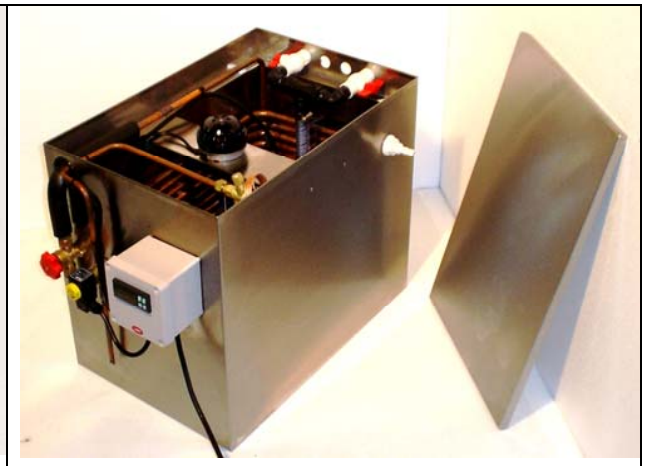
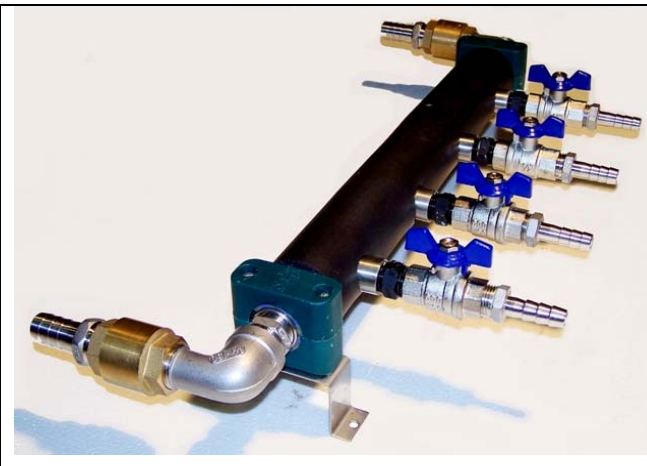


ALPINE CHILLERS

Self Contained A/C Series OPERATING MANUAL



www.alpinechillers.com.au

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PO Box 334, Maddington WA 6989

Ph: 08 9490 9933

Fax: 08 9493 2013

ALPINE CHILLERS

Final Check Sheet

CHILLER MODEL

- | | | | |
|----------|--------------------------|----------|--------------------------|
| UBAC2500 | <input type="checkbox"/> | UBAC3000 | <input type="checkbox"/> |
| AC3000 | <input type="checkbox"/> | AC3000S | <input type="checkbox"/> |
| AC4000 | <input type="checkbox"/> | AC4000S | <input type="checkbox"/> |
| AC5000 | <input type="checkbox"/> | AC5000S | <input type="checkbox"/> |
| AC6000 | <input type="checkbox"/> | AC6000S | <input type="checkbox"/> |

Custom _____

REFRIGERANT TYPE

- R404A
- R134A
- R22

Other _____

STAND TYPE

- Stainless Steel Legs 250mm
- Stainless Steel Legs 150mm
- Stainless Steel Stand 800mm

Custom _____

MANIFOLD TYPE

Hose Tail - 12mm 19mm

Ball Valves - yes no

Outlets – single 2 way 3 way Custom _____

Non return valve - yes no

Other _____

ALPINE CHILLERS

Final Check Sheet

SYSTEM CHECK LIST

Pressure test at 2000kpa for 48hrs - checked by _____

Evacuated to 30inhg

System Pull down to temperature _____

Pull down time _____

Electrical contacts checked

All fixings checked

Agitation motor tested

Test and set control

Temperature set at _____ °C

Differential set at _____ °C

REFRIGERATION TYPE

Static Coil (Copper Coil)

Static Coil (Stainless Steel)

