreme high humidity or in direct sunlight. Any of these factors may lead to a reduction in performance and shorten the life span of the components. The freezer should be placed on a horizontal level, and should not be placed close to a heating appliance or heating tubes. Allow a minimum of 50mm (2") clearance on the side and the back. The side with the ventilation grill should have a clearance of at least 100 mm (4") in order to allow the heat from the compressor motor to dissipate. Underneath the appliance there should be a gap of 15 mm approx. (1/2"). On a soft surface, e.g. carpet, it may be necessary to ensure the correct distance by means of spacers.



7. Electrical supply.

The electrical supply should always be in accordance with the rating plate on the back of the freezer. The supply must always be in accordance with the law and regulations regarding electrical safety, if any doubts contact your supplier.

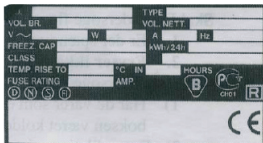


Fig. 1

8. Starting Up.

In case the compressor does not start when the freezer has been plugged in, the electrical supply may not be in order. Check if

there is an electricity supply to the plug or if the fuse is blown. If not please go to trouble shooting page 6. 18.

9. Operating the freezer

The empty freezer should be switched on for at least 5-6 hours prior to loading of the freezer. The freezer should not be loaded above the inside walls which is also the load line limit.

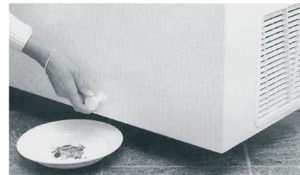
Please note: After the lid has been opened, there will be a vacuum created inside the freezer due to the low temperatures. Wait a few minutes before trying to reopen the lid otherwise the handle could be damaged.

10. Defrosting.

In order for the freezer to work to its maximum efficiency the cabinet should be defrosted when a approx. 2mm thick ice layer has formed inside the cabinet.

The ice layer is easily removed with a plastic or wooden scraper. **Never use a sharp metal object which might will cause damage to the inner liner.**

The defrosting frequency is determined mainly by two factors the usage pattern (number of lid openings) and the relative humidity. Excess water can be drained out by using the drain water outlet on the front of the freezer.



11. Cleaning.

Cleaning should be done when needed. When used in a dirty environment it might be necessary to remove the compressor compartment grill, and clean the compressor compartment eventually with a vacuum cleaner.

If the cleaning process is neglected there is a risk that the performance of the freezer will be effected, and even damage to the

compressor could occur due to overheating.



12. Storage.

If the freezer is stored for a period of time, the lid should be kept open for free circulation of air inside the cabinet in order to avoid corrosion of the inner liner.

13. Temperature control PRO/XLT- freezers.

The temperature inside the freezer is controlled by the electronic controller in the front grill. The controller has a digital readout of the temperature inside the cabinet, and the option of changing the temperature inside the cabinet.

14. External voltage and temperature alarm.

Optionally the freezer can be equipped with a battery operated alarm box with connections for external alarm for voltage failure and temperature alarm. The battery should be exchanged every two years.

Please note! When commissioning the freezer, the battery must be turned into its correct position.

15. Dixell controller.



16. Functions.

How to see the set point:

1. Press and immediately release the SET key, the display will now show the set point value.
2. Press and immediately release the SET key or wait for 5 seconds to display the probe value again.

How to lock and unlock the keyboard

1. Press the up and down keys simultaneously for more than 3 seconds.

How to change the set point

1. Press the SET key for more than 3 seconds to change the set point value.
2. The set point value will be displayed and the LED starts flashing.
3. To change the set point value, push the up or down arrow.
4. To memorise the new setting press the SET key again or wait 15 seconds for the controller to return to normal display of the probe temperature.

17. Setting the controllers offset value

The LAB/ULT freezer is designed for long time and safe storage of sensitive products. In some situations the PRO/XLT freezer is also used for other applications like in laboratories for different low temperature test. Depending on the actual situation it might be necessary to change the controllers offset value in order to get a correspondence between the reading on the display and the actual temperature inside the cabinet. The factory setting is an offset of 2 dgr.C. The offset can be adjusted in the following way.

Unlock the keyboard.

