

ICON-343C / ICON-363C REFRIGERATION CONTROLLER

USER GUIDE



Trademark Information

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2. SAFETY INSTRUCTIONS

- A. Keep this instruction booklet where it can always be easily consulted by the operator or by maintenance personnel.
- B. Before making an intervention or connection of any kind, make sure that the mains are disconnected both from the instrument and from any device connected to it.
- C. Warning: hot components may be inside the plastic housing of the controller.
- D. No user-serviceable parts are inside the plastic housing of the controller.
- E. The controller and any device connected to it must be installed in compliance with the safety regulations in force. If these regulations are not complied with during installation, and if our product is not installed in compliance with the indications given in this instruction booklet, then this may result in the safety of the controller being compromised. In particular, the ambient operating conditions for the controller given in our technical data must be complied with. Absolutely avoid: water condensation or excessive humidity, exposure to steam, corrosive or toxic gases, contact with any type of liquid, and exposure to shocks or extreme vibrations. Not complying with the above indications could cause malfunctions and entail unpredictable consequences.
- F. This controller is guaranteed by Honeywell to have a specific immunity level, in compliance with CE regulations, against irradiated and conducted electromagnetic disturbances. By irradiated electromagnetic disturbances we recommend to screen the controller with a metal screen connected to ground. To eliminate, or at least reduce conducted disturbances, which not only could propagate through the mains but also through the probes or the connected loads, carry out the electrical wiring according to the indications given in this instruction booklet. If necessary, use filters with suitable characteristics for specific applications and for the detected type of disturbance.
- G. If the type of probe to be used will directly touch foodstuffs, make sure that it is in compliance with the local sanitary and health regulations.
- H. The controller has no type of protection for the connected loads, so these must be protected against short circuits, over-current or over-voltage, excessive temperature, etc., by suitable protective means (such as fuses, suitable thermo-magnetic circuit breakers, thermal protections, etc.). At any rate, the electrical power lines that supply both the controller and any other device connected to it, either directly or through a transformer, must be manufactured in compliance with the regulations in force.
- I. When the controller is used in appliances where any malfunction of said controller could cause a form of risk to persons, animals or objects, it is **ABSOLUTELY MANDATORY** to provide a suitable protective/safety device, in addition to the controller, which independently starts to operate in case of a failure.
- J. The controller cannot be used as critical component in life-support devices or systems without a written approval expressly issued by the legal representative of Honeywell.

CAUTION

Disconnect the power supply before you begin installing the Icon controller. Do not reconnect the power supply until you have completed installation.

3. GENERAL DESCRIPTION

The Honeywell Icon 300 Series is a microprocessor controlled thermostat, powered by AC 230 V, 50/60 Hz, and operates with up to three NTC or PT1000 probes (air-on, air-off and evaporator probes), and has up to six relay outputs (alarm, auxiliary, light, compressor, defrost and fan), and two digital inputs (doorswitch and auxiliary). Icon 300 series has a RS485 serial line connection to enable the controller to interface to Honeywell Genus® network.

The Icon 300 series comes in two variants:
Icon 343 (Part Number: ICON-343C)
Icon 363 (Part Number: ICON-363C)

The Icon 300 series can be applied both in cooling and refrigeration applications and has the following features:

- satisfy the most diverse plant requirements for cooling/refrigeration with its 42 configurable parameters, that can be set very easily and quickly through the instrument keyboard.
- display the conditioned ambient temperature as well as the alarm messages that refer to faulty cooling/refrigeration plant functions.
- control the conditioned ambient temperature through weighted average of the air-on / air-off probes in order to maintain it under a set limit value (main set point + differential), by activating the compressor to lower said temperature every time it exceeds the main set point + differential value.
- control the defrost cycles of the cooling/refrigeration plant manually, through the network or through the programmed mode; in the latter mode it is possible to set the starting times of up to six daily defrost cycles.
- control the defrost cycle time as well as the successive startup of the cooling/refrigeration plant fan through the evaporator probe.
- select the Low Humidity mode (with a specific key) which keeps the fan of the cooling/refrigeration plant running.

4. OPERATOR MODES

The ICON 343C / 363C controller has three operating modes:

- Stand-by:** The controller is not active and OFF is displayed.
- Programming:** In this mode it is possible to set the configurable parameter values of the thermostat.
- Normal:** In this mode the conditioned ambient temperature is displayed and the digital outputs, the defrost cycles, and any case / coldroom alarms are monitored.

5. TECHNICAL SPECIFICATIONS

Icon 343C / 363C

Power Supply	AC 230Vac 50/60 Hz
Transformer on board	AC 230 – 12 V, 50/60 Hz
Door switch input	operates according to customer requirements. (not on ICON-343C).
Networking Connection	RS485 (Honeywell Genus®)
Air-On, air-off and evaporator probe range	- 55 ... + 85 °C / - 67 ... + 185 °F
Compressor output	SPST relay, AC 240 V 15A (resist.)
Defrost output	SPST relay, AC 250 V 8A (resist.)
Fan output	SPST relay, AC 250 V 6A (resist.)
Alarm output:	SPDT relay, AC 250 V 4A (resist.) (<i>not on ICON-343</i>)
ON/OFF (Auxiliary) output	SPST relay, AC 250 V 4A (resist.) (<i>not on ICON-343</i>)
Light output	SPST relay, AC 250 V 6A (resist.)
Internal alarm	buzzer
Back-up battery for internal clock	3 V, lithium (non-replaceable)
Display:	four-digit, 14.2 mm high, green LEDs and four decimal points
Front panel	Keyboard with 8 keys, 1 red signaling LEDs and 4 green signaling LEDs
Resolution	0.1 or 1 unit
Network	Honeywell Genus®
Electrical connections of the inputs (probes, digital inputs)	through 3-mm screw terminals for 14 AWG, 2.5 mm ² wires
Electrical connections of the outputs (relays)	Fast-on shrouded spades
Controller dimensions (height x width x depth)	46mm x 188mm x 68mm
Installation	panel mount
Panel cutout dimension	149.5 x 31.5 mm
Housing	in self-extinguishing PC/ABS plastic.
Front Panel IP Class	IP52
Operating ambient temperature	0...+ 50 °C / 32... 122 °F
Operating ambient R.H.	30...85 % non-condensing
Storage temperature	- 20...+ 80 °C / - 4...176 °F

Table 1. Technical Specifications

Honeywell reserves all rights to modify the technical features of its instruments as well as to discontinue the production of any model without previous notification.

6. INSTALLATION

6.1. First Things

The controller must be installed in a place where it is protected from extreme vibration, impact, water, corrosive gases, steam, etc., and where temperature and humidity do not exceed the values given in the technical data sheet.

