



IJF ADVANCED HMI XL VERSION
Food Storage & Catering Display



Instruction sheets in other languages can be downloaded from the website www.carel.com via QR Code.



⚠️ DANGER

- This leaflet is part of the product and should be kept near the control for quick reference.
- The control shall not be used for purposes other than those for which it was designed, in particular it can't be used as a safety device.
- In case of failure contact an authorized service center.
- The control must not be opened.
- Check the power supply voltage before installing.
- Use the control inside the operating conditions limits. Do not expose to liquids or steam and avoid sudden temperature changes that might cause condensation.
- Disconnect the power supply before any kind of maintenance.
- Observe the maximum current output value for each relay (see "Technical specifications" section).
- Do not apply dangerous voltage to the SELV connection terminals (see "Technical specifications" section).
- Only use cables with a suitable cross-section (see "Technical specifications" section).
- Separate the probe and digital input cables from output and power cables. Never run power cable and signal cables in the same conduct.
- Some models are equipped with the High and Low Voltage Protection function (HLVP). Power supply voltage reading accuracy: $\pm 5\%$ fs. In any condition of use, HLVP function cannot be considered a compressor safety function. The use of the controller outside the nominal power supply voltage declared on technical specifications is under responsibility of the final client. For serial communication line do not connect GND to PE (Protective Earth); opto-isolated converter is mandatory.

⚠️ ATTENTION: electrical equipment must be installed, used and repaired only by qualified technicians

IMPORTANT WARNINGS

The CAREL product is a state-of-the-art product, whose operation is specified in the technical documentation supplied with the product or can be downloaded, even prior to purchase, from the website www.carel.com. The customer (manufacturer, developer or installer of the final equipment) accepts all liability and risk relating to the configuration of the product in order to reach the expected results in relation to the specific final installation and/or equipment. Failure to complete such operations, which are required/indicated in the user manual, may cause the final product to malfunction; CAREL accepts no liability in such cases. The customer must only use the product in the manner described in the documentation relating to the product. The liability of CAREL in relation to its products is specified in the CAREL general contract conditions, available on the website www.CAREL.com and/or by specific agreements with customers.

VERY IMPORTANT WARNINGS

The Zero Crossing (ZC) and protection against high and low power supply voltages (HLVP) functions are disabled by default. To enable them, act on the corresponding parameters; see "Functions" chapter of the manual.

ENG



Certification model	BCU08	XL Panel
	BCU09	XL HMI

Disposal of the product: the appliance (or the product) must be disposed of separately in accordance with the local waste disposal legislation in force.

TECHNICAL CODING

Technical code		
BCU*****00	No coating	

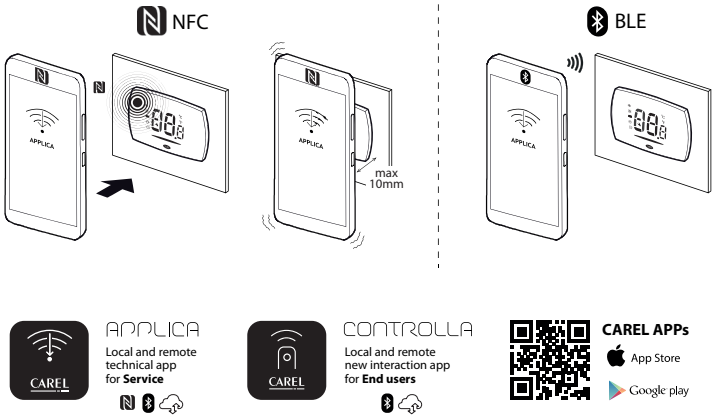
The technical code is shown on the product label

MODELS AND OPTIONS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
I	J	F	H	_	A	0	*	0	0	_	_	_	_	_
Versions				Connectivity/RTC				Package				Progressive		
X: XL horizontal				N = NFC				S = Single Pack						
V: XL vertical				B = NFC, RTC, Bluetooth				M = Multiple Pack						
								1 = Single Pack with custom parameters						
								2 = Multiple Pack with custom parameter						
								X = Single Pack with custom software						
								Y = Multiple Pack with custom software						

MOBILE DEVICE

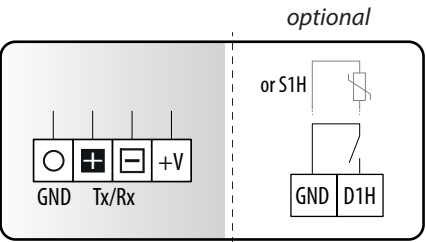
The Carel app can be used to configure the controller from a mobile device (smartphone, tablet), via NFC (Near Field Communication) or BLE (Bluetooth Low Energy). Supported devices: Android 7 or higher, and iOS 11 or higher, Bluetooth® 4.0, and following.