Enter the programming mode by pressing the SET and arrow down keys for 3 seconds.

Select the parameter "Opb" by pressing arrow up or down key.

Press the SET key to display its value.

Use arrow up or down to change its value. The offset can be adjusted to +/- 12 dgr .C

Press SET to store the new value.

Press SET + arrow up or wait 15 seconds without pressing any key. The new value will now be stored.

For more detailed information about programming the Dixell controllers please consult the attached manuals.

18. Trouble shooting.

The appliance is not operating. Please check:

Is the electrical plug connected to the mains (wall socket)? Has the fuse blown?

The temperature inside the appliance is too high. Please check:

Is the Dixell controller set to the correct temperature?

Has an excess amount of ice formed inside the appliance?

The appliance is operating continuously. Please check:

Is the ambient temperature too high?

Has the appliance recently been loaded with a large amount of warm products?

If you have checked the above points and the appliance is still not working as expected, please contact your local dealer for further advice.

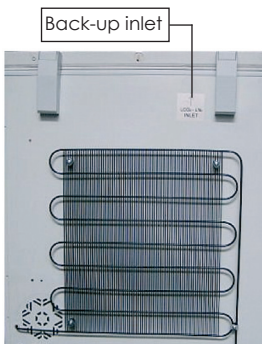
19. LN 2 or LCO 2 back-up

On the rear side of the cabinet there is a label and a marking, where it is possible to insert either a temperature probe or a back-up LN2 or LCO2 supply.

The inner and outer skins are pre-drilled.

IMPORTANT NOTE !!!

Do not attempt to drill or in other way make access to the freezers interior other places than at the marking, there is a risk of damaging the freezers tubing system, resulting in a leakage with inflammable gasses.





GENERAL WARNING



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.



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
- The instrument must not be opened.
- In case of failure or faulty operation send the instrument back to the distributor 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.

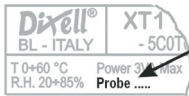
GENERAL DESCRIPTION

The XT110C and XT111C are single-stage ON/OFF controllers for temperature, humidity and pressure applications with direct or inverse action, user-selectable. The analogue input type can be set by parameter between the following, according to the model:

- PTC, NTC;
- PTC, NTC, Pt100, Thermocouple J, K, S;
- 4÷20mA, 0÷1V, 0÷10V.

FIRST INSTALLATION

Probe setting



The pre-set probe type is written on the label of the instrument, see picture. If it is different from the probe that has been used, set the probe following procedure below

How to set the probe.

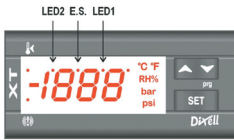
1. Enter the programming menu by pressing the SET+ n for 3s.
2. Select the Pbc (Probe configuration) parameter and push the SET key.
3. Set the kind of probe:
 - a. **Controller for temperature: Pt=**
Pt100, **J** = J thermocouple, **c** = K thermocouple, **S** = S thermocouple; Ptc = PTC; **ntc** = ntc
 - b. **Controller with current or voltage inputs: cur=**4÷20mA, **0-1=** 0÷1V, **10=** 0÷10V
4. Push the **SET** key to confirm it.
5. Switch the controller **off** and **on** again

NOTE: Before proceeding check and, if necessary; set with appropriate values the

Minimum Set Points (LS1 e LS2) and Maximum Set Points (US1 e US2). See also the paragraphs concerning the programming.



Front panel commands



SET:

To display and modify target set point; in programming mode it selects a parameter or confirm an operation.

TO SWITCH THE INSTRUMENT ON/OFF: If the function is enabled (par. onF=yES), by pressing the SET key for more than 4s the controller is switched OFF. To switch the instrument on again press the SET key.

o UP:

in programming mode it browses the parameter codes or increases the displayed value. Hold it pressed for a faster change

n DOWN:

in programming mode it browses the parameter codes or decreases the displayed value. Hold it pressed for a faster change

KEY COMBINATIONS:

- o + n** To lock & unlock the keyboard.
- SET + n** To enter in programming mode.
- SET + o** To return to the room temperature display.

Use of LEDs

A series of light points on the front panels is used to monitor the loads controlled by the instrument. Each LED function is described in the following table.

