



WARNING: separate as much as possible the probe and digital input signal cables from the cables carrying inductive loads and power cables to avoid possible electromagnetic disturbance. Never run power cables (including the electrical panel wiring) and signal cables in the same conduits.

Dimensions (mm)

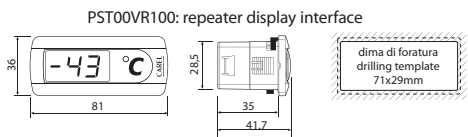
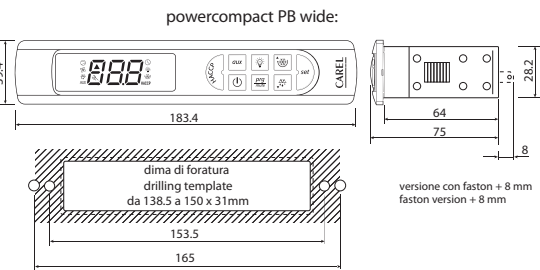
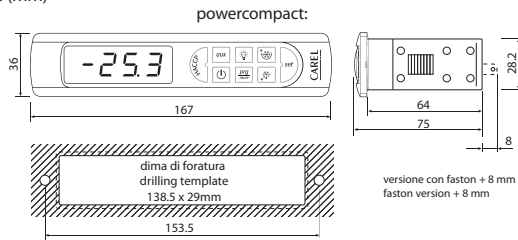
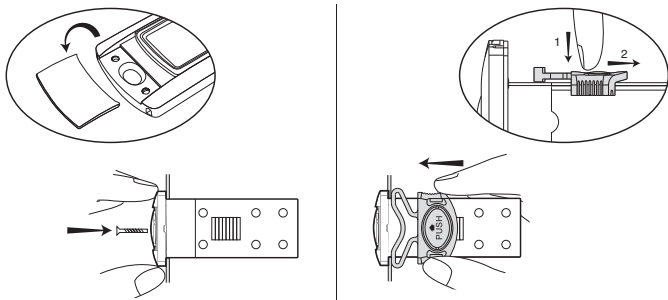


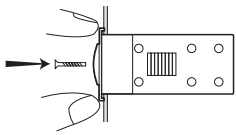
Fig. 1

Panel mounting

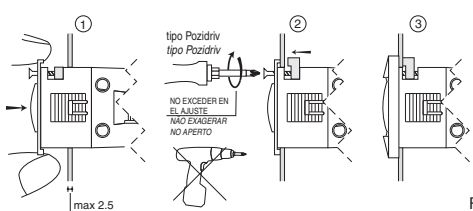
powercompact:
Panel mounting: by two lateral sliding plastic brackets.



powercompact PB wide:



PST00VR100: repeater display interface



Panel mounting: by two countersunk screws, max. diameter 3.9 mm.