6.2. Probes

We recommend the use of probes such as Honeywell 2k ohm NTC thermistor temperature probes (Part Number: TP002K).

Both the air-on and air-off probe is to be installed inside the coldroom or refrigerated display case where it is protected from direct air flow (i.e., far from fans or doors) so that the average ambient temperature can be measured.

The evaporator probe must be installed in the coldest area between the evaporator fins, i.e., where the greatest amount of ice will form and far from the resistances or the area that warms up first during defrosting, in order to avoid anticipating termination of said defrost cycle.

6.3. Electrical Wiring

The wiring diagram of the ICON 343C / 363C controller is shown in Figs.1. & 2.

We recommend the protection of the controllers power supply from electromagnetic disturbances, voltage peaks, etc., especially applications in particularly critical industrial environments.

This can be done while carrying out the electrical wiring by keeping the following points in mind:

- A. Keep the power output cables for the compressor, motors, etc. separate from those for the control part;
- B. Keep the probe cables, the controller power cables and the attached load power supply cables separate and far enough from each other, so they do not cross or form spirals;
- C. Use mains filters to reduce disturbances at the controller power supply, as well as filters for the loads in order to attenuate disturbances at the controller relay outputs;
- D. If strong radio disturbances are present, screen the entire device with a metal screen and connect it to ground.
- E. Use correct wire gauges to avoid damaging the screw connectors.

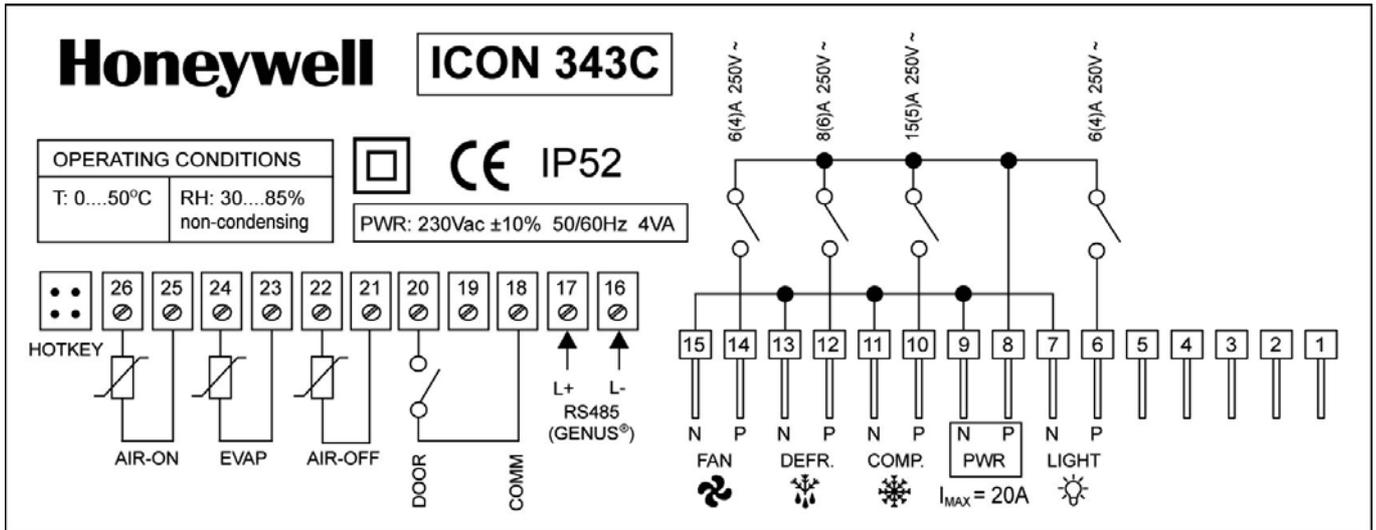


Fig. 1. – Electrical wiring diagram of the ICON 343C controller

- | | | | |
|--------|-------------------------|--------|------------------------|
| 6,7: | light output | 18: | comms contact input |
| 8,9: | controller power supply | 19: | not used |
| 10,11: | compressor output | 20: | door contact input |
| 12,13: | defrost output | 21,22: | air-off probe input |
| 14,15: | fan output | 23,24: | evaporator probe input |
| 16,17: | RS485 serial line input | 25,26: | air-on probe input |

