Carel PZGXS0J111

Carel PZGXS0J111 Refrigeration Cooler Control Temperature Controller User Manual

Model: PZGXS0J111 | Brand: Carel

1. Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of the Carel PZGXS0J111 Refrigeration Cooler Control Temperature Controller. This device is designed for precise temperature management in refrigeration systems, display cabinets, and showcases. Please read this manual thoroughly before installation and operation to ensure safe and efficient use.

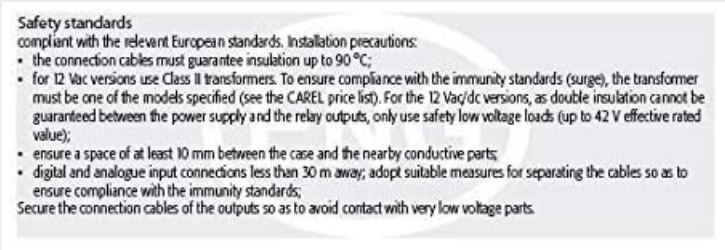
Figure 1: Front view of the Carel PZGXS0J111 controller, showing the digital display and control buttons.

2. Safety Information

Adherence to safety standards is crucial for the proper functioning and longevity of the device, as well as for user safety. This controller complies with relevant European standards.

- **Connection Cables:** Ensure connection cables guarantee insulation up to 90°C.
- **12 Vac Versions:** For 12 Vac versions, use Class II transformers. To comply with immunity standards, the transformer must be a specified CAREL model. Double insulation cannot be guaranteed between power supply and relay outputs for 12 Vac/dc versions; use only safety low voltage loads (up to 42 V effective rated value).

- **Installation Clearance:** Maintain a space of at least 10 mm between the case and nearby conductive parts.
- **Digital and Analog Input Connections:** For connections less than 30 m away, adopt suitable measures for separating cables to ensure compliance with immunity standards.
- **Output Cable Security:** Secure the connection cables of the outputs to avoid contact with very low voltage parts.


Safety standards
compliant with the relevant European standards. Installation precautions:
- the connection cables must guarantee insulation up to 90 °C;
- for 12 Vac versions use Class II transformers. To ensure compliance with the immunity standards (surge), the transformer must be one of the models specified (see the CAREL price list). For the 12 Vac/dc versions, as double insulation cannot be guaranteed between the power supply and the relay outputs, only use safety low voltage loads (up to 42 V effective rated value);
- ensure a space of at least 10 mm between the case and the nearby conductive parts;
- digital and analogue input connections less than 30 m away; adopt suitable measures for separating the cables so as to ensure compliance with the immunity standards;

Secure the connection cables of the outputs so as to avoid contact with very low voltage parts.

Figure 2: Excerpt from the safety standards document, detailing insulation, transformer, and installation clearance requirements.

3. Technical Specifications

The Carel PZGXS0J111 is a robust electronic microprocessor controller designed for various refrigeration applications. Below are its key technical specifications:

Feature	Specification
Power Supply	115 Vac +10/-15% 50/60 Hz
Rated Power	3 VA
Inputs	NTC or PTC probes (1 or 3 inputs), Digital input as alternative to third probe
Relay Outputs	2 HP relay: UL 12 A Res. 12 FLA 72 LRA - 240 Vac; 16 A relay: UL 8 A Res. 10 FLA 60 LRA - 240 Vac
Type of Probe	Std CAREL NTC 10 kΩ at 25°C, Std CAREL PTC 990 Ω at 25°C
Connections	Screw terminals for cables with cross-sect. from 0.5 mm² to 1.5 mm². Plug-in terminals for screw blocks or with crimped contact (cable cross-sect. up to 2.5 mm²). Rated maximum current per terminal 12 A.
Assembly	Terminal: using screws from the front panel or with rear brackets. Interface: with mounting, 4 screws, spacing 101x151 mm.
Display	3 digit LED display with sign (-999 to 999) and decimal point, six status LEDs
Operating Conditions	-10T50 °C - humidity <90% RH non-condensing
Storage Conditions	-20T70 °C - humidity <90% RH non-condensing
Range of Measurement	-50T90 °C (-58T194 °F) - resolution 0.1 °C/°F
Front Panel Index of Protection	Panel installation with IP65 type 1 gasket
Case	Plastic terminal, H76xL36xW65 mm
Certification	NSF, cURus, EAC CE

Feature	Specification
Voltage	115 Volts
Color	Black
UPC	661020725184

ENG **Description**

P/EZ* (models S, C, Y and X) represent a range of electronic microprocessor controllers with LED display developed for the management of refrigerating units, display cabinets and showcases.