PLUG TYPE

Water proof screw fit 10amp

Custom _____

Serial Number _____

Date of Manufacture _____

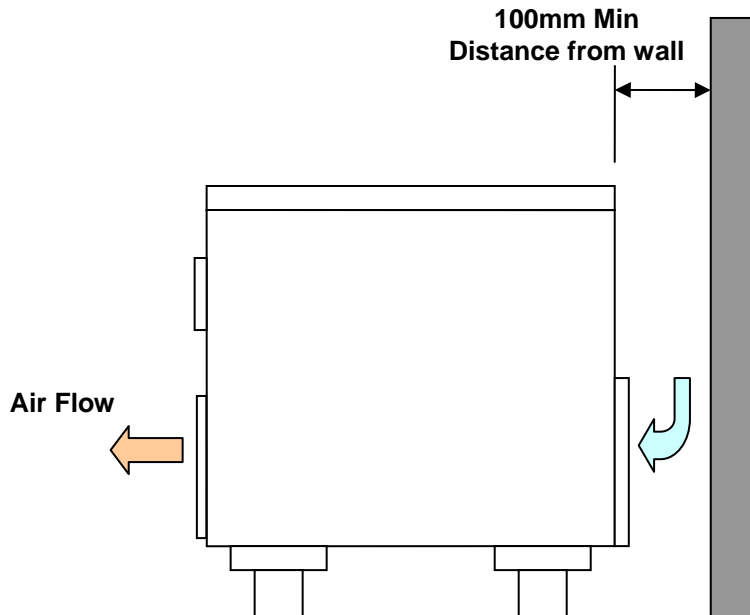
Final inspection by _____

Inspection completion date _____

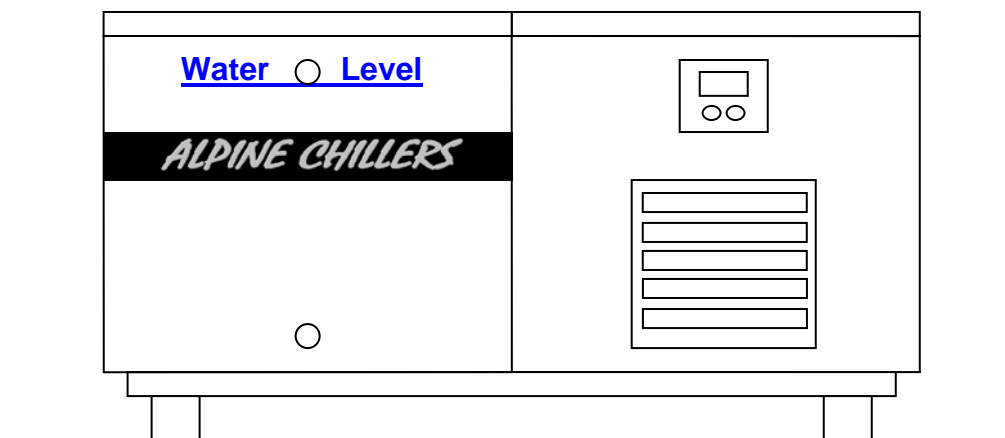
ALPINE CHILLERS

Installation of Chiller

- Ensure the Chiller is level.
- Position the Chiller so that the rear is at least 100mm from the wall to allow adequate air flow to the refrigeration system.



- Make sure drain plug is firmly tightened.
- Fill water to level just below the overflow.
- Allow for volume of Product / Samples when filling.



- Turn the Refrigeration Switch and Power Switch on the Control to the OFF Position.
- Plug the Chiller into a 10 amp power supply.