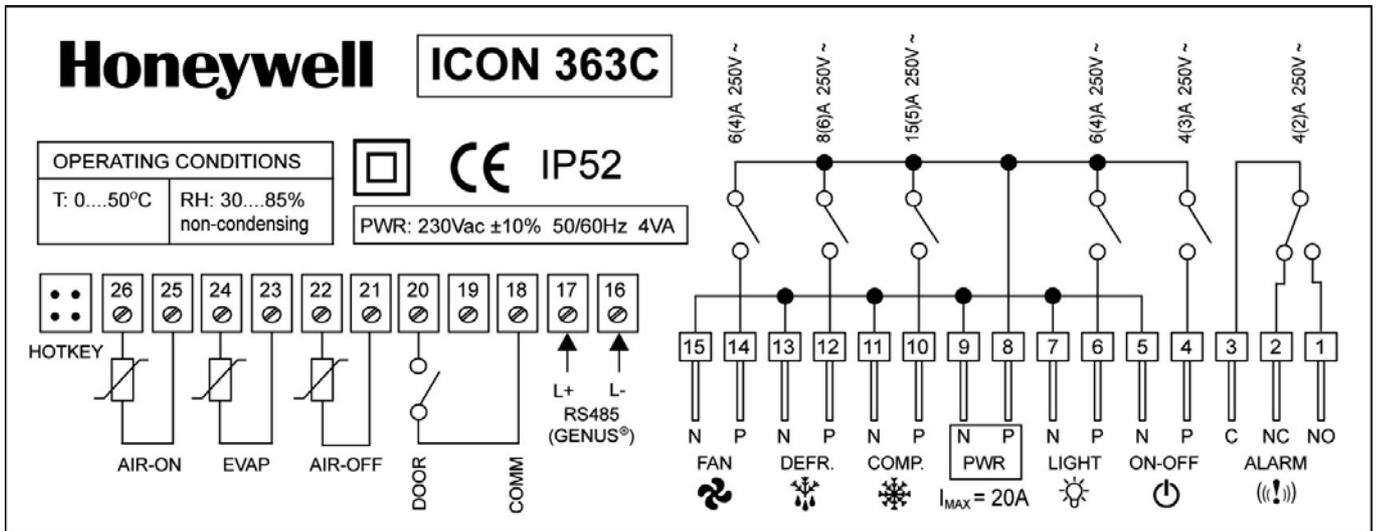
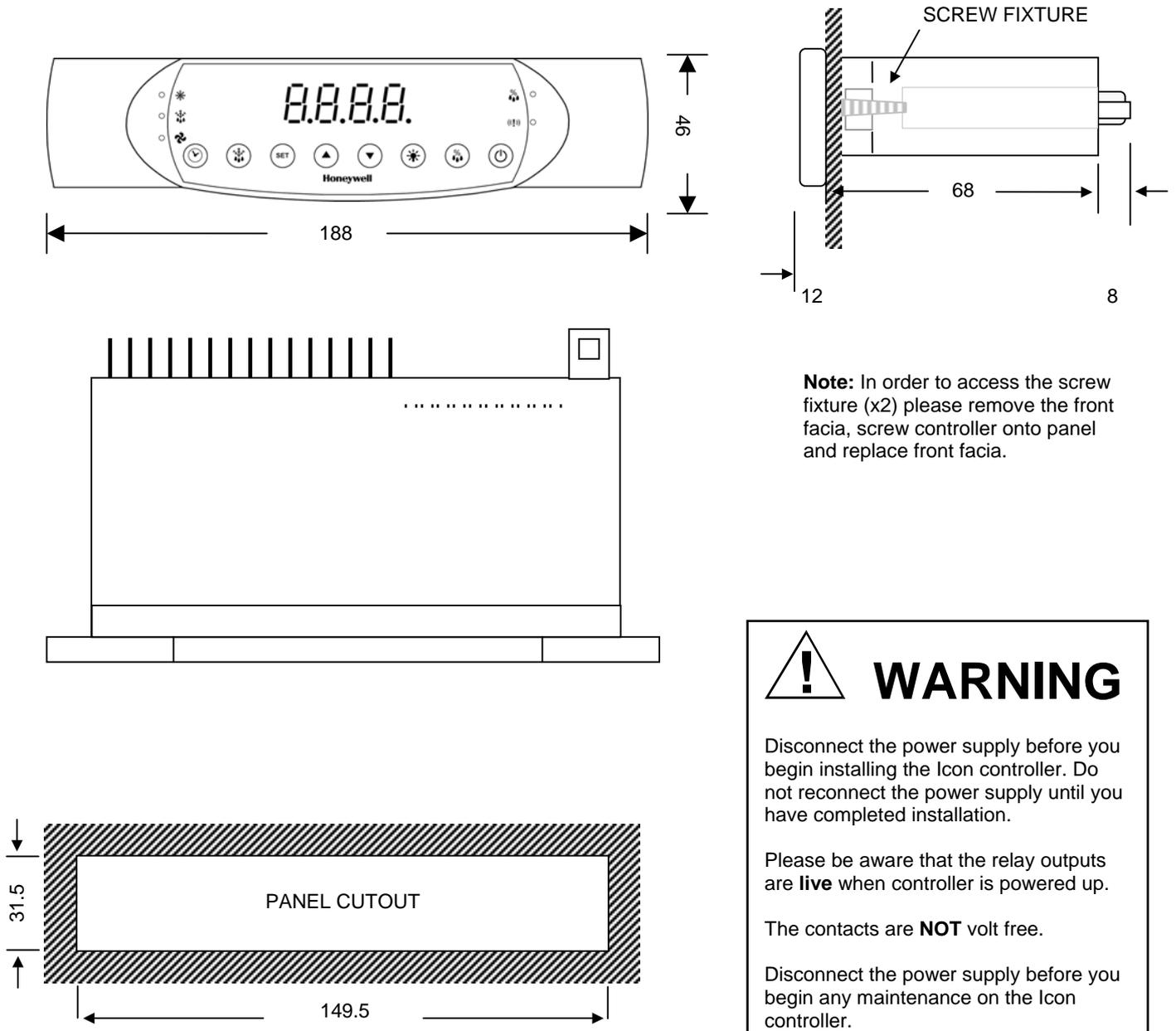


Fig. 2. – Electrical wiring diagram of the ICON 363C controller

- | | | | |
|--------|-------------------------|--------|-------------------------|
| 1,2,3: | alarm output | 16,17: | RS485 serial line input |
| 4,5: | ON / OFF output | 18: | comms contact input |
| 6,7: | light output | 19: | not used |
| 8,9: | controller power supply | 20: | door contact input |
| 10,11: | compressor output | 21,22: | air-off probe input |
| 12,13: | defrost output | 23,24: | evaporator probe input |
| 14,15: | fan output | 25,26: | air-on probe input |

6.4. Fitting

When fitting the controller, leave enough room at the rear to avoid compressing or excessively bending the cables. The overall instrument dimensions and panel cut out are given in Figure 3. below.



Note: In order to access the screw fixture (x2) please remove the front facia, screw controller onto panel and replace front facia.

⚠ WARNING

Disconnect the power supply before you begin installing the Icon controller. Do not reconnect the power supply until you have completed installation.

Please be aware that the relay outputs are **live** when controller is powered up.

The contacts are **NOT** volt free.

Disconnect the power supply before you begin any maintenance on the Icon controller.

Fig. 3. – Controller – Panel-mount
(all dimensions are expressed in mm)

6.5. Probe Self Detect

The Icon 300 series has a feature that allows only the AIR-OFF probe to be fitted. If this function is used then the controller will not alarm on any probes that are missing.

Again, this applies to the AIR OFF probe if this is the only probe that is fitted, and therefore the weighting parameter pair must be set to 0%.

This function only applies from initial power up of the controller. If both the AIR-ON and AIR-OFF probes are fitted and the AIR-ON probe becomes faulty, then the controller will continue to function using the AIR-OFF probe, and the power to the controller would have to be cycled off and then on again.

7. ICON FRONT PANEL

7.1. Functions of the Front Panel

The front panel of the ICON 343C / 363C controller is shown in Fig. 4. The front panel includes a four-digit display and four decimal points, a keyboard with eight keys, and has one red and four green LED alerts.