Models available:

- P/EZS*, designed for the management of static refrigerating units, no fan on the evaporator, operating at temperatures above 0°C;
- P/EZC*, designed for the management of low temperature ventilated refrigerating units.
- P/EZ(Y, X)*, designed for the management of static refrigerating units, no fan, operating at low temperatures;
- P/EZM*, simple solution for measuring the temperature.

Note: model Y= relays connected electronically internally; model X= independent relays.

Technical specifications

power supply (*)	230 Vac +10/-15% 50/60 Hz; 115 Vac +10/-15% 50/60 Hz 12 Vac +10/-15% 50/60 Hz class 2; 12 Vdc +10/-20% class 2;	
rated power	3,5 VA	
inputs (*)	NTC or PTC probes 1 or 3 inputs. Digital input as alternative to third probe	
relay outputs (*)	2 HP relay	UL: 12 A Res. 12 FLA 72 LRA - 240 Vac (***), UL: 12 A Res. 10 FLA 60 LRA - 240 Vac (****) EN60730-1: 10(10) A 250 Vac (**)
	16 A relay	UL: 12 A Res. 5 FLA 30 LRA - 240 Vac C300, EN60730-1: 12(2) A NO/NC, 10(4) A up to 60 °C NO, 2(2) A CO - 250 Vac
	8 A relay	UL: 8 A Res. 2 FLA 12 LRA - 240 Vac C300, EN60730-1: 8(4) A NO, 6(4) A NC, 2(2) A CO - 250 Vac
type of probe (*)	Std CAREL NTC 10 KΩ at 25 °C, Std CAREL PTC 985 Ω at 25 °C	
connections (*)	screw terminals for cables with cross-sect. from 0.5 mm² to 1.5 mm². Plug-in terminals for screw blocks or with crimped contact (cable cross-sect. up to 2.5 mm²). Rated maximum current per terminal 12 A	
assembly (*)	terminal: using screws from the front panel or with rear brackets. Interface: wall mounting, 4 screws, spacing 101x151 mm	
display	3 digit LED display with sign (-199 to 999) and decimal point, six status LEDs	
operating conditions	-10T50 °C - humidity <90% rH non-condensing	
storage conditions	-20T70 °C - humidity <90% rH non-condensing	
range of measurement	-50T90 °C (-58T194 °F) - resolution 0.1 °C/°F	
front panel index of protection	panel installation with IP65 type 1 gasket	
case	plastic terminal, 81 x 36x65 mm	
classification according to protection against electric shock	Class II when suitably integrated	
environmental pollution	normal	
PTI of the insulating material	250 V	
period of stress across the insulating parts	long	
category of resistance to heat and fire	category D (UL94 - V0)	
immunity against voltage surges	category 1	
type of action and disconnection	1C relay contacts	
no. of relay automatic operating cycles (*)	EN60730-1: 100,000 operations UL: 30,000 operations (250 Vac)	
software class and structure	Class A	
cleaning the instrument	Only use neutral detergents and water.	
cable max. lenght	serial: 1 km probes: 30 m relay: 10 m	

Figure 3: Detailed technical specifications, including power supply, inputs, outputs, and environmental conditions.

4. Installation and Wiring

Proper installation is critical for the controller's performance and safety. Refer to the wiring diagrams and ensure all connections are secure and comply with local electrical codes.

4.1 Wiring Diagram

The controller features screw terminals for secure wiring. Ensure to use copper conductors only, as indicated on the device label.

Figure 4: Rear view of the controller displaying the terminal block layout and electrical specifications. Note the "Use copper conductors only" instruction.

Figure 5: Close-up of the wiring terminals, indicating connections for power (115V~), probes (NTC, AMB.T, DEF.T), and digital inputs (DI/NTC).