ALPINE CHILLERS

Start up Procedure

- Ensure Chiller is level and in operation position.
- Fill the tank with liquid to be cooled (fresh water, salt water, glycol/water mix) to the water level label (bottom of the overflow). Taking into account the volume of product/samples to be placed into the tank.
- Ensure that there is no product or foreign objects obstructing the agitation motor inside the chiller.
- Turn the Refrigeration and Power switch to the **Off** position on the front of the chiller.
- Plug the Chiller into a 10 amp power point and turn on.
- Switch the power switch **ONLY** to the on position on the front of the chiller.
- The control will illuminate and the temperature of the water will be displayed.
- The agitation motor in the chiller will also start at this point and circulate the water in the tank.
- Turn the Refrigeration switch on the front of the chiller to the on position.
 - Note: you will hear a Click and slight hissing noise of the refrigerant in the system and a few seconds later the refrigeration system will start.
- The Control will read the temperature in 0.1 degree increments and will slowly lower until reaching temperature set point. The pull down time of the water will vary depending on the heat load put on the chiller.
- The chiller will maintain the desired set point temperature, and the refrigeration system will cycle on and off as required to hold this temperature constant.
 - Note: The Control Setting will maintain the Product temperature at the set point. The control has a 1°C differential (Temp between cut in and cut out) programmed so the Chiller can operate. This differential set point (**rd**) must not be set below 0.6°C. It will cause the Chiller to Stop start erratically (Short Cycle) and damage the refrigerator system.
 - EG. If the Set point is 10°C, the product will be cooled and maintain that temperature. The display read out will alternate between 9.5°C and 10.5°C as the Chiller cuts in and out to maintain the set point of 10°C.

ALPINE CHILLERS

Chiller Stand by and Shut down Procedure

Chiller Stand By Procedure

- Switch the Refrigeration switch on the front of the chiller to the off position. The refrigeration system will continue running for a short period of time and switch itself off.
 - Note: The temperature display will continue to read out the temperature and the agitation motor in the chiller tank will continue to run.

Chiller Shut Down Procedure

- Switch the Refrigeration switch on the front of the chiller to the off position. The refrigeration system will continue running for a short period of time and switch itself off.
 - Note: The temperature display will continue to read out the temperature and the agitation motor in the chiller tank will continue to run.
- Wait approximately 60 seconds and then switch the Power Switch to the off position.
- Turn the power point off and remove the power plug from the wall.
- Remove the lower drain plug on the Chiller and remove the water from the tank.
- Carefully tilt the chiller forward (max 20 degrees) to remove the remaining water from the tank, or alternately mop up the remaining water in the tank.
- Ensure that the inner tank is left clean when not in use.

Emergency Shut Down Procedure

- Switch the power switch to the off position on the front of the chiller. This will stop all refrigeration and motors immediately.
- Turn the power point off and remove the plug.
 - Note: The chiller can be switched off directly at the power point without any damage to the chiller. The above procedures are a safe guard to help maintain an efficient and trouble free chiller.

ALPINE CHILLERS

Control Settings

- The Temperature control has been pre programmed to the desired cooling temperature requested on purchase of chiller.
- The Temperature differential (rd) is pre set to 1°C. Do Not adjust this setting below 0.6°C.
- The Control has been programmed with a minimum set point of 10°C and a maximum set point of 25°C.
- This can be altered if required and the programming sheets can be found in this booklet and on the web site www.alpinechillers.com.au
- Alternatively please contact Paul at Alpine Chillers on 0418 938 991 and he will guide you through the programming of the control.
 - Note: If you require different temperature set points take care not to set the chiller temperature too low ie below 0°C without using the appropriate mixture of glycol solution to lower the freezing point of the water.
 - The Glycol to water ratios can be found in this booklet.

Adjusting the operating temperature.

- Press and hold the set button until the set temp is displayed (2 seconds).
- Adjust the temp using the up/down buttons (▲▼).
- When desired temp is reached press the set button to confirm setting.

Adjusting the differential setting.

- Press and hold the (PRG) button until the display shows parameters (changes from numbers to letters).
- Using (▲▼) buttons scroll through until (rd) is displayed.
- Press the set button.
- Set the required differential using the (▲▼) buttons.
- Press and hold the (PRG) button until the temp is displayed (this will lock in setting).

