



**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)**

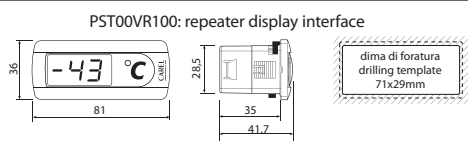
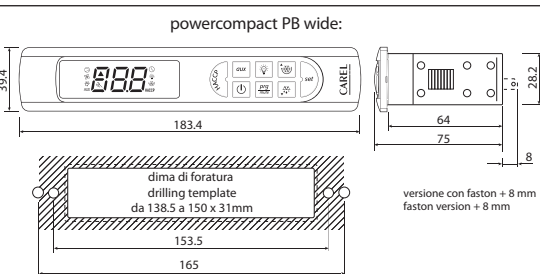
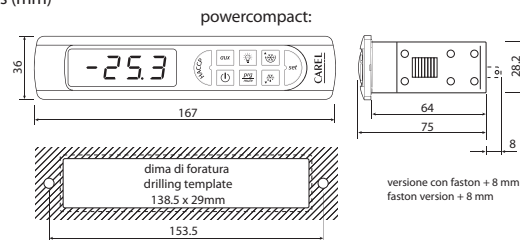
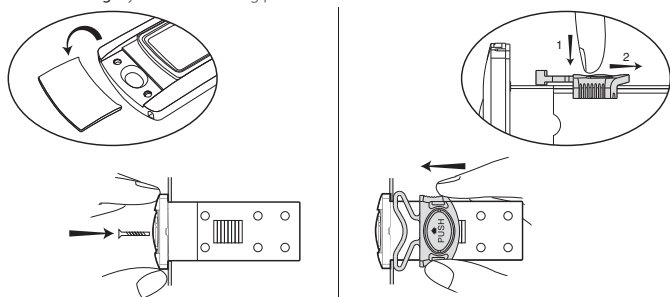


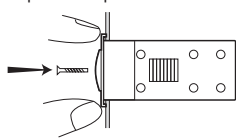
Fig. 1

**Panel mounting**

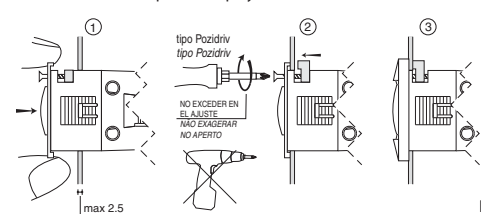
**powercompact:**  
Panel mounting: by two lateral sliding plastic brackets.



