CAREL

connectivity, telemaintenance and monitoring systems

temperature, humidity and pressure controllers



ir33 universale

electronic controller with universal inputs

carel.com

Integrated Control Solutions & Energy Savings

ir33 universale: the improvement and extension of the ir32 universal range

Is the CAREL controller that lets you manage several values at the same time, including temperature, humidity, pressure, CO_2 , VOC …

%rH, bar, °C, ...
It is our solution
for all your needs.





Available models

The models available are divided into two families: the first with temperature inputs only, and consequently suitable for temperature control in HVAC/R applications and/or generic applications that require the use of a thermostat in the range –50T150 °C; the second with universal inputs (NTC, NTC-HT, PTC, PT1000, PT100, TC J/K, voltage and current). In addition, ir33 universal incorporates the main functions (speed-up, cut-off, control on the higher value read by the 2 probes…) of the CAREL FCM range.

ir33 universal is an advanced controller that includes all the features already available in the previous range, adding some new sophisticated functions such as:
- PID autotuning;
- two independent control loops;
- management of the clock;
- working cycles.

The product features an user interface that is simple to use, in line with the previous version, while at the same time adding symbols on the display and navigation menus, making the interface with the product more user-friendly

The models available are suitable for panel installation (IR33*) and DIN rail assembly (DN33*). Switching power supply, 12 to 24 V, 24 V or 115 to 230 Vac, 2 digital inputs, 2 analogue inputs, IR receiver and buzzer as standard, while some versions feature integrated 0 to 10 Vdc outputs and/or real time clock (RTC).
See the table at the end for the complete list of codes and the cross-reference with the previous ir32 series.

The following sensors can be connected:
temperature only models
- NTC range –50T90 °C
- NTC-HT range –40T150 °C
- PTC range –50T150 °C
- PT1000 range –50T150 °C

in addition, for the models with universal inputs
- PT1000 range –199T800 °C
- PT100 range –199T800 °C
- TC J/K range –100T800 °C
- Voltage: 0 to 1 V, - 0.5 to 1.3 V, 0 to 10 V, 0 to 5 V rat.
- Current: 0 to 20 mA, 4 to 20 mA.

The type of probe is selected using a configuration parameter.



Display
The large display, complete with icons, makes it easy to set the parameters.



Installation
All models are supplied with plug-in terminals. The units can be programmed on the keypad, via key, remote control & comtool.



power supply
All models are available with 12 to 24 Vac/ 12 to 30 Vdc, 24 Vac/dc or 115 to 230 Vac power supply.

Parameter configuration

ir33 universal is compatible with the new configuration tool for CAREL parametric controllers, for fast and practical setup of the application.



Display

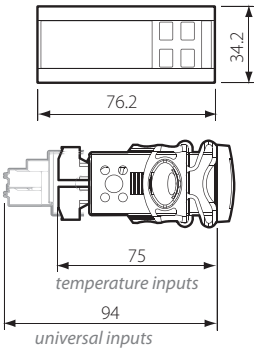
ir33 universal is fitted with a display featuring 3 digits with decimal point, minus sign and icons, making it easier to read the values and check the operating status.



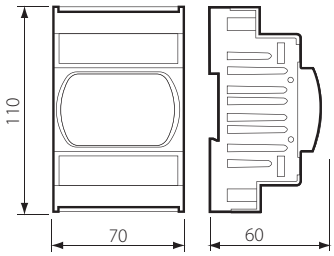
alarm
service
clock
direct
reverse
TUNING tuning

Dimensions in mm

ir33



DN33



Connections

The use of plug-in terminals simplifies installation and any maintenance operations on the unit.
According to the range, only the type of input terminal changes, as illustrated in the photo, while the output and power supply terminals remain unchanged.

Model with temperature inputs

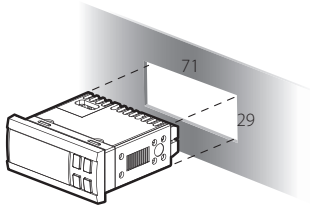


Model with universal inputs

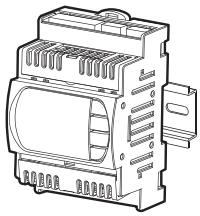


Mounting

panel



DIN rail



Range of models

The best solution can be easily identified, thanks to the vast range of models available.

