New generation...
...continuity, innovation, design

CAREL

HACCP

❄ *ir33*

New generation...
...continuity, innovation

❄ *ir33*

Welcome to the new generation!

The famous *ir32* series of controllers has given rise to the new generation of controllers for refrigeration!

The new *ir33* includes: infrared remote control, programming key, repeater display, high efficiency LED display, HACCP function, clock, RS485 serial port, defrost management on a second evaporator, all without sacrificing the 4 relay outputs and the 115 to 230 Vac switching power supply!

All this in the same dimensions as the current *ir32*!

ir33 also manages smart defrosts, resulting in energy savings for the entire installation.

IP65 is guaranteed: the innovative technology used by CAREL to mould the plastic parts allows the protection gasket to be integrated directly into the front panel.

In models with an internal clock, HACCP management is standard: this guarantees the temperature control of the foodstuffs stored, in compliance with the requirements of the HACCP system.

The parameters are set directly on the instrument: the time and temperature limits envisaged by the standards on food storage can be set.

The controller automatically manages the monitoring of the unit, highlighting any critical situations.

It warns when the alarm limits are exceeded, saving the main information to permanent memory.

Additionally, it signals power failures in the event where the maintenance of the temperature could be compromised.

The data are easy to read on the instrument, and the alarm conditions are signalled automatically.

Comply with
HACCP
93/43/EU

New generation...
...32x74

❄ *ir33*

ir33 has a very powerful and aesthetically pleasant display, featuring 3 digits plus decimal point, sign and icons to simplify the reading of the values and the operating status.

ir33 represents a true step forwards in the world of electronic controllers for refrigeration. There are significant new software functions, as well as extraordinary innovations in terms of hardware: first of all is the switching power supply.

By using this technology, the range of power supply is extended. Depending on the version, this may range from 12 to 24 Vac/dc or from 115 to 230 Vac; this feature is very important because, according to the target application or market, it allows the customer to reduce the number of product codes managed and kept in stock. The top-of-the-range 115/230 Vac model is very powerful, featuring 4 relays, one of which 16 A, clock, buzzer and infrared receiver. In addition, the controller is approved for operation at ambient temperatures up to 60 °C.

The 230 Vac model fitted with built-in transformer is the most compact model in the range (just 56.5 mm deep). This is undoubtedly a significant advantage in applications where the space available to house the controller is limited.

Programming the parameters

ir33 can be programmed quickly, (without power when OFF), reducing the risk of errors, using the special programming key. This accessory can be used to optimise the management of the product codes, perform technical service fast and effectively, and complete the programming in just a few seconds, even during the testing phase at the end of the production line.

RS485 serial connection

ir33 can be connected to a supervisor system via an RS485 network, using the external connection module.
This is easily inserted in the connector that is normally used for the programming key, at time of installation or a later retrofit.

"Hot point" display terminal

Most models can be connected to a display used to read and check the values measured by the third probe, located in the hottest point of the cabinet, as envisaged by the **EN 441-13 standard**.

New generation...
...rail DIN

❄ ir33 DIN

Naturally there is also a DIN version of *ir33*, radically upgraded from its predecessor. In this format, *ir33* is completely compatible with the panel version in terms of both software and functions.

The hardware features are very powerful: it can control compressors with ratings up to 2 Hp and manage the defrost heater with a 16 A relay.

The top-of-the-range version has 5 relay outputs, while all models come as standard with 2 control probes and 3 digital inputs that can be configured as probes.

16 A relay

Another new feature of this range regards the 16 A relay output for controlling refrigeration compressors; most of the models are fitted with this relay, which can be used to directly control higher loads such as compressors, without requiring further intermediate relays.

Accessoires

Infrared remote control

This new accessory is used to directly access the main functions and configuration parameters and to program *ir33* from a distance, with a group of buttons that represent an exact copy of the instrument keypad.