**powercompact PB wide:**



**PST00VR100: repeater display interface**



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

Fig. 2

**Wiring diagrams**

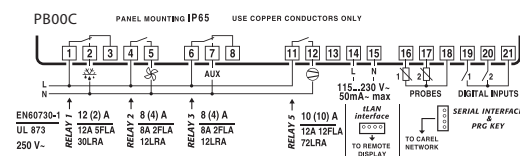


Fig. 3

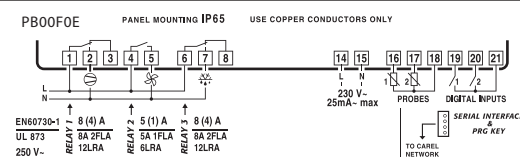


Fig. 4

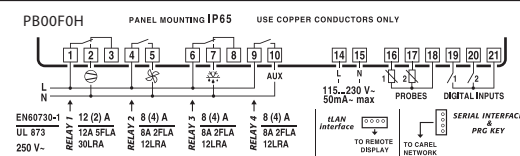


Fig. 5

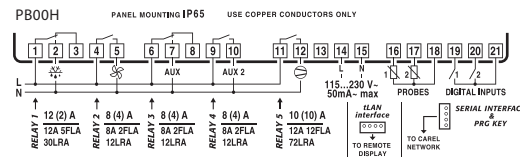


Fig. 6

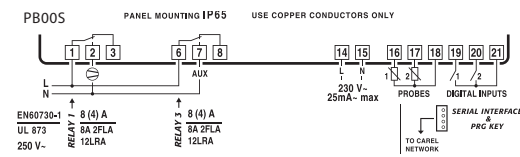


Fig. 7

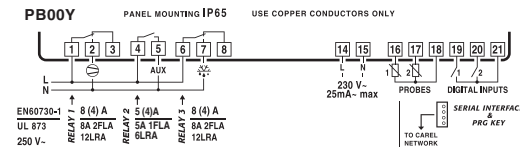


Fig. 8

**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
PSOPZKEY000	parameter programming key with extended memory and 12 V batteries included
PSOPZKEYA0	parameter programming key with 230 Vac power supply
IROPZKEY000	parameter programming key with 12 V 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
COMPRESS.	COMPRESS.	compressor ON	compressor OFF	blink
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  $\uparrow$  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 (<IADR>) across the CAREL network, containing the network address.
- Pressing the  $\uparrow$  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 '<IADR>' 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  $\uparrow$  and  $\downarrow$  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  $\uparrow$  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  $\uparrow$  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  $\uparrow$  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  $\uparrow$  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  $\uparrow$  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  $\uparrow$  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  $\uparrow$  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'	$\uparrow$
Compressor parameters	c	'CMP'	$\uparrow$
Defrost parameters	d	'dEF'	$\uparrow$
Alarm parameters	A	'ALM'	$\uparrow$
Fan parameters	F	'FAn'	$\uparrow$
Configuration parameters	H	configuration 'CnF'	AUX
HACCP parameters	H HACCP	'HcP'	HACCP
RTC parameters	rtc	'rtc'	$\uparrow$

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)**

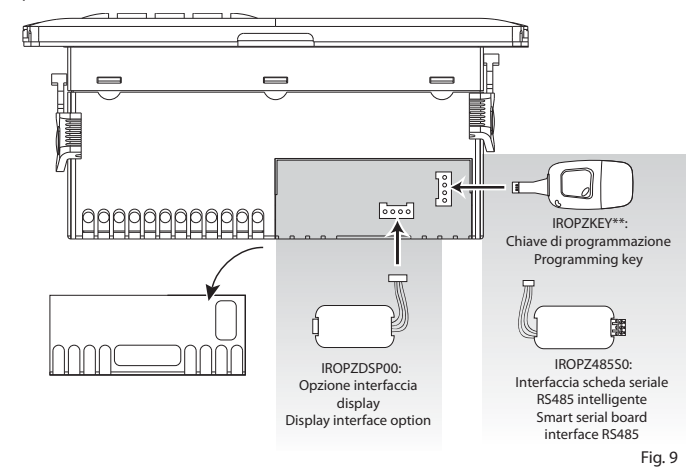
Establishes whether relays AUX1 and AUX2 (present only if envisaged by the model) are used as auxiliary outputs (e.g. demister fan or other ON/OFF actuator), an alarm output, a light output, a defrost actuator for the auxiliary evaporator, pump-down valve control or output for the condenser fan.

- 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  $\uparrow$  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.

Optional connections:



Date and day for defrost event (parameters td1...td8)

0= no event; 1..7= Monday..Sunday; 8= from Monday to Friday; 9= from Monday to Saturday; 10= from Saturday to Sunday; 1= every day.

Summary of operating parameters

UOM = Unit of measure; Def. = Default value.