Fig. 2

Wiring diagrams

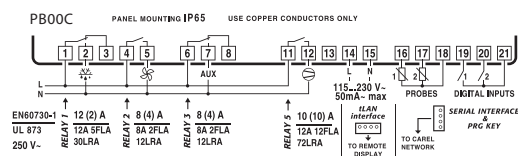


Fig. 3

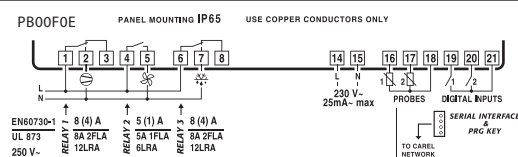


Fig. 4

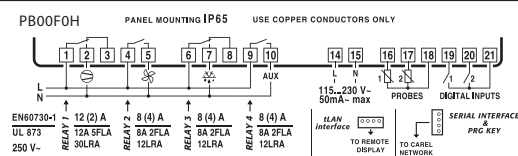


Fig. 5

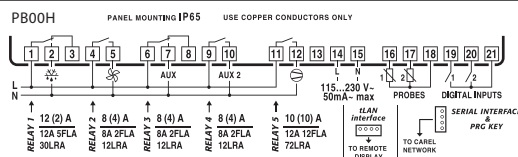


Fig. 6

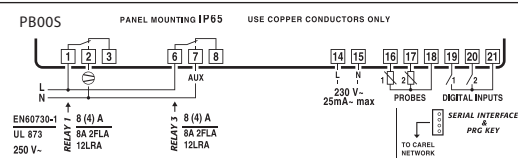


Fig. 7

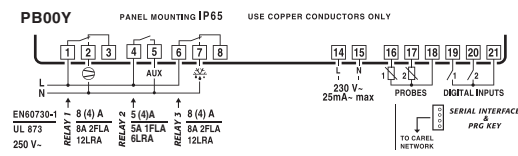


Fig. 8

Option codes

CODE	DESCRIPTION
IRTRRES000	small remote control
IROPZ48500	RS485 serial interface
IROPZ48550	RS485 serial board interface with automatic recognition of the polarity +/-
IROPZDS000	remote display interface
PST00VR100	remote repeater display
IROORGO000	remote repeater display ir33 range green display
IROORRO000	remote repeater display ir33 range red display
PSTCON10B0	repeater display connection cables 1,5 m
PSTCON30B0	repeater display connection cables 3 m
PSTCON05B0	repeater display connection cables 5 m
PSOPZKEY00	parameter programming key with extended memory and 12V batteries included
PSOPZKEYA0	parameter programming key with 230 Vac power supply
IROPZKEY00	parameter programming key with 12V battery included
IROPZKEYA0	parameter programming key with extended memory and external 230 Vac power supply
VPMSTDKY*0	key programming kit

Tab. 1

Display

powercompact uses a built-in display terminal with three LED digits and icon, to display the operating status. An additional display can be connected to the powercompact controller, via a suitable interface for example to display the reading of a third probe.

Signals on the display

Icon	Function	ON	Normal operation	Start up
COMPRESSOR	COMPRESSOR	compressor ON	compressor OFF	compressor request
FAN	FAN	fan ON	fan OFF	fan request
DEFROST	DEFROST	defrost ON	defrost OFF	defrost request
AUX	AUX	auxiliary output AUX active	auxiliary output AUX not active	anti-sweat heater function active
ALARM	ALARM	delayed external alarm (before the expiry of the time 'A7')	no alarm present	alarms in normal operation (e.g. high/low temperature) or alarm from external digital input, immediate or delayed
CLOCK	CLOCK	if at least 1 timed defrost has been set	no timed defrost is	clock alarm present
LIGHT	LIGHT	auxiliary output LIGHT active	auxiliary output LIGHT not active	anti-sweat heater function active
SERVICE	SERVICE		no malfunction	malfunction (e.g. EEPROM error or probe fault)
HACCP	HACCP	HACCP function enabled	HACCP function not enabled	HACCP alarm (HA and/or HF)
CONTINUOUS CYCLE	CONTINUOUS CYCLE	CONTINUOUS CYCLE enabled	CONTINUOUS CYCLE not enabled	CONTINUOUS CYCLE request

Tab. 2

The blinking status indicates a request for activation that cannot be implemented until the end of the corresponding delay times.

Buttons on the keypad

Icon	Button	Pressing the button alone other	Pressing together with buttons address	Start-up	Request automatic assignment
HACCP	HACCP	enters the menu to display and delete the HACCP alarms			
ON/OFF	ON/OFF	if pressed for more than 5 s, switches the unit on/off			
PRG/MUTE	PRG/MUTE	if pressed for more than 5 s, accesses the menu for setting type "F" (frequent) parameters in the event of alarm: silences the audible alarm (buzzer) and disables the alarm relay	SET: if pressed for more than 5 s together with the SET button accesses the menu for setting the type "C" (configuration) or downloading the parameters UP/CC: if pressed for more than 5 s together with the UP/CC button, resets any active alarms with manual reset	if pressed for more than 5 s at start-up, enables the procedure for setting the default values	if pressed for more than 1 s, enters the automatic serial address assignment procedure
UP/CC	UP/CC	if pressed for more than 5 s, enables/disables continuous cycle operation	SET: if pressed for more than 5 s together with the SET button, starts the procedure for printing the reports (function available, with management to be implemented) PRG/MUTE: if pressed for more than 5 s together with the PRG/MUTE button, resets any active alarms with manual reset		
LUCE	LUCE	if pressed for more than 1 s, enables/disables auxiliary AUX2			
AUX	AUX	if pressed for more than 1 s, enables/disables auxiliary AUX1			
DOWN/DEF	DOWN/DEF	if pressed for more than 5 s, enables/disables a manual defrost			
SET	SET	if pressed for more than 1 s, displays and/or sets the set point	PRG/MUTE: if pressed for more than 5 s together with the PRG/MUTE button accesses the menu for setting the type "C" (configuration) or downloading the parameters UP/CC: if pressed for more than 5 s together with the UP/CC button, starts the procedure for printing the reports (function available, with management to be implemented)		

Tab. 3

Setting the set point (desired temperature value)

To display or set the set point, proceed as follows:

- press the "set" button for more than 1 second to display the set point;
- increase or decrease the value of the set point, using the \uparrow and \downarrow buttons respectively, until reaching the desired value;
- press the "set" button again to confirm the new value.

Alarms with manual reset

The alarms with manual reset can be reset by pressing the \uparrow and \downarrow buttons together for more than 5 s.