4.2 Terminal Connections

- **Terminals 1-3:** AUX and L (Line) connections.
- **Terminals 4-5:** L (Line) and N (Neutral) for 115V~ power supply.
- **Terminals 6-7:** AMB.T (Ambient Temperature) probe.
- **Terminals 8-9:** NTC (Negative Temperature Coefficient) probes.
- **Terminals 10-11:** DEF.T (Defrost Temperature) probe and DI/NTC (Digital Input/NTC) connections.

Ensure proper polarity and secure connections for all wires. The terminal blocks are designed for easy and reliable wiring.

Figure 6: Detailed view of the green screw terminal blocks, highlighting the robust connection points.

4.3 Mounting

The controller is designed for panel installation. It uses 4 screws for mounting with a spacing of 101x151 mm. Ensure the panel opening is correctly sized for a snug fit and IP65 protection.

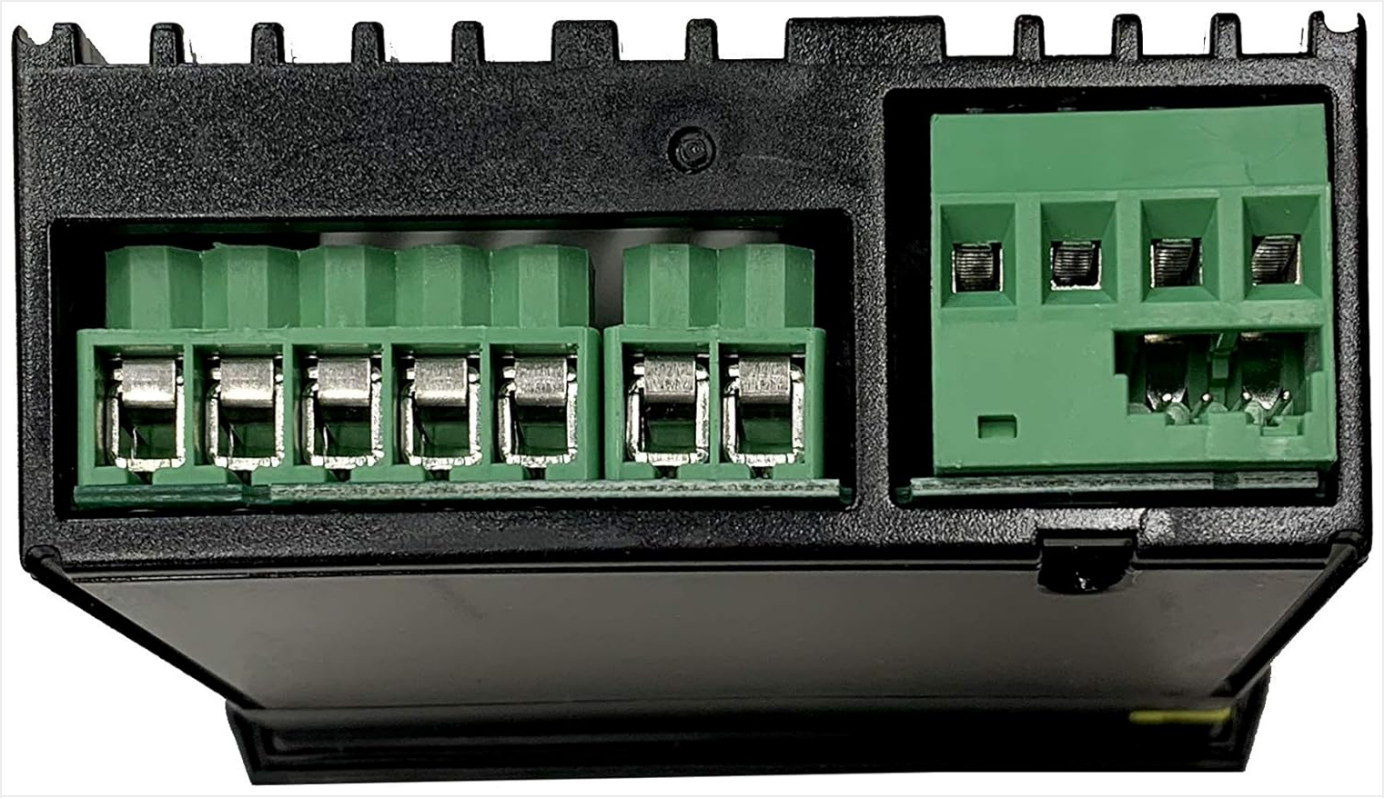


Figure 7: Yellow push clips, likely used for securing the controller during panel mounting or for cable management.