LED	MODE	FUNCTION
	ON	Output relay enabled
LED 1	flashing	- Programming Phase (flashing with LED2)
LED 2	flashing	- Programming Phase (flashing with LED1)
E.S.	ON	Energy saving activated by digital input
	ON	- ALARM signal - In "Pr2" indicates the parameter is also present in "Pr1"

TO see THE SETPOINT

- SET
1. Push and release the **SET** key to see the Set point value;
 2. To come back to the normal display push again the **SET** key or wait 10s.

TO CHANGE THE SETPOINT

- SET
1. Hold pushed the SET key for 3s to change the Set point value;
 2. The value of the set point will be displayed and the LED1 & 2 start blinking;
 3. To change the Set value push the o or n arrows within 10s.
 4. To memorise the new set point value push the **SET** key again or wait 10 s.

TO enter the parameters list "Pr1"

To enter the parameter list "Pr1" (user accessible parameters) operate as follows:

-
1. Push for 3s the **SET + n** keys (LED1 & 2 start blinking).
 2. The controller will display the first parameter present in the Pr1 menu..

TO ENTER the parameters list "Pr2"

The "Pr2" parameter list contains the configuration parameters. A security code is required to enter it.

1. Enter the "**Pr1**" level, see above paragraph.
2. Select "**Pr2**" parameter and press the "**SET**" key.
3. The "**PAS**" flashing message is displayed, shortly followed by "**0 - -**" with a flashing zero.
4. Use o or n to input the security code in the flashing digit; confirm the figure by pressing "**SET**". **The security code is "321"**.
5. If the security code is correct the access to "Pr2" is enabled by pressing "**SET**" on the last digit.

Another possibility is the following:
 After switching ON the instrument, within 30 seconds, push SET + n keys together for 3s: the Pr2 menu will be entered.

HOW TO MOVE A PARAMETER FROM THE "PR2" MENU TO "PR1" AND VICEVERSA.

Each parameter present in "Pr2" MENU can be removed or put into "Pr1", user level, by pressing "SET + n".

In "Pr2" when a parameter is present in "Pr1" the LED (⚠) is on.

HOW TO CHANGE a parameter

To change a parameter value operates as follows:

1. Enter the **Programming mode**
2. Select the required parameter.
3. Press the "**SET**" key to display its value.
4. Use "UP" or "**DOWN**" to change its value.
5. Press "**SET**" to store the new value and move to the following parameter.

TO EXIT: Press **SET + UP** or wait 15s without pressing a key.

NOTE: the set value is stored even when the procedure is exited by waiting the timeout to expire.

HOW TO LOCK THE KEYBOARD



1. Keep pressed for more than 3 s the the **o** and **n** keys.
2. The "POF" message will be displayed and the keyboard will be locked. At this point it will be possible only to see the set point or the MAX o Min temperature stored
3. If a key is pressed more than 3s the "POF" message will be displayed.

TO UNLOCK THE KEYBOARD

Keep pressed together for more than 3s the the **o** and **n** keys, till the "Pon" message will be displayed.

ON/OFF function

TO SWITCH THE INSTRUMENT ON/OFF:

If the function is enabled (par. onF=yES), by pressing the SET key for more than 4s

the controller is switched OFF. To switch the instrument on again press the SET key.

PROBES AND MEASURING RANGE

Pro	Down Scale	Full Scale
be		
NTC	-40°C/-40°F	110°C/230°F
PTC	-50°C/-58°F	150°C/302°F
Pt100	-200°C/-328°F	600°C/1112°F
TcK	0°C/32°F	1300°C/1999°F
TcJ	0°C/32°F	600°C/1112°F
TcS	0°C/32°F	1400°C/1999°F

List of Parameters

REGULATION

Hy1

Differential: (-Full Sc. / Full Sc.) Intervention differential for set point. It can be set with positive value or with negative value.

The kind of action (direct or inverse) depends on the S1C parameter (in or di).

LS1

Minimum set point: (Down Sc.÷ Set) Sets the minimum acceptable value for the set point.
 US1 Maximum set point: (Set÷ Full Sc.) Sets the maximum acceptable value for set point.