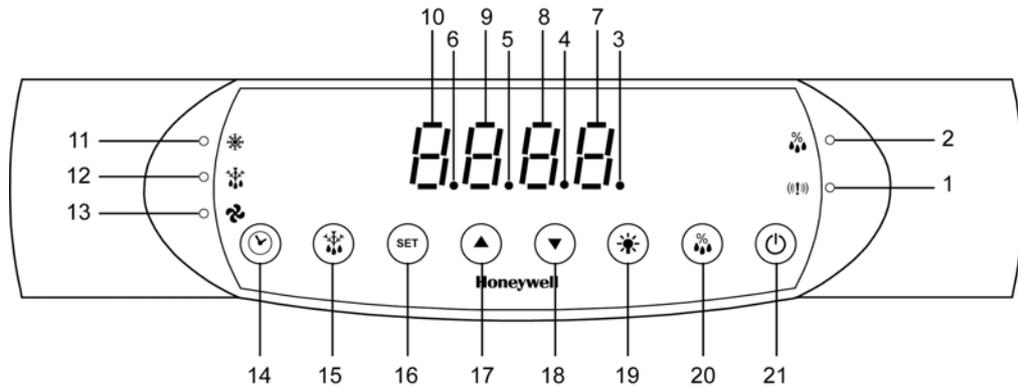


Fig. 4 Controller Front Panel and Remote Control

With reference to Fig. 3, in Table 1 the LEDs of the front panel are indicated together with their denomination. In Table 2 the symbols of the front panel keys are indicated with their denomination.

7.2. Controller Front Panel LEDs

References to Fig. 3	Symbols	Description
1		ALARM
2		LOW HUMIDITY
3, 4, 5, 6		DECIMAL POINTS 1, 2, 3, 4
7, 8, 9, 10		DIGITS 1, 2, 3, 4
11		COMPRESSOR
12		DEFROST
13		FAN

Table 2. Controller LED's

7.3. Controller Front Panel Keys

References To Fig. 4.	Symbols	Description
14		REAL TIME CLOCK
15		LOW HUMIDITY
16	SET	SET
17		UP
18		DOWN
19		LIGHT
20		DEFROSTING
21		ON/OFF

Table 3. Controller Keys

7.4. Functions of the Keys

The function of the individual keys and combinations thereof are listed below. Please note that the use of the keys in a combined manner is only possible on the controller front panel.



DEFROST KEY

- When depressed for **5** seconds, during normal controller functioning, starts a manual defrost cycle, provided that the temperature measured by the evaporator probe is below the defrost-end temperature value, parameter 11 (dFEt). During the manual defrost cycle the DEFROST LED is switched on.

SET SET KEY

- When depressed and released, during the normal controller function, displays SEtP and the main set point value for **5** seconds; it also allows to you change this value.
- When depressed for **15** seconds, during the normal controller function, allows you to access the parameter configuration menu (see Section 8.) and change the parameter settings.
- When depressed and released after having changed the main set point or a parameter value, enters the new setting.



UP KEY

- When depressed while selecting the main set point or parameter settings, increases the numerical value shown on the display.



DOWN KEY

- When depressed while selecting the main set point or parameter settings, decreases the numerical value shown on the display.
- When depressed for **5** seconds when in an alarm state, the acoustic alarm signal is switched off as well as the alarm signal on the display (provided the reason for the alarm has been cleared).



LIGHT KEY

- When depressed for **1** second activates or deactivates the light output and switches the LIGHT KEY LED on or off, if the door of the coldroom is closed. If the door of the coldroom is open, the LIGHT KEY has no effect on the ON/OFF function of the coldroom light.
- In "OFF" mode and when the key is depressed for **15** seconds the controller displays "DEFAULT", at which time the controller will return to the factory default settings.



LOW HUMIDITY KEY

- When depressed for **3** seconds, switches the low humidity function on or off and simultaneously switches the LOW HUMIDITY LED and the LOW HUMIDITY KEY LED on or off.
- During the low humidity function the fan is always switched on, or is switched off during defrosting, provided in parameter 20 (FanO), either option CoF or OnOF have been selected.
- If the low humidity function is switched off, and according to how parameter 20 was set, the fan runs parallel with the compressor or always remains switched on, except during the defrost and drain-down cycle and until the evaporator temperature reaches the value set in parameter 18.



ON/OFF KEY

- When depressed for **3** seconds switches the controller on or off. When the controller is switched off, OFF is displayed.



CLOCK KEY

- When depressed the current time is displayed. As long as this key is depressed, the display first shows tiME, then the current time, then t1, followed by the air-on temperature value, then t2, followed by the evaporator probe temperature value, then t3 followed by the air-off temperature value then the current time, and so on until the key is released.



UP and SET KEYS

- When depressed simultaneously during the normal controller operation, the temperature of the air-off probe (t1) is displayed. The display first shows t1 and then the air-off temperature value until the both keys are released.



DOWN and SET KEYS

- When depressed simultaneously during the normal controller operation, the temperature of the evaporator probe (t2) is displayed. The display first shows t2 and then the evaporator temperature value until the both keys are released.



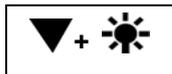
LIGHT and SET

- When depressed simultaneously during the normal controller operation, the temperature of the air-on probe (t3) is displayed. The display first shows t3 and then the air-on temperature value until the both keys are released.



UP and LIGHT KEYS

- When depressed simultaneously for **5** seconds, allows the controller to log onto the Honeywell Genus[®] network and communicate.



DOWN and LIGHT KEYS

- When depressed simultaneously for **5** seconds, allows the controller to log off the Honeywell Genus[®] network.



UP and DOWN KEYS

- When depressed simultaneously for **10** seconds, locks the keypad. Display will show 'access disabled' in scrolling format. Repeat process to unlock keypad. Display will then show 'access enabled'.

7.5. LED Functions



ALARM LED

- When switched on, this indicates the presence of an alarm situation. The alarm situations are accompanied by an intermittent bleeping sound and are shown with a message on the display.



LOW HUMIDITY LED

- This indicates that the low humidity function is switched on. The fan output is always switched on, depending on the selection made on parameter 20).



DISPLAY LEDs

- These LEDs show the temperature value of the current time, the values or the parameter configuration options, the alarm messages or alarm signals.



COMPRESSOR LED

- When switched on, but not blinking, indicates that the compressor output is activated.
- When blinking, indicates that the compressor in anti-short cycle mode



DEFROST LED

- When switched on, but not blinking, indicates that a programmed or manual defrost cycle is running (the defrost output is activated).
- When switched on, and blinking, indicates that the evaporator is in the drain-down phase.



FAN LED

- When switched on indicates that the fan output is activated.



COMPRESSOR, DEFROST AND FAN LEDs

- When flashing in sequence indicates that the controller is in the programming mode.

8. CONFIGURATION PARAMETERS

The configuration parameters, their description, and their respective limits or options as well as their default values are given in Table 4 (page 17).