5. Operation

The Carel PZGXS0J111 features an intuitive interface with a 3-digit LED display and several buttons for control and configuration.

5.1 Display and Functions

The display shows the value of the probe set using parameter P1. An ambient probe, defrost probe, and third probe are available. LEDs indicate the activation of control functions.

LED Icon	Function	Normal Operation	Blink	Start Up
❄	Compressor	on	request	ON
	Fan	on	request	ON
	Defrost	on	request	ON
AUX	Output on	Output off	-	ON
	Alarm	no alarm	-	ON
	Clock	RTC fitted or disabled, at least 1 time band set	RTC not fitted or disabled, not even 1 time band set	ON if RTC fitted

5.2 Button Functions (Models S, X, Y, C)

Button	Normal Operation	Start Up

Button	Normal Operation	Start Up
SET	Pressing the button alone: display set point. More than 3 s: display parameter setting menu.	Pressed together: Set point display.
UP (▲)	Increase value.	-
DOWN (▼)	Decrease value.	-
ON/OFF ( )	More than 3 s: start/stop ON/OFF.	-
DEFROST (❄)	More than 3 s: start defrost.	-
MUTE ( )	Mute alarm.	-

5.3 Setting the Set Point (Desired Temperature)

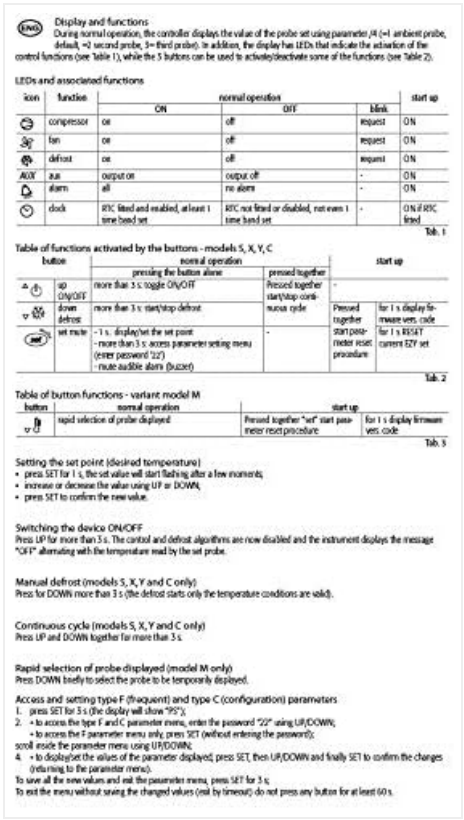
- Press **SET** for 1 s; the set value will start flashing after a few moments.
- Increase or decrease the value using **UP** (▲) or **DOWN** (▼).
- Press **SET** to confirm the new value.

5.4 Switching the Device ON/OFF

Press **ON/OFF ( )** for more than 3 s. The control and defrost algorithms are now disabled and the instrument displays the message "OFF" alternating with the temperature read by the set probe.

5.5 Manual Defrost (Models S, X, Y and C only)

Press **DEFROST (❄)** for more than 3 s (the defrost starts only if the temperature conditions are valid).


ENG

Display and functions

During normal operation, the controller displays the value of the probe set using parameter /4 (=1 ambient probe, default, =2 second probe, 3= third probe). In addition, the display has LEDs that indicate the activation of the control functions (see Table 1), while the 3 buttons can be used to activate/deactivate some of the functions (see Table 2).