S1C

Action type: S1C=in inverse action (heating/ humidifying/increase pressure); S1C=dir direct action (cooling /dehumidifying/decrease pressure).

AC

Anti-short cycle delay: (0÷250 sec) Minimum time between the switching off and the following switching on

on

Minimum time a stage stays switched ON (0÷250 sec)

ono:

Minimum time between 2 following switching ON of the same load (0÷120 min).



ALARMS

ALC

Temperature alarms configuration: it determines if alarms are relative to set point or referred to absolute values.

rE relative to set point; **Ab** absolute temperature

ALL

Minimum alarm:

with ALC=rE: relative to set point, (0÷|Down Sc.-Set|) this value is subtracted from the set point. The alarm signal is enabled when the probe values goes below the "SET-ALL" value.

with ALC=Ab absolute value, minimum alarm is enabled when the probe values goes below the "ALL" value.

ALU

Maximum alarm:

with ALC=rE: alarm relative to set point, (0÷|Full Sc.-Set|) Maximum alarm is enabled when the probe values exceeds the "SET+ALU" value.

with ALC=Ab: absolute alarm, (Set÷Full Sc.) Maximum alarm is enabled when the probe values exceeds the "ALU" value.

ALH

Differential for alarm recovery: (0,1÷Full scale) the alarm recovers when probe value is higher than Alarm value + ALH.

ALd

Alarm delay:(0÷999 min) time interval between the detection of an alarm condition and alarm signalling.

dAO

Delay of alarm at start-up: (0÷23.5h) time interval between the detection of the alarm condition after instrument power on and alarm signalling.

So1

Relay status with faulty probe: So1=**oFF** open; So1=**oN** closed.

tbA

Status of alarm relay after pushing a key. (XT111C only):

oFF = relay disabled; **oN** = relay enabled.

AS

Alarm relay configuration (XT111C only):

cL = 4-6 terminals open with alarm; **oP** = 4-6 terminals closed with alarm.

PROBES AND DISPLAY

LCI

Start of scale, only with current or voltage

input: (-1999÷1999) Adjustment of read out corresponding to 4mA or 0V input signal.

UCI

End of scale, only with current or voltage

input: (-1999÷1999) Adjustment of read out corresponding to 20mA or 1V or 10V input signal.

oPb

Probe calibration: (-999÷999) allows to adjust possible offset of the probe.

rES

Decimal point ON/OFF: (rES=in OFF; rES=dE ON; rES= cE with 2 decimal points, only for current or voltage input) select the resolution of the controller.

NOTE: the decimal point selection is not available on models with thermocouple input.

UdM

Measurement unit: it depends on models: **for temperature:** °C = Celsius; °F = Fahrenheit.

with 4÷20mA, 0÷1V, 0÷10V input : 0= °C; 1= °F, 2= %RH, 3=bar, 4=PSI, 5=no measurement unit.

PbC

Probe selection: it sets the kind of probe. It depends on models

for temperature NTC/PTC: Ptc = PTC; **ntc** = ntc.

for temperature standard: Pt= Pt100, **J** = J thermocouple, **c** = K thermocouple, **S** = S thermocouple; Ptc = PTC; ntc = ntc.

with 4÷20mA, 0÷1V, 0÷10V input: cur=4÷20mA, **0-1**= 0÷1V, **10**= 0÷10V.

P3F

Third wire presence for Pt100 probe: for using 2 or 3 wires Pt100 probes: **no** = 2 wires probe; **yES** = 3 wires probe.

DIGITAL INPUT

HES

Set point change during during the Energy Saving cycle: (Down Sc./Full Sc.) sets the variation of the set point during the Energy Saving cycle.

i1F

Digital input operating mode:

configure the digital input function: **c-H** = to invert the kind of action: direct - reverse;

oFF = to switch the controller off.; **AUS** = Not used; HES = Energy Saving;

EAL = generic external alarm; **bAL** = serious external alarm: it switches off the loads.

i1P

Digital input polarity:

CL: the digital input is activated by closing the contact;

OP: the digital input is activated by opening the contact

did

Digital input alarm delay: (0÷255 min) delay between the detection of the external alarm condition (i1F= EAL or i1F = bAL) and its signalling.