Control Fault Codes can be found on the programming sheet on last page of booklet

ALPINE CHILLERS

Maintenance Procedure


- A refrigeration technician or maintenance person is required to remove the rear louvered grill from the rear of the chiller and clean the Condensing Coil located behind it using compressed air to blow the coil clean of dust and dirt.
- Depending on the environment, this should be carried out approximately every six months or three months in harsh conditions.
- A visual inspection of the tank should be carried out periodically and water replaced if dirty.
 - Note: The Inner Chiller tank and Coil are manufactured from marine grade 316 Stainless Steel and will withstand salt water and most chemicals. Cleaning of the tank will ensure years of trouble free use.
- Periodically check the power lead is out of the way from damage and has not been damaged or cut.
- No other maintenance is required on the chiller. It is constructed from Stainless Steel and designed to run maintenance free.

Propylene glycol to water ratio - freezing point of solution

- 10% glycol in water solution has a freezing point of -3.5°C
- 20% glycol in water solution has a freezing point of -7.5°C
- 30% glycol in water solution has a freezing point of -13.5°C
- 40% glycol in water solution has a freezing point of -21.5°C
- 50% glycol in water solution has a freezing point of -34°C
- 60% glycol in water solution has a freezing point of -50°C

ALPINE CHILLERS

Chiller Spares

Part Number	Description	
10610	Zeihl EBM Agitator Motor EBM40JB (Special)	
10095	Carel Control IR33SOER00 240V Med Temp Control	
10097	Carel Control NTC Probe	
30050	Danfoss Compressor SC21GX R134A 220V 50/60 Htz	
10090	Dual Pressure Control (Auto Reset) Ranco 017-8701	
20011	Refrigeration Switch (TEEZB2-BD2 Rotary Selector operator) (TEEZB2-BZ102 Pushbutton Body)	
20011	Power Switch (TEEZB2-BD2 Rotary Selector operator) (TEEZB2-BZ102 Pushbutton Body)	
20020	Water Proof 10amp Plug IP66	
20063	1/4" Liquid Line Filter Drier EK032S	
10141	Heldon Solenoid Coil 240V 50/60 Htz	
10139	Heldon 1/4" Solenoid Valve	
10020	Alco orifice # 2	
10045	Alco Thermostatic Expansion Valve (R134a, Internally Equalised)	

ALPINE CHILLERS

Warranty

All parts and materials carry a 1 year manufactures warranty.

- Warranty does not cover labour.
- Warranty does not cover damage caused by ice within the tank due to insufficient glycol levels.
- Warranty does not cover damage caused to the refrigeration system from running the chiller with incorrect temperature and differential settings.

Alpine Chillers are manufactured to the highest standards using high quality materials and components. These units are designed to be simple to operate, low maintenance, strong, reliable and efficient.

For any technical advice please contact:

Alpine Chillers
PO Box 334, Maddington WA 6989
Ph: 08 9490 9933
Fax: 08 9493 2013
AH: 0418 938 991
Email: admin@alpinechillers.com.au
Web: www.alpinechillers.com.au

ALPINE CHILLERS



Carel

IR33 Temperature Control

Setting the control to suit Alpine Chiller models

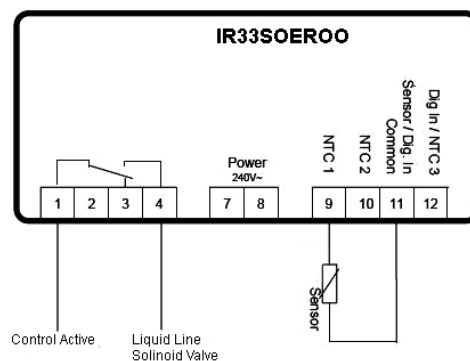
UBAC Series
AC Series

Adjusting the operating temperature.