Removable front panel

One essential characteristic on the latest generation instruments is the possibility to customise the look by simply replacing the front panel, according to the company colours or logo.
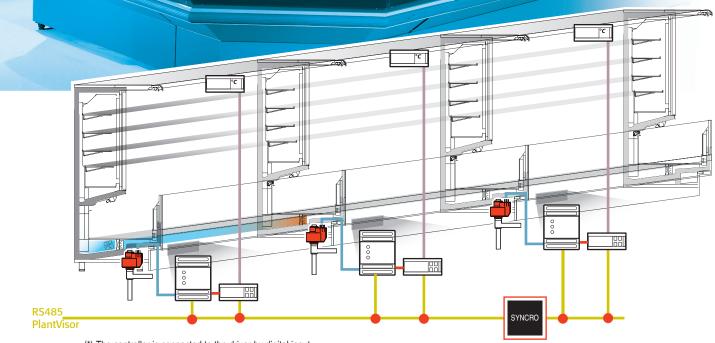
RTC

This accessory is used to record detailed data with precision, and set the defrost function according to the real time (and not at intervals, as is usually the case). The RTC ensures that *ir33* conforms with the **HACCP** standards, with operation guaranteed for 10 years even in the event of power failures.

New generation...
...Local Area Network

RS485
PlantVisor

SYNCRO

(*) The controller is connected to the driver by digital input.

Teamwork

ir33 can operate not only in stand-alone mode, but also in a local network, using an external control (synchroniser), with the advantage of not having to lay additional wiring.

This characteristic is particularly useful and effective in the case of applications with multiplexed cabinets, where all the operations of the installation need to be managed in a synchronised manner, above all as regards the defrosts.

The defrosts start at the same time on all the sections, and then end independently, in relation to the status of the different sections.

When the defrost is completed, the subsequent refrigeration phase is started in synch on all sections.

The local network can be used to centralise and synchronise not only the defrosts, but all the functions, on a single display.

This means that when pressing the light button, for example, the command is transferred via serial connection to all the boards, which activate the light relay at the same time.

The same applies to the ON/OFF commands, manual defrosts, continuous cycle and AUX functions.

This new and powerful feature will be available as standard on all instruments in the *ir33* range.

❄ ir33

ir33 (Panel)

	OUTPUTS			
	compressor	defrost	evaporator fan	light / aux 1
12 Vac				
IR33M00N00				
IR33S00N00	16 A			
IR33Y00N00	16 A	8 A		
IR33C00N00	16 A	8 A	8 A	8 A
IR33C00R00	16 A	8 A	8 A	8 A
12/24 Vac/dc				
IR33S0LN00	16 A			
IR33S0LR00	16 A			
IR33Y0LR00	16 A	8 A		
IR33C0LN00	16 A	8 A	8 A	8 A
IR33C0LR00	16 A	8 A	8 A	8 A
IR33C0LB00	16 A	8 A	8 A	8 A
IR33C7LN00	16 A	8 A	8 A	8 A
IR33C7LR00	16 A	8 A	8 A	8 A
230 Vac				
IR33M0ER00				
IR33S0EN00	8 A			
IR33S0EP00	16 A			
IR33S0EA00	8 A			8 A
IR33S0ER00	8 A			
IR33F0EN00	8 A	8 A	5 A	
IR33F0ER00	8 A	8 A	5 A	
IR33F0EC00	8 A	8 A	5 A	
IR33F7EN00	16 A	8 A	5 A	
115 Vac				
IR33F0AM00	8 A	8 A	5 A	
230 Vac ir33 power				
IR33S0EHA0	2 Hp			
IR33S0EGE0	2 Hp			8 A*
IR33Y0EHA0	2 Hp	8 A		
IR33F0EHA0	2 Hp	8 A	5 A	
IR33F0EHE0	2 Hp	8 A	5 A*	
IR33F0EFA0	2 Hp	8 A	5 A	
115/230 Vac				
IR33C0HR00	16 A	8 A	8 A	8 A
IR33C7HR00	16 A	8 A	8 A	8 A
IR33C0HB00	16 A	8 A	8 A	8 A

