

Dixell

Electronic Controls Handbook

September 2000

Programming Flow Charts & Parameter Lists for:

XR100 Series - Refrigeration Controller

XT Series - Heating & Cooling Controllers

XC Series - Step Controllers

Prime Series - Refrigeration Controllers



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HOW TO USE THIS GUIDE

THE PROGRAMMING FLOW CHART ON PAGE 3 SHOULD BE USED FOR ALL MODELS *EXCEPT* THE PRIME SERIES. USE THE FLOW CHART ON PAGE 41 FOR THE PRIME SERIES.

READ IT IN CONJUNCTION WITH THE PARAMETER LIST FOR YOUR PARTICULAR MODEL

Further information can also be found
on pages 5 - 7 & 33 - 35

**PROGRAMMING FLOW CHART
ALL MODELS EXCEPT PRIME SERIES
(For Prime Series, see chart inside rear cover)**

IMPORTANT NOTES:

Not every Menu Function Label or Parameter will be present in every model

If no button is pressed for 15 seconds, the controller will revert to normal display. **Any alteration that have been made will be stored.**

Main Function Menu Labels

- “dFt” Displays how long until next defrost
- “Pt2” Displays the evaporator probe temperature
- “Pr1” Contains any User accessible parameters (no security code required)
- “Pr2” Contains all parameters at engineers level (security code protected)
- “rTC” Contains real time clock parameters at “User Level”
- “dIG” Configures digital input to work with a normally open or normally closed circuit
- “LOC” Locks the buttons so only temperature & Set Point can be viewed
- “tSt” Starts the controller’s self test routine
- “Alr” Displays any alarm messages
- “Out” Exits Main Function Menu
- “rAL” Resets & clears alarms in memory
- “rESC” Resets run time meter for each stage (security code 3-2-1-0 required)

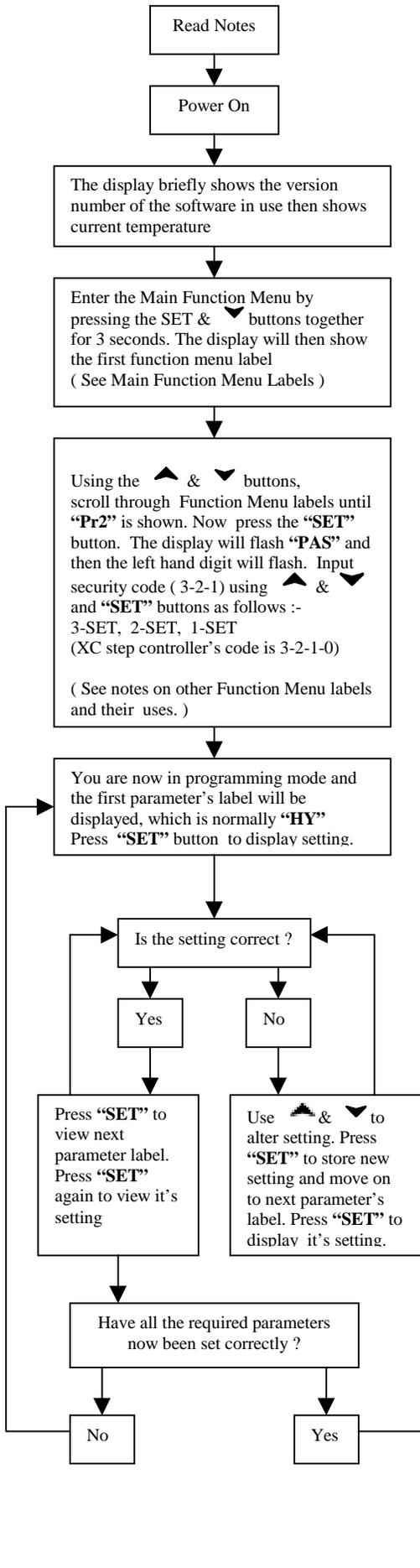
Notes: Pressing “SET” while any of these labels are displayed will activate the function or enter the sub menu.

To unlock buttons press the ▲ & ▼ buttons together for 3 seconds. The display will flash “Pon” for a few seconds to confirm unlocking.

Alarm Codes

DISPLAY FLASHING	PROBLEM
EE	Data or memory corruption
P1	Fault with thermostat probe or probe wiring
000	Probe open circuit
CCC	Probe closed circuit
P2	Fault with evaporator probe or probe wiring
rtC	Real time clock settings have been lost
HA	High temperature alarm
LA	Low temperature alarm
dEA	Defrost has terminated on time instead of temperature
FF	Power interruption during fast chill / fast freeze cycle
EA	External alarm
CA	Klixon external alarm
OFF	Serious external alarm
dA	Door open alarm

Press any button to silence alarm



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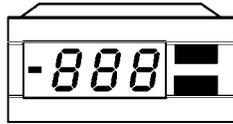
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Electronic Controllers

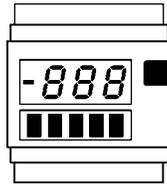
This booklet has been produced to assist you with the setting up and programming of Dixell Controllers. It is not designed to totally replace the manufacturer's manual, but rather to compliment it. Please refer to the manufacturer's manual when in any doubt.

The complete range of Dixell Controllers is extremely large, so only the popular models are covered here. However, the method of programming any Dixell controller is very similar across all the range.

Model numbers ending with "C" are 32 x 74mm panel mount versions.



Model numbers ending with "D" are DIN Rail mount versions.



XR = Refrigeration

Models beginning with "XR" are multi-function refrigeration controllers, most have defrost interval timers, but some have Real Time Clocks for defrost. Dixell XR100 & 500 Series always use PTC probes, Dixell Prime Series can use either PTC or NTC (selectable by parameter)

XT = Temperature

Models beginning with "XT" are for heating or cooling applications and can be programmed for either function. XT120C & XT121C are two stage, but can be programmed to operate as Dead Band controllers. XT130 & XT131C are Dead Band only controllers. XT models can accept a range of probes but the type must be specified at time of order. They are most commonly, PTC, Thermocouples K, J, S, Pt100, Ni100. Other input types are 0 to 1v, 0 to 10v and 4 to 20mA.

XC = Step Control

Models beginning with "XC" are step controllers. They can be used to control multiple stages, compressors, condenser fans, heaters or pumps. They can work with a 4 to 20 mA input from a pressure transducer or an input from a PTC temperature probe. This input type must be specified at time of order.

General Information

Safety

Ensure that the controllers are installed in such a way so as to comply with all relevant regulations and with the manufacturer's instructions. Consult manufacturer's manual before carrying out any installation or maintenance procedure. **Caution:** Electrical shock can kill. Good Practice should at all times be observed.

Sensor interference and extension of probe cables

It is important to avoid running probe cables close to power cables or other electrical equipment and cables that carry or switch heavy loads. This is even more important when extending probe cables. When extending probe cables use cable Part No.s CON490 (100 metre roll) & CON491 (25 metre roll) If extending beyond the normal maximum of 50 metres, please consult our technical dept.

Sensor resistances at degrees C

		-30c	-20c	-10c	0c	+10c	+20c
PTC	Ohms	617	677	740	807	877	951
NTC	Ohms x 1000	115	70	42	27	18	12

Power supply interruption

Dixell controllers store parameter settings in Non Volatile memory, so they will maintain those settings indefinitely even when disconnected from the power supply.

Models with Real Time Clocks (RTC) will maintain the correct day / time settings for approximately 7 hours (display will be off). If RTC setting is lost, once the power is restored, the controller will revert to it's defrost interval timer (see parameter IdF) and the display will alarm "rtC" to warn that the correct day / time setting has been lost. Re-enter the correct RTC settings to restore Real Time Clock defrosts. The start time for each defrost is stored in non volatile memory, so these will not have been lost.

Output relays

Always refer to the manufacturer's manual and ensure that the currents being switched by the controller's output relays do not exceed the rating of that relay. If necessary fit an auxiliary relay or contactor of an appropriate rating.

Output interference

If the control is connected to an inductive coil (e.g. solenoid valves, etc.) it is possible to pick up and transmit interference back to the control thus causing errors. If this could be a problem, fit an induction noise filter model FT-IL (Part No DIXL930). See page 33 for further details.

Electrical noise and Power spikes

If electrical noise is present, fit a line filter FT-PW (Part No. DIXL932). If power spikes are likely to occur, fit a Varsities Part no. CON210. See page 33 for further details.

Water / Moisture, Ventilation and Vibration

Ensure the controller is protected from excessive moisture and humidity. Air must be allowed to circulate through the cooling vents at the rear of the controller's housing. Panel mounted controllers have a frontal protection rating of IP65. If there is any risk of water getting behind the front mounting then this must be prevented by the use of a suitable gasket (PELE 206). Do not fit a controller in a place where it will be subjected to excessive vibration.

BASIC PROGRAMMING

To program your Dixell controller, fold out the Programming Flow Chart inside the front or rear cover. Then turn to the parameter list for your particular model, which has all the information you need on the various parameters, their functions and adjustment ranges.

Firstly though, please take a few moments to read the following section.

<p>The Display</p>	<p>The controller is fitted with a display, which normally shows the current temperature. There are 3 LED's with a decimal point so the right hand digit usually represents 0.1 degree, although on some models you can switch the decimal point on or off</p>
<p>The Buttons</p>	<p>On most panel mount 32 x 74mm models, there are two double buttons, each having 2 actions. To use them you must press either the left or right hand side of the button as appropriate.</p> <p style="text-align: center;"> Up  Down Manual Defrost  Set </p>
<p>To Display the Set Point</p>	<p>Press and release the SET button and the Set Point will be displayed for 5 seconds.</p>
<p>To alter the Set Point</p>	<p>Press and <u>hold</u> the SET button for at least 3 seconds and Set Point change mode is entered, the 2 small LED's will start flashing indicating you are now in programming mode.</p> <p style="text-align: center;">Use the  and  buttons to alter the Set Point .</p> <p>The new value can then be stored either by pressing the SET button or by waiting 15 seconds until the exit time out has expired.</p>
<p>Programming</p>	<ul style="list-style-type: none"> • To enter the programming mode, you must press and hold the SET &  buttons together until the display changes. • <u>All models except Prime Series:</u> <p>When you do this, you will have entered the Main Function Menu. In this menu you will find Pr1, which contains any parameters that can be accessed without a security code. You will also find Pr2, which contains all parameters but requires a security code to gain access.</p> <ul style="list-style-type: none"> • <u>Prime Series</u> <p>Prime Series models are similar, but instead of entering a Main Function Menu, you enter directly into a menu of "Visible Parameters". There is however another menu of "Hidden Parameters" and access to these needs a further operation but not a security code.</p> <p>For more details, see the Fold Out Programming Flow Charts inside the front and rear covers. Use them in conjunction with the parameter list for a particular model</p> <p>Note: To allow you to decide how much (if any) access you wish the end user to have, you can transfer any parameter or combination of parameters between the two access levels. See manufacturer's manual for details or call us.</p>

Parameters – XR110C On / Off controller

← Use fold out programming flow chart inside front cover

Parameter & Label	Description	Range	Pr1 Pr2	Factory Default
SP Set Point	Sets the temperature at which the compressor stops	LS ÷ US	Pr1	5 c
HY Differential	Sets the number of degrees above set point at which the compressor is re-started (Heating - If parameter CH = 1, differential is beneath Set Point – see below)	0 \exists 2 ÷ 12 \exists 0 c	Pr1	2 c
LS Lower Set Point Limit	Sets the lowest temperature to which the customer can adjust the Set Point	- 57 c ÷ Set Point	Pr2	- 10 c
US Upper Set Point Limit	Sets the highest temperature to which the customer can adjust the Set Point	Set Point ÷ 99 c	Pr2	20 c
AC Anti Short Cycle	Sets the minimum time period between the stopping of the compressor and it's next possible restart	0 ÷ 30 mins.	Pr2	1 min.
ALC Alarm Configuration	Configures the alarm either to absolute temperatures or to be relative to the Set Point (i.e. so many degrees above & below Set Point) If "Relative", when the Set Point is altered the alarm levels will follow it	0=Relative 1=Absolute 2=Relative 3=Absolute	Pr2	0
ALU Alarm Level Upper	Sets the high temperature alarm level. If ALC =0 it sets how many degrees above Set Point. If ALC =1 it sets a fixed alarm temperature.	Set Point ÷ 99 c	Pr2	5 c
ALL Alarm Limit Lower	Sets the low temperature alarm level. If ALC =0 it sets how many degrees below Set Point. If ALC =1 it sets a fixed alarm temperature.	-57c ÷ Set Point	Pr2	5 c
Ald Alarm Delay	Sets the time delay between a temperature alarm condition being sensed and the alarm being signaled during normal operation.	0 ÷ 120 mins.	Pr2	15 mins.
dAO Alarm Delay at Start Up	Sets the initial temperature alarm delay time on start up so avoiding unnecessary alarms during pull down.	0 ÷ 720 mins.	Pr2	60 mins.
Ods Delay of Outputs on Start Up	Sets the time delay between the power to the controller being turned on and any output relay starting to operate. This can be used to prevent short cycling of the compressor following a momentary power failure. It can also be used to stagger the re-start of multiple units following a power failure, to prevent everything trying to start at once and blowing a fuse.	0 ÷ 120 mins.	Pr2	1 min.
Ot Thermostat Probe Calibration	Probe offset adjustment.	- 12 \exists 0 ÷ +12 \exists 0	Pr2	0
CF Unit of Measurement	Sets the display to read out in Celsius or Fahrenheit	0=Degrees C 1=Degrees F	Pr2	0
CH Cooling or Heating mode	Sets the controller for heating or cooling applications. Cooling – Differential is above the Set Point Heating – Differential is below the Set Point	0 = Cooling 1 = Heating	Pr2	0
Con Probe Fault "ON" Time	If a probe fault is detected the display will flash P1 and the controller will automatically cycle the compressor on and off. This parameter sets the "ON" time period	0 ÷ 120 mins.	Pr2	30 mins.
COF Probe Fault "OFF" Time	If a probe fault is detected the display will flash P1 and the controller will automatically cycle the compressor on and off. This parameter sets the "OFF" time period	0 ÷ 120 mins.	Pr2	30 mins.