- Press and hold the set button until the set temp is displayed (2 seconds).
- Adjust the temp using the up/down buttons (▲▼).
- When desired temp is reached press the set button to confirm setting.

Adjusting the differential setting.

- Press and hold the (PRG) button until the display shows parameters (changes from numbers to letters).
- Using (▲▼) buttons scroll through until (rd) is displayed.
- Press the set button.
- Set the required differential using the (▲▼) buttons.
- Press and hold the (PRG) button until the temp is displayed (this will lock in setting).



Alpine Chillers

www.alpinechillers.com.au

CAREL IR33 Summary of operating parameters (v1.131 up)

Set Point (cut out temp)

PRESS & hold for 2 sec **Set** Set point value will be displayed

PRESS **▲** OR **def** To display required Set Point

PRESS **Set** To confirm and save Set Point

(Or adjust parameter "St")

HACCP Parameters
To view HACCP alarm details

PRESS **Set** & **def** "HAn" will be displayed (Follow normal prog steps to view parameters)

To clear HACCP alarm (HACCP Flashing with HA) when in HACCP Menu

PRESS & hold for 5 sec **Set** & **def** After 5 seconds "rES" will be displayed to indicate the alarm is reset

Parameter Access

"F" (frequent parameters)
PRESS & hold for 5 sec **Prg mute** "St" will be displayed

"C" (configuration parameters)
PRESS & hold for 5 sec **Prg mute** & **Set** "Q" will be displayed

PRESS **▲** OR **def** To display "22" (This is the Password)

PRESS **Set** To confirm password entry

See steps below for parameter modification

Parameter Modification

Once level "F" or "C" has been accessed

PRESS **▲** OR **def** To display the parameter to be modified (eg rd = diff)

PRESS **Set** To display the value the parameter is set to

PRESS **▲** OR **def** To adjust the value of the parameter (eg rd = 2.0)

PRESS **Set** To display code of the parameter modified eg rd

Repeat above steps until all required parameters have been programmed

PRESS & hold for 5 sec **Prg mute** This is IMPORTANT. Without this step your parameters will not be saved!

Block Level Access

Block programming access allows the user to scroll between menu blocks rather than scrolling through the complete parameter list

Once level "F" or "C" has been accessed and a parameter code is displayed,

PRESS for 1 sec **Prg mute** To display block code eg Pro for Probes, dEF for defrost

PRESS **▲** OR **def** To display the next block code (eg FAn for fan)

PRESS **Set**

Follow these steps to adjust individual parameters

PRESS **Prg mute** IMPORTANT: Press and hold PRG for 5 sec when programming is completed and repeat above)

(At any time to go back to block programming and repeat above)