Manual defrost

As well as the automatic defrost function, a manual defrost can be enabled, if the temperature conditions allow, by pressing \downarrow for 5 seconds.

ON/OFF button

Pressing this button for 5 s switches the unit on/off. When the controller is turned off, it actually goes into standby, and therefore, when carrying out maintenance on the device, it must be disconnected from the power supply.

HACCP function

powercompact is compliant with the HACCP standards in force since it allows the monitoring of the temperature of the stored food. "HA" alarm = exceeded maximum threshold: up to three HA events are saved (HA, HA1, HA2) respectively from the more recent (HA) to the oldest (HA2) and a HAn signal that displays the number of occurred HA events. "HF" alarm = power failure lasting over a minute and exceeded AH maximum threshold: up to three HF events are saved (HF, HF1, HF2) respectively from the more recent (HF) to the oldest (HF2) and a HFn signal that displays the number of occurred HF events. HA/HF alarm setting: AH parameter (high temperature threshold); Ad and Htd (Ad+Htd = HACCP alarm activation delay). Display of the details: access to HA or HF parameters pressing the "HACCP" button and use \uparrow or \downarrow buttons to glance over. HACCP alarm erasing: press the "HACCP" button for more than 5 s, the message "res" indicates that the alarm has been deleted. To cancel the saved alarms press the "HACCP" and \downarrow buttons for more than 5 s.

Continuous cycle

Pressing the button \downarrow for more than 5 seconds enables the continuous cycle function. During operation in continuous cycle, the compressor continues to operate for the time 'cc' and it stops when reaches the 'cc' time out or the minimum temperature envisaged (AL = low temperature alarm threshold). Continuous cycle setting: "cc" parameter (continuous cycle duration): "cc" = 0 never active; "c6" parameter (bypassing the alarm after the continuous cycle): it avoids or delays the low temperature alarm after the continuous cycle.

Procedure for setting the default parameter values

To set the default parameter values on the controller, proceed as follows:

- If "Hdn" = 0: 1: switch the instrument off; 2: switch the instrument back on, holding the \uparrow button until the message "Std" is shown on the display.
- Note: The default values are only set for the visible parameters (C and F). For further details see table "Summary of operating parameters".

- If "Hdn" < > 0: 1: switch the instrument off; 2: switch the instrument back on, holding the \uparrow button until the value 0 is shown on the display; 3: select the set of default parameters, between 0 and "Hdn", using the \uparrow and \downarrow buttons;
- press the \downarrow button until the message "Std" is shown on the display

Automatic assignment of the serial address

This is a special procedure that, using an application installed on a PC, allows setting and managing simply the addresses of all instruments (featuring this function) connected to the CAREL network. The procedure is very simple:

- Using the remote application. The "Network definition" procedure started; the application sends a special message ("<ADR>") across the CAREL network, containing the network address.
 - Pressing the \downarrow on an instrument connected to the network recognises the message sent by the remote application, automatically sets the address to the desired value and sends a confirmation message to the application, containing the unit code and firmware revision (message 'V'). When the message sent by the remote application is recognised, the instrument shows the message 'Add' on the display for 5 seconds, followed by the value of the serial address assigned;
 - The application, on receiving the confirmation message from the units connected to the network, saves the information received in its database, increases the serial address and sends the message '<ADR>' again;
 - At this point, the procedure starting from point 2 can be repeated on another unit connected to the network, until defining all the network addresses.
- Note: once the address has been assigned to an instrument, the operation, for safety reasons, is disabled on the same instrument for 1 minute, preventing a different address from being assigned to the instrument.

Accessing the configuration parameters (type C)

- Press the \downarrow and "set" buttons at the same time for more than 5 seconds; the display will show the number "00" (password prompt).
- Press the \uparrow or \downarrow button until displaying the number "22" (parameter access password)
- Confirm by pressing the "set" button.
- The display shows the code of the first modifiable "C" parameter.

Accessing the configuration parameters (type F)

- Hold the \downarrow button for more than 5 s (if there are active alarms, first mute the buzzer), the display will show the first modifiable "F" parameter.