OTHER

Adr

RS485 serial address (0÷247) identifies the instrument within a control or supervising system.

onF

Switching ON/OFF enabling from keyboard: (**no** = disabled; **yES**=enabled) It permits the switching ON/OFF of the instrument by pressing the SET key for more than 4s.

Ptb

Parameters table: (read only) Shows the code of the parameters map.

rEL

Software release: (read only)

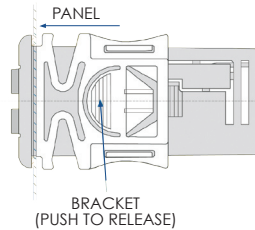
Pr2

To access the Pr2 parameter programming menu.

Installation and mounting

Instrument XT110C and XT111C shall be

mounted on vertical panel, in a 29x71 mm hole, and fixed using the special brackets supplied.



To obtain an IP65 protection grade use the front panel rubber gasket (mod. RG-C) as shown in figure.

The temperature range allowed for correct operation is 0÷60 °C. Avoid places subject to strong vibrations, corrosive gases, excessive dirt or humidity. The same recommendations apply to probes. Let air circulate by the cooling holes.

Electrical connections

The instruments are provided with screw terminal block to connect cables with a cross section up to 2,5 mm². Before connecting cables make sure the power supply complies with the instrument's requirements. Separate the input connection 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.

Serial connections

All models can be connected to the monitoring and supervising system XJ500 using the serial port. The external XJ485 serial module to interface the instrument with the monitoring and supervising system XJ500 is required.

The standard ModBus RTU protocol it is used.

NOTE: Instruments with current or voltage input and 230V or 115V supply, cannot be connected to the XJ485 serial module.

How to use the HOT KEY

How to program a hot key from the instrument (JUPLOAD)

1. Program one controller with the front keypad.
2. When the controller is ON, insert the "Hot key" and push o key; the "uPL" message appears followed a by flashing "End"
3. Push "SET" key and the End will stop flashing.
4. Turn OFF the instrument remove the "Hot Key", then turn it ON again.

NOTE: the "Err" message is displayed for failed programming. In this case push again o key if you want to restart the upload again or remove the "Hot key" to abort the operation.

HOW TO PROGRAM AN INSTRUMENT USING A HOT KEY (DOWNLOAD)

1. Turn OFF the instrument.
2. Insert a programmed "Hot Key" into the 5 PIN receptacle and then turn the Controller ON.
3. Automatically the parameter list of the "Hot Key" is downloaded into the Controller memory, the "dOL" message is blinking followed a by flashing "End".
4. After 10 seconds the instrument will restart working with the new parameters.
5. Remove the "Hot Key"..

NOTE: the message "Err" 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.

digital input

XT110C and XT111C have 1 free contact digital input. It is programmable in 5 different configurations by the "iIF" parameter.

invert the kind of action: heatingcooling (iIF = C-H)

This function allows to invert the regulation of the controller: from direct to inverse and viceversa.

REMOTE ON/OFF (iIF = OFF)

This function allows to switch ON and OFF the instrument.

GENERIC ALARM (iIF = 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 don't change. The alarm stops just after the digital input is deactivated.

serious alarm mode (iIF = BAL)

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

energy saving (iIF = HES)

The Energy Saving function allows to change the set point1 value as the result of the SET1 + HES (parameter) sum. This function is enabled until the digital input is activated.

ALARM SIGNALS

Message	Cause	Outputs
"PFo"	Probe broken or absence	Alarm output ON; Output according to Parameter "So1"
"Pfc"	Probe short circuited	Alarm output ON; Output according to Parameter "So1"
"HA"	Maximum alarm	Alarm output ON; Other outputs unchanged
"LA"	Minimum alarm	Alarm output ON; Other outputs unchanged
"EAL"	External alarm	Output unchanged
"bAL"	Serious external alarm	Output OFF

alarm relay status (XT111c)

Status of the instrument	AS = CL	AS = oP
Instrument off	4-6 closed	4-6 closed
Normal operating	4-6 closed	4-6 open
Alarm present	4-6 open	4-6 closed

Silencing buzzer / alarm relay output

Once the alarm signal is detected the buzzer, if present, can be disabled by pressing any key.