Parameters - XR120C – XR130C – XR130D Off cycle defrost controllers

← Use fold out programming flow chart inside front cover

Parameter & Label	Description	Range	Pr1 Pr2	Factory Default
SP Set Point	Sets the temperature at which the compressor stops	LS ÷ US	Pr1	3 c
HY Differential	Sets the number of degrees above Set Point at which the compressor is re-started	0 ÷ 2 + 12 ÷ 0 c	Pr1	2 c
LS Lower Set Point Limit	Sets the lowest temperature to which the customer can adjust the Set Point	- 57 c ÷ Set Point	Pr2	- 57 c
US Upper Set Point Limit	Sets the highest temperature to which the customer can adjust the Set Point	Set Point ÷ 99 c	Pr2	99 c
AC Anti Short Cycle	Sets the minimum time period between the stopping of the compressor and it's next possible restart	0 ÷ 30 mins.	Pr2	1 min.
ALC Alarm Configuration	Configures the alarm either to absolute temperatures or to be relative to the Set Point (i.e. so many degrees above & below Set Point) If "Relative", when the Set Point is altered the alarm levels will follow it Note: (Only for XR130C / D with alarm relay):- 0 & 1 – Muting buzzer de-activates alarm relay 2 & 3 – Muting buzzer leaves alarm relay activated	0=Relative 1=Absolute 2=Relative 3=Absolute	Pr2	0
ALU Alarm Level Upper	Sets the high temperature alarm level. If ALC=0 it sets how many degrees above Set Point. If ALC=1 it sets a fixed alarm temperature.	Set Point ÷ 99c	Pr2	10 c
ALL Alarm Limit Lower	Sets the low temperature alarm level. If ALC=0 it sets how many degrees below Set Point. If ALC=1 it sets a fixed alarm temperature.	-57c ÷ Set Point	Pr2	10 c
Ald Alarm Delay	Sets the time delay between a temperature alarm condition being sensed and the alarm being signaled during normal operation.	0 ÷ 120 mins.	Pr2	15 mins.
dAO Alarm Delay at Start Up	Sets the initial temperature alarm delay time on start up so avoiding unnecessary alarms during pull down.	0 ÷ 720 mins.	Pr2	90 mins.
Ods Delay of Outputs on Start Up	Sets the time delay between the power to the controller being turned on and any output relay starting to operate. This can be used to prevent short cycling of the compressor following a momentary power failure. It can also be used to stagger the re-start of multiple units following a power failure, to prevent everything trying to start at once and blowing a fuse.	0 ÷ 120 mins.	Pr2	1 min.
CCt Fast Chill / Freeze	The controller has a thermostat override facility. This parameter sets the override time during which the compressor will run continuously irrespective of the temperature. Setting time to 0 to disables this function	0 ÷ 990 mins.	Pr2	240 mins.
dAF Delay of Defrost after fast chill	Sets the period of time following a thermostat override after which the controller will go into a defrost. The controller will then resume normal operation	0 ÷ 120 mins.	Pr2	120 mins.
IdF Interval Between defrosts	Sets the interval time between the start of successive defrosts	1 ÷ 120 hours	Pr2	8 hours
ndF Length of Defrost	Sets the duration time of the defrost	0 ÷ 120 mins.	Pr2	20 mins.
dFd Display During Defrost	This tells the controller what to display during defrost. 0 = Actual temperature, 1 = Temperature at start of defrost, 2 = Set Point, 3 = "DEF" label	0 1 2 3	Pr2	1
dAd Max display after Defrost	After defrost, the temperature as it was at commencement of defrost is displayed. Normal display is resumed once the actual temperature drops below this point or the time set in this parameter has expired	0 ÷ 120 mins.	Pr2	30 mins.
dPO First Defrost after start up	Tells the controller whether to do an immediate defrost when the power is switched on or to wait for the normal interval time as set in parameter IdF. Can be used to make sure defrosts are not missed in areas with unreliable power supplies.	0=immediate 1=After IdF time	Pr2	1
Ot Thermostat Probe Calibration	Probe offset adjustment	-12 ÷ 0 ÷ +12 ÷ 0 c	Pr2	0 c
CF Unit of Measurement	Sets the display to read out in Celsius or Fahrenheit	0=Degrees C 1=Degrees F	Pr2	0
CO_n Probe Fault "ON" Time	If a probe fault is detected the display will flash P1 and the controller will automatically cycle the compressor on and off. This parameter sets the "ON" time period	0 ÷ 120 mins.	Pr2	15 mins.
CO_F Probe Fault "OFF" Time	If a probe fault is detected the display will flash P1 and the controller will automatically cycle the compressor on and off. This parameter sets the "OFF" time period	0 ÷ 120 mins.	Pr2	30 mins.

Parameters - XR140C - XR150C Controllers with forced defrost

← Use fold out programming flow chart inside front cover

Parameter & Label	Description	Range	Pr1 Pr2	Factory Default
SP Set Point	Sets the temperature at which the compressor stops	LS ÷ US	Pr1	- 5 c
HY Differential	Sets the number of degrees above Set Point at which the compressor is re-started	0 ÷ 2 + 12 ÷ 0 c	Pr1	2 c
LS Lower Set Point Limit	Sets the lowest temperature to which the customer can adjust the Set Point	- 57 c ÷ Set Point	Pr2	- 30 c
US Upper Set Point Limit	Sets the highest temperature to which the customer can adjust the Set Point	Set Point ÷ 99 c	Pr2	20 c
AC Anti Short Cycle	Sets the minimum time period between the stopping of the compressor and it's next possible restart	0 ÷ 30 mins.	Pr2	1 min.
ALC Alarm Configuration	Configures the alarm either to absolute temperatures or to be relative to the Set Point (i.e. so many degrees above & below Set Point) If "Relative", when the Set Point is altered the alarm levels will follow it Note: (Only for XR150C with alarm relay):- 0 & 1 – Muting buzzer de-activates alarm relay 2 & 3 – Muting buzzer leaves alarm relay activated	0=Relative 1=Absolute 2=Relative 3=Absolute	Pr2	0
ALU Alarm Level Upper	Sets the high temperature alarm level. If ALC=0 it sets how many degrees above Set Point. If ALC=1 it sets a fixed alarm temperature.	Set Point ÷ 99c	Pr2	10 c
ALL Alarm Limit Lower	Sets the low temperature alarm level. If ALC=0 it sets how many degrees below Set Point. If ALC=1 it sets a fixed alarm temperature.	-57c ÷ Set Point	Pr2	10 c
AlD Alarm Delay	Sets the time delay between a temperature alarm condition being sensed and the alarm being signaled during normal operation.	0 ÷ 120 mins.	Pr2	15 mins.
dAO Alarm Delay at Start Up	Sets the initial temperature alarm delay time on start up so avoiding unnecessary alarms during pull down.	0 ÷ 720 mins.	Pr2	90 mins.
Ods Delay of Outputs on Start Up	Sets the time delay between the power to the controller being turned on and any output relay starting to operate. This can be used to prevent short cycling of the compressor following a momentary power failure, or to stagger the re-start of multiple units following a power failure, to prevent everything trying to start at once and blowing a fuse.	0 ÷ 120 mins.	Pr2	1 min.
CCt Fast Chill / Freeze	The controller has a thermostat override facility. This parameter sets the override time during which the compressor will run continuously irrespective of the temperature. Setting time to 0 to disables this function	0 ÷ 990 mins.	Pr2	240 mins.
dAF Delay of Defrost after fast chill	Sets the period of time following a thermostat override after which the controller will go into defrost. The controller will then resume normal operation after this defrost terminates	0 ÷ 120 mins.	Pr2	120 mins.
IdF Interval Between defrosts	Sets the interval time between the start of successive defrosts	1 ÷ 120 hours	Pr2	6 hours
dSd Delay start of defrost	When a defrost is due to commence (after the IdF time), this parameter adds a period of time during which the start of defrost is delayed. Used to stagger defrosts between multiple controllers	0 ÷ 59 mins	Pr2	0 mins.
ndF Length Of Defrost	Sets the maximum duration time of the defrost	0 to 120 mins.	Pr2	30 mins.
dtE Defrost Termination Temperature	Sets the evaporator temperature at which the controller will terminate the defrost. This temperature is sensed by the evaporator probe.	- 57 to 99 c	Pr2	8 c
dFd Display During Defrost	This tells the controller what to display during defrost. 0 = Actual temperature, 1 = Temperature at start of defrost, 2 = Set Point, 3 = "DEF" label	0 1 2 3	Pr2	1
dAd Max display after Defrost	After defrost, the temperature as it was at commencement of defrost is displayed. Normal display is resumed once the actual temperature drops below this point or the time set in this parameter has expired	0 to 120 mins.	Pr2	30 mins.
tdF Defrost Type	Configures the controller for defrost by electrical heaters or hot gas. If set for hot gas, the compressor is kept running during defrost. * Settings 2 & 3 are for special applications only. Refer to manufacturer's manual	0=Electrical 1=Hot Gas 2=* 3=*	Pr2	0
EdF Evaporator Probe Presence	This controller can work with or without an evaporator probe. 0=No evaporator probe, defrost will terminate on time. 1=Evaporator probe present, defrost will terminate on temperature. Note: When EdF=0, there is no need to fit an evaporator probe and the controller will not produce a P2 evaporator probe alarm	0 = No Probe 1 = Probe	Pr2	1

Parameters - XR140C - XR150C continued.

← Use fold out programming flow chart inside front cover

Fdt Drip Time	Sets the period of time following the termination of a defrost during which nothing happens. This allows any residual moisture on the evaporator time to drip down and drain away.	0 ÷ 120 mins.	Pr2	0
dPO First Defrost after start up	Tells the controller whether to do an immediate defrost when the power is switched on or to wait for the normal interval time as set in parameter IdF . Can be used to make sure defrosts are not missed in areas with unreliable power supplies.	0=immediate 1=After IdF time	Pr2	1
Ot Thermostat Probe Calibration	Probe offset adjustment – thermostat	- 12 ∃ 0 ÷ 12 ∃ 0c	Pr2	0
OE Evaporator Probe Calibration	Probe offset adjustment – evaporator	- 12 ∃ 0 ÷ 12 ∃ 0c	Pr2	0
CF Unit of Measurement	Sets the display to read out in Celsius or Fahrenheit	0=Degrees C 1=Degrees F	Pr2	0
CO_n Probe Fault “ON” Time	If a probe fault is detected the display will flash P1 and the controller will automatically cycle the compressor on and off. This parameter sets the “ON” time period	0 ÷ 120 mins.	Pr2	15 mins.
CO_F Probe Fault “OFF” Time	If a probe fault is detected the display will flash P1 and the controller will automatically cycle the compressor on and off. This parameter sets the “OFF” time period	0 ÷ 120 mins.	Pr2	30 mins.

Parameters - XR160C – XR170C – XR162C – XR172C - XR160D –
XR170D Controllers with forced defrost & fan delay

← Use fold out programming flow chart inside front cover

Parameter & Label	Description	Range	Pr1 Pr2	Factory Default
SP Set Point	Sets the temperature at which the compressor stops	LS to US	Pr1	- 5 c
HY Differential	Sets the number of degrees above Set Point at which the compressor is re-started	0 ÷ 2 °+ 12 ÷ 0 c	Pr1	2 c
LS Lower Set Point Limit	Sets the lowest temperature to which the customer can adjust the Set Point	- 57 c + Set Point	Pr2	- 30 c
US Upper Set Point Limit	Sets the highest temperature to which the customer can adjust the Set Point	Set Point + 99 c	Pr2	20 c
AC Anti Short Cycle	Sets the minimum time period between the stopping of the compressor and it's next possible restart	0 + 30 mins.	Pr2	1 min.
ALC Alarm Configuration	Configures the alarm either to absolute temperatures or to be relative to the Set Point (i.e. so many degrees above & below Set Point) If "Relative", when the Set Point is altered the alarm levels will follow it Note: (Only for XR150C with alarm relay):- 0 & 1 – Muting buzzer de-activates alarm relay 2 & 3 – Muting buzzer leaves alarm relay activated	0=Relative 1=Absolute 2=Relative 3=Absolute	Pr2	0
ALU Alarm Level Upper	Sets the high temperature alarm level. If ALC =0 it sets how many degrees above Set Point. If ALC =1 it sets a fixed alarm temperature.	Set Point + 99 c	Pr2	10 c
ALL Alarm Limit Lower	Sets the low temperature alarm level. If ALC =0 it sets how many degrees below Set Point. If ALC =1 it sets a fixed alarm temperature.	-57c + Set Point	Pr2	10 c
Ald Alarm Delay	Sets the time delay between a temperature alarm condition being sensed and the alarm being signaled during normal operation.	0 + 120 mins.	Pr2	15 mins.
dAO Alarm Delay at Start Up	Sets the initial temperature alarm delay time on start up so avoiding unnecessary alarms during pull down.	0 + 720 mins.	Pr2	90 mins.
Ods Delay of Outputs on Start Up	Sets the time delay between the power to the controller being turned on and any output relay starting to operate. This can be used to prevent short cycling of the compressor following a momentary power failure. It can also be used to stagger the re-start of multiple units following a power failure, to prevent everything trying to start at once and blowing a fuse.	0 + 120 mins.	Pr2	1 min.
Cct Fast Chill / Freeze	The controller has a thermostat override facility. This parameter sets the override time during which the compressor will run continuously irrespective of the temperature. Setting time to 0 to disables this function	0 + 990 mins.	Pr2	240 mins
dAF Delay of Defrost after fast chill	Sets the period of time following a thermostat override after which the controller will go into a defrost. The controller will then resume normal operation	0 + 120 mins.	Pr2	120 mins.
IdF Interval Between defrosts	Sets the interval time between the start of successive defrosts	1 + 120 hours	Pr2	6 hours
dSd Delay start of defrost	When a defrost is due to commence (after the IdF time), this parameter adds a period of time during which the start of defrost is delayed. Used to stagger defrosts between multiple controllers	0 + 59 mins	Pr2	0 mins.
ndF Length Of Defrost	Sets the maximum duration time of the defrost	0 + 120 mins.	Pr2	30 mins.
dtE Defrost Termination Temperature	Sets the evaporator temperature at which the controller will terminate the defrost. This temperature is sensed by the evaporator probe.	- 57 + 50 c	Pr2	8 c
dFd Display During Defrost	This tells the controller what to display during defrost. 0 = Actual temperature, 1 = Temperature at start of defrost, 2 = Set Point, 3 = "DEF" label	0 1 2 3	Pr2	1
dAd Max display after Defrost	After defrost, the temperature as it was at commencement of defrost is displayed. Normal display is resumed once the actual temperature drops below this point or the time set in this parameter has expired	0 + 120 mins.	Pr2	30 mins.
tdF Defrost Type	Configures the controller for defrost by electrical heaters or hot gas. If set for hot gas, the compressor is kept running during defrost. * Settings 2 & 3 are for special applications only. Refer to manufacturer's manual	0=Electrical 1=Hot Gas 2=* 3=*	Pr2	0