INPUTS: ambient temperature, defrost temperature, digital input/probe 3, digital input/probe 4 — programming key — PLUS: high efficiency display, buzzer, infrared, real time clock, optional "hot point" display terminal, optional RS485 board, NTC/PTC probes

***:** relay output with independent contacts

ir33 DIN

	OUTPUTS				
	compressor	defrost	evaporator fan	light / aux 1	light / aux 2
12 Vac					
DN33S00A00	16 A			8 A	
DN33H00N00	16 A	16 A	8 A	8 A	8 A
12/24 Vac					
DN33S0LR00	16 A				
DN33C0LR00	16 A	16 A	8 A	8 A	
DN33C0LC00	16 A	16 A	8 A	8 A	
DN33C0LB00	16 A	16 A	8 A	8 A	
230 Vac					
DN33S0EN00	16 A				
DN33S0EA00	16 A	8 A			
DN33F0EN00	16 A	16 A	8 A		
DN33F0EC00	16 A	16 A	8 A		
DN33F0EA00	16 A	16 A	8 A	8 A	
DN33F0EL00	16 A	16 A	8 A	8 A	
DN33F0ET00	16 A	16 A	8 A	8 A	
115/230 Vac					
DN33S0HR00	2 Hp				
DN33S0HA00	2 Hp			8 A	
DN33C0HR00	2 Hp	16 A	8 A	8 A	
DN33C0HB00	2 Hp	16 A	8 A	8 A	
DN33H0HN00	2 Hp	16 A	8 A	8 A	8 A
DN33H0HR00	2 Hp	16 A	8 A	8 A	8 A
DN33H0HB00	2 Hp	16 A	8 A	8 A	8 A

INPUTS: ambient temperature, defrost temperature, digital input/probe 3, digital input/probe 4, digital input/probe 5 — HACCP — programming key — PLUS: high efficiency display, buzzer, infrared, real time clock, optional "hot point" display terminal, optional RS485 board
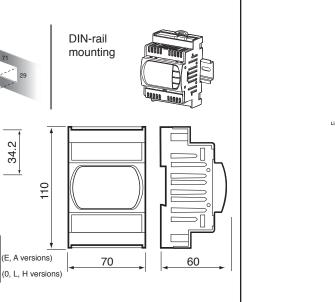
Options

IROPZKEY00: programming key with battery
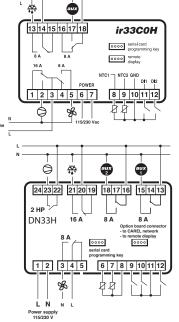**IROPZKEYA0:** programming key with power supply
PSOPZPGR00: programming kit

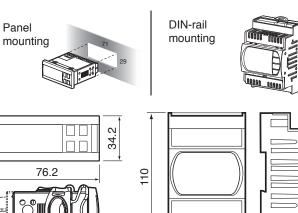**IROPZ48500:** RS485 serial card, RX/TX automatic sensing
IRTRRES000: remote control

Probes

NTC015HP00: 1.5 m range (-50T100 °C)
NTC030HP00: 3 m range (-50T100 °C)

NTC015HT00: 1.5 m range (0T150 °C)
NTC030HT00: 3 m range (0T150 °C)

Panel mounting

71 — 29

34.2 — 76.2 — 56.5 (E, A versions) — 70.5 (0, L, H versions)

DIN-rail mounting

110 — 70 — 60

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ir33C0H

Line N L — aux
13 14 15 16 17 18
8 A — 8 A
16 A — 8 A
serial card programming key
remote display
NTC1 NTC2 GND — DI1 DI2
1 2 3 4 5 6 7 — 8 9 10 11 12
POWER
Line N L — 115/230 Vac

DN33H

L N — aux — aux
24 23 22 — 21 20 19 — 18 17 16 — 15 14 13
2 HP — 16 A — 8 A — 8 A
8 A
Option board connector - to CAREL network - to remote display
serial card programming key
1 2 — 3 4 5 — 6 7 8 9 10 11 12
L N N L
Power supply 115/230 V

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