Symb.	Code	Parameter	Models	UOM	Type	Min	Max	Def.
Pw		Password	MSYF	-	C	0	200	22
Z2		Measurement stability	MSYF	-	C	1	15	4
/3		Probe display response	MSYF	-	C	0	15	0
/4		Virtual probe	MSYF	-	C	0	100	0
/5		Select °C or °F	MSYF	flag	C	0	1	0
/6		Display decimal point	MSYF	flag	C	0	1	0
/7		0: with tenths of a degree 1: without tenths of a degree	MSYF	-	C	1	7	1
/t1		1: virtual probe 2: probe 1 3: probe 2 4: probe 3 5: probe 4 6: probe 5 7: set point	MSYF	-	C	1	7	1
/tE		Display on external terminal 0: remote terminal not present	MSYF	-	C	0	6	0
/t1		1: virtual probe 2: probe 1 3: probe 2 4: probe 3 5: probe 4 6: probe 5	MSYF	-	C	0	6	0
/P		Select type of probe 0: NTC standard with range -50T90 °C 1: NTC enhanced with range -40T150 °C 2: PTC standard with range -50T150 °C	MSYF	-	C	0	2	0
/A2		Configuration of probe 2 (S2) 0: Probe absent 1: Product probe (display only) 2: Defrost probe 3: Condenser probe 4: Antifreeze probe	MSYF MS	- C	C C	0 0	4 4	2 0
/A3		Configuration of probe 3 (S3, D11) As for /A2	MSYF	-	C	0	3	0
/A4		Configuration of probe 4 (S4, D12) As for /A2	MSYF	-	C	0	3	0
/A5		Configuration of probe 5 (S5, D13) As for /A2	MSYF	-	C	0	3	0
/c1		Calibration of probe 1	MSYF	°C/°F	C	-20	20	0.0
/c2		Calibration of probe 2	MSYF	°C/°F	C	-20	20	0.0
/c3		Calibration of probe 3	MSYF	°C/°F	C	-20	20	0.0
/c4		Calibration of probe 4	MSYF	°C/°F	C	-20	20	0.0
/t		Temperature set point	MSYF	°C/°F	F	r1	r2	0.0
/r		Control delta	SYF	°C/°F	F	0.1	20	2.0
/r		Dead band	SYF	°C/°F	C	0.0	60	4.0
/r		Reverse differential for control with dead band	SYF	°C/°F	C	0.1	20	2.0
/r1		Minimum set point allowed	MSYF	°C/°F	C	-50	r2	-50
/r2		Maximum set point allowed	MSYF	°C/°F	C	r1	200	60
/r3		Operating mode 0: Direct (cooling) with defrost control 1: Direct (cooling) 2: Reverse-cycle (heating)	SYF	flag	C	0	2	0
/r4		Automatic night-time set point variation	MSYF	°C/°F	C	-20	20	3.0
/r5		Enable temperature monitoring 0: Disabled 1: Enabled	MSYF	flag	C	0	1	0
/r		Temperature monitoring interval	MSYF	ore	F	0	999	-
/rH		Maximum temperature read	MSYF	°C/°F	F	-	-	-
/rL		Minimum temperature read	MSYF	°C/°F	F	-	-	-
/c0		Comp. fan and AUX delay on start-up in	SYF	min	C	0	15	0
/c1		Minimum time between successive starts	SYF	min	C	0	15	0
/c2		Minimum compressor OFF time	SYF	min	C	0	15	0
/c3		Minimum compressor ON time	SYF	min	C	0	15	0
/c4		Duty setting	SYF	min	C	0	100	0
/c5		Continuous cycle duration	SYF	ore	C	0	15	0
/c6		Alarm bypass after continuous cycle	SYF	ore	C	0	250	2
/c7		Maximum pump down time	SYF	s	C	0	900	0
/c8		Comp. start delay after open PD valve (factory default=0, not visible from display)	SYF	s	C	0	60	5
/c9		Enable autostart function in PD	SYF	flag	C	0	1	0
/c10		Select Pump down by time or pressure 0: Pump down by pressure 1: Pump down by time	SYF	flag	C	0	1	0
/c11		Second compressor delay	SYF	s	C	0	250	4
/d1		Type of defrost SYF 0: Electric heater defrost by temperature 1: Hot gas defrost by temperature 2: Electric heater defrost by time 3: Hot gas defrost by time 4: Electric heater defrost thermostat by time	SYF	ore	F	0	250	8
/d1		End defrost temperature, evaporator	SYF	°C/°F	F	-50	200	4.0
/d2		End defrost temperature, aux evapor.	SYF	°C/°F	F	-50	200	4.0
/dP1		Maximum defrost duration, evaporator	SYF	min	F	1	250	30
/dP2		Maximum defrost duration, aux evapor	SYF	min	F	1	250	30
/d3		Defrost start delay	SYF	min	C	0	250	0
/d4		Enable defrost on start-up 0: No defrost is performed when the instrument is switched on 1: A defrost is performed when the instrument is switched on	SYF	flag	C	0	1	0