XT111C: the alarm relay status depends on the tbA parameter: with tbA=yES the relay is disabled by pressing any key, with tbA=no the alarm relay remains enabled as long as the alarm lasts. The display signal remains as long as the alarm condition remains.

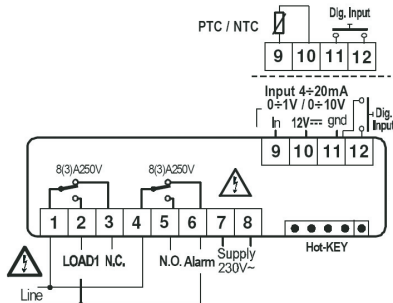
Alarm recovery: Probe alarms "PFO", "PFC" start few seconds after the fault in the probe; they automatically stop few seconds after the probe restarts normal operation. Check connections before replacing the probe. Max. and min. alarms "HA" and "LA" automatically stop as soon as the variable returns to normal values. Alarms "bAL" and "EAL" recover as soon as the digital input is disabled.

Technical data

Housing: self extinguishing ABS.
 Case: frontal 32x74 mm; depth 60mm;
 Mounting: panel mounting in a 71x29 mm panel cut-out.
 Protection: IP20.
 Frontal protection: IP65 with frontal gasket RG-C (optional).
 Connections: Screw terminal block £ 2,5 mm² heat-resistant wiring.
 Power supply: 12Vac/dc, ±10% or: 24Vac/dc ± 10% or 230Vac ± 10%, 50/60Hz or 110Vac, ± 10%, 50/60Hz
 Power absorption: 3VA max.
 Display: 3 1/2 digits, red LED
 Inputs: according to the order: NTC/PTC or NTC/PTC /Pt100/Thermo couple J, K, S or 4÷20mA/ 0÷1V / 0÷10V
 Relay outputs: Load relay SPDT 8(3)A, 250Vac
 Alarm: (XT111C) relay SPDT 8(3)A, 250Vac
 Other output: buzzer (optional)
 Kind of action: 1B; Pollution grade: normal, Software class: A.
 Data storing: on the non-volatile memory (EEPROM).
 Operating temperature: 0÷60 °C (32÷140°F).
 Storage temperature: -30÷85 °C (-22÷185°F).
 Relative humidity: 20÷85% (no condensing)
 Measuring and regulation range: according to the probe
 Controller Accuracy a 25°C: better than ±0,5% of full scale

CONNECTIONS

XT111C - 230V AC OR 115V AC



Probe: Pt100 = 91-11 (10); Thermocouple

J, K, S = 9(+)-11 (-)