Parameters - XR160C – XR170C – XR162C – XR172C - XR160D
XR170D Continued

← Use fold out programming flow chart inside front cover

EdF Evaporator Probe Presence	This controller can work with or without an evaporator probe. 0=No evaporator probe, defrost will terminate on time. 1=Evaporator probe present, defrost will terminate on temperature. Note: When EdF =0, there is no need to fit an evaporator probe and the controller will not produce a P2 evaporator probe alarm	0 = No Probe 1 = Probe	Pr2	1
Fdt Drip Time	Sets the period of time following the termination of a defrost during which period nothing happens. This allows any residual moisture on the evaporator time to drip down and drain away.	0 ÷ 120 mins.	Pr2	0
dPO First Defrost after start up	Tells the controller whether to do an immediate defrost when the power is switched on or to wait for the normal interval time as set in parameter IdF . Can be used to make sure defrosts are not missed in areas with unreliable power supplies.	0=immediate 1=After IdF time	Pr2	1
FnC Fan Operating Mode Also control of a 2nd compressor	Defines how the evaporator fan relay operates. 0 = The fan stops and starts with the compressor (fan off during defrost) 1 = The fan runs continuously (fan off during defrost) 2 = The fan stops and starts with the compressor (fan on during defrost) 3 = The fan runs continuously (fan on during defrost) 4 = Fan relay used instead, to control a 2 nd compressor :- If the fan relay is not being used to control an evaporator fan, it can be used to control a second compressor by setting FnC = 4. Note: Parameter Fnd (fan delay) now becomes the delay between the start of the 1 st and 2 nd compressor.	0=cycle with compressor 1= Continuous	Pr2	1
FSt Fan Stop Temperature	Sets the maximum temperature (sensed by the evaporator probe) above which the controller stops evaporator fans from running	- 60 ÷ 50 c	Pr2	2 c
Fnd Fan Delay	Sets the time delay between the end of defrost and the evaporator fans re-starting. Note: If parameter FnC =4 (fan relay used to control a 2 nd compressor), it sets the delay between the start of the 1 st & 2 nd compressor	0 ÷ 120 mins.	Pr2	10 mins.
Ot Thermostat Probe Calibration	Probe offset adjustment – thermostat	- 12 ÷ 12	Pr2	0
OE Evaporator Probe Calibration	Probe offset adjustment – evaporator	- 12 ÷ 12	Pr2	0
CF Unit of Measurement	Sets the display to read out in Celsius or Fahrenheit	0=Degrees C 1=Degrees F	Pr2	0
CO_n Probe Fault “ON” Time	If a probe fault is detected the display will flash P1 and the controller will automatically cycle the compressor on and off. This parameter sets the “ON” time period	0 ÷ 120 mins.	Pr2	15 mins.
CO_F Probe Fault “OFF” Time	If a probe fault is detected the display will flash P1 and the controller will automatically cycle the compressor on and off. This parameter sets the “OFF” time period	0 ÷ 120 mins.	Pr2	30 mins.

Parameters - XR530C - XR530D Off cycle defrost controllers with Real Time Clock

← Use fold out programming flow chart inside front cover

Parameter & Label	Description	Range	Pr1 Pr2	Factory Default
SP Set Point	Sets the temperature at which the compressor stops	LS ÷ US	Pr1	3 c
HY Differential	Sets the number of degrees above Set Point at which the compressor is re-started	1 ÷ 50 c	Pr1	2 c
LS Lower Set Point Limit	Sets the lowest temperature to which the customer can adjust the Set Point	- 50 c ÷ Set Point	Pr2	- 10 c
US Upper Set Point Limit	Sets the highest temperature to which the customer can adjust the Set Point	Set Point ÷ 50 c	Pr2	20 c
AC Anti Short Cycle	Sets the minimum time period between the stopping of the compressor and it's next possible restart	0 ÷ 30 mins.	Pr2	1 min.
Ods Delay of Outputs on Start Up	Sets the time delay between the power to the controller being turned on and any output relay starting to operate. This can be used to prevent short cycling of the compressor following a momentary power failure. It can also be used to stagger the re-start of multiple units following a power failure, to prevent everything trying to start at once and blowing a fuse.	0 ÷ 30 mins.	Pr2	1 min.
ALC Alarm Configuration	Configures the alarm either to absolute temperatures or to be relative to the Set Point (i.e. so many degrees above & below Set Point) If "Relative", when the Set Point is altered alarm levels will follow it	0=Relative 1=Absolute	Pr2	0
ALU Alarm Level Upper	Sets the high temperature alarm level. If ALC =0 it sets how many degrees above Set Point. If ALC =1 it sets a fixed alarm temperature.	Set Point ÷ 50c	Pr2	10 c
ALL Alarm Limit Lower	Sets the low temperature alarm level. If ALC =0 it sets how many degrees below Set Point. If ALC =1 it sets a fixed alarm temperature.	-50c ÷ Set Point	Pr2	10 c
Ald Alarm Delay	Sets the time delay between a temperature alarm condition being sensed and the alarm being signaled during normal operation.	0 ÷ 255 mins.	Pr2	15 mins.
dAO Alarm Delay at Start Up	Sets the initial temperature alarm delay time on start up so avoiding unnecessary alarms during pull down.	0 ÷ 23h. 50min	Pr2	1hr. 30 mins.
EdA Alarm delay at end of defrost	Sets the time delay at the end of defrost between an alarm condition being detected and the alarm being signaled.	0 ÷ 255 mins.	Pr2	30 mins.
CCt Fast Chill / Freeze	The controller has a thermostat override facility. This parameter sets the override time during which the compressor will run continuously irrespective of the temperature. Setting time to 0 to disables this function	0 ÷ 24 hours	Pr2	4 hours
dAF Delay of Defrost after fast chill	Sets the period of time following a thermostat override after which the controller will go into a defrost. The controller will then resume normal operation	0 ÷ 23h. 50min	Pr2	1 hour
IdF Interval Between defrosts	Sets the interval time between the start of successive defrosts. This only functions if the real time clock settings are lost.	1 ÷ 99 hours	Pr2	8 hours
ndF Length Of Defrost	Sets the maximum duration time of the defrost	0 ÷ 255 mins.	Pr2	20 mins.
dFd Display During Defrost	This tells the controller what to display during defrost. 0 = Actual temperature, 1 = Temperature at start of defrost, 2 = Set Point, 3 = "DEF" label	0 1 2 3	Pr2	1
dAd Max display after Defrost	After defrost, the temperature as it was at commencement of defrost is displayed. Normal display is resumed once the actual temperature drops below this point or the time set in this parameter has expired	0 ÷ 255 mins.	Pr2	30 mins.
dPO First Defrost after start up	Tells the controller whether to do an immediate defrost when the power is switched on or to wait for the normal interval time as set in parameter IdF . Can be used to make sure defrosts are not missed in areas with unreliable power supplies.	0=immediate 1=After IdF time	Pr2	1
Ot Thermostat Probe Calibration	Enables the controller to be re-calibrated or off-set from the probe temperature reading.	- 30 c ÷ 30 c	Pr2	0
rES Resolution	Turns the decimal point on or off. This gives a display resolution of either 1 degree or 0.1 degree Celsius.	0=Off 1=On	Pr2	1

Parameters - XR530C - XR530D Continued

← Use fold out programming flow chart inside front cover

CF Unit of Measurement	Sets the display to read out in Celsius or Fahrenheit	0=Degrees C 1=Degrees F	Pr2	0
CO_n Probe Fault "ON" Time	If a probe fault is detected the display will flash P1 and the controller will automatically cycle the compressor on and off. This parameter sets the "ON" time period	0 to 255 mins.	Pr2	15 mins.
CO_F Probe Fault "OFF" Time	If a probe fault is detected the display will flash P1 and the controller will automatically cycle the compressor on and off. This parameter sets the "OFF" time period	0 to 255 mins.	Pr2	30 mins.
dIC Digital input mode	Configures controller's response to an input on "Digital input 1" 0 = Generic alarm . Display will flash "EA", alarm sounds and alarm relay operates, controller continues to control as normal 1 = Important alarm . Display will flash "CA", alarm sounds and alarm relay operates, controller relays open to stop all functions. 2 = Serious alarm . Display will flash "OFF", alarm sounds and alarm relay operates, controller relays open to stop all functions. 3= External consent for defrost end : See technical manual	0 = Generic 1 = Important 2 = Serious 3=External consent	Pr2	0
dId Digital input delay	Sets the delay between an input being detected by "Digital input 1" and the alarm being activated.	0 to 255 mins.	Pr2	5 mins.
tBA Alarm Mute On / Off	Allows or prevents muting of the alarm buzzer and alarm relay. 0 = Alarm cannot be muted, 1 = Alarm can be muted	0=Mute disable 1=Mute enable	Pr2	1
Ad 1-Ad 2 Serial Address	This is only utilized when the instrument is being used as part of a networked control system together with other controllers, all linked back to a monitoring panel. It gives the controller it's system address.	0 to 94	Pr2	0 / 1
Ptb Parameter Table	Shows in sequence every parameter's label and then displays the factory default setting for that parameter.	- - -	Pr2	- - -

Real Time Clock Parameters

Note : Defrost time resolution is in 10 minute increments, so 12.4 means a start time of 12.40 pm.

To omit a particular defrost period, set it to 00.0

Ld1	Sets the start time for defrost 1, Mondays through to Saturdays	0.0 to 24.0	Pr2	7.0
Ld2	Sets the start time for defrost 2, Mondays through to Saturdays	0.0 to 24.0	Pr2	20.0
Ld3	Sets the start time for defrost 3, Mondays through to Saturdays	0.0 to 24.0	Pr2	0.0
Ld4	Sets the start time for defrost 4, Mondays through to Saturdays	0.0 to 24.0	Pr2	0.0
Ld5	Sets the start time for defrost 5, Mondays through to Saturdays	0.0 to 24.0	Pr2	0.0
Ld6	Sets the start time for defrost 6, Mondays through to Saturdays	0.0 to 24.0	Pr2	0.0
Sd1	Sets the start time for defrost 1, Sundays	0.0 to 24.0	Pr2	7.0
Sd2	Sets the start time for defrost 2, Sundays	0.0 to 24.0	Pr2	20.0
Sd3	Sets the start time for defrost 3, Sundays	0.0 to 24.0	Pr2	0.0
Sd4	Sets the start time for defrost 4, Sundays	0.0 to 24.0	Pr2	0.0
Sd5	Sets the start time for defrost 5, Sundays	0.0 to 24.0	Pr2	0.0
Sd6	Sets the start time for defrost 6, Sundays	0.0 to 24.0	Pr2	0.0
ILE Energy Saving Cycle Workdays	Sets the start time (for Mondays through to Fridays) at which point the controller will switch to operating at a higher Set Point. This higher temperature is defined in parameter "HES" (see below)	00.0 to 24 .0	Pr2	0.0
dLE Duration Workdays	Sets the length of time(for Mondays through to Fridays) during which the controller will operate at the higher set point set in "HES"	0 to 23	Pr2	0
ISE Energy Saving Cycle Saturdays	Sets the start time (for Saturdays) at which point the controller will switch to operating at a higher Set Point. This higher temperature is defined in parameter "HES" (see below)	0.0 to 24.0	Pr2	0.0
dSE Duration Saturdays	Sets the length of time(for Saturdays) during which the controller will operate at the higher set point set in "HES"	0 to 72	Pr2	0
HES Higher set point	Sets the number of degrees above the normal set point, at which the controller will operate during the energy saving cycle. Note: During the energy saving cycle, the temperature display will flash.	0 to 30 c	Pr2	0 c
ddd Day	Sets the current day. 1 = Monday, 7 = Sunday	1 to 7 Day	Pr2	1
HHH Hour	Sets the current hour.	0 to 23 Hours	Pr2	0
nnn Minute	Sets the current minute	0 to 59 Mins.	Pr2	0

Note : Saturday's energy saving cycle can be extended for up to 72 hours to allow for weekends and Bank Holidays. If you want Friday's energy saving cycle to start and run without a break throughout the weekend, you can do this by setting Saturday's cycle to start to a time which is earlier than Friday's cycle is due to finish.(which will be some time on Saturday AM). Hence these two energy saving cycles will overlap.