/d5		Defrost delay on start-up	SYF	min	C	0	250	0
/d6		Display on hold during defrost 0: Alternating display of dEF and probe value 1: Display of the last temp. shown 2: Display of dEF steady	SYF	-	C	0	2	1
/dd		Dripping time after defrost	SYF	min	F	0	15	2
/d8		Alarm bypass after defrost	SYF	ore	F	0	250	1
/d8d		Alarm bypass after door open	SYF	min	C	0	250	0
/d9		Defrost priority over compressor protectors 0: The protection times c1, c2 and c3 are observed 1: The protection times c1, c2 and c3 are not observed	SYF	flag	C	0	1	0
/d1		Display of defrost probe 1	MSYF	°C/°F	F	-	-	-
/d2		Display of defrost probe 2	MSYF	°C/°F	F	-	-	-
/dC		Time base for defrost 0: d in hours, dP1 and dP2 in minutes 1: d in minutes, dP1 and dP2 in seconds	SYF	flag	C	0	1	0
/d10		Compressor running time	SYF	ore	C	0	250	0
/d11		Running time temperature threshold	SYF	°C/°F	C	-20	20	1.0
/d12		Advanced defrost	SYF	-	C	0	3	0
/dn		Nominal defrost duration	SYF	-	C	1	100	65
/dH		Proportional factor, variation in dI	SYF	-	C	0	100	50
/A0		Alarm and fan differential	MSYF	°C/°F	C	0.1	20	2.0
/A1		Type of threshold 'AL' and 'AH' 0: AL and AH are relative thresholds to the set point 1: AL and AH are absolute thresholds	MSYF	flag	C	0	1	0
/AL		Low temperature alarm threshold	MSYF	°C/°F	F	-50	200	0.0
/AH		High temperature alarm threshold	MSYF	°C/°F	F	-50	200	0.0
/Ad		Low and high temperature signal delay	MSYF	min	F	0	250	120
/A4		Digital input 1 configuration 0: Input not active 1: Immediate external alarm 2: Delayed external alarm 3: Enable defrost (model M probe selection) 4: Start defrost 5: Door switch with compressor and fan stop 6: Remote on/off 7: Curtain switch 8: Low pressure switch 9: Door switch with fan stop only 10: Direct/reverse 11: Light sensor 12: Activation of the AUX output 13: Door switch with compressor and fans off and light not managed 14: Door switch with fans only off and light not managed	SYF M	- C	C C	0 0	14 14	3 3
/A5		Digital input 2 configuration (DI2) - As for A4	MSYF	-	C	0	14	0
/A6		Stop compressor from external alarm	SYF	min	C	0	100	0
/A7		External alarm detection delay	SYF	min	C	0	250	0
/A8		Enable alarms 'Ed1' and 'Ed2' 0: Alarm signals Ed1 and Ed2 enabled 1: Alarm signals Ed1 and Ed2 disabled	SYF	flag	C	0	1	0
/A9		Digital input 3 configuration (DI3) - As for A4	MSYF	-	C	0	14	0
/Ado		Light management mode with door switch	MSYF	flag	C	0	1	0
/Ac		High condenser temperature alarm	SYF	°C/°F	C	0.0	200	70.0
/AE		High condenser temperature alarm differential	SYF	°C/°F	C	0.1	20	10
/AcD		High condenser temperature alarm delay	SYF	min	C	0	250	0
/AF		Light sensor OFF time	SYF	s	C	0	250	0
/ALF		Antifreeze alarm threshold	MSYF	°C/°F	C	-50	200	-5.0
/AdF		Antifreeze alarm delay	MSYF	min	C	0	15	1
/F0		Fan management 0: Fans always on 1: Fans controlled according to the temperature difference between the virtual control probe and the evaporator temperature 2: Fans controlled according to the evaporator temperature	F	flag	C	0	2	0
/F1		Fan start temperature	F	°C/°F	F	-50	200	5.0
/F2		Fan OFF with compressor OFF 0: Fans always on 1: Fans off with compressor off	F	flag	C	0	1	1
/F3		Fans in defrost 0: Fans operate during defrosts 1: Fans do not operate during defrosts	F	flag	C	0	1	1
/Fd		Fan OFF after dripping	F	min	F	0	15	1
/F4		Condenser fan stop temperature	MSYF	°C/°F	C	-50	200	40
/F5		Condenser fan start differential	MSYF	°C/°F	C	0.1	20	5.0