When the controller is in the normal operating mode it is possible to change parameter configuration by proceeding the following way:

- Depress the SET key for 15 seconds until the three front panel COMPRESSOR, DEFROST and FAN LEDs switch on and off in sequence and SEtP is displayed (this procedure enters the parameter configuration menu).
- Release the SET key, and when the display shows the previously set value of the SEtP parameter, change said value by using the UP or DOWN keys (the change must be carried out within 15 seconds after the SET key has been released, otherwise the controller returns to the normal function mode).
- Confirm the newly selected value by depressing the SET key (this must be done within 15 seconds after changing the SEtP parameter value, otherwise the controller exits the parameter configuration menu without changing said value. Once the new parameter value is confirmed it blinks for 2 seconds, to confirm that the value was accepted and saved by the controller. After the value is stored the next parameter code is displayed and, after 2 seconds, its value).
- Change the displayed value of the second parameter and save the new data by repeating the procedure described in the above two points. Proceed this way with all the other parameters (once the last parameter has been saved, the code of the first parameter will again be displayed and, after 2 seconds, its value. After 15 seconds the controller returns to the normal function mode).

Please note that in order to leave a configured parameter value unchanged during the configuration procedure, depress the SET key when, after having stored the changed value of the previous parameter, the controller displays the code or the value of the parameter one wishes to leave unchanged. In this manner the controller proceeds and displays the code and then the value of the next parameter.

The changes made related to time values are only effective after the currently timed cycles end, while changes regarding other variables are immediately effective.

Should it be necessary to only change the main set point (parameter SEtP) during the normal controller function, then this can be done without entering the parameter configuration menu by proceeding the following way:

- Depress and then release the SET key (SEtP will be displayed and then current the main set point value).
- Change the displayed main set point value by using the UP or the DOWN key (the change must be made within 5 seconds after the set point value is displayed, otherwise the controller returns to the normal function mode and displays the current message without changing the main set point value; it is possible to select a main set point value only within the upper and lower limits, set respectively in parameters 3 and 4).
- Confirm the new value by depressing and then releasing the SET key (this must be done within 10 seconds after completing the previous operation, otherwise the controller will return to the normal functioning mode without changing the main set point value; once the new set point value is confirmed it blinks for 2 seconds, to validate that it was accepted and saved by the controller, after which it is replaced on the display by the current message).

8.1. Parameter Configuration of the Icon 343C & 363C Controller

No.	Code	Limits/options [default values]	Resolution	Description
1	SEtP	LSPL...HSPL [0]	1/0.1 °C (°F)	Main set point: when the compressor is switched on to reduce the conditioned ambient temperature, this parameter sets the temperature value of said conditioned ambient, which, once it is reached, will switch off the compressor.
2	HySt	0.1...20.0 °C 0.1...68.0 °F [2]	1/0.1 °C (°F)	Differential or Hysteresis: when the compressor is switched off and the conditioned ambient temperature rises, this parameter sets the maximum temperature increase with respect to the main set point, which, once it is exceeded, will switch on the compressor to reduce the temperature.
3	LSPL	-55...HSPL °C -67...HSPL °F [-40]	1/0.1 °C (°F)	Lower set point limit: this parameter fixes the lower set point limit value.
4	HSPL	LSPL...+50 °C LSPL...+122 °F [50]	1/0.1 °C (°F)	Upper set point limit: this parameter fixes the upper set point limit value.
5	ACyt	0...999 s [120]	1 s	Anti cycling time: this parameter fixes the time interval which starts when the compressor is switched off and during which it is not possible to switch it on, in order to allow the internal refrigeration circuit pressures to stabilize.
6	HtAd	0...50 °C 0...122 °F [10]	1/0.1 °C (°F)	High temperature alarm differential: this parameter fixes the temperature increase of the conditioned ambient temperature with respect to the main set point (1), which, when exceeded, causes the controller, after ALdy minutes (8), to activate the alarm output, the intermittent acoustic alarm signal, and displays the ALHt alarm message, which alternates with the conditioned ambient temperature value, provided that during time interval ALdy (8), the ambient temperature always remains above SEtP+HtAd
7	LtAd	0...50 °C 0...122 °F [10]	1/0.1 °C (°F)	Low temperature alarm differential: this parameter fixes the temperature decrease of the conditioned ambient temperature with respect to the main set point (1), which, when exceeded, causes the controller, after ALdy minutes (8), to activate the alarm output, the intermittent acoustic alarm signal, and displays the ALLt alarm message, which alternates with the conditioned ambient temperature value, provided that during time interval ALdy, the ambient temperature always remains below SEtP-LtAd.

Table 4. Parameters

Parameter Configuration of the Icon 343C / 363C Controller (continued)

No	Code	Limits/options [default values]	Resolution	Description
8	ALdy	0...99 min [10]	1 min	<p>Low and high temperature alarm delay: this parameter fixes the time interval in minutes between the moment in which the conditioned ambient temperature exceeds the value SEtP+HtAd (1, 6) and the moment the ALHt alarm signal is given, provided that during this time interval, the ambient temperature always remains above SEtP+HtAd.</p> <p>Likewise it fixes the time interval in minutes between the moment in which the conditioned ambient temperature drops below the value SEtP-LtAd (1, 7) and the moment the ALLt alarm signal is given, provided that during this time interval, the ambient temperature always remains below SEtP-LtAd.</p>
9	dCSt	1...999 h [4]	1 h	<p>Time interval between defrost cycles: this parameter fixes the time interval between the beginning of a defrost cycle and the beginning of the next one.</p> <p>When the defrost cycle is regulated by this parameter (dCSt), counting of the time interval between defrost cycles restarts from zero, every time a defrost cycle is started manually.</p> <p>During the defrost cycle the settings in parameter dIdF (22) are displayed.</p> <p>Please remember that the value set in this parameter must be greater than the maximum set interval between two defrost cycles start times set in parameters tIN1...tIN6.</p>
10	dFCt	1...999 min [30]	1 min	<p>Maximum defrost cycle time: this parameter fixes the maximum defrost cycle time, provided the evaporator defrost-end temperature is not reached, which is set in parameter dFEt (11), or an evaporator probe failure occurs.</p>
11	dFEt	-55...+50 °C -67...+122 °F [10]	1/0.1 °C (°F)	<p>Defrost-end temperature: this parameter fixes the evaporator temperature, which, when reached, ends the defrost cycle. For security purposes, defrosting ends after the time set in parameter dFCt (10) ends.</p>
12	dFdL	0...99 min [10]	1 min	<p>Delay of real defrost-end temperature display: this parameter fixes the time interval, that starts at the end of a defrost cycle (including drain-down time), and during which the controller displays the last temperature value shown before the current defrost cycle started, provided the real temperature value of the conditioned ambient is higher than said value.</p> <p>If not, and in any case at the end of the above mentioned time interval, the controller will again display the real ambient temperature.</p>