Parameters - XR570C - XR570D – XR572C Controllers with forced defrost & fan delay with Real Time Clock

← Use fold out programming flow chart inside front cover

Parameter & Label	Description	Range	Pr1 Pr2	Factory Default
SP Set Point	Sets the temperature at which the compressor stops	LS ÷ US	Pr1	- 5 c
HY Differential	Sets the number of degrees above Set Point at which the compressor is re-started	1 ÷ 50 c	Pr1	2 c
LS Lower Set Point Limit	Sets the lowest temperature to which the customer can adjust the Set Point	- 50 c ÷ Set Point	Pr2	- 30 c
US Upper Set Point Limit	Sets the highest temperature to which the customer can adjust the Set Point	Set Point ÷ 50 c	Pr2	20 c
AC Anti Short Cycle	Sets the minimum time period between the stopping of the compressor and it's next possible restart	0 ÷ 30 mins.	Pr2	1 min.
Ods Delay of Outputs on Start Up	Sets the time delay between the power to the controller being turned on and any output relay starting to operate. This can be used to prevent short cycling of the compressor following a momentary power failure. It can also be used to stagger the re-start of multiple units following a power failure, to prevent everything trying to start at once and blowing a fuse.	0 ÷ 30 mins.	Pr2	1 min.
ALC Alarm Configuration	Configures the alarm either to absolute temperatures or to be relative to the Set Point (i.e. so many degrees above & below Set Point) If "Relative", when the Set Point is altered alarm levels will follow it	0=Relative 1=Absolute	Pr2	0
ALU Alarm Level Upper	Sets the high temperature alarm level. If ALC =0 it sets how many degrees above Set Point. If ALC =1 it sets a fixed alarm temperature.	Set Point ÷ 50c	Pr2	10 c
ALL Alarm Limit Lower	Sets the low temperature alarm level. If ALC =0 it sets how many degrees below Set Point. If ALC =1 it sets a fixed alarm temperature.	-50c ÷ Set Point	Pr2	10 c
Ald Alarm Delay	Sets the time delay between a temperature alarm condition being sensed and the alarm being signaled during normal operation.	0 ÷ 255 mins.	Pr2	15 mins.
dAO Alarm Delay at Start Up	Sets the initial temperature alarm delay time on start up so avoiding unnecessary alarms during pull down.	0 ÷ 23h. 50min	Pr2	1hr. 30 mins.
EdA Alarm delay at end of defrost	Sets the time delay at the end of defrost between an alarm condition being detected and the alarm being signaled.	0 ÷ 255 mins.	Pr2	30 mins.
CCt Fast Chill / Freeze	The controller has a thermostat override facility. This parameter sets the override time during which the compressor will run continuously irrespective of the temperature. Setting time to 0 to disables this function	0 ÷ 24 hours	Pr2	4 hours
dAF Delay of Defrost after fast chill	Sets the period of time following a thermostat override after which the controller will go into a defrost. The controller will then resume normal operation	0 ÷ 23h. 50min	Pr2	2 hours
IdF Interval Between defrosts	Sets the interval time between the start of successive defrosts. This only functions if the real time clock settings are lost.	1 ÷ 99 hours	Pr2	6 hours
ndF Length Of Defrost	Sets the maximum duration time of the defrost	0 ÷ 255 mins.	Pr2	30 mins.
SdF Smart Defrost	Sets the temperature sensed by the evaporator probe, above which the count towards next defrost is suspended (as set in parameter IdF) Only functions if Smart Defrost is enabled (see parameter EdF)	- 30 ÷ 30 c	Pr2	0 c
dtE Defrost Termination Temperature	Sets the evaporator temperature at which the controller will terminate the defrost. This temperature is sensed by the evaporator probe.	- 50 ÷ 50 c	Pr2	8 c
dFd Display During Defrost	This tells the controller what to display during defrost. 0 = Actual temperature, 1 = Temperature at start of defrost, 2 = Set Point, 3 = "DEF" label	0 1 2 3	Pr2	1
dAd Max display after Defrost	After defrost, the temperature as it was at commencement of defrost is displayed. Normal display is resumed once the actual temperature drops below this point or the time set in this parameter has expired	0 ÷ 255 mins.	Pr2	30 mins.
tdF Defrost Type	Configures the controller for defrost by electrical heaters or hot gas. If set for hot gas, the compressor is kept running during defrost.	0=Electrical 1=Hot Gas	Pr2	0
EdF Defrost Mode	Sets the defrost mode. 0 = Defrost terminates on time 1 = Defrost terminates on temperature with time over ride. 2 = Smart defrost	0=Time/Time 1=Time/Temp. 2=Smart Def.	Pr2	1

Parameters - XR570C - XR570D – XR572C - Continued

← Use fold out programming flow chart inside front cover

Fdt Drip Time	Sets the period of time following the termination of a defrost during which period nothing happens. This allows any residual moisture on the evaporator time to drip down and drain away.	0 ÷ 255 mins.	Pr2	0
dPO First Defrost after start up	Tells the controller whether to do an immediate defrost when the power is switched on or to wait for the normal interval time as set in parameter IdF . Can be used to make sure defrosts are not missed in areas with unreliable power supplies.	0=immediate 1=After IdF time	Pr2	1
FnC Fan Operating Mode	Tells the evaporator fan to either run continuously (apart from during defrost) or to cycle on and off with the compressor.	0=cycle with compressor 1= Continuous	Pr2	1
Fnd Fan Delay	Sets the time between the end of defrost and the evaporator fans re-starting.	0 ÷ 255 mins.	Pr2	10 mins.
FSt Fan Stop Temperature	Sets the maximum temperature (sensed by the evaporator probe) above which the controller stops evaporator fans from running	- 50 c ÷ 50 c	Pr2	- 1 c
Ot Thermostat Probe Calibration	Enables the controller to be re-calibrated or off-set from the probe temperature reading.	- 30 c ÷ 30 c	Pr2	0
OE Evaporator Probe Calibration	Adjusts the off – set of the evaporator probe	- 30 c ÷ 30 c	Pr2	0
rES Resolution	Turns the decimal point on or off. This gives a display resolution of either 1 degree or 0.1 degree Celsius.	0=Off 1=On	Pr2	1
CF Unit of Measurement	Sets the display to read out in Celsius or Fahrenheit	0=Degrees C 1=Degrees F	Pr2	0
CO n Probe Fault “ON” Time	If a probe fault is detected the display will flash P1 and the controller will automatically cycle the compressor on and off. This parameter sets the “ON” time period	0 ÷ 255 mins.	Pr2	15 mins.
CO F Probe Fault “OFF” Time	If a probe fault is detected the display will flash P1 and the controller will automatically cycle the compressor on and off. This parameter sets the “OFF” time period	0 ÷ 255 mins.	Pr2	30 mins.
dIC Digital input mode	Configures controller’s response to an input on “Digital input 1” 0 = Generic alarm . Display will flash “ EA ”, alarm sounds and alarm relay operates, controller continues to control as normal 1 = Important alarm . Display will flash “ CA ”, alarm sounds and alarm relay operates, controller relays open to stop all functions. 2 = Serious alarm . Display will flash “ OFF ”, alarm sounds and alarm relay operates, controller relays open to stop all functions. 3= External consent for defrost end : See technical manual	0 = Generic 1 = Important 2 = Serious 3=External consent	Pr2	0
dId Digital input delay	Sets the delay between an input being detected by “Digital input 1” and the alarm being activated.	0 ÷ 255 mins.	Pr2	5 mins.
dOA Open door alarm delay	Sets the delay between an input being detected by “Digital input 2” and the “Door Open” alarm being activated. (XR572C only)	0 ÷ 255 mins.	Pr2	15mins.
tBA Alarm Mute On / Off	Allows or prevents muting of the alarm buzzer and alarm relay. 0 = Alarm cannot be muted, 1 = Alarm can be muted	0=Mute disable 1=Mute enable	Pr2	1
Ad 1-Ad 2 Serial Address	This is only utilized when the instrument is being used as part of a networked control system together with other controllers, all linked back to a monitoring panel. It gives the controller it’s system address.	0 ÷ 94	Pr2	0 / 1
Ptb Parameter Table	Shows in sequence every parameter’s label and then displays the factory default setting for that parameter.	- - -	Pr2	- - -

Continued overleaf:-

Parameters - XR570C - XR570D – XR572C - Continued

← Use fold out programming flow chart inside front cover

Real Time Clock Parameters

Note : Defrost time resolution is in 10 minute increments, so 12.4 means a start time of 12.40 pm.
To omit a particular defrost period, set it to 00.0

Ld1	Sets the start time for defrost 1, Mondays through to Saturdays	0.0 to 24.0	Pr2	6.0
Ld2	Sets the start time for defrost 2, Mondays through to Saturdays	0.0 to 24.0	Pr2	13.0
Ld3	Sets the start time for defrost 3, Mondays through to Saturdays	0.0 to 24.0	Pr2	21.0
Ld4	Sets the start time for defrost 4, Mondays through to Saturdays	0.0 to 24.0	Pr2	0.0
Ld5	Sets the start time for defrost 5, Mondays through to Saturdays	0.0 to 24.0	Pr2	0.0
Ld6	Sets the start time for defrost 6, Mondays through to Saturdays	0.0 to 24.0	Pr2	0.0
Sd1	Sets the start time for defrost 1, Sundays	0.0 to 24.0	Pr2	6.0
Sd2	Sets the start time for defrost 2, Sundays	0.0 to 24.0	Pr2	13.0
Sd3	Sets the start time for defrost 3, Sundays	0.0 to 24.0	Pr2	21.0
Sd4	Sets the start time for defrost 4, Sundays	0.0 to 24.0	Pr2	0.0
Sd5	Sets the start time for defrost 5, Sundays	0.0 to 24.0	Pr2	0.0
Sd6	Sets the start time for defrost 6, Sundays	0.0 to 24.0	Pr2	0.0
ILE Energy Saving Cycle Workdays	Sets the start time (for Mondays through to Fridays) at which point the controller will switch to operating at a higher Set Point. This higher temperature is defined in parameter “HES” (see below)	01.0 to 24.0	Pr2	0.0
dLE Duration Workdays	Sets the length of time(for Mondays through to Fridays) during which the controller will operate at the higher set point set in “HES”	0 to 23	Pr2	0
ISE Energy Saving Cycle Saturdays	Sets the start time (for Saturdays) at which point the controller will switch to operating at a higher Set Point. This higher temperature is defined in parameter “HES” (see below)	0.0 to 24.0	Pr2	0.0
dSE Duration Saturdays	Sets the length of time(for Saturdays) during which the controller will operate at the higher set point set in “HES”	0 to 72	Pr2	0
HES Higher set point	Sets the number of degrees above the normal set point, at which the controller will operate during the energy saving cycle. Note: During the energy saving cycle, the temperature display will flash.	0 to 30 c	Pr2	0 c
ddd Day	Sets the current day. 1 = Monday, 7 = Sunday	1 to 7 Day	Pr2	1
HHH Hour	Sets the current hour.	0 to 23 Hours	Pr2	0
nnn Minute	Sets the current minute	0 to 59 Mins.	Pr2	0

Note : Saturday’s energy saving cycle can be extended for up to 72 hours to allow for weekends and Bank Holidays. If you want Friday’s energy saving cycle to start and run without a break throughout the weekend, you can do this by setting Saturday’s cycle to start to a time which is earlier than Friday’s cycle is due to finish.(which will be some time on Saturday AM). Hence these two energy saving cycles will overlap.

Parameters - XT110C & XT111C - Single Stage Controllers for heating or cooling

← Use fold out programming flow chart inside front cover

Parameter & Label	Description	Range	Pr1 Pr2	Factory Default
SP 1 Set Point	Sets the temperature at which load 1 is switched off	LS1 to US1	Pr1	0 c
HY 1 Differential	Sets the number of degrees above or below Set Point at which the load is switched on.	Bottom of scale + top of scale	Pr1	- 1 c
LS1 Lower Limit Set Point	Sets the lowest temperature to which the customer can adjust Set Point	Bottom of scale + Set Point	Pr2	Min.
US1 Upper Limit Set Point	Sets the highest temperature to which the customer can adjust Set Point	Set Point + top of scale	Pr2	Max.
ALU Alarm Level Upper	Sets the high temperature alarm level. If ALC =0 it sets how many degrees above Set Point. If ALC =1 it sets a fixed alarm temperature.	Set Point + top of scale	Pr2	10 c
ALL Alarm Limit Lower	Sets the low temperature alarm level. If ALC =0 it sets how many degrees below Set Point. If ALC =1 it sets a fixed alarm temperature.	Bottom of scale to Set Point	Pr2	10 c
Ald Alarm Delay	Sets the time delay between a temperature alarm condition being sensed and the alarm being signaled during normal operation.	0 + 999 mins.	Pr2	15 mins.
daO Alarm Delay at Start Up	Sets the initial temperature alarm delay time on start up so avoiding unnecessary alarms while temperatures stabilize.	0 + 999 mins.	Pr2	30 mins.
od Output delay	Sets the minimum time between a load being switched off and it's next re-start. (anti short cycle)	0 + 500 secs.	Pr2	0 secs.
OPb Probe calibration	Probe offset adjustment	Bottom of scale + top of scale	Pr2	0
Ad1 – Ad2	Serial address – only used when connected to Xj500 monitoring unit	0 + 99	Pr2	-
PbC Probe type	Configures controller for the following probe types RTD Ni100 & Pt100 or Thermocouples J, K & S Note: This parameter is not in controllers with PTC probe input	0 = J 1 = K (Ni100) 2 = S (Pt100)	Pr2	-
SIC Action type heating or cooling	Configures output Relay to inverse or direct action. 0 = Inverse action (Heating) 1 = Direct action (Cooling)	0 = inverse 1 = direct	Pr2	0
So1 Probe fault relay failsafe	Configures the relay to fail safe open or closed in the event of a probe fault. 0 = Fail to open, 1 = Fail to closed	0 = Fail open 1 = Fail closed	Pr2	0
Hdd Half digit display	Half digit On / Off - Used to make the display's right hand digit read full scale (0 to 9) or half digit only (0 or 5)	0 = Off 1 = On	Pr2	0
rES Resolution	Turns the decimal point on or off. This gives a display resolution of either 1 degree or 0.1 degree. Note : Not for thermocouple models.	0 = Off 1 = On	Pr2	0
CF Unit of Measurement	Sets the display to read out in Celsius or Fahrenheit	0=Degrees C 1=Degrees F	Pr2	0
ALC Alarm configuration	Configures the temperature alarm to be either "Absolute", i.e. adjusted to a fixed temperature or "Relative to Set Point", i.e. so many degrees over and under set point. If set to "Relative" then the alarms level will follow the Set Point if it is altered.	0 = Relative 1 = Absolute	Pr2	0
OnF On / Off	Allows the SET button to be used to put the controller into OFF mode. Push SET for 4 secs. and the display will show "OFF" and relays will remain open. Repeat to turn ON again.	0=Disable 1=Enable	Pr2	0
Ptb Table	Read only – for factory use.	---	Pr2	---
rEL Software	Shows the version of software in use with this particular controller	---	Pr2	---

Note : If the decimal point is switched on (**rES**), all parameter values expressed in degrees will be divided by 10, including the Set Point.