Code	Block	Parameter	Model	Unit	Type	Min.	Max.	Def.	New
/2	Pro	Measurement stability	MSC	-	C	1	15	4	
/3	Pro	Probe display speed	MSC	-	C	0	15	0	
/4	Pro	Virtual probe	MSC	-	C	0	100	0	
/5	Pro	Select °C or °F (0 = °C)	MSC	flag	C	0	1	0	
/6	Pro	Decimal point (0 = decimal point)	MSC	flag	C	0	1	0	
/tl	Pro	Sensor shown on controller display (1= Control sen)	MSC	-	C	1	7	1	
/tE	Pro	Sensor shown on remote display	MSC	-	C	0	6	0	
/P	Pro	Type of probe (0= standard Carel NTC)	MSC	-	C	0	2	0	
/A2	Pro	Probe 2 configuration (eg 2=evap,3=cond)	MSC	-	C	0	4	2	
			-S-	-	C	0	4	0	
/A3	Pro	Probe 3 configuration (eg 2=evap,3=cond)	MSC	-	C	0	4	0	
/A4	Pro	Probe 4 configuration(eg 0=absent,2=evap,3=cond)	MSC	-	C	0	4	0	
/c1	Pro	Calibration of probe 1	MSC	°C/°F	C	-20	20	0.0	
/c2-4	Pro	Calibration of probe 2-3-4 /c2=probe 2, /c3=probe 3	MSC	°C/°F	C	-20	20	0.0	
St	Ctl	Temperature set point	MSC	°C/°F	F	r1	r2	0.0	
rd	Ctl	Controller differential	-SC	°C/°F	F	0.1	20	2.0	
m	Ctl	Dead Zone (when used 1 Heat 1 Cool)	-SC	°C/°F	C	0	60	4	
rr	Ctl	Reverse (heat) diff in dead zone control	-SC	°C/°F	C	0.1	20	2	
r1	Ctl	Minimum Set Point allowed	MSC	°C/°F	C	-50	r2	-50	
r2	Ctl	Maximum Set Point allowed	MSC	°C/°F	C	r1	200	60	
r3	Ctl	Mode 0=cool with defrost,1=cool only, 2=heating	-SC	flag	C	0	2	0	
r4	Ctl	Value to alter Set Point by from Digital Input	MSC	°C/°F	C	-20	20	3.0	
r5	Ctl	Enable temperature monitoring	MSC	flag	C	0	1	0	
rt	Ctl	Temperature monitoring interval	MSC	hours	F	0	999	-	
rH	Ctl	Max temperature recorded during period rt	MSC	°C/°F	F	-	-	-	
rL	Ctl	Min temperature recorded during period rt	MSC	°C/°F	F	-	-	-	
c0	CnP	Comp. and fan start delay at power up	-SC	min	C	0	15	0	
c1	CnP	Minimum time between 2 comp starts	-SC	min	C	0	15	0	
c2	CnP	Minimum compressor OFF time	-SC	min	C	0	15	0	
c3	CnP	Minimum compressor ON time	-SC	min	C	0	15	0	
c4	CnP	Duty setting	-SC	min	C	0	100	0	
cc	CnP	Duration of continuous cycle	-SC	hours	C	0	15	0	
c6	CnP	Alarm bypass after continuous cycle	-SC	hours	C	0	15	2	
c7	CnP	Maximum Pump-Down (PD) time	-SC	sec	C	0	900	0	
c8	CnP	Comp. start delay after opening Pump Down valve	-SC	sec	C	0	60	5	
c9	CnP	Enable autostart with Pump Down operation	-SC	flag	C	0	1	0	
c10	CnP	Select Pump-Down by time or pressure switch	-SC	flag	C	0	1	0	
c11	CnP	Second compressor start delay	-SC	s	C	0	250	4	
d0	dEF	Defrost type (0 = elec / temp,1 = H.Gas / temp 2 = elec / time, 3 = hot gas / time.....)	-SC	flag	C	0	4	0	
dl	dEF	Interval between defrosts (if not using real time)	-SC	hours	F	0	250	8	
dt1	dEF	End defrost temperature, (if d0 = 0 or 1)	-SC	°C/°F	F	-50	200	4.0	
dt2	dEF	End defrost temperature, aux evap (if selected)	-SC	°C/°F	F	-50	200	4.0	
dP1	dEF	Maximum defrost duration	-SC	min	F	1	250	30	
dP2	dEF	Maximum defrost duration, aux evap.	-SC	min	F	1	250	30	
d3	dEF	Defrost- delay starting defrost after stopping comp	-SC	min	C	0	250	0	
d4	dEF	Defrost at power up (0 = no, 1 = yes)	-SC	flag	C	0	1	0	