Technical specification

Model	Voltage	Power																								
E	230 V~ (+10%, -15%), 50/60 Hz 230 V~ (+10%, -10%), 50/60 Hz (vers. 16 A, 8A, 8A)	3 VA, 25 mA~ max.																								
A	115 V~ (+10%, -15%), 50/60 Hz 115 V~ (+10%, -10%), 50/60 Hz (vers. 16 A, 8A, 8A)	3 VA, 50 mA~ max.																								
H	115 to 230 V~ (switching) (+10%, -15%), 50/60 Hz	6 VA, 50 mA~ max.																								
0	12 V~ (+10%, -15%), 50/60 Hz 12 Vdc, 12 to 18 Vdc	To use only the transformer TR1A12VDC00 with 315 mA slow-blow fuse in the secondary																								
E, A, H	insulation in reference to very low voltage parts	reinforced 6 mm in air, 8 mm on surface 3750 V insulation																								
0	insulation in reference to very low voltage parts	externally guaranteed by safety transformer																								
	insulation from relay outputs	primary 3 mm in air, 4 mm on surface 1250 V insulation																								
S1	NTC or PTC, depending on the model																									
S2	NTC or PTC, depending on the model																									
DI1/S3	free contact, contact resistance < 10 Ω, closing current 6 mA NTC or PTC, depending on the model																									
DI2 / S4	free contact, contact resistance < 10 Ω, closing current 6 mA NTC or PTC, depending on the model																									
Maximum distance of probes and digital inputs less than 10 m Note: During installation keep the power and load connections separate probe cables, digital inputs, repeater display and supervisory system.																										
Probe type	NTC high temperature	50 kΩ at 25 °C, range from -40T150 °C measurement error: 1.5 °C in the -40T150 °C range 4 °C in the external range at -20T115 °C																								
	Std. CAREL NTC	10 kΩ at 25 °C, range from -50T90 °C measurement error: 1 °C in the -50T90 °C range 3 °C in the -50T90 °C range																								
	Std. CAREL PTC (specific model)	985 Ω at 25 °C, range from -50T150 °C measurement error: 2 °C in the -50T150 °C range 4 °C in the -50T150 °C range																								
depending on the model																										
<table border="1"> <thead> <tr> <th colspan="2">EN60730-1</th> <th colspan="2">UL 873</th> </tr> <tr> <th>250 V~</th> <th>operating cycles</th> <th>250 V~</th> <th>operating cycles</th> </tr> </thead> <tbody> <tr> <td>5 A *</td> <td>5 (1) A 100000</td> <td>5 A resistive 1 FLA 6 LRA C 300</td> <td>30000</td> </tr> <tr> <td>8 A *</td> <td>8 (4) A on NO. 6 (4) A on N.C. 2 (2) A if the N.C. and N.O. contacts are connected contemporaneously 100000</td> <td>8 A resistive 2 FLA 12 LRA C300</td> <td>30000 Uscite relè</td> </tr> <tr> <td>16 A *</td> <td>10 (4) A up to 60 °C on N.O. 12 (2) A on N.O. and N.C. 100000</td> <td>12 A resistive 5FLA 30 LRA C300</td> <td>30000</td> </tr> <tr> <td>2 Hp</td> <td>10 (10) A 100000</td> <td>12 A resistive 12 FLA 72 LRA</td> <td>30000</td> </tr> </tbody> </table>			EN60730-1		UL 873		250 V~	operating cycles	250 V~	operating cycles	5 A *	5 (1) A 100000	5 A resistive 1 FLA 6 LRA C 300	30000	8 A *	8 (4) A on NO. 6 (4) A on N.C. 2 (2) A if the N.C. and N.O. contacts are connected contemporaneously 100000	8 A resistive 2 FLA 12 LRA C300	30000 Uscite relè	16 A *	10 (4) A up to 60 °C on N.O. 12 (2) A on N.O. and N.C. 100000	12 A resistive 5FLA 30 LRA C300	30000	2 Hp	10 (10) A 100000	12 A resistive 12 FLA 72 LRA	30000
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* relay not suitable for fluorescent loads (neon lights, ...) that use starters (ballasts) with phase-shift capacitors. Fluorescent lamps with electronic control devices or without phase-shift capacitors can be used, within the operating limits specified for each type of relay.																										
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The installer has to provide the correct dimensioning of the power supply and cable connection between the instrument and the loads. In max load and max operating temp. conditions, cables rated for operation at up to 105 °C are required.																										
Case	plastic	dimensions 36x16x75 mm mount-in depth 64 mm																								
Mounting	panel drilling template	using screws from front panel dimensions 29x138.5 mm distance between fastening screws 153.5 mm																								
	fastening screws	countersunk with tread diameter 3.9 mm maximum																								
Case (wide version)	plastic	dimensions 39.4x183x75 mm mounting depth 63 mm																								
Installation (wide version)	on smooth, hard and indeformable panel	using screws from the front or brackets																								
	drilling template	dimensions from 138.5x29 to 150x31 spacing between fastening screws 165 mm or 153.5 mm																								
Fastening screws	countersunk with maximum thread diameter 3.9 mm for 165 mm spacing; for 153 spacing, flat head with max. thread diameter 3 mm																									
	fastening screws																									
Display	digits	3 digit LED																								
display range	from -99 to 999																									
operating status	indicated by graphic icons on the display																									
Keypad	8 rubber silicon buttons																									
Infrared receiver	available depending on the model																									
Clock with backup battery	available depending on the model																									
Buzzer	available on all models																									
error at 25 °C	±10 ppm (±5.3 min/year)																									
error in the temperature range -10T60 °C	-50 ppm (-27 min/year)																									
ageing	< ±5 ppm (±2.7 min/year)																									
discharge time	6 months (max. 8 months)																									
recharge time	typical 5 hours (<8 hours max.)																									
Operating temperature	-10T65 °C																									
Operating humidity	<90% r.H. non-condensing																									
Storage temperature	-20T70 °C																									
Storage humidity	<90% r.H. non-condensing																									
Front panel index of protection	smooth and stiff panel installation with gasket IP65																									
Environmental pollution	2 (normal)																									
PTI of the insulating material	printed circuit board 250, insulation 175																									
Period of electric stress across insulating parts	long																									
Category of resistance to fire	category D and category B (UL 94-V0)																									
Class of protection against voltage surges	category II																									
Type of disconnection or interruption	1.B relay contacts (micro-disconnection)																									
Construction of control	incorporated control, electronically																									
Classification according to protection against electric shock	Class II, by appropriate incorporation																									
The control is either to be hand-held or is intended for a hand-held equipment	no																									
Software class and structure	class A																									
Front panel cleaning	only use neutral detergents and water																									
Serial interface for CAREL network	external, available on all models																									
Interface for repeater display	external, available on models with H and 0 power supply																									
Max. distance between interface and display	10 mt																									
Programming key	available for all models																									