Parameters - XT120C & XT121C - Two stage for heating & cooling

← Use fold out programming flow chart inside front cover

Parameter & Label	Description	Range	Pr1 Pr2	Factory Default
SP 1 Set Point 1	Sets the temperature at which load 1 is switched off	LS1 to US1	Pr1	0 c
SP 2 Set Point 2	Sets the temperature at which load 2 is switched off Note: If Set Points are linked (see parameter OUC), then the setting of SP2 = the number of degrees over or under Set Point 1	LS2 to US2	Pr1	1 c
HY 1 Differential 1	Sets the number of degrees above or below Set Point 1 at which the load is switched on.	Bottom of scale + top of scale	Pr1	- 1 c
HY 2 Differential 2	Sets the number of degrees above or below Set Point 2 at which the load is switched on.	Bottom of scale + top of scale	Pr1	-1 c
LS1 Lower Limit Set Point 1	Sets the lowest temperature to which the customer can adjust Set Point 1	Bottom of scale + Set Point	Pr2	Min.
LS2 Lower Limit Set Point 2	Sets the lowest temperature to which the customer can adjust Set Point 2	Bottom of scale + Set Point	Pr2	Min.
US1 Upper Limit Set Point 1	Sets the highest temperature to which the customer can adjust Set Point 1	Set Point + top of scale	Pr2	Max.
US2 Upper Limit Set Point 2	Sets the highest temperature to which the customer can adjust Set Point 2	Set Point + top of scale	Pr2	Max.
ALU Alarm Level Upper	Sets the high temperature alarm level. If ALC =0 it sets how many degrees above Set Point. If ALC =1 it sets a fixed alarm temperature.	Set Point + top of scale	Pr2	10 c
ALL Alarm Limit Lower	Sets the low temperature alarm level. If ALC =0 it sets how many degrees below Set Point. If ALC =1 it sets a fixed alarm temperature.	Bottom of scale + Set Point	Pr2	10 c
Ald Alarm Delay	Sets the time delay between a temperature alarm condition being sensed and the alarm being signaled during normal operation.	0 + 999 mins.	Pr2	15 mins.
daO Alarm Delay at Start Up	Sets the initial temperature alarm delay time on start up so avoiding unnecessary alarms while temperatures stabilize.	0 + 999 mins.	Pr2	30 mins.
od Output delay	Sets the minimum time between a load being switched off and it's next re-start. (anti short cycle)	0 + 500 secs.	Pr2	0 secs.
OPb Probe calibration	Probe offset adjustment	Bottom of scale + top of scale	Pr2	0
Ad1 – Ad2	Serial address – only used when connected to Xj500 monitoring unit	0 + 99	Pr2	-
PbC Probe type	Configures controller for the following probe types RTD Ni100 & Pt100 or Thermocouples J, K & S Note: This parameter is not in controllers with PTC probe input	0 = J 1 = K (Ni100) 2 = S (Pt100)	Pr2	-
OUC Set Points linked or not	Determines if Set Point 2 is linked or unlinked to Set Point 1. If linked, then when Set Point 1 is altered, Set Point 2 will follow it.	0=Dependent 1=Independent	Pr2	1
SIC Action type Output 1	Configures output Relay 1 to inverse or direct action. 0 = Inverse action (Heating) 1 = Direct action (Cooling)	0 = inverse 1 = direct	Pr2	0
S2C Action type for Output 2	Configures output Relay 2 to inverse or direct action. 0 = Inverse action (Heating) 1 = Direct action (Cooling)	0 = inverse 1 = direct	Pr2	0
So1 Probe fault failsafe, Relay 1	Configures Relay 1 to fail safe open or closed in the event of a probe fault. 0 = Fail to open, 1 = Fail to closed	0 = Fail open 1 = Fail closed	Pr2	0
So2 Probe fault failsafe, Relay 2	Configures Relay 2 to fail safe open or closed in the event of a probe fault. 0 = Fail to open, 1 = Fail to closed	0 = Fail open 1 = Fail closed	Pr2	0
Hdd Half digit display	Half digit On / Off - Used to make the display's right hand digit read full scale (0 to 9) or half digit only (0 or 5)	0 = Off 1 = On	Pr2	0
rES Resolution	Turns the decimal point on or off. This gives a display resolution of either 1 degree or 0.1 degree. Note : Not for thermocouple models.	0 = Off 1 = On	Pr2	0
CF Unit of Measurement	Sets the display to read out in Celsius or Fahrenheit	0=Degrees C 1=Degrees F	Pr2	0
ALC Alarm configuration	Configures the temperature alarm to be either "Absolute", i.e. adjusted to a fixed temperature or "Relative to Set Point", i.e. so many degrees over and under set point. If set to "Relative" then the alarms level will follow the Set Point if it is altered.	0 = Relative 1 = Absolute	Pr2	0
OnF On / Off	Allows the SET button to be used to put the controller into OFF mode. Push SET for 4 secs. and the display will show "OFF" and relays will remain open. Repeat to turn ON again.	0=Disable 1=Enable	Pr2	0
Ptb Table	Read only – for factory use.	---	Pr2	---
rEL Software	Shows the version of software in use with this particular controller	---	Pr2	---

Note : If the decimal point is switched on (**rES**), all parameter values expressed in degrees will be divided by 10, including the Set Point.

Parameters - XT130C & XT131C Dead Band Heating & Cooling

← Use fold out programming flow chart inside front cover

Parameter & Label	Description	Range	Pr1 Pr2	Factory Default
SP Set Point	Sets the temperature at which either load is switched off	LS1 to US1	Pr1	0 c
db Dead Band	Sets the number of degrees above and below the Set Point, at which temperature either of the loads are switched on	0.1 c ÷ end of scale	Pr1	1 c
LS1 Lower Limit of Set Point	Sets the lowest temperature to which the customer can adjust Set Point	Bottom of scale ÷ Set Point	Pr2	Min.
US1 Upper Limit of Set Point	Sets the highest temperature to which the customer can adjust Set Point	Set Point ÷ top of scale	Pr2	Max.
ALU Alarm Level Upper	Sets the high temperature alarm level. If ALC =0 it sets how many degrees above Set Point. If ALC =1 it sets a fixed alarm temperature.	Set Point ÷ top of scale	Pr2	10 c
ALL Alarm Limit Lower	Sets the low temperature alarm level. If ALC =0 it sets how many degrees below Set Point. If ALC =1 it sets a fixed alarm temperature.	Bottom of scale ÷ Set Point	Pr2	10 c
Ald Alarm Delay	Sets the time delay between a temperature alarm condition being sensed and the alarm being signaled during normal operation.	0 ÷ 999 mins.	Pr2	15 mins.
daO Alarm Delay at Start Up	Sets the initial temperature alarm delay time on start up so avoiding unnecessary alarms while temperatures stabilize.	0 ÷ 999 mins.	Pr2	30 mins.
od Output delay	Sets the minimum time between a load being switched off and it's next re-start. (anti short cycle)	0 ÷ 500 secs.	Pr2	0 secs.
OPb Probe calibration	Probe offset adjustment	Bottom of scale ÷ top of scale	Pr2	0
Ad1 – Ad2	Serial address – only used when connected to Xj500 monitoring unit	0 ÷ 99	Pr2	-
PbC Probe type	Configures controller for the following probe types RTD Ni100 & Pt100 or Thermocouples J, K & S Note: This parameter is not in controllers with PTC probe input	0 = J 1 = K (Ni100) 2 = S (Pt100)	Pr2	-
So1 Probe fault failsafe, Relay 1	Configures Relay 1 to fail safe open or closed in the event of a probe fault. 0 = Fail to open, 1 = Fail to closed	0 = Fail open 1 = Fail closed	Pr2	0
So2 Probe fault failsafe, Relay 2	Configures Relay 2 to fail safe open or closed in the event of a probe fault. 0 = Fail to open, 1 = Fail to closed	0 = Fail open 1 = Fail closed	Pr2	0
Hdd Half digit display	Used to make the display's left hand digit read full scale (0 to 9) or half digit only (0 or 5) Half digit On / Off	0 = Off 1 = On	Pr2	0
rES Resolution	Turns the decimal point on or off. This gives a display resolution of either 1 degree or 0.1 degree. Note : Not for thermocouple models.	0 = Off 1 = On	Pr2	0
CF Unit of Measurement	Sets the display to read out in Celsius or Fahrenheit	0=Degrees C 1=Degrees F	Pr2	0
ALC Alarm configuration	Configures the temperature alarm to be either "Absolute", i.e. adjusted to a fixed temperature or "Relative to Set Point", i.e. so many degrees over and under set point. If set to "Relative" then the alarms level will follow the Set Point if it is altered.	0 = Relative 1 = Absolute	Pr2	0
OnF On / Off	Allows the SET button to be used to put the controller into OFF mode. Push SET for 4 secs. and the display will show "OFF" and relays will remain open. Repeat to turn ON again.	0=Disable 1=Enable	Pr2	0
Ptb Parameters	Read only – for factory use.	---	Pr2	---
rEL Software	Shows the version of software in use with this particular controller	---	Pr2	---

Note : If the decimal point is switched on (**rES**), all parameter values expressed in degrees will be divided by 10, including the Set Point.

Parameters XC440C – XC440D & XC460D – Step Controllers

← Use fold out programming flow chart inside front cover

Parameter & Label	Description	Range *(in units)	Pr1 Pr2	Factory Default
SP Set Point	Sets the temperature (or pressure) at which the last load will switch off. (PTC input for temperature, 4-20mA input for pressure)	LS ÷ US	Pr1	- 30 c
Hy Differential	Sets the band width above set point within which the controller will switch the stages on and off. The controller will automatically divide this band equally by the number of stages set in parameter noC Note : You can control stages of heating by setting parameter CH for inverse action, the band width will then be below the Set Point	0.3 ÷ 50.0	Pr1	*
LS Lower Set Point Limit	Sets the lowest value to which the customer can adjust the Set Point	- 80 ÷ SP	Pr2	*
US Upper Set Point Limit	Sets the highest value to which the customer can adjust the Set Point	SP ÷ 900.0	Pr2	*
ALU Alarm Level Upper	Sets the high temperature (or pressure) alarm level.	0.5 ÷ 300 Relative to SP	Pr2	*
ALL Alarm Limit Lower	Sets the low temperature (or pressure) alarm level.	- 300 ÷ 0.5 Relative to SP	Pr2	*
Ald Alarm Delay	Sets the time delay between a temperature or pressure alarm condition being sensed and the alarm being signaled during normal operation.	0 ÷ 255 mins.	Pr2	15 mins.
Ot Probe calibration	Offset for probe or transducer calibration	- 30 ÷ 30	Pr2	*
Ods Delay of Outputs on Start Up	Sets the time delay between the power to the controller being turned on and any output relay starting to operate.	0 ÷ 255 mins.	Pr2	1 min.
dSC Bottom end of scale	Adjust this parameter to the same value as the transducer's bottom end of pressure scale, typically LP – 0.5 bar or HP 0 bar see note ‡	- 80 ÷ top of scale	Pr2	*
FSC Top end of scale	Adjust this parameter to the same value as the transducer's top end of pressure scale, typically LP 7 bar or HP 30 bar see note ‡	Bottom of scale ÷ 900.0	Pr2	*
Ad 1-Ad 2 Serial Address	Serial Address. Only used when controller is connected to the Dixell XJ500 monitoring system	0 ÷ 94	Pr2	0 / 1
dIC Digital input mode	Configures controller's response to a digital input. 0 = Instrument Off Display will flash "OFF", alarm sounds and alarm relay operates, all other relays switch off. 1 = Compressor Alarm . Display will flash "CAL", alarm sounds and alarm relay operates, all other relays switch off. 2 = Generic Alarm . Display will flash "EA" alarm sounds and alarm relay operates, all other relays continue to operate as normal. 3 = Alarm Mute . Allows the digital input to be used to mute a high or low level alarm from a remote button. (also see parameter "tBA")	0 1 2	Pr2	1
dId Digital input delay	Sets the delay between a digital input being detected and the alarm response being activated.	0 ÷ 255 mins.	Pr2	60 mins.
noC Number of stages	Tells the controller how many stages it is controlling. Max 4 stages for XC440C & XC440D, Max 6 stages for XC460D	XC440 1 ÷ 4 XC460 1 ÷ 6	Pr2	4 or 6
AC Stage control logic	Tells the controller how to control the stages. 0 = Straight on / off sequence – stage 1 is always first to start up 1 = Run rotation – Each time a sequence begins, the first stage to start up rotates, first time it will be stage 1, next time stage 2 etc. 2 = Unequal stage capacities – auto selects best stage combinations Note : See manual for fuller explanation	0 1 2	Pr2	1
CP1 Stage 1 capacity	Only used when parameter "AC" = 2, for unequal stage capacities. Tells the controller what percentage of the total available duty is supplied by Stage 1	1 ÷ 99%	Pr2	25%
CP2 Stage 2 capacity	Only used when parameter "AC" = 2, for unequal stage capacities. Tells the controller what percentage of the total available duty is supplied by Stage 2	1 ÷ 99%	Pr2	25%
CP3 Stage 3 capacity	Only used when parameter "AC" = 2, for unequal stage capacities. Tells the controller what percentage of the total available duty is supplied by Stage 3	1 ÷ 99%	Pr2	25%
CP4 Stage 4 capacity	Only used when parameter "AC" = 2, for unequal stage capacities. Tells the controller what percentage of the total available duty is supplied by Stage 4	1 ÷ 99%	Pr2	25%
Cd1 Switch up delay	Sets the minimum time interval between the switching on of two separate stages	0 ÷ 250 secs.	Pr2	15 secs.

