



**ICON-111S / ICON-111SR / ICON-112S
ICON-112SR / ICON-132S / ICON-132SR**

ICON 100 SERIES REFRIGERATION CONTROLLER

INSTALLATION GUIDE



EN1B-0004UK07 R1003

ICON 100 SERIES INSTALLATION GUIDE

Trademark Information:

Genus[®] is a registered trademark of Honeywell Control Systems Ltd.

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For Icon 100 series operating instructions, please refer to document:
MU2B-0001UK07. This can be found at Honeywell Cooling & Refrigeration's
internet site: www.honeywell.com/cooling

1. SAFETY INSTRUCTIONS

- A. Keep this instruction booklet where it can always be easily consulted by the operator or by maintenance personnel.
- B. Warning: hot components may be inside the plastic housing of the controller.
- C. No user-serviceable parts are inside the plastic housing of the controller.
- D. The controller and any device connected to it must be installed in compliance with the Safety Regulations in force. If these regulations are not respected during installation, and if our product is not installed in compliance with the indications given in this instruction booklet, then this may cause a reduction in the safety level of the controller. In particular, the ambient operating conditions for the controller given in our technical data must be complied by; 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 to extreme vibrations. Not respecting the above indications could cause malfunctions and entail unpredictable consequences, e.g., in the worst cases, dangerous electrical discharges on probes or other parts of the instrument.

- E. 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.
- F. 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.
- G. 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.

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- H. When the controller is used in appliances where any malfunction of said controller could cause a form of risk to persons, animals or things, 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.
- I. The controller cannot be used as a 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.

2. GENERAL DESCRIPTION

The microprocessor-based electronic Honeywell Icon 100 Series Refrigeration Controllers are designed to measure, display, and control the temperature of refrigeration cases and coldrooms. The Icon 100 Series are powered by AC 230 V, 50/60 Hz, and can read from two thermistor probes (thermostat and / or defrost probes), and has up to three relay outputs (compressor, defrost and fan).

All of the controllers operating parameters are configurable using a four button keypad on the front of the temperature display. Access to the configuration parameters menu is achieved through the front panel keyboard by following a very simple security procedure, after which the required parameter values can be set quickly and easily.

A Honeywell NTC 2k Ohm probe is supplied as standard with Icon and has a measuring range of -50 to $+90^{\circ}\text{C}$. (-58 to $+194^{\circ}\text{F}$), that can be installed up to 10 meters (30ft) from the controller without requiring instrument recalibration. Icon can also use the PT1000 thermistor probe with a measuring range of -50 to $+90^{\circ}\text{C}$. (-58 to $+194^{\circ}\text{F}$). Please note that you cannot have a combination of NTC or PT1000 probes on a single controller.

All programming data is stored in a non-volatile memory (EEPROM), where it also remains during a power failure.

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The Icon 100 Series have the following features.

- display the measured case temperature as well as the alarm messages that refer to faulty cooling/refrigeration plant functions.
- control the measured temperature through the thermostat probe 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 or through the programmed mode; in the latter mode it is possible to set the times of up to four daily defrost cycles (112SR & 132SR models only)
- control the defrost cycle time as well as the successive startup of the cooling/refrigeration plant fan through the defrost probe. (112SR & 132SR models only)
- Honeywell Genus[®] Network compatible.
- Optional Genus[®] comms. Module.

Product	Description	Part-No
Icon 111S	1 relay, 1 probe.	ICON-111S
Icon 111SR	1 relay, 1 probe, real-time clock.	ICON-111SR
Icon 112S	1 relay, 2 probes.	ICON-112S
Icon 112SR	1 relay, 2 probes, real-time clock.	ICON-112SR
Icon 132S	3 relays, 2 probes.	ICON-132S
Icon 132SR	3 relays, 2 probes, real-time clock.	ICON-132SR
Icon HotKey	Programmable HotKey for Icon 100 Series.	ICON-KEY1
Icon Comms Module	Honeywell Genus® communications module for Icon 100 Series.	ICON-COMMS
Temperature Probe	2k NTC temperature probe with 7m cable.	TP002K
Temperature Probe	PT1000 temperature probe with 7m cable.	TPPT1K

Table 1. Icon Part Numbers & Descriptions

3. TECHNICAL SPECIFICATION

Part Number	ICON-11S	ICON-111SR	ICON-112S	ICON-112SR	ICON-132S	ICON-132SR
Housing						
Self extinguishing PC/ABS	●	●	●	●	●	●
Power Supply						
AC 230Vac ~ 4VA 50/60 Hz	●	●	●	●	●	●
Display						
3 digits, 14.2 mm high green LED's	●	●	●	●	●	●
Resolution						
0.1 °C or one unit	●	●	●	●	●	●
Accuracy						
± 0.7% t.s.	●	●	●	●	●	●
Probe Type						
2 x thermistor PT1000 / 2k NTC			●	●	●	●
1 x thermistor PT1000 / 2k NTC	●	●				

Table 2. Technical Specification

Part Number	ICON-111S	ICON-111SR	ICON-112S	ICON-112SR	ICON-132S	ICON-132SR
Compressor Output						
SPDT relay AC 240V 6(3)A	●	●	●	●	●	●
Defrost Output						
SPST relay AC 240V 6(4)A					●	●
Fan Output						
SPST relay AC 250V 6(4)A					●	●
Real Time Clock						
24 Hour, 1 minute increment		●		●		●
Network Type						
Honeywell Genus®	●	●	●	●	●	●
IP Rating						
IP52	●	●	●	●	●	●

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Part Number	ICON-111S	ICON-111SR	ICON-112S	ICON-112SR	ICON-132S	ICON-132SR
Operation Conditions						
Ambient Operating Temp: 0...+50 °C	●	●	●	●	●	●
Ambient Storage Temp: -20...+80 °C	●	●	●	●	●	●
Relative Humidity: +30...+85 NC	●	●	●	●	●	●
Mount Type						
Panel mounted	●	●	●	●	●	●

4. INSTALLATION

4.1 Introduction

The controller must be installed in a place where it is protected from extreme vibrations, impacts, water, corrosive gases, steam etc. and where temperature and humidity do not exceed the values given in the technical specification table (see page 11). The same instructions are also valid for the probes.