PID regulation

As well as classic proportional and proportional + integral control (P, P+I), PID with autotuning or 2 indipendent control loops have been added.

RTC

Used to log the alarms and manage the working cycles.

List of product codes with ir32 universal cross-reference

Panel mounting

Models	temperature inputs		universal inputs		Description
	ir33	ir32	ir33	ir32	
1 relay	IR33V7HR20	IR32V0H000	IR33V9HR20	IR32V*H000	2AI, 2DI, 1DO, BUZ, IR, 115-230 Vac
	IR33V7HB20		IR33V9HB20		2AI, 2DI, 1DO, BUZ, IR, RTC,115-230 Vac
	IR33V7LR20	IR32V0L000	IR33V9MR20 ♦	IR32V*L000	2AI, 2DI, 1DO, BUZ, IR, 12-24Vac 12-30 Vdc (♦= 24 Vac/Vdc)
2 relay	IR33W7HR20		IR33W9HR20		2AI, 2DI, 2DO, BUZ, IR, 115-230 Vac
	IR33W7HB20		IR33W9HB20		2AI, 2DI, 2DO, BUZ, IR, RTC,115-230 Vac
	IR33W7LR20	IR32W00000	IR33W9MR20 ♦	IR32W*0000	2AI, 2DI, 2DO, BUZ, IR, 12-24Vac 12-30 Vdc (♦= 24 Vac/Vdc)
4 relay	IR33Z7HR20		IR33Z9HR20		2AI, 2DI, 4DO, BUZ, IR, 115-230 Vac
	IR33Z7HB20		IR33Z9HB20		2AI, 2DI, 4DO, BUZ, IR, RTC,115-230 Vac
	IR33Z7LR20	IR32Z00000	IR33Z9MR20 ♦	IR32Z*0000	2AI, 2DI, 4DO, BUZ, IR, 12-24Vac 12-30 Vdc (♦= 24 Vac/Vdc)
4 SSR	IR33A7HR20		IR33A9HR20		2AI, 2DI, 4SSR, BUZ, IR, 115-23 0Vac
	IR33A7HB20		IR33A9HB20		2AI, 2DI, 4SSR, BUZ, IR, RTC,115-230 Vac
	IR33A7LR20	IR32A00000, IR32D0L000	IR33A9MR20 ♦	IR32A*0000, IR32D*L000	2AI, 2DI, 4SSR, BUZ, IR, 12-24Vac 12-30 Vdc (♦= 24 Vac/Vdc)
1 relay + 1 0 to 10 V	IR33B7HR20		IR33B9HR20		2AI, 2DI, 1DO+1AO, BUZ, IR, 115-230 Vac
	IR33B7HB20		IR33B9HB20		2AI, 2DI, 1DO+1AO, BUZ, IR, RTC,115-230 Vac
	IR33B7LR20	IR32D0L000 +1 CONV0/10A0	IR33B9MR20 ♦	IR32D*L000 +1 CONV0/10A0	2AI, 2DI, 1DO+1AO, BUZ, IR, 12-24Vac 12-30 Vdc (♦= 24 Vac/Vdc)
2 relays + 2 0 to 10 V	IR33E7HR20		IR33E9HR20		2AI, 2DI, 2DO+2AO, BUZ, IR, 115-230 Vac
	IR33E7HB20		IR33E9HB20		2AI, 2DI, 2DO+2AO, BUZ, IR, RTC,115-230 Vac
	IR33E7LR20	IR32A00000 +2 CONV0/10A0	IR33E9MR20 ♦	IR32A*0000 +2 CONV0/10A0	2AI, 2DI, 2DO+2AO, BUZ, IR, 12-24Vac 12-30 Vdc (♦= 24 Vac/Vdc)