Parameters – XC440C – XC440D – XC460D - Continued

← Use fold out programming flow chart inside front cover

Cd2 Switch down delay	Sets the minimum time interval between the switching off of two separate stages	0 ÷ 250 secs.	Pr2	15 secs.
Cd3 Anti short cycle	Sets the minimum time interval between successive cycles, i.e. between the last load switching off and the first one switching on again. Only used when parameter “AC” is set to 0 or 1	0 ÷ 250 secs.	Pr2	15 secs.
CD4 Anti short cycle	Sets the minimum time period that a stage remains switch on	0 ÷ 250 secs.	Pr2	15 secs.
CPd Anti short cycle	Sets the minimum time interval between the switching off and back on again of the same stage	0.0 ÷ 30.0 mins. (in 10 sec. increments)	Pr2	1.0 mins
HrC Hours run check	Sets the running hours after which a “Service Due” signal is generated by the controller. Note : If set to zero, this function is disabled.	0 ÷ 9990 hours	Pr2	9990 hours
IAC Excess stage run elimination	If any stage has been running for a time that exceeds the time set in this parameter, and no other stage has either switched on or off, the controller will narrow the differential (parameter HY) to get stages cycling on / off again. Once Set Point has been achieved, the differential band will return to it’s normal setting. Note: If this parameter is set to 0.0, this function is disabled	0.0 ÷ 25.3 hours (in 30 min increments)	Pr2	0.0
Ptb Parameter Table	Factory use – Read only	-	Pr2	-
rEL Software release	Shows the number of the software release in use. (read only)	-	Pr2	-
rES Resolution	Turns the decimal point on or off. This gives a display resolution of either 1 degree or 0.1 degree Celsius.	0 1	Pr2	1
CF Unit of Measurement	Sets the display to read out in Celsius or Fahrenheit. PTC temperature probe input models only.	0 1	Pr2	0
CH Action type all relays	Configures the controller to inverse or direct action. see note † 0 = Direct action (Cooling or de-pressurization) 1 = Inverse action (Heating or pressurization)	0 1	Pr2	0
tBA Alarm Mute On / Off	Allows or prevents muting of the alarm buzzer and alarm relay. 0 = Alarm cannot be muted, 1 = Alarm can be muted	0 1	Pr2	1

* These parameters are expressed in units of measurement, which may be temperature (degrees C), or pressure (bar or PSI) depending on the input type requested at time of order. The factory defaults will differ accordingly.

‡ Most pressure transducers have an electrical output of 4 ÷ 20mA, but because the pressure sensing ranges of different transducers will vary, the controller needs to be told what pressures are represented by 4mA and 20mA respectively. This is done by entering the transducer’s lower and upper pressure range into parameters dSC & FSC

Example: If your transducer has pressure range of – 0.35 ÷ 7 Bar (gauge), set parameters as follows:-

Parameter dSC = - 0.35 Bar

Parameter FSC = 7 Bar

Note: Absolute pressure range – LP transducers

Your LP transducer may have a range of 0.35 ÷ 8 Bar (absolute) This is the same as – 0.35 ÷ 7 Bar (gauge) so you should still set parameters dSC & FSC at - 0.35 & 7 Bar when using these transducers.

For HP transducer with a range of 0 ÷ 30 Bar (gauge), set parameters dSC & FSC to 0 & 30 Bar

† Parameter CH sets the controller for Direct action (cooling) or Inverse action. (heating). If set for Inverse action, these controllers can be used for up to 6 stages of heating (use version with PTC probe input)

UNIVERSAL-R **SERVICE REPLACEMENT CONTROL**

The Dixell **Universal-R** is designed as a multi-purpose field replacement for over 60 electronic refrigeration controllers commonly found in the field. Its aim was to provide a solution to the problem of sourcing a service replacement when there are so many different types of controller being installed as original equipment. It has proved a great success, with thousands sold and fitted.

The Universal-R can be used as a service replacement for all popular 32 x 74mm format electronic refrigeration controllers listed opposite. The original model has now been upgraded. The new version, designated v 2.0, has two major software improvements that make it even easier to apply.

The inclusion of a new 'smart' parameter allows the Universal-R to be quickly set up to mimic the five basic refrigeration applications of such controllers: thermostat, thermostat with off-cycle defrost, thermostat with time initiated and terminated defrost, thermostat with time initiated and temperature terminated defrost, and the same but with evaporator fan delay. Setting the 'smart' parameter sets the software defaults accordingly. As a result programming takes just a few minutes using the new 'Quick Programming' guide.

The revised Universal-R can also now work with either the industry standard PTC sensor or the newer NTC type. This means that when replacing controllers that use either type of sensor the original sensor can be retained if need be. Should the existing sensors need to be replaced, the Universal-R is supplied complete with 2 new PTC sensors.

A separate programming guide is available for the Universal-R.

UNIVERSAL-R

A GUIDE TO WHICH MODELS THE UNIVERSAL-R CAN REPLACE.

The Dixell Universal-R can directly replace all of the following controllers for their most typical applications as well as many others not listed. It is compatible with the existing sensors from most other leading brands. If the existing sensors are incompatible or possibly faulty, they can be replaced by the two new PTC sensors which come supplied with the Universal-R.

When ever practical, replacement of the sensors is always recommended as good practice.

Controllers that use PTC sensors*

* Please note that some Every controllers may be using NTC sensors

LAE	SAE	Eliwell EWPC	Intek	Tedding- ton	Every	Dixell
MTR11/T1RDS	RT31-0000	EWPC901	RK31	EK-R31	EC3-120	XR110C
MTR11/T1RES	RT31-1000	EWPC902	RK32	EK-R32	EC3-130	XR120C
SDU11/T1RES	RC31	EWPC961	RK33	EK-R33	EC3-131	XR130C
SDU11/T1REBS	RC31-1000	EWPC970	TK31		EC3-110	XR140C
MCDU11/T1RDS	RC31-0100	EWPC971	DK31 (PTC)		EC3-111	XR150C
MCDU11/T1RDS/1	RC32-0000	EWPC974			EC3-180	XR160C
MCDU11/T1RDS/2	RC33	EWPC977A			EC3-181	XR170C
MCDU11/T1RDS/3	DC31 (PTC)	EWTC101			EC3-185	
CDC112/T1R2S						
CDC112/T1R3S						
CDC112/T1RBS						

Controllers that use NTC probes.

Carel		Eliwell EWPX	
IR32S	CR32T	EWPX161	EWPX174
IR32Y	CR32X	EWPX161AR	EWPX174AR
IR32C	CR32S	EWPX170	EWPX177A
	CR32Y	EWPX171	EWPX185

Parameters – Prime Series XR10C
 On / Off Controller for refrigeration or heating
 Use fold out programming flow chart inside rear cover

Parameter & Label	Description	Range	Visible or Hidden menu	Factory Default
REGULATION				
SP Set Point	Sets the temperature at which the compressor stops	LS to US	V	5 c
HY Differential	Sets the number of degrees above Set Point at which the compressor is re-started	0 ÷ 1 + 25 ÷ 5 c	V	2 c
LS Lower Set Point Limit	Sets the lowest temperature to which the customer can adjust the Set Point	- 50 c + Set Point	H	- 50 c
US Upper Set Point Limit	Sets the highest temperature to which the customer can adjust the Set Point	Set Point + 150 c	H	150 c
Ot Thermostat Probe Calibration	Probe offset adjustment – thermostat	- 12 + 12 c	V	0 c
Ods Delay of Outputs on Start Up	Sets the time delay between the power to the controller being turned on and any output relay starting to operate. This can be used to prevent short cycling of the compressor following a momentary power failure. It can also be used to stagger the re-start of multiple units following a power failure, to prevent everything trying to start at once and blowing a fuse.	0 + 255 mins.	H	0 mins.
AC Anti Short Cycle	Sets the minimum time period between the stopping of the compressor and it's next possible restart	0 + 50 mins.	V	1
CO_n Probe Fault "ON" Time	If a probe fault is detected the display will flash P1 and the controller will automatically cycle the compressor on and off. This parameter sets the "ON" time period	0 + 255 mins.	H	30 mins.
CO_f Probe Fault "OFF" Time	If a probe fault is detected the display will flash P1 and the controller will automatically cycle the compressor on and off. This parameter sets the "OFF" time period	0 + 255 mins.	H	30 mins.
CH Cooling or Heating mode	Sets the controller for heating or cooling applications. Cooling – Differential is above the Set Point Heating – Differential is below the Set Point	CL = Cooling Ht = Heating	V	CL
DISPLAY				
CF Unit of Measurement	Sets the display to read out in Celsius or Fahrenheit	C = °C F = °F	H	C
rES Resolution	Turns the decimal point on or off. This gives a display resolution of either 1 degree or 0.1 degree Celsius.	in = Off dE - On	V	dE
ALARMS				
ALC Alarm Configuration	Configures the alarm either to absolute temperatures or to be relative to the Set Point (i.e. so many degrees above & below Set Point) If "Relative", when the Set Point is altered the alarm levels will follow it	rE = Relative Ab = Absolute	H	Ab
ALU Alarm Level Upper	Sets the high temperature alarm level. If ALC = rE it sets how many degrees above Set Point. If ALC = Ab it sets a fixed alarm temperature.	Set Point + 150 c	V	150 c
ALL Alarm Limit Lower	Sets the low temperature alarm level. If ALC = rE it sets how many degrees below Set Point. If ALC = Ab it sets a fixed alarm temperature.	-50 c + Set Point	V	- 50 c
Ald Alarm Delay	Sets the time delay between a temperature alarm condition being sensed and the alarm being signaled during normal operation.	0 + 255 mins.	H	15 mins.

Parameters – Prime Series XR20C
Controller for off cycle defrost or heating
Use fold out programming flow chart inside rear cover

Parameter & Label	Description	Range	Visible or Hidden menu	Factory Default
REGULATION				
SP Set Point	Sets the temperature at which the compressor stops	LS to US	V	3 c
HY Differential	Sets the number of degrees above Set Point at which the compressor is re-started	0 ÷ 1 + 25 ÷ 5 c	V	2 c
LS Lower Set Point Limit	Sets the lowest temperature to which the customer can adjust the Set Point	- 50 c + Set Point	H	- 50 c
US Upper Set Point Limit	Sets the highest temperature to which the customer can adjust the Set Point	Set Point + 150 c	H	150 c
Ot Thermostat Probe Calibration	Probe offset adjustment – thermostat	- 12 + 12 c	V	0 c
Ods Delay of Outputs on Start Up	Sets the time delay between the power to the controller being turned on and any output relay starting to operate. This can be used to prevent short cycling of the compressor following a momentary power failure. It can also be used to stagger the re-start of multiple units following a power failure, to prevent everything trying to start at once and blowing a fuse.	0 + 255 mins.	H	0 mins.
AC Anti Short Cycle	Sets the minimum time period between the stopping of the compressor and it's next possible restart	0 + 50 mins.	V	1
Cct Fast Chill / Freeze	The controller has a thermostat override facility. This parameter sets the override time during which the compressor will run continuously irrespective of the temperature. Setting time to 0 to disables this function	0.0 + 24.0 hours (in 10 min. increments)	H	0.0
CO_n Probe Fault "ON" Time	If a probe fault is detected the display will flash P1 and the controller will automatically cycle the compressor on and off. This parameter sets the "ON" time period	0 + 255 mins.	H	15 mins.
CO_F Probe Fault "OFF" Time	If a probe fault is detected the display will flash P1 and the controller will automatically cycle the compressor on and off. This parameter sets the "OFF" time period	0 + 255 mins.	H	30 mins.
CH Cooling or Heating mode	Sets the controller for heating or cooling applications. Cooling – Differential is above the Set Point Heating – Differential is below the Set Point	CL = Cooling Ht = Heating	V	CL
DISPLAY				
CF Unit of Measurement	Sets the display to read out in Celsius or Fahrenheit	C = °C F = °F	H	C
rES Resolution	Turns the decimal point on or off. This gives a display resolution of either 1 degree or 0.1 degree Celsius.	in = Off dE - On	V	dE
DEFROST				
IdF Interval Between defrosts	Sets the interval time between the start of successive defrosts	1 + 120 hours	V	8 hours
ndF Length Of Defrost	Sets the maximum duration time of the defrost	0 + 255 mins.	V	20 mins.
dFd Display During Defrost	This tells the controller what to display during defrost. rt = Actual temperature, it = Temperature at start of defrost, SEt = Set Point, DEF = "DEF" label	rt it SEt DEF	H	it
dAd Max display after Defrost	After defrost, the temperature as it was at commencement of defrost is displayed. Normal display is resumed once the actual temperature drops below this point or the time set in this parameter has expired	0 + 255 mins.	H	30 mins.
ALARMS				
ALC Alarm Configuration	Configures the alarm either to absolute temperatures or to be relative to the Set Point (i.e. so many degrees above & below Set Point) If "Relative", when the Set Point is altered the alarm levels will follow it	rE = Relative Ab = Absolute	H	Ab
ALU Alarm Level Upper	Sets the high temperature alarm level. If ALC = rE it sets how many degrees above Set Point. If ALC = Ab it sets a fixed alarm temperature.	Set Point + 110 c	V	150 c

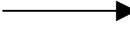
Parameters – Prime Series XR20C - Continued
 Use fold out programming flow chart inside rear cover

ALL Alarm Limit Lower	Sets the low temperature alarm level. If ALC = rE it sets how many degrees below Set Point. If ALC = Ab it sets a fixed alarm temperature.	-50 c ÷ Set Point	V	- 50 c
Ald Alarm Delay	Sets the time delay between a temperature alarm condition being sensed and the alarm being signaled during normal operation.	0 ÷ 255 mins.	H	15 mins.
dAO Alarm Delay at Start Up	Sets the initial temperature alarm delay time on start up so avoiding unnecessary alarms during pull down.	0.0 ÷ 23.5 hours (in 10 min. increments)	H	1.30 hours
iIP Digital input polarity	The digital input can be activated by either opening or closing the circuit. oP = Activate on opening, CL = activate on closing	oP CL	V	CL
iIF Digital input function	Defines what action the controller will perform in the event that the digital input is activated. EAL = External alarm – display will flash “EA” bAL = Serious alarm – display will flash “CA” - relay turns off dEF = Controller will start a defrost cycle AUS = Do not select this setting	EAL bAL nPS AUS	V	EAL
did Digital input delay	Sets the delay period between the sensing of a digital input and the controller responding with it’s programmed action	0 ÷ 255 mins.	V	5 mins.
PbC Probe Type	Configures controller to work with PTC or NTC probes	Ptc = PTC ntc = NTC	V	Ptc

Parameters – Prime Series XR30C
Controller for off cycle defrost or heating
Use fold out programming flow chart inside rear cover