For technical support contact CAREL Australia Pty Ltd

Sydney Office - Ph 02 - 8762 9200 Fax 02 - 9764 6933 email sales@carel.com.au

Technical literature can be downloaded from www.carel.com.au

Code	Block	Parameter	Model	Unit	Type	Min.	Max.	Def.	New
d5	dEF	Defrost delay at power up (if d4=1)	-SC	min	C	0	250	0	
d6	dEF	Display during def.(0=dF (flash),1=locked,2=dEF)	-SC	-	C	0	2	1	
dd	dEF	Dripping time after defrost	-SC	min	F	0	15	2	
d8	dEF	Bypass alarms after defrost	-SC	hours	F	0	15	1	
d9	dEF	Defrost priority over compressor protection	-SC	flag	C	0	1	0	
d1/d2	dEF	Display defrost probe temp d/1=def P1,d/2=def P2)	MSC	°C/°F	F	-	-	-	
dC	dEF	Time basis for defrost (0=hr/min, 1=min/sec)	-SC	flag	C	0	1	0	
d10	dEF	Compressor run time for demand defrost	-SC	min	C	0	250	0	
d11	dEF	Comp. run time temp set for demand defrost	-SC	°C/°F	C	-20	20	1.0	
d12	dEF	Advanced defrost enable	-SC	-	C	0	3	0	
dn	dEF	Nominal defrost duration (smart defrost)	-SC	-	C	1	100	65	
dH	dEF	Proportional factor for variation in 'dl' (smart DF)	-SC	-	C	0	100	50	
A0	ALn	Alarm and fan differential	MSC	°C/°F	C	0.1	20	2.0	
A1	ALn	Type of alarm for AL and AH (0=rel. 1=absolute)	MSC	flag	C	0	1	0	
AL	ALn	Low alarm temp (see A1 for absol. or relative)	MSC	°C/°F	F	-50	200	0.0	
AH	ALn	High alarm temp (see A1 for absol. or relative)	MSC	°C/°F	F	-50	200	0.0	
Ad	ALn	Low and high temperature alarm delay	MSC	min	F	0	250	120	
A4	ALn	Configuration of digital input 1	-SC	-	C	0	15	0	
A5	ALn	Configuration of digital input 2	MSC	-	C	0	15	0	
A6	ALn	Duty setting for comp from digital in alarm	-SC	min	C	0	100	0	
A7	ALn	External alarm delay if using digital input	-SC	min	C	0	250	0	
A8	ALn	Enable alarms 'Ed1' and 'Ed2' (defrost end on time)	-SC	flag	C	0	1	0	
Ado	ALn	Door switch light management mode	MSC	flag	C	0	1	0	
Ac	ALn	High condenser temperature alarm set point	-SC	°C/°F	C	0.0	200	70.0	
AE	ALn	High cond. temp. alarm differential	-SC	°C/°F	C	0.1	20	10.0	
Acd	ALn	High cond. temp. alarm delay	-SC	min	C	0	250	0	
AF	ALn	Light sensor off time	-SC	s	C	0	250	0	
ALF	ALn	Antifreeze alarm set point	MSC	°C/°F	C	-50	200	-5	
AdF	ALn	Antifreeze alarm delay	MSC	min	C	0	15	1	
F0	Fan	Fan management (0=according to F2,F3,Fd 1 = amb - evap, 2 = evap temp (St + F1)	--C	flag	C	0	2	0	
F1	Fan	Fan start temperature	--C	°C/°F	F	-50	200	5.0	
F2	Fan	Fans cycle with comp (0=no, 1=yes)	--C	flag	C	0	1	1	
F3	Fan	Fans in defrost (0 = on, 1 = off)	--C	flag	C	0	1	1	
F4	Fan	Condenser fan off temperature	MSC	°C/°F	C	-50	200	40.0	
F5	Fan	Condenser fan differential	MSC	°C/°F	C	0.1	20	5.0	
Fd	Fan	Fans delay after dripping	--C	min	F	0	15	1	
H0	CnF	Serial address	MSC	-	C	0	207	1	
H1	CnF	Function of relay 4 (0,1=alarm,2=aux,3=light..)	MSC	flag	C	0	11	1	
H2	CnF	Keypad and IR locking	MSC	flag	C	1	6	1	
H3	CnF	Remote control enabling code	MSC	-	C	0	255	0	
H4	CnF	Disable buzzer (0=enabled, 1 = disabled)	MSC	flag	C	0	1	0	
H5	CnF	Function of relay 5 (IR33DIN & PowerCompact)	MSC	flag	C	0	11	1	
H6	CnF	Buttons to lock when keypad locked	MSC	-	C	0	255	0	
H8	CnF	Select output to activate with time band	MSC	flag	C	0	1	0	
HPr	CnF	Print profile	MSC	-	C	0	15	0	
H9	CnF	Enable set point change with time	MSC	flag	C	0	1	0	
Hdn	CnF	Number of default paramater sets	MSC	flag	C	0	6	0	