The powercompact range fitted with the standard CAREL NTC probe is compliant with standard EN 13485 on thermometers for measuring the air temperature in applications on units for the conservation and sale of refrigerated, frozen and deep-frozen food and ice cream. Designation of the instrument: EN13485, air, S, A, 1, - 50T90 °C. The standard CAREL NTC probe is identifiable by the printed laser code on "WP" models, or the code "103AT-11" on "HP" models, both visible on the sensor part.

H0	Serial address	MSYF	-	C	0	207	1
H1	Function of AUX1 0: Alarm output usually energised 1: Alarm output usually de-energised 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 deactivation when OFF 9: Light output with deactivation when OFF 10: No function associated with the output 11: Reverse output in control with dead band 12: Second compressor step output 13: Second compressor step output with rotation	MSYF	flag	C	0	13	1
H2	Disable keypad/IR Parameter: H2 LIGHT ON/OFF AUX HACCP PRG/AUTE (mute) UP/CC DOWN/DEF SET Parameter F: modification Set point modification Remote control modif.	MSYF	flag	C	0	6	1
H3	Remote control enabling code	MSYF	-	C	0	255	0
H4	Disable buzzer 0: Buzzer enabled 1: Buzzer disabled	MSYF	flag	C	0	1	0
H5	Function of relay 5 - As for H1	MSYF	flag	C	0	13	1
H6	Lock keypad	MSYF	-	C	0	255	0
H8	Select activation of output with time band 0: Time band linked						