LEDs and associated functions

icon	function	normal operation			start up
		ON	OFF	blink	
	compressor	on	off	request	ON
	fan	on	off	request	ON
	defrost	on	off	request	ON
AUX	aux	output on	output off	-	ON
	alarm	all	no alarm	-	ON
	clock	RTC fitted and enabled, at least 1 time band set	RTC not fitted or disabled, not even 1 time band set	-	ON if RTC fitted

Tab. 1

Table of functions activated by the buttons - models S, X, Y, C

button		normal operation		start up	
		pressing the button alone	pressed together		
	up ON/OFF	more than 3 s: toggle ON/OFF	Pressed together: start/stop continuous cycle	-	
	down defrost	more than 3 s: start/stop defrost		Pressed together	for 1 s display firmware vers. code
	set mute	- 1 s.: display/set the set point - more than 3 s: access parameter setting menu (enter password '22') - mute audible alarm (buzzer)	-	start parameter reset procedure	for 1 s RESET current EEV set

Tab. 2

Table of button functions - variant model M

button	normal operation	start up	
	rapid selection of probe displayed	Pressed together "set" start parameter reset procedure	for 1 s display firmware vers. code

Tab. 3

Setting the set point (desired temperature)
- press SET for 1 s, the set value will start flashing after a few moments;
- increase or decrease the value using UP or DOWN;
- press SET to confirm the new value.

Switching the device ON/OFF
Press UP for more than 3 s. The control and defrost algorithms are now disabled and the instrument displays the message "OFF" alternating with the temperature read by the set probe.

Manual defrost (models S, X, Y and C only)
Press for DOWN more than 3 s (the defrost starts only the temperature conditions are valid).

Continuous cycle (models S, X, Y and C only)
Press UP and DOWN together for more than 3 s.

Rapid selection of probe displayed (model M only)
Press DOWN briefly to select the probe to be temporarily displayed.

Access and setting type F (frequent) and type C (configuration) parameters
1. press SET for 3 s (the display will show "PS");
2. • to access the type F and C parameter menu, enter the password "22" using UP/DOWN;
   • to access the F parameter menu only, press SET (without entering the password);
   scroll inside the parameter menu using UP/DOWN;
4. • to display/set the values of the parameter displayed, press SET, then UP/DOWN and finally SET to confirm the changes (returning to the parameter menu).

To save all the new values and exit the parameter menu, press SET for 3 s;
To exit the menu without saving the changed values (exit by timeout) do not press any button for at least 60 s.

Figure 8: Tables detailing LED indicators, button functions, and basic operation procedures.

6. Maintenance

Regular maintenance ensures the optimal performance and longevity of your Carel PZGXS0J111 controller.

6.1 Cleaning

To clean the instrument, use only neutral detergents and water. Avoid abrasive cleaners or solvents that could damage the casing or display.

6.2 Probe and Cable Inspection

Periodically inspect probes and cables for any signs of wear, damage, or loose connections. Ensure probes are correctly positioned for accurate temperature readings. The maximum cable length for probes is 10 meters.

7. Troubleshooting

This section provides guidance for common issues you might encounter with the Carel PZGXS0J111 controller. For complex problems, consult a qualified technician.

- **Display shows "OFF":** This indicates the device is switched off. Press and hold the ON/OFF button for more than 3 seconds to turn it back on.
- **Incorrect Temperature Reading:** Check probe connections and ensure probes are not damaged or improperly installed. Verify the probe type setting in the controller's parameters.
- **Controller Not Responding:** Check the power supply (115V AC). Ensure all wiring connections are secure. If the issue persists, a reset might be necessary (refer to advanced settings in the full manual, if available).
- **Alarm Indicator On:** Check the alarm conditions. Press the MUTE button to silence the alarm. Address the underlying cause of the alarm (e.g., temperature out of range).

8. Warranty Information

For warranty details, please refer to the official Carel product warranty statement provided with your purchase or visit the Carel official website. Typically, warranty covers manufacturing defects under normal operating conditions.

- **Protection Plans:** Additional protection plans may be available for purchase, offering extended coverage beyond the standard manufacturer's warranty. Examples include 3-Year and 4-Year Protection Plans.

9. Customer Support

For technical assistance, spare parts, or further inquiries regarding your Carel PZGXS0J111 controller, please contact Carel customer support or your authorized distributor.
Manufacturer: Carel
Website: www.carel.com (Please note: This is a generic link. Refer to your product packaging or official documentation for specific support contacts.)