*= 0,1,2,3,4 indicates the types of input in the ir32 range

DIN rail mounting

Models	temperature inputs		universal inputs		Description
	ir33	ir32	ir33	ir32	
1 relay	DN33V7HR20	IRDRV00000	DN33V9HR20	IRDRV*0000	2AI, 2DI, 1DO, BUZ, IR, 115-230 Vac
	DN33V7HB20		DN33V9HB20		2AI, 2DI, 1DO, BUZ, IR, RTC,115-230 Vac
	DN33V7LR20		DN33V9MR20 ♦		2AI, 2DI, 1DO, BUZ, IR, 12-24Vac 12-30 Vdc (♦= 24 Vac/Vdc)
2 relay	DN33W7HR20	IRDRW00000	DN33W9HR20	IRDRW*0000	2AI, 2DI, 2DO, BUZ, IR, 115-230 Vac
	DN33W7HB20		DN33W9HB20		2AI, 2DI, 2DO, BUZ, IR, RTC,115-230 Vac
	DN33W7LR20		DN33W9MR20 ♦		2AI, 2DI, 2DO, BUZ, IR, 12-24Vac 12-30 Vdc (♦= 24 Vac/Vdc)
4 relay	DN33Z7HR20		DN33Z9HR20		2AI, 2DI, 4DO, BUZ, IR, 115-230 Vac
	DN33Z7HB20		DN33Z9HB20		2AI, 2DI, 4DO, BUZ, IR, RTC,115-230 Vac
	DN33Z7LR20	IRDRZ00000	DN33Z9MR20 ♦	IRDRZ*0000	2AI, 2DI, 4DO, BUZ, IR, 12-24Vac 12-30 Vdc (♦= 24 Vac/Vdc)
4 SSR	DN33A7HR20		DN33A9HR20		2AI, 2DI, 4SSR, BUZ, IR, 115-230 Vac
	DN33A7HB20		DN33A9HB20		2AI, 2DI, 4SSR, BUZ, IR, RTC,115-230 Vac
	DN33A7LR20	IRDRA00000	DN33A9MR20 ♦	IRDRA*0000	2AI, 2DI, 4SSR, BUZ, IR, 12-24Vac 12-30 Vdc (♦= 24 Vac/Vdc)
1 relay + 1 0...10 V	DN33B7HR20		DN33B9HR20		2AI, 2DI, 1DO+1AO, BUZ, IR, 115-230 Vac
	DN33B7HB20		DN33B9HB20		2AI, 2DI, 1DO+1AO, BUZ, IR, RTC,115-230 Vac
	DN33B7LR20	IRDRA00000 +1 CONV0/10A0	DN33B9MR20 ♦	IRDRA*0000 +1 CONV0/10A0	2AI, 2DI, 1DO+1AO, BUZ, IR, 12-24Vac 12-30 Vdc (♦= 24 Vac/Vdc)
2 relays + 2 0 to 10 V	DN33E7HR20		DN33E9HR20		2AI, 2DI, 2DO+2AO, BUZ, IR, 115-230 Vac
	DN33E7HB20		DN33E9HB20		2AI, 2DI, 2DO+2AO, BUZ, IR, RTC,115-230 Vac
	DN33E7LR20	IRDRA00000 +2 CONV0/10A0	DN33E9MR20 ♦	IRDRA*0000 +2 CONV0/10A0	2AI, 2DI, 2DO+2AO, BUZ, IR, 12-24Vac 12-30 Vdc (♦= 24 Vac/Vdc)

*= 0,1,2,3,4 indicates the types of input in the ir32 range

Accessories

ir33	ir32	Description
IRTRUES000	IRTRUE0000	Remote control for ir33 universal
IROPZKEY00		Programming key with battery
IROPZKEYA0		Programming key with 230 V power supply
IROPZ48500	IR32SER00E	RS485 serial communication interface
IROPZ485S0		IS485 serial communication interface with automatic RX-TX
IROPZSER30		RS485 serial interface for DN33

+302235441 - 2.1 - 10.12.2009

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Headquarters ITALY

CAREL INDUSTRIES Hqs.
Via dell'Industria, 11
35020 Brugine - Padova (Italy)
Tel. (+39) 0499 716611
Fax (+39) 0499 716600
carel@carel.com

Sales organization

CAREL Asia - www.carel.com
CAREL Australia - www.carel.com.au
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