Parameter Configuration of the Icon 343C / 363C Controller (continued)

No.	Code	Limits/options [default values]	Resolution	Description
13	OFP1	-20...+20 °C (°F) [0]	1/0.1 °C (°F)	Air-off probe offset: this parameter fixes the positive or negative correction to be made of the value measured by the air-off probe in order to compensate for measurement errors.
14	OFP2	-20...+20 °C (°F) [0]	1/0.1 °C (°F)	Evaporator probe offset: this parameter fixes the positive or negative correction to be made of the value measured by the evaporator probe in order to compensate measurement errors.
15	OFP3	-20...+20 °C (°F) [0]	1/0.1 °C (°F)	Air-on probe offset: this parameter fixes the positive or negative correction to be made of the value measured by the air-on probe in order to compensate for measurement errors.
16	PAir	0...100% [50]	1%	Control Temperature Weighting: This parameter fixes the value of the wighted average of the air-on and air-off probes. Set to zero (0) for 100% Air-off or set to 100 for 100% Air-on.
17	SErC	0...9999 h [0]	1 h	Filter maintenance interval time (service): This parameter indicates the number of working hours of the fan which, when reached, will generate the MSEr message on the display, accompanied by the sound of the buzzer, three consecutive times. This message means maintenance of the fan filter is required. This message is repeated in 1-minute intervals until deactivated by setting parameter SerC to 0. When the filter maintenance intervention is terminated one can set a new interval time for the following maintenance intervention.
18	FAnT	-55...+50 °C -67...+122 °F [0]	1/0.1	Fan startup temperature at controller start-up and after defrost cycle: this parameter determines the evaporator temperature value measured by the evaporator probe. Below this value the fan is switched on after delay time in parameter Fand (19). The Fand parameter is de-activated while the controller operates in low humidity mode. The fan is always switched on, except during defrosting (see parameter 20, FanO).

Parameter Configuration of the Icon 343C / 363C Controller (continued)

No.	Code	Limits/options [default values]	Resolution	Description
19	FAnd	0...99 min [2]	1	<p>Fan start delay at controller startup and after defrost cycle: this parameter fixes the time interval that starts at controller start-up or at the end of a defrost cycle (including drain-down time), during which the fan must remain switched off in order to not introduce warm and humid air into the conditioned ambient air.</p> <p>At the end of said time interval, the fan will be switched on either immediately, if the evaporator probe is defective, or when the evaporator temperature drops and reaches the value set in parameter 18 (Fant).</p> <p>The Fand parameter is de-activated while the controller operates in the low humidity mode. The fan is always switched on, except during defrosting (see parameter 20, FanO).</p>
20	FAnO	Con, CoF, OnOn OnOF [OnOn]		<p>Fan operating mode: this parameter fixes the type of fan operating mode.</p> <p>If the Con option is selected, then the fan operating mode is linked to that of the compressor, provided the system is <i>not</i> operating in the low humidity mode. The fan is always switched on when the system <i>is</i> operating in the low humidity mode.</p> <p>If the CoF option is selected, then the fan operating mode is linked to that of the compressor, provided the system is <i>not</i> operating in the low humidity mode. The fan is always switched on, except during the defrost cycle, when the system <i>is</i> operating in the low humidity mode.</p> <p>If the OnOn option is selected, then the fan is always switched on, except during the defrost cycle and thereafter for the time set in parameter 19 (Fand), until the temperature has reached the value set in parameter 18 (Fant), provided the system is <i>not</i> operating in the low humidity mode. The fan is always switched on when the system <i>is</i> operating in the low humidity mode.</p> <p>If the OnOF option is selected, then the fan is always switched on, except during the defrost cycle and thereafter for the time set in parameter 19 (Fand). Until the temperature has reached the value set in parameter 18 (Fant), provided the system is <i>not</i> operating in the low humidity mode. The fan is always switched on, except during the defrost cycle, when the system <i>is</i> operating in the low humidity mode.</p>

Parameter Configuration of the Icon 343C / 363C Controller (continued)

No.	Code	Limits/options [default values]	Resolution	Description
21	CodF	OFF, On [OFF]		Compressor operating mode during the defrost cycle: this parameter determines the compressor function mode during a defrost cycle, i.e., always switched off when the OFF option is selected, or always switched on when the On option is selected.
22	DIdF	REAL, dEF, LAST [dEF]		Displayed message during a defrost cycle: this parameter indicates the message to be displayed during a defrost cycle (including the drain-down time), i.e., the real conditioned ambient temperature if option REAL is selected, dEF if option dEF is selected, or the last conditioned ambient temperature measured before the defrost cycle if option LAST is selected.
23	drIP	0...99 min [2]	1 min	Drain-down time: this parameter fixes the time interval, which starts when a defrost cycle ends, and during which the compressor is switched off to allow for optimized drying of the evaporator.
24	Ptyp	NTC, RTD [NTC]		This parameter determines the type of probe connected to the controller; option NTC (default) is for NTC 2K probes, whereas option RTD is for PT1000 probe.
25	RESo	Int, Dec [Int]		Resolution: this parameter determines with which resolution the temperature value is to be displayed, i.e., 1 if option Int is selected, or 0,1 if option Dec is selected.
26	Unit	CELS, FAHr [CELS]		Unit of measure: This parameter sets the unit of measure of the temperature, i.e., °C if the option CELS is selected, or °F if the option FAHr is selected.
27	COPF	OFF, ON, CYC [CYC]		Compressor function during probe failure: this parameter fixes the compressor operating mode during a conditioned ambient temperature probe failure. If option OFF is selected, the compressor is switched off and remains like that until the failure has been repaired; if option ON is selected, the compressor is switched on and remains like that until the probe failure has been repaired; if option CYC is selected, the compressor – as soon as the failure occurs – alternates the time interval set in parameter 28 (CoOF), during which it remains switched off, with the time interval set in parameter 27 (CoOn), during which it remains switched on, and so on until the failure has been repaired.