Modifying the parameters

After having displayed the parameter, either type "C" or type "F", proceed as follows:

- Press the \uparrow or \downarrow button to scroll the parameters, until reaching the parameter to be modified; when scrolling, an icon appears on the display representing the category the parameter belongs to.
- Alternatively, press the \downarrow button to display a menu that is used to quickly access the category of parameters to be modified.
- Scroll the menu with the \uparrow and \downarrow buttons; the display shows the codes of the various categories of parameters (see the Summary of operating parameters), accompanied by the display of the corresponding icon (if present).
- Once having reached the desired category, press "set" to go directly to the first parameter in the chosen category (if no parameter is visible, pressing the "set" button will have no effect).
- At this stage, modify the parameters or return to the "Categories" menu, using the \downarrow button.
- Press "set" to display the value associated with the parameter.
- Increase or decrease the value using the \uparrow or \downarrow buttons respectively.
- Press "set" to temporarily save the new value and return to the display of the parameter.
- Repeat the operations from point 1 or point 2.
- If the parameter has sub-parameters, press "set" to display the first sub-parameter.
- Press the \uparrow or \downarrow button to display all the sub-parameters.
- Press "set" to display the associated value.
- Increase or decrease the value using the \uparrow or \downarrow button respectively.
- Press "set" to temporarily save the new value and return to the display of the sub-parameter code.
- Press \downarrow to return to the display of the parent parameter.

Saving the new values assigned to the parameters

To definitively save the new values of the modified parameters, press the \downarrow button for more than 5 seconds, thus exiting the parameter setting procedure. All the modifications made to the parameters, temporarily saved in the RAM, can be cancelled and "normal operation" resumed by not pressing any button for 60 seconds, thus allowing the parameter setting session to expire due to timeout. If the instrument is switched off before pressing the \downarrow button, all the modifications made to the parameters and temporarily saved will be lost.

Directly accessing the parameters by selecting the category

The configuration parameters can also be accessed, in addition to the mode described above, via the category (see the icons and abbreviations in the table below), according to the list on the display with the corresponding name and icon. To directly access the list of parameters grouped by category, press the \downarrow button for at least 1 second, \uparrow , and to modify the parameter press "set", \uparrow .

Category	Parameters	Message	Icon
Probe parameters	/	'Pro'	\uparrow
Control parameters	r	'CTL'	\downarrow
Compressor parameters	c	'CMP'	\downarrow
Defrost parameters	d	'DEF'	\downarrow
Alarm parameters	A	'ALM'	\uparrow
Fan parameters	F	'FAn'	\downarrow
Configuration parameters	H	configuration 'CnF'	AUX
HACCP parameters	H HACCP	'HcP'	HACCP
RTC parameters	rtc	'rtc'	\downarrow

Tab. 4

Probe configuration (/A2.../A5)

In the powercompact series, these parameters are used to configure the operating mode of the probes:
0 = probe absent; 1 = product probe (used for display only); 2 = defrost probe; 3 = condenser probe; 4 = antifreeze probe.

Configuration of the digital inputs (A4, A5, A9)

In the powercompact series, this parameter and the model of controller used define the meaning of the digital input:

- 0 = input not active;
- 1 = immediate external alarm, normally closed; open = alarm;
- 2 = delayed external alarm, normally closed;
- 3 = enable defrost from external contact; open = disabled (an external contact can be connected to the multifunction input to enable or disable the defrost);
- 4 = start defrost from external contact;
- 5 = door switch with stopping of compressor and fans; open = open door;
- 6 = remote ON/OFF; CLOSED=ON;
- 7 = curtain switch; close = lowered curtain;
- 8 = low pressure switch input for pump-down; open = low pressure;
- 9 = door switch with stopping of fans only; open = open door;
- 10 = direct/reverse cycle operation; open = direct;
- 11 = light sensor;
- 12 = AUX output enabling (if configured with H1 or H5 parameters); opening = enabling;
- 13 = door switch with compress. and fans OFF, with light not managed;
- 14 = door switch with fans OFF and light not managed.

Configuration of the relay outputs AUX1 (H1) and AUX2 (H5)

Establishes whether relays AUX1 and AUX2 (present only if envisaged by the model) are used as auxiliary outputs (e.g. demister fan or other ON/OFF actuator), an alarm output, a light output, a defrost actuator for the auxiliary evaporator, pump-down valve control or output for the condenser fan.

- 0 = alarm output; normally energised; the relay is de-energised when an alarm occurs;
- 1 = alarm output; normally de-energised; the relay is energised when an alarm occurs;
- 2 = auxiliary output;
- 3 = light output;
- 4 = auxiliary evaporator defrost output;
- 5 = pump-down valve output;
- 6 = condenser fan output;
- 7 = delayed compressor output;
- 8 = auxiliary output with OFF shutdown;
- 9 = light output with OFF shutdown;
- 10 = disabled output;
- 11 = reverse output in dead zone control;
- 12 = second compressor step output;
- 13 = second compressor step output with rotation.

Warning: the mode H1/H5=0 is useful for signalling the alarm status even in case of power failure.

Note: in the models fitted with only one auxiliary output, to associate the button \downarrow to this output, set H1 = 10 and H5 = 3. It is necessary to associate the relay assigned to aux 1 to the auxiliary output 2. The operation can be performed using the programming kit PSOPZPRG00 and the programming key PSOPZKEY00/A0.