4.2 Thermistor Probe

The thermistor probe must be installed in a place where it is protected from direct airflow (i.e., away from fans or doors), so that the average temperature can be measured.

4.3 Defrost Termination Probe

The defrost termination probe must be installed in the coldest area between the evaporator fins, i.e., where the most ice will form, and not near the defrost heater or near the area that warms up first during defrosting, in order to avoid early termination of the defrost cycle.

4.4 Electrical Wiring

We would recommend protecting the controller power supply from electromagnetic disturbances, voltage peaks, etc. This can be easily done while wiring by following the instructions below:

- separate the power supply cables of the compressor, motors, etc. from those of the controller;
- keep the probe cables, the controller power supply cables, and the load power supply cables separate and sufficiently far away from each other, so they do not cross or form spirals.

4.5 Applications in Critical Environments

When used in particularly critical industrial environments the following precautions can also be useful:

- Use mains network 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;
- Use screened probe cables connected to the grounding system, if the previous indications are not sufficient;
- In the event of strong radio disturbances screen the entire device with a metallic screen and connect it the grounding system.

4.6 Fitting

Icon is supplied in a panel-mount enclosure. While fitting the controller we recommend to leave enough room at the back in order to avoid compressing or excessively bending the cables. Overall instrument size and panel cut-out dimensions are given in Fig. 1. below.

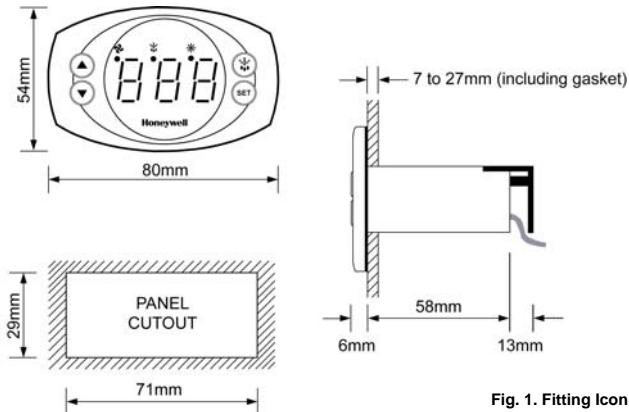


Fig. 1. Fitting Icon

4.7 Connections

We recommend the use of wire gauges adequate for the given load power ratings in order to avoid damage to the screw connector.

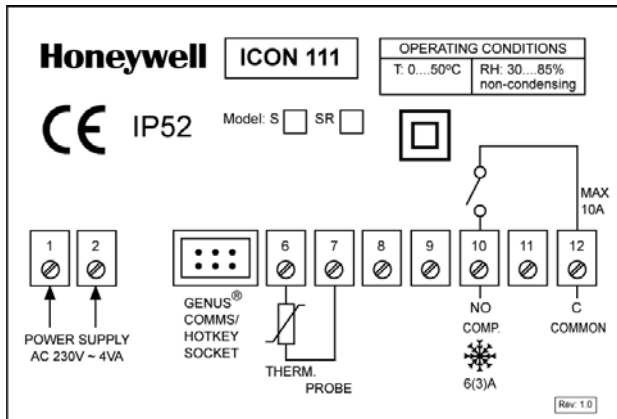


Fig. 2. ICON-111S/SR Models

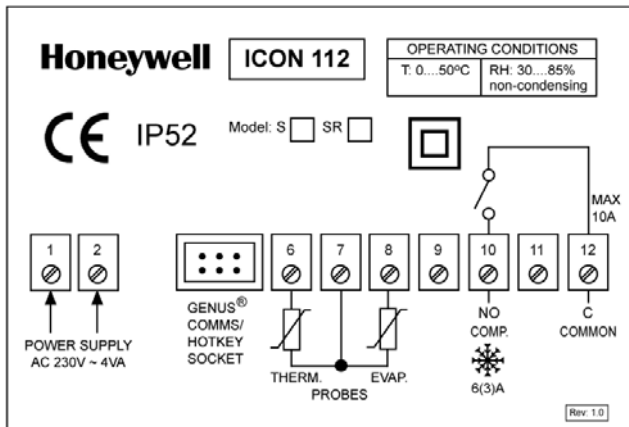


Fig. 3. ICON-112S/SR Models

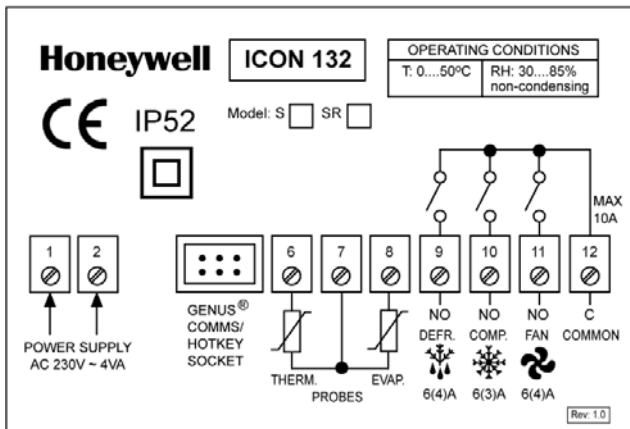


Fig. 4. ICON-132S/SR Models



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