Parameter Configuration of the Icon 343C / 363C Controller (continued)

No.	Code	Limits/options [default values]	Resolution	Description
28	COOn	1...99 min [2]	1 min	Compressor on-time during probe failure: this parameter fixes the time interval that alternates with the time set in parameter 28 (CoOF), during which the compressor must remain switched on during a probe failure, provided option CYC is selected in parameter 26 (CoPF).
29	COOF	1...99 min [5]	1 min	Compressor off-time during probe failure: this parameter fixes the time interval that alternates with the time set in parameter 27 (CoOn), during which the compressor must remain switched off during a probe failure, provided option CYC is selected in parameter 26 (CoPF).
30	dOrS	nO, nC [nO]		Door switch: this parameter determines the position of the door switch, that corresponds with when the door is closed. If dorS = nO, the door is closed when the switch is normally open. If dorS = nC, the door is closed when the switch is normally closed.
31	dSFU	nOCy, FAOF, COOF, FCOF [FAOF]		Controller functions when door is open: this parameter determines the controller function when the door is open. If the option nOCY is selected the controller continues to function normally. If the option FAOF is selected then the controller switches off the fan two seconds after the door has been opened and for as long as the door remains open. If the option COOF is selected then the controller switches off the compressor one minute after the door has been opened and for as long as the door remains open. If the option FCOF is selected then the controller switches off the fan two seconds after the door has been opened, and the compressor one minute after the door has been opened, and both for as long as the door remains open. Whichever option is selected, as long as the door remains open the controller displays the message "door" that alternates with the current message.
32	rHPb	EnAb dISA [dISA]		Low humidity push-button activation/deactivation: This parameter enables or disables the High Humidity key, according to the option that was selected, i.e., EnAb or dISA.
33	tINE	00.00...23.59 [12.00]	1 min	Real time: this parameter allows to set the current time in the HH:MM format.

Parameter Configuration of the Icon 343C / 363C Controller (continued)

No.	Code	Limits/options [default values]	Resolution	Description
34	tIN1	00.01...23.59 ---- ---- ---- ---- ----	1 min	<p>1st, 2nd,...,6th defrost cycle starting times: in this parameter up to six defrost cycle starting times can be set, or the same can be disabled (option - - - -). A given defrost cycle not only doesn't occur when disabled, but is also deactivated, should its starting time be during another enabled defrost cycle (manual defrosting), or during a time alarm (ALti).</p> <p>If the various defrost cycle start times are not set in the increasing order of the parameters (e.g., TIM1=18.30, TIM2=09.27), then the execution of the defrost cycles will not respect the order of said parameters, but will respect the increasing order of real time.</p> <p>Every selected defrost cycle ends when the evaporator reaches the temperature value set in parameter 11 (dFEt), or when the time set in parameter 10 (dFct) ends. During the defrost cycle the display shows the settings made in parameter 22 (dIdF).</p>
35	tIN2			
36	tIN3			
37	tIN4			
38	tIN5			
39	tIN6			
40	DFst	DFSt = rEM (remote) DFS t= Loc (local)		<p>Local or Remote Defrost Start Modes DFSt for defrost start mode that defines the selection between Local or Remote defrost operation; if DFSt= rEM the defrost is initiated only when a network command is issued by the Supervisor (or Genus[®] Front-End system); if DFSt= Loc the defrost is controlled by the local timing set by the parameters TIN1....TIN6</p>
41	StUb	0...99 [0]		<p>Stub Number Number given to identify refrigeration stub from 0...99 when connected to, and viewed from, a Genus[®] network</p>
42	CASE	0...9, A,B,C,D, E, F,G,H,I,L,P,T,U,Y [0]		<p>Case number Number given to identify refrigeration case from 0...9...A...Y when connected to, and viewed from, Genus[®] network.</p>

9. REAL TIME CLOCK AND DEFROST SETUP

9.1. Setting and Displaying the Real Time Clock

The Real Time Clock (RTC) operates on a 24 hour cycle (00:00...23:59)

The current time set in the RTC can be displayed by depressing and holding the CLOCK key. The display will show the standard format (24 hours) of: HH.MM (hours. minutes)

Procedure:

1. To set the Real-Time clock press and hold the SET Key for **15** seconds until the three front panel COMPRESSOR, DEFROST and FAN LEDs switch on and off in sequence and SETP is displayed (with this procedure one enters the parameter configuration menu).
2. Repeatedly press the SET key until 'tINE' is displayed followed by current time value. Use the UP and DOWN arrows to set clock as required.
3. Press SET to confirm new value.

9.2. Setting the Daily Defrost Cycles on the Real Time Clock

It is possible to set-up 6 defrost cycles per day on Icon models: ICON-343C & ICON-363C.

The time parameters regarding this function are: tIN1, tIN2, tIN3, tIN4, tIN5 & tIN6

Notes:

1. In order to activate a defrost cycle it is necessary to set the defrost cycle starting time in at least one of the parameters (tIN1, tIN2, tIN3, tIN4, tIN5 or tIN6)
2. To be recognized as valid the time must be set in the format of HH.MM, (24 hours)
3. If parameters tIN1...tIN6 are set to --.-- then function is DISABLED.

Procedure:

1. To set the timed defrost press and hold the SET Key for **15** seconds until the three front panel COMPRESSOR, DEFROST and FAN LEDs switch on and off in sequence and SETP is displayed (with this procedure one enters the parameter configuration menu).
2. Repeatedly press the SET key until 'tIN1' is displayed followed by current value. Use the UP and DOWN arrows to set defrost start time as required.
3. Press SET to confirm new value.
4. Repeat steps 1 to 3 for tIN2...tIN6.

Important:

With regard to parameter dCSt, (time interval between defrost cycles), please remember that the value set in said parameter (dCSt) must be greater than the maximum set interval between two defrost cycles start times set in parameters tIN1...tIN6.

Example: tIN1 = 05.00 tIN2 = 11.30
 TIN3 = 15.30 tIN4 = 23.50
 TIN5 = --.-- tIN6 = --.--

Therefore: dCSt > 18 hours 50 mins.

10. CONNECTING TO HONEYWELL GENUS NETWORK

10.1. Icon Controller Identification on Genus® Network

Icon has to be given a name (alias) in order to log onto the Genus® network. The following naming convention is required for Genus network identification and defrost capabilities.

The Icon controller name is displayed as 'ICXX-Y' on Genus network. Where 'XX' is the StUB number and 'Y' is the CASE number.

A stub number 'XX' represents the refrigeration section where the Icon controller is situated within the supermarket. A case number 'Y' represents the case within the stub.

10.2. Network Logging-On Procedure

1. Disconnect or ensure that the controller is not logged on the network by depressing the buttons LIGHT+DOWN for 5 sec: the controller will display OFFLINE
2. Connect Genus® network cable to Genus® socket at rear end of the Icon controller. **OBSERVE POLARITY**
3. Set the StUb parameter between 0..99
4. Set the CASE parameter between 0...9,A,B,C,D,E,F,G,H,I,L,P,T,U,Y
5. Enable the controller to communicate on the network by depressing the buttons LIGHT+UP for 5 sec: the controller will display ONLINE

10.3. Network Logging-Off Procedure

1. To log off from the Genus network depress the buttons LIGHT+DOWN for 5 seconds, the controller will display OFFLINE

11. PROGRAMMABLE HOTKEY

The Icon controller has an optional programmable HotKey (Part Number: ICON-KEY3) When the controller is in OFF mode i.e. when it is non-activated and displays the message "OFF", it is possible to upload the parameter configurations of the controller to the HotKey, or vice-versa, to download parameter configurations from the HotKey to the controller.