Parameter & Label	Description	Range	Visible or Hidden menu	Factory Default
REGULATION				
SP Set Point	Sets the temperature at which the compressor stops	LS to US	V	3 c
HY Differential	Sets the number of degrees above Set Point at which the compressor is re-started	0 ÷ 1 + 25 ÷ 5 c	V	2 c
LS Lower Set Point Limit	Sets the lowest temperature to which the customer can adjust the Set Point	- 50 c + Set Point	H	- 50 c
US Upper Set Point Limit	Sets the highest temperature to which the customer can adjust the Set Point	Set Point + 150 c	H	150 c
Ot Thermostat Probe Calibration	Probe offset adjustment – thermostat	- 12 + 12 c	V	0 c
Ods Delay of Outputs on Start Up	Sets the time delay between the power to the controller being turned on and any output relay starting to operate. This can be used to prevent short cycling of the compressor following a momentary power failure. It can also be used to stagger the re-start of multiple units following a power failure, to prevent everything trying to start at once and blowing a fuse.	0 + 255 mins.	H	0 mins.
AC Anti Short Cycle	Sets the minimum time period between the stopping of the compressor and it's next possible restart	0 + 50 mins.	V	1
Cct Fast Chill / Freeze	The controller has a thermostat override facility. This parameter sets the override time during which the compressor will run continuously irrespective of the temperature. Setting time to 0 to disables this function	0.0 + 24.0 hours (in 10 min. increments)	H	0.0
CO_n Probe Fault "ON" Time	If a probe fault is detected the display will flash P1 and the controller will automatically cycle the compressor on and off. This parameter sets the "ON" time period	0 + 255 mins.	H	15 mins.
CO_F Probe Fault "OFF" Time	If a probe fault is detected the display will flash P1 and the controller will automatically cycle the compressor on and off. This parameter sets the "OFF" time period	0 + 255 mins.	H	30 mins.
CH Cooling or Heating mode	Sets the controller for heating or cooling applications. Cooling – Differential is above the Set Point Heating – Differential is below the Set Point	CL = Cooling Ht = Heating	V	CL
DISPLAY				
CF Unit of Measurement	Sets the display to read out in Celsius or Fahrenheit	C = °C F = °F	H	C
rES Resolution	Turns the decimal point on or off. This gives a display resolution of either 1 degree or 0.1 degree Celsius.	in = Off dE - On	V	dE
DEFROST				
IdF Interval Between defrosts	Sets the interval time between the start of successive defrosts	1 + 120 hours	V	8 hours
ndF Length Of Defrost	Sets the maximum duration time of the defrost	0 + 255 mins.	V	20 mins.
dFd Display During Defrost	This tells the controller what to display during defrost. rt = Actual temperature, it = Temperature at start of defrost, SEt = Set Point, DEF = "DEF" label	rt it SEt DEF	H	it
dAd Max display after Defrost	After defrost, the temperature as it was at commencement of defrost is displayed. Normal display is resumed once the actual temperature drops below this point or the time set in this parameter has expired	0 + 255 mins.	H	30 mins.
ALARMS				
ALC Alarm Configuration	Configures the alarm either to absolute temperatures or to be relative to the Set Point (i.e. so many degrees above & below Set Point) If "Relative", when the Set Point is altered the alarm levels will follow it	rE = Relative Ab = Absolute	H	Ab
ALU Alarm Level Upper	Sets the high temperature alarm level. If ALC = rE it sets how many degrees above Set Point. If ALC = Ab it sets a fixed alarm temperature.	Set Point + 110 c	V	150 c

Parameters – Prime Series XR30C - Continued

Use fold out programming flow chart inside rear cover 

ALL Alarm Limit Lower	Sets the low temperature alarm level. If ALC = rE it sets how many degrees below Set Point. If ALC = Ab it sets a fixed alarm temperature.	-50 c ÷ Set Point	V	- 50 c
Ald Alarm Delay	Sets the time delay between a temperature alarm condition being sensed and the alarm being signaled during normal operation.	0 ÷ 255 mins.	H	15 mins.
dAO Alarm Delay at Start Up	Sets the initial temperature alarm delay time on start up so avoiding unnecessary alarms during pull down.	0.0 ÷ 23E5 hours (in 10 min. increments)	H	1E30 hours
tbA Alarm relay muting	With parameter 0AC set at Alr, the second relay is used as an alarm relay. Muting can be enabled or disabled by this parameter's setting n = When alarm buzzer is muted, alarm relay still remains active until alarm condition clears Y = When alarm buzzer is muted, alarm relay will de-activate	n Y	H	Y
0AC 2 nd Relay configuration	The second relay can act as an auxiliary or an alarm relay ALr = Alarm relay AUS = Auxiliary relay DEF = Do not select this setting	ALr AUS DEF	V	AUS
i1P Digital input polarity	The digital input can be activated by either opening or closing the circuit. oP = Activate on opening, CL = activate on closing	oP CL	V	CL
i1F Digital input function	Defines what action the controller will perform in the event that the digital input is activated. EAL = External alarm – display will flash “EA” bAL = Serious alarm – display will flash “CA” – relay turns off dEF = Controller will start a defrost cycle AUS = With parameter A0C = AUS, the auxiliary relay activates	EAL bAL nPS AUS	V	AUS
did Digital input delay	Sets the delay period between the sensing of a digital input and the controller responding with it's programmed action	0 ÷ 255 mins.	V	5 mins.
PbC Probe Type	Configures controller to work with PTC or NTC probes	Ptc = PTC ntc = NTC	V	Ptc

Parameters – Prime Series XR40C
Controller with forced defrost & fan delay
Use fold out programming flow chart inside rear cover

Parameter & Label	Description	Range	Visible or Hidden menu	Factory Default
REGULATION				
SP Set Point	Sets the temperature at which the compressor stops	LS to US	V	- 5 c
HY Differential	Sets the number of degrees above Set Point at which the compressor is re-started	0 ÷ 1 + 25 ÷ 5 c	V	2 c
LS Lower Set Point Limit	Sets the lowest temperature to which the customer can adjust the Set Point	- 50 c + Set Point	H	- 50 c
US Upper Set Point Limit	Sets the highest temperature to which the customer can adjust the Set Point	Set Point + 150 c	H	150 c
Ot Thermostat Probe Calibration	Probe offset adjustment – thermostat	- 12 ÷ 12 c	V	0 c
P2P Evaporator Probe Presence	This controller can work with or without an evaporator probe. n = No evaporator probe, defrost will terminate on time. Y = Evaporator probe present, defrost will terminate on temperature. Note: When P2P = n, there is no need to fit an evaporator probe and the controller will not produce a P2 evaporator probe alarm	n = No Probe Y = Probe	V	Y
OE Evaporator Probe Calibration	Probe offset adjustment – evaporator	- 12 ÷ 12 c	H	0 c
Ods Delay of Outputs on Start Up	Sets the time delay between the power to the controller being turned on and any output relay starting to operate. This can be used to prevent short cycling of the compressor following a momentary power failure. It can also be used to stagger the re-start of multiple units following a power failure, to prevent everything trying to start at once and blowing a fuse.	0 ÷ 255 mins.	H	0 mins.
AC Anti Short Cycle	Sets the minimum time period between the stopping of the compressor and it's next possible restart	0 ÷ 50 mins.	V	1
CCt Fast Chill / Freeze	The controller has a thermostat override facility. This parameter sets the override time during which the compressor will run continuously irrespective of the temperature. Setting time to 0 to disables this function	0.0 ÷ 24.0 hours (in 10 min. increments)	H	0.0
CO_n Probe Fault "ON" Time	If a probe fault is detected the display will flash P1 and the controller will automatically cycle the compressor on and off. This parameter sets the "ON" time period	0 ÷ 255 mins.	H	15 mins.
CO_F Probe Fault "OFF" Time	If a probe fault is detected the display will flash P1 and the controller will automatically cycle the compressor on and off. This parameter sets the "OFF" time period	0 ÷ 255 mins.	H	30 mins.
DISPLAY				
CF Unit of Measurement	Sets the display to read out in Celsius or Fahrenheit	C = °C F = °F	H	C
rES Resolution	Turns the decimal point on or off. This gives a display resolution of either 1 degree or 0.1 degree Celsius.	in = Off dE = On	V	dE
DEFROST				
Prd Evap Probe	Shows current temperature of evaporator probe	--	H	--
tdF Defrost Type	Configures the controller for defrost by electrical heaters or hot gas. If set for hot gas, the compressor is kept running during defrost	EL = Electrical in = Hot Gas	V	EL
dtE Defrost Termination Temperature	Sets the evaporator temperature at which the controller will terminate the defrost. This temperature is sensed by the evaporator probe (if fitted)	- 50 ÷ 50 c	V	8 c
IdF Interval Between defrosts	Sets the interval time between the start of successive defrosts	1 ÷ 120 hours	V	6 hours
ndF Length Of Defrost	Sets the maximum duration time of the defrost	0 ÷ 255 mins.	V	30 mins.

Parameters – Prime Series XR40C - Continued

Use fold out programming flow chart inside rear cover →

dFd Display During Defrost	This tells the controller what to display during defrost. rt = Actual temperature, it = Temperature at start of defrost, SEt = Set Point, DEF = "DEF" label	rt it SEt DEF	H	it
dAd Max display after Defrost	After defrost, the temperature as it was at commencement of defrost is displayed. Normal display is resumed once the actual temperature drops below this point or the time set in this parameter has expired	0 ÷ 255 mins.	H	30 mins.
Fdt Drip Time	Sets the period of time following the termination of a defrost during which period nothing happens. This allows any residual moisture on the evaporator time to drip down and drain away.	0 ÷ 120 mins.	H	0
dPO First Defrost after start up	Tells the controller whether to do an immediate defrost when the power is switched on or to wait for the normal interval time as set in parameter IdF . Can be used to make sure defrosts are not missed in areas with unreliable power supplies.	Y = Immediate n = After IdF time	H	n
dAF Delay of Defrost after fast chill	Sets the period of time following a thermostat override after which the controller will go into a defrost. The controller will then resume normal operation	0 ÷ 23∓ 50 (in 10 min. increments)	H	0∓ 0 Hours
ALARMS				
ALC Alarm Configuration	Configures the alarm either to absolute temperatures or to be relative to the Set Point (i.e. so many degrees above & below Set Point) If "Relative", when the Set Point is altered the alarm levels will follow it	rE = Relative Ab = Absolute	H	Ab
ALU Alarm Level Upper	Sets the high temperature alarm level. If ALC = rE it sets how many degrees above Set Point. If ALC = Ab it sets a fixed alarm temperature.	Set Point ÷ 150 c	V	150 c
ALL Alarm Limit Lower	Sets the low temperature alarm level. If ALC = rE it sets how many degrees below Set Point. If ALC = Ab it sets a fixed alarm temperature.	-50 c ÷ Set Point	V	- 50 c
Ald Alarm Delay	Sets the time delay between a temperature alarm condition being sensed and the alarm being signaled during normal operation.	0 ÷ 255 mins.	H	15 mins.
dAO Alarm Delay at Start Up	Sets the initial temperature alarm delay time on start up so avoiding unnecessary alarms during pull down.	0.0 ÷ 23∓ 5 hours (in 10 min. increments)	H	1∓ 30 hours
PbC Probe Type	Configures controller to work with PTC or NTC probes	Ptc = PTC ntc = NTC	V	Ptc

Parameters – Prime Series XR60C
Controller with forced defrost & fan delay
Use fold out programming flow chart inside rear cover

Parameter & Label	Description	Range	Visible or Hidden menu	Factory Default
REGULATION				
SP Set Point	Sets the temperature at which the compressor stops	LS to US	V	- 5 c
HY Differential	Sets the number of degrees above Set Point at which the compressor is re-started	0 ÷ 1 + 25 ÷ 5 c	V	2 c
LS Lower Set Point Limit	Sets the lowest temperature to which the customer can adjust the Set Point	- 50 c + Set Point	H	- 50 c
US Upper Set Point Limit	Sets the highest temperature to which the customer can adjust the Set Point	Set Point + 110 c	H	110 c
Ot Thermostat Probe Calibration	Probe offset adjustment – thermostat	- 12 ÷ 12 c	V	0 c
P2P Evaporator Probe Presence	This controller can work with or without an evaporator probe. n = No evaporator probe, defrost will terminate on time. Y = Evaporator probe present, defrost will terminate on temperature. Note: When P2P = n, there is no need to fit an evaporator probe and the controller will not produce a P2 evaporator probe alarm	n = No Probe Y = Probe	V	Y
OE Evaporator Probe Calibration	Probe offset adjustment – evaporator	- 12 ÷ 12 c	H	0 c
Ods Delay of Outputs on Start Up	Sets the time delay between the power to the controller being turned on and any output relay starting to operate. This can be used to prevent short cycling of the compressor following a momentary power failure. It can also be used to stagger the re-start of multiple units following a power failure, to prevent everything trying to start at once and blowing a fuse.	0 ÷ 255 mins.	H	0 mins.
AC Anti Short Cycle	Sets the minimum time period between the stopping of the compressor and it's next possible restart	0 ÷ 50 mins.	V	1
CCt Fast Chill / Freeze	The controller has a thermostat override facility. This parameter sets the override time during which the compressor will run continuously irrespective of the temperature. Setting time to 0 to disables this function	0.0 ÷ 24.0 hours (in 10 min. increments)	H	0.0
CO_n Probe Fault "ON" Time	If a probe fault is detected the display will flash P1 and the controller will automatically cycle the compressor on and off. This parameter sets the "ON" time period	0 ÷ 255 mins.	H	15 mins.
CO_F Probe Fault "OFF" Time	If a probe fault is detected the display will flash P1 and the controller will automatically cycle the compressor on and off. This parameter sets the "OFF" time period	0 ÷ 255 mins.	H	30 mins.
DISPLAY				
CF Unit of Measurement	Sets the display to read out in Celsius or Fahrenheit	C = °C F = °F	H	C
rES Resolution	Turns the decimal point on or off. This gives a display resolution of either 1 degree or 0.1 degree Celsius.	in = Off dE = On	V	dE
DEFROST				
Prd Evap Probe	Shows current temperature of evaporator probe	--	H	--
tdF Defrost Type	Configures the controller for defrost by electrical heaters or hot gas. If set for hot gas, the compressor is kept running during defrost	EL = Electrical in = Hot Gas	V	EL
dtE Defrost Termination Temperature	Sets the evaporator temperature at which the controller will terminate the defrost. This temperature is sensed by the evaporator probe (if fitted)	- 50 ÷ 50 c	V	8 c
IdF Interval Between defrosts	Sets the interval time between the start of successive defrosts	1 ÷ 120 hours	V	6 hours
ndF Length Of Defrost	Sets the maximum duration time of the defrost	0 ÷ 255 mins.	V	30 mins.