115Vac Supply: 7-8

DEFAULT SETTING VALUES

COD	Name	Range	°C/°F	Lev
Set	Set point	LS1+US1	0/32	-
Hy1	Differential	-Full Sc./Full Sc.	-1/-2	Pr1
LS1	Minimum set point	Down Sc./Set	min	Pr2
US1	Maximum setpoint	Set/Full Sc.	max	Pr2
S1C	Action type output	in=inverse; dir=directed	in	Pr2
Ac	Anti-short cycle delay	0 -250 sec.	0	Pr2
on	Minimum time a stage stays switched ON	0 -250 sec.	0	Pr2
ono	Minimum time between 2 following switching ON of the same load	0 -120 min.	0	Pr2
ALC	Alarm configuration	rE=relat.; Ab=absolute	rE	Pr2
ALL	Minimum alarm (ALC=rE) (ALC=Ab)	0 +[Start Sc.-Set]. Start Sc.+Alu	10.0/ 20	Pr2
ALU	Maximum alarm (ALC=rE) (ALC=Ab)	0 +[Full Sc.-Set] ALL+Full scale	10.0/ 20	Pr2
ALH	Alarm recovery differential	0 -Full scale	2.0/4	Pr2
AlD	Alarm delay	0 -999 min	1.5	Pr2
dAO	Alarm delay at start up	0 -23h 50 min	1.3	Pr2
So1	Output status with faulty pr.	oFF=open on=closed	oFF	Pr2
tba ¹	Alarm relay disabling	no; yES	yES	Pr2
AS ¹	Alarm relay polarity	CL + oP	oP	Pr2
LcI ²	Start scale with current or voltage input	-1999 -1999	various	Pr1
Uci ²	End scale with current or voltage input	-1999 -1999	various	Pr1
OPb	Probe calibration	-Full Sc./Full Sc.	0.0	Pr1
rES	Resolution	in=NO; dE=0,1; cE=0,01	in	Pr2
UdM	Measurement unit (temp.) (current/voltage)	°C=°C; °F; 0=°C; 1=°F; 2=HR; 3=bar; 4=PSI; 5=off	various	Pr1
PbC	Kind of probe	PT=Pt100; J=tcJ; c=tcJ; S=tcS; Ptc=PTC; ntc=NTC; 0-1=0-1V; 10=0+10V; cur=0-20mA	various	Pr1
P3F	3rd wire presence	no=2 wires; yES=3wires	no	Pr2
HES	Energy saving differential	Down SC./Full Sc.	0.0	Pr2
iIF	Digital inputconfiguration	c-H/oFF/AuS/HES/EAL/bAL	EAL	Pr2
iIP	Digital input polarity	cL=closed; oP=open	cL	Pr2
did	Alarm delay for dig. input	0-120 m	0	Pr2
Adr	Serial adress	0-247	1	Pr2
OnF	oFF function enabling	no=not enabled; yES=enabled	no	Pr2
Ptb	Parameter table	Readable only	--	Pr2
rEL	Software release	Readable only	--	Pr2
Pr2	To access the Pr2	Readable only	321	Pr1

Factory settings PRO/XLT models.

Dixell XT111C		-60	-65
		Food	Research
Description	Label		
Regulation			
Set point	Set	-60	-65
Different (Hysteresis)	Hy1	1,5	0,7
Minimum set point	LS1	-60	-65
Maximum set point	US1	-45	-45
Action type output 1	S1C	in	in
Anti-short cycle delay	Ac	0	0
Minimum time a stage stays switched on	on	0	0
Minimum time between 2 following switching ON of the same load	ono	0	0
Alarm and safety			
Alarm configuration	ALC	re	re
Minimum alarm	ALL	5,0	3,0
Maximum alarm	ALU	20,0	10,0
Alarm recovery differential	ALH	2,0	2,0
Alarm delay	Ald	60	5
Alarm delay at start up	dAO	10,0	8,0
Alarm relay disabling	tbA	on	on
Alarm relay polarity	AS	OP	OP
Out1 status with faulty pr.	So1	OFF	OFF
Other			
Probe calibration	Opb	5	2
Resolution	rES	De	De
Measurement unit (temp.)	udM	C	C
Kind of probe	Pbc	Pf	Pf
3rd. wire presence	P3F	YES	YES
Energy saving differential	HES	0	0
Digital input configuration	iIF	EAL	EAL
Digital input polarity	iIP	cL	cL
Alarm delay for dig. input	did	0	0
Serial address	Adr	1	1
off function enabling	OnF	NO	NO

Technical specifications:

PRO/XLT		PRO 11/11 XLT	PRO 21/21 XLT	PRO 31/31 XLT	PRO 41/41 XLT	PRO 60/60 XLT
Ambient temperature	°C	+15° to +25°	+15° to +25°	+15° to +25°	+15° to +25°	+15° to +25°
Net volume	litres	130	230	300	360	485
Net volume	cu. ft.	4,6	8,1	10,6	12,8	17,3
Height with 50 mm castors	mm	920	920	920	920	920
Height with open lid	mm	1620	1620	1620	1620	1620
Width	mm	720	1050	1300	1500	1700
Insulation thickness	mm	100	100	100	100	80
Depth excl. handle and hinges	mm	730	730	730	730	730
Power consumption at +25° C	Watts	330	410	560	610	610
Fuse	A	10	10	10	10	10
Temperature range	°C	-30° to -60°	-30° to -60°	-30° to -60°	-30° to -60°	-30° to -60°
Noise level	dBa	< 51	< 51	< 51	< 51	< 51
Weight	kg	53	68	78	89	95



Wiring diagrams