11.1. HotKey Uploading Procedure

To upload the parameter configuration from the controller to the HotKey, proceed in the following manner.

1. Connect the HotKey to the HotKey connector on the rear of the controller (Note: the HotKey is orientated where the Hotkey main body is vertically inserted with the keyring hole **below** the main body of the Icon controller. **Failure to observe this orientation instruction will result in controller malfunction**)
2. Press the DEFROST key for 15 seconds until the "PrOG" message appears on the display.
3. Press the UP key until the "n-SA" message appears on the display.
4. Press the SET key for at least 5 seconds until the "yES" message, the "-rST" message (meaning the data is being uploaded) and after that the "OFF" message appears on the display.
5. The HotKey can now be removed.

11.2. HotKey Downloading Procedure

To download the parameter configuration from the HotKey to the controller, proceed in the following manner.

1. Connect the HotKey to the HotKey connector on the rear of the controller. (Note: the HotKey is orientated where the Hotkey main body is vertically inserted with the keyring hole **below** the main body of the Icon controller **Failure to observe this orientation instruction will result in controller malfunction**)
2. Press the DEFROST key for 15 seconds until the "PrOG" message appears on the display.
3. Press the DOWN key until the "n-rd" message appears on the display.
4. Press the SET key for at least 5 seconds until the "yES" message, the "-rST" message (meaning the data is being downloaded) and after that the "OFF" message appears on the display.
5. The HotKey can now be removed.
6. If for any reason the download procedure from the HotKey to the controller does not work correctly, or is not possible because the HotKey is not enabled, after pressing the SET key the "Err" message will appear on the display (indicating that the data was not transferred) and will be followed by "-rST" and "OFF".
7. If the Icon is connected to the Honeywell Genus[®] network, manually re-configure controller parameters StUb and CASE to reflect new address. Also manually re-configure DFst (see note below).

Note: Parameters **DFst** (local or remote defrost) will be automatically set to 'LOC' (local) , **StUb** (stub number), **CASE** (case number) are automatically set to '0' (default) when Hotkey download to new controller is complete. This ensures that there is no conflict with 2 or more controllers having the same network address. Reconfigure these parameters to create new address for controller as well as network logging status. E.g. StUb = 14, CASE = 5.

12. TROUBLESHOOTING

The ICON controller is able to recognize and to signal seven types of alarm situation. Each alarm type has a corresponding alarm message and actions that are made by the controller (see Table 5).

The alarm messages are displayed and alternate with the current displayed value; they are also accompanied by an intermittent audible signal (buzzer).

Once the cause for the alarm has been eliminated, the corresponding alarm message continues to be displayed and is accompanied by the buzzer.

In case of an 'Alti' alarm, once the cause has been eliminated, it is necessary to reset both the current time and the various defrost cycle starting times (parameter 38 – tINE.... tIN1, tIN2,..., tIN6).

When DOWN key is depressed for **5** seconds when in an alarm state, the acoustic alarm signal is switched off as well as the alarm signal on the display (**provided the reason for the alarm has been cleared**).

12.1. Alarm Messages

Alarm message	Cause	Controller intervention
ALP1	Interruption or short circuit of the AIR-OFF probe.	Alarm output active Compressor output according to parameters COPF, COOn & COOF (26, 27, 28) Other outputs not modified
ALP2	Interruption or short circuit of the evaporator probe.	Alarm output active Defrost output as set in parameter 10 (dFCt) Fan start delay as set in parameter 19 (Fand) Other outputs not modified
ALP3	Interruption or short circuit of the AIR-ON probe.	Alarm output active Other outputs not modified
ALHt	The temperature of the conditioned ambient exceeds SEtP+HtAd (1, 6) and therefore remains above SEtP+HtAd for the time set in parameter 8 (ALdy)	Alarm output active Other outputs not modified
ALLt	The temperature of the conditioned ambient drops below SEtP-LtAd (1, 7) and therefore remains below SEtP-HtAd for the time set in parameter 8 (ALdy)	Alarm output active Other outputs not modified
ALti	Internal clock failure or clock back-up battery exhausted or defective.	Alarm output active Defrost output as set in parameters 9,11,10 (dCSt, dFEt or dFCt)
ALEE	Loss of EEPROM data	Alarm output active. The instrument functions with the default parameters given in Table 4

Table 5. Alarm Messages

12.2. Warning Messages

As well as the alarm signals, the ICON controller can also display four warning messages as given in the table below.

Warning Messages	Meaning
dEF	Defrost cycle activated
door	Coldroom door is open
FiLt	Filter requires maintenance
OFF	Controller is in the stand-by mode

Table 6. Warning Messages

13. MAINTENANCE

Clean the instrument front panel with a soft cloth, dampened with soapy water. We recommend not to use abrasive detergents or detergents that contain solvents, since they could damage the instrument; also, do not splash water or any other liquid directly on the instrument.

All repairs on the controller must be carried out by authorized personnel.

Opening the instrument housing or tampering with the controller automatically voids the warranty.

14. ABOUT THE OPERATING INSTRUCTIONS

These operating instructions are to be considered part of our product and are therefore to be kept with proper care until the product itself is disposed of. The user can directly request new operating instructions from Honeywell, should those supplied have been damaged or lost.

Honeywell reserves the right to modify product features and/or to up-date the operating instructions at any time, without giving prior notice and without the obligation to up-date previously issued versions.

The user can request possible up-dates or integrations directly from Honeywell; he/she may also request further information about the product and in turn make proposals on how to improve these operating instructions.

The information included in these operating instructions shall serve to illustrate the use of the product as foreseen in the application, to list its technical features, to supply information about its installation and regulation, to prescribe maintenance procedures, to list residual risks, etc.

Honeywell therefore assumes no responsibility deriving from the improper use of its product or use by incompetent personnel, incorrect installation, faulty power supply, serious lack of prescribed maintenance, non-authorized modifications or interventions, the use of spare parts that are either not original or not specific for this model or not fully complying with the operating instructions.

Honeywell

Automation & Control Solutions

Cooling & Refrigeration
Newhouse Industrial Estate
Motherwell
Lanarkshire ML1 5SB
Phone: (44) 01698 481698
Fax: (44) 01698 481699
www.honeywell.com/cooling

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