Parameters – Prime Series XR60C - Continued

Use fold out programming flow chart inside rear cover

dFd Display During Defrost	This tells the controller what to display during defrost. rt = Actual temperature, it = Temperature at start of defrost, SEt = Set Point, DEF = "DEF" label	rt it SEt DEF	H	it
dAd Max display after Defrost	After defrost, the temperature as it was at commencement of defrost is displayed. Normal display is resumed once the actual temperature drops below this point or the time set in this parameter has expired	0 ÷ 255 mins.	H	30 mins.
Fdt Drip Time	Sets the period of time following the termination of a defrost during which period nothing happens. This allows any residual moisture on the evaporator time to drip down and drain away.	0 ÷ 120 mins.	H	0
dPO First Defrost after start up	Tells the controller whether to do an immediate defrost when the power is switched on or to wait for the normal interval time as set in parameter IdF . Can be used to make sure defrosts are not missed in areas with unreliable power supplies.	Y = Immediate n = After IdF time	H	n
dAF Delay of Defrost after fast chill	Sets the period of time following a thermostat override after which the controller will go into a defrost. The controller will then resume normal operation	0 ÷ 23 ÷ 50 (in 10 min. increments)	H	0 ÷ 0 Hours
FANS				
FnC Fan Operating Mode	Defines how the evaporator fan relay operates. C-n = The fan stops and starts with the compressor (but always off during defrost) o-n = The fan runs continuously (but always off during defrost) C-Y = The fan stops and starts with the compressor (fan stays on during defrost) o-Y = The fan runs continuously (fan stays on during defrost)	C-n o-n C-Y o-Y	V	o-n
Fnd Fan Delay	Sets the time delay between the end of defrost and the evaporator fans re-starting.	0 ÷ 255 mins.	V	10 mins.
FSt Fan Stop Temperature	Sets the maximum temperature (sensed by the evaporator probe) above which the controller stops evaporator fans from running	- 50 ÷ 50 c	V	2 c
ALARMS				
ALC Alarm Configuration	Configures the alarm either to absolute temperatures or to be relative to the Set Point (i.e. so many degrees above & below Set Point) If "Relative", when the Set Point is altered the alarm levels will follow it	rE = Relative Ab = Absolute	H	Ab
ALU Alarm Level Upper	Sets the high temperature alarm level. If ALC = rE it sets how many degrees above Set Point. If ALC = Ab it sets a fixed alarm temperature.	Set Point ÷ 110 c	V	110 c
ALL Alarm Limit Lower	Sets the low temperature alarm level. If ALC = rE it sets how many degrees below Set Point. If ALC = Ab it sets a fixed alarm temperature.	-50 c ÷ Set Point	V	- 50 c
Ald Alarm Delay	Sets the time delay between a temperature alarm condition being sensed and the alarm being signaled during normal operation.	0 ÷ 255 mins.	H	15 mins.
dAO Alarm Delay at Start Up	Sets the initial temperature alarm delay time on start up so avoiding unnecessary alarms during pull down.	0.0 ÷ 23 ÷ 5 hours in 10 min steps	H	1 ÷ 30 hours
iIP Digital input polarity	The digital input can be activated by either opening or closing the circuit. oP = Activate on opening, CL = activate on closing	oP CL	V	CL
iIF Digital input function	Defines what action the controller will perform in the event that the digital input is activated. EAL = External alarm – display will flash "EA" bAL = Action will depend on the setting of parameter nPS dEF = Controller will start a defrost AUS = Not enabled – no action	EAL bAL nPS AUS	V	bAL
did Digital input delay	Sets the delay period between the sensing of a digital input and the controller responding with it's programmed action	0 ÷ 255 mins.	V	5 mins.
nPS Digital input action	If parameter iIF has been set to bAL , the controller will respond to a digital input according to this parameter's setting:- 0 = Door open – Fans & Compressor stop (or liquid valve closes) 1 = Alarm – all relays will turn off after time set in parameter did 2 ÷ 15 = Pressure switch alarm: All relays turn off. If the number of times the input is activated exceeds this value within the time set in parameter did , the relays lock out. To re-set, turn the power to the controller off & on	0 1 2 ÷ 15	H	0

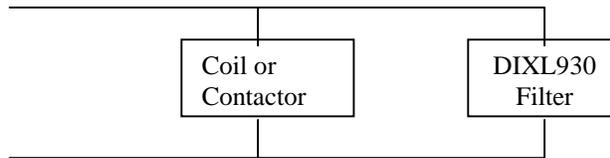
Dixell Controls - Adverse Condition Protection

In circumstances where a control could be influenced by other local electrical equipment or by an erratic or spike prone mains supply, it may be prudent to take action to protect the control and thereby the reliable operation of the system. Generally, these 'safeguards' are very inexpensive and may in some situations be looked upon as standard procedure where there is any doubt about the quality of the electrical supply or the effect of associated electrical equipment.

Noise Filter for Inductive coils -

part no. **DIXL930**

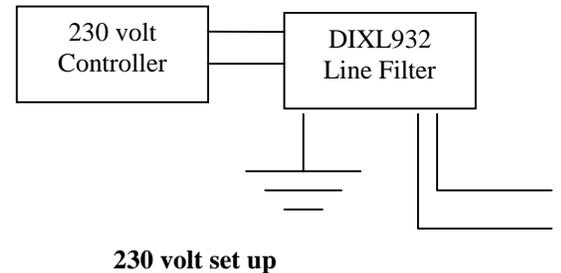
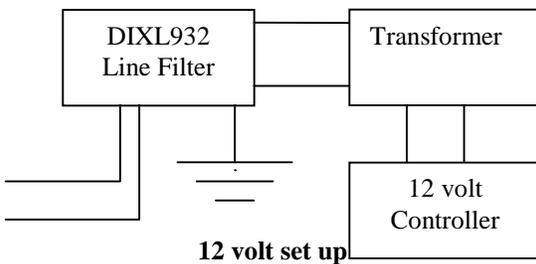
Inductive coils as fitted, for example, to solenoid valves or contactors can produce a back EMF which can interfere with the control. This particularly relates to coils directly operated by the control. To minimize the effect, a noise filter should be fitted in parallel, and as near as possible, to the relevant coil as shown below.



Noise Filter for Mains supply -

part no. **DIXL932**

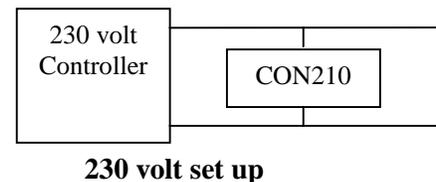
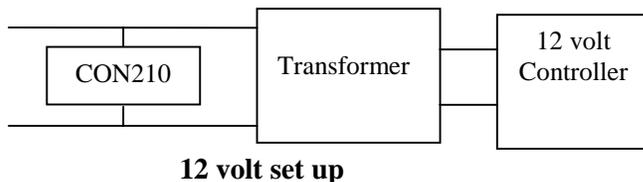
Almost all electrical supplies are influenced by the running of other electrical equipment and will carry some 'noise' or transients. Most normal supplies are however acceptable but where the supply is also used for large motors, fluorescent lights, etc., the fitting of a mains noise filter is advisable. The filter should be fitted in series to the 240vac supply to the control or transformer. The earth connection **must** be made otherwise the filter will not function.



Varistor Voltage Spike suppressor

part no. **CON210**

Spikes of up to 35 times the normal line voltage are not uncommon and will often either damage or influence any electronic control. When a poor quality supply is established or suspected, it is practical to fit a spike suppressor in parallel with the 240vac supply to the transformer or, in the case of 240v instruments, in parallel with the mains supply.



Key Feature Check List

REFRIGERATION CONTROLLERS

Model	Supply Voltage	Mount (mm)	Defrost Start	Defrost End	Defrost Type	Compressor Relay	Defrost & Evaporator Fan Relays	Alarm Buzzer	Alarm Output
XR10C	230	Panel (32x74)	-	-	-	1 x 20A (8A)	-	✗	12v 40mA
XR20C	230	Panel (32x74)	Interval Timer	Time	Elec. or Hg.	1 x 20A (8A)	-	✗	12v 40mA
XR30C	230	Panel (32x74)	Interval Timer	Time	Elec. or Hg.	1 x 20A (8A)	-	✗	Relay
XR40C	230	Panel (32x74)	Interval Timer	Time or Temp	Elec. or Hg.	1 x 20A (8A)	1 x 8A (3A)	✗	✗
XR60C	230	Panel (32x74)	Interval Timer	Temp	Elec. or Hg.	1 x 8A (3A)	2 x 8A (3A)	✗	✗
XR110C	12	Panel (32x74)	-	-	-	1 x 8A (3A)	-	✓	✗
XR110C	230	Panel (32x74)	-	-	-	1 x 8A (3A)	-	✗	12v 40mA
XR120C	12	Panel (32x74)	Interval Timer	Time	Elec. or Hg.	1 x 8A (3A)	-	✓	✗
XR120C	230	Panel (32x74)	Interval Timer	Time	Elec. or Hg.	1 x 8A (3A)	-	✗	12v 40mA
XR130C	12	Panel (32x74)	Interval Timer	Time	Elec. or Hg.	1 x 8A (3A)	-	✓	Relay
XR130D	230	DIN rail	Interval Timer	Time	Elec. or Hg.	1 x 8A (3A)	-	✓	Relay
XR140C	12	Panel (32x74)	Interval Timer	Time or Temp	Elec. or Hg.	1 x 8A (3A)	1 x 8A (3A)	✗	✗
XR150C	12	Panel (32x74)	Interval Timer	Time or Temp	Elec. or Hg.	1 x 8A (3A)	1 x 8A (3A)	✓	Relay
XR160C	12	Panel (32x74)	Interval Timer	Temp	Elec. or Hg.	1 x 8A (3A)	2 x 8A (3A)	✓	✗
XR160D	230	DIN rail	Interval Timer	Temp	Elec. or Hg.	1 x 5A (2A)	2 x 8A (3A)	✓	12v 40mA
XR162C	230	Panel (32x74)	Interval Timer	Temp	Elec. or Hg.	1 x 16A (8A)	2 x 8A (3A)	✗	12v 40mA
XR170C	12	Panel (32x74)	Interval Timer	Temp	Elec. or Hg.	1 x 8A (3A)	2 x 8A (3A)	✓	Relay
XR170D	230	DIN rail	Interval Timer	Temp	Elec. or Hg.	1 x 5A (2A)	2 x 5A (2A)	✓	Relay
XR172C	230	Panel (32x74)	Interval Timer	Temp	Elec. or Hg.	1 x 16A (8A)	2 x 8A (3A)	✓	Relay
XR530C	12	Panel (32x74)	Real Time	Time	Elec. or Hg.	1 x 8A (3A)	-	✓	Relay
XR570C	12	Panel (32x74)	Real Time	Temp	Elec. or Hg.	1 x 8A (3A)	2 x 8A (3A)	✓	Relay
XR572C	230	Panel (32x74)	Real Time	Temp	Elec. or Hg.	1 x 16A (8A)	2 x 8A (3A)	✓	Relay

Relays - Ratings are resistive (inductive in brackets) **Defrost** – Elec. = Electric, Hg = Hot Gas

Continued:-

Key Feature Check List

TEMPERATURE (Heating / Cooling) CONTROLLERS

Model	Supply Voltage	Mount (mm)	Load Relay (s)	Alarm Buzzer	Alarm Output
XT110C	12	Panel (32x74)	1 x 8A (3A)	X	X
XT111C	12	Panel (32x74)	1 x 8A (3A)	✓	Relay
XT120C	12	Panel (32x74)	2 x 8A (3A)	X	X
XT121C	12	Panel (32x74)	2 x 8A (3A)	✓	Relay
XT130C	12	Panel (32x74)	2 x 8A (3A)	X	X
XT131C	12	Panel (32x74)	2 x 8A (3A)	✓	Relay

STEP CONTROLLERS

Model	Supply Voltage	Mount (mm)	Number of Stages	Load Relay(s)	Alarm Buzzer	Alarm Output
XC440C	12	Panel (32x74)	4 Step	4 x 5A (2A)	✓	Relay
XC440D	230	DIN rail	4 Step	4 x 5A (2A)	✓	Relay
XC460D	230	DIN rail	6 Step	6 x 5A (2A)	✓	12v 40mA

Relays - Ratings are resistive (inductive in brackets)

Dixell



WARNING : These controllers are electrical devices. Under no circumstances should they be opened. Electric shock can be serious or fatal

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**THE PROGRAMMING FLOW CHART ON
THE NEXT PAGE IS FOR PRIME SERIES
ONLY.**

**READ IT IN CONJUNCTION WITH THE
PARAMETER LIST FOR YOUR PARTICULAR
MODEL**

**THIS CHART IS FOR DIXELL PRIME SERIES MODELS
THERE IS ANOTHER CHART INSIDE THE FRONT COVER FOR
ALL OTHER MODELS**

**PROGRAMMING FLOW CHART
ALL PRIME SERIES MODELS
(For all other models, see chart inside front cover)**

IMPORTANT NOTES:

Not every parameter will be present in every model

If no button is pressed for 15 seconds, the controller will revert to normal display. **Any alteration that have been made will be stored.**

Alarm Codes

DISPLAY FLASHING	PROBLEM
EE	Data or memory corruption
P1	Fault with thermostat probe or probe wiring
P2	Fault with evaporator probe or probe wiring
HA	High temperature alarm
LA	Low temperature alarm
EA	External alarm
CA	Serious external alarm

Press any button to silence alarm