Code	Block	Parameter	Model	Unit	Type	Min.	Max.	Def.	New
Hdh	CnF	Anti-sweat heater control offset	MSC	°C/°F	C	-50	200	0	
HrL	CnF	Enable remote ind. of light status	MSC	flag	C	0	1	0	
HrA	CnF	Enable remote ind. of aux status	MSC	flag	C	0	1	0	
HsA	CnF	Enable alarms on network devices	MSC	flag	C	0	1	0	
In	CnF	Standard control or master or slave	MSC	flag	C	0	6	0	
HAn/HFn	HcP	Number of events HA/HF occurred	MSC	-	C	0	15	-	
HA/HF	HcP	Date/time of most recent HA/HF	MSC	-	C	-	-	-	
y__	HcP	Year	****	years	*	0	99	-	
M__	HcP	Month	****	months	*	1	12	-	
d__	HcP	Day	****	days	*	1	7	-	
h__	HcP	Hour	****	hours	*	0	23	-	
n__	HcP	Minute	****	min	*	0	59	-	
t__	HcP	Duration	****	hours	*	0	99	-	
Htd	HcP	HACCP alarm delay	MSC	min	C	0	250	0	
td1-td8	rtc	Defrost time band 1/8	-SC	-	C	-	-	-	
d__	rtc	Day	****	days	*	0	11	0	
h__	rtc	Hour	****	hours	*	0	23	0	
n__	rtc	Minute	****	min	*	0	59	0	
ton	rtc	Light/aux ON time setting	-SC	-	C	-	-	-	
d__	rtc	Day	****	days	*	0	11	0	
h__	rtc	Hour	****	hours	*	0	23	0	
n__	rtc	Minute	****	min.	*	0	59	0	
tof	rtc	Light/aux OFF time setting	-SC	-	C	-	-	-	
d__	rtc	Day	****	days	*	0	11	0	
h__	rtc	Hour	****	hours	*	0	23	0	
n__	rtc	Minute	****	min.	*	0	59	0	
tc	rtc	RTC date/time setting	MSC	-	C	-	-	-	
y__	rtc	Years	****	years	0	0	99	00	
M__	rtc	Month	****	months	1	1	12	1	
d__	rtc	Day of the month	****	days	1	1	31	1	
u__	rtc	Day of the week	****	days	6	1	7	6	
h__	rtc	Hour	****	hours	0	0	23	0	
n__	rtc	Minute	****	min	0	0	59	0	

Code	Icon on the display	Alarm relay	Buzzer	Reset	Description
'iE'	flashing	active	active	automatic	virtual control probe fault
'E0'	flashing	OFF	OFF	automatic	room probe S1 fault
'E1'	flashing	OFF	OFF	automatic	defrost probe S2 fault
'E2'	flashing	OFF	OFF	automatic	probe S3 fault
'E3'	flashing	OFF	OFF	automatic	probe S4 fault
'_'	no	OFF	OFF	automatic	probe not enabled
'LO'	flashing	active	active	automatic	low temperature alarm
'HI'	flashing	active	active	automatic	high temperature alarm
'IA'	flashing	active	active	automatic	immediate alarm from external contact
'dA'	flashing	active	active	automatic	delayed alarm from external contact