ELECTRICAL CONNECTIONS

HORIZONTAL VERSION

Plug-in male-female/ Screw connector

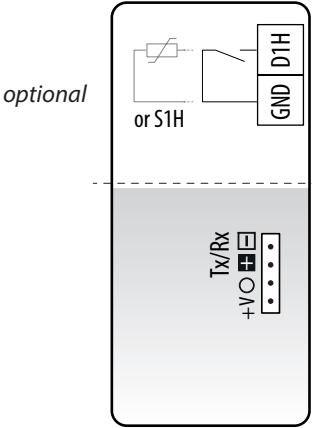


JST ZH connector

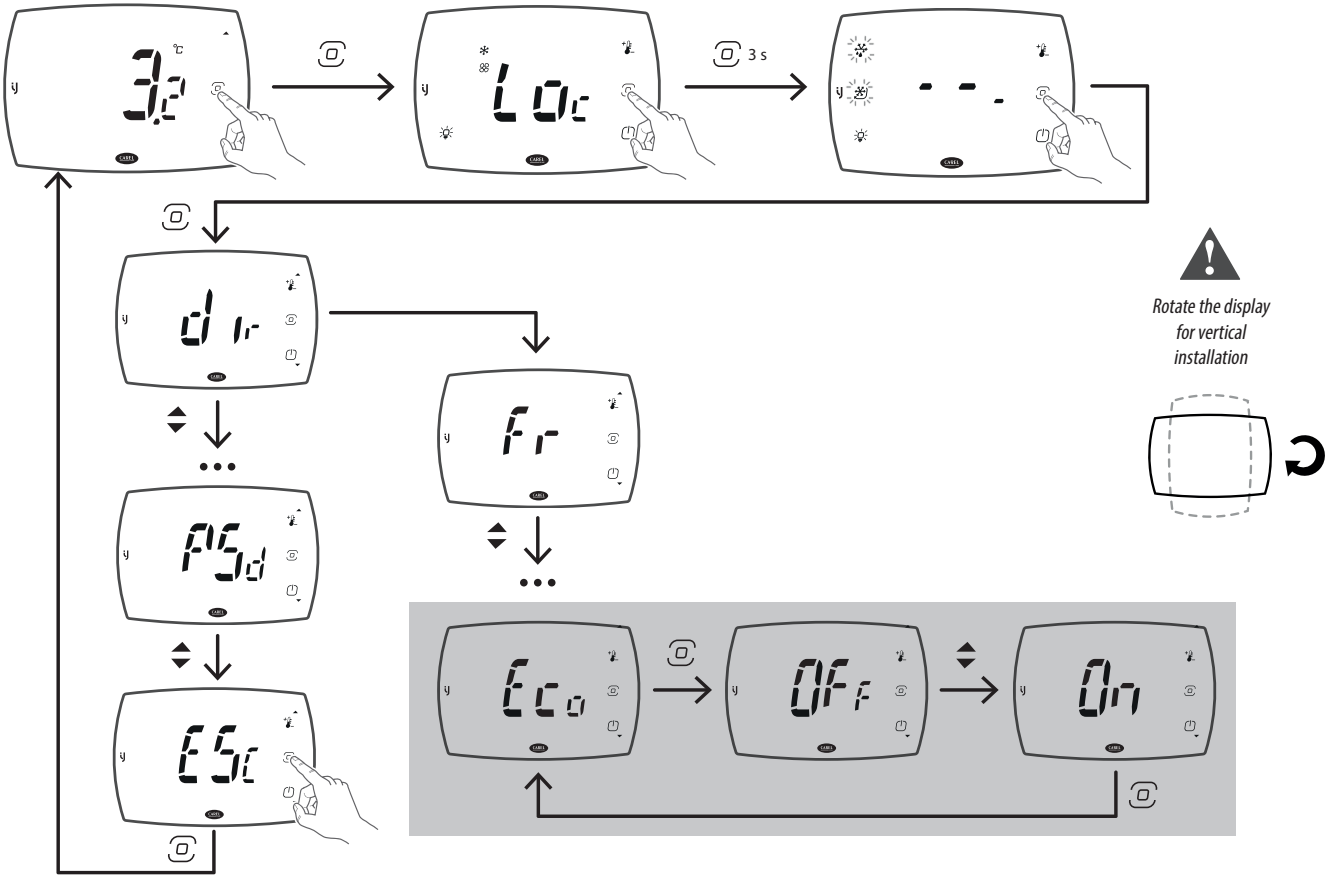


VERTICAL VERSION

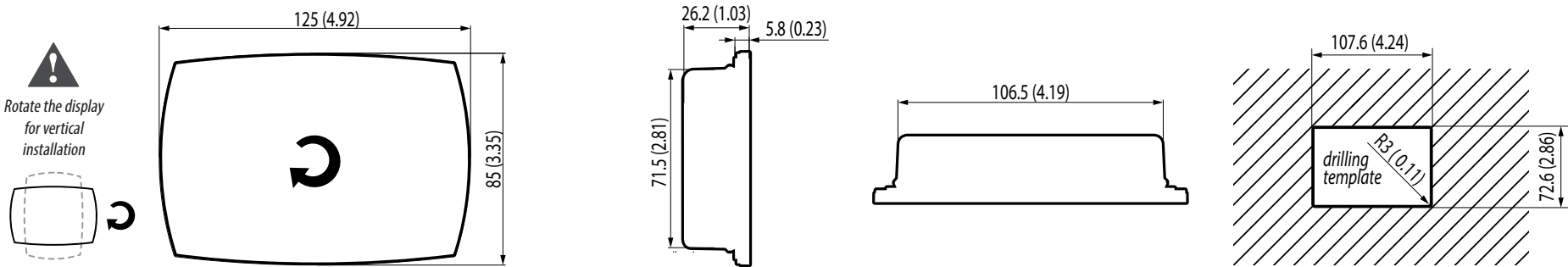
Plug-in male-female/ JST ZH connector



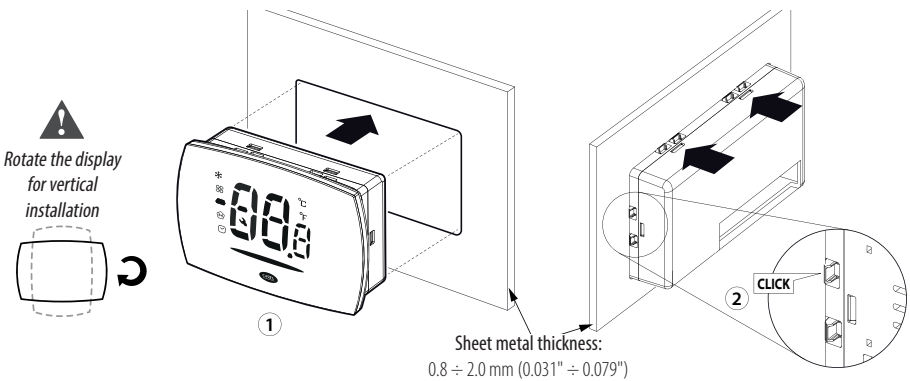
NAVIGATION



DIMENSIONS [MM (IN)]



MOUNTING



TECHNICAL SPECIFICATIONS			
Physical specifications	Case	Self-extinguish polycarbonate	
	Ball pressure test temperature	125 °C	
	Ingress protection	IEC Rear: IP10	UL: Type 1
Environment conditions	Front cleaning	Use soft, non-abrasive cloth and neutral detergent or water	
	Operating temperature	-20T60 °C, <90% U.R. non-condensing	
	Storage temperature	-40T80 °C, <90% U.R. non-condensing	
Electrical specifications	Tensione di alimentazione nominale	12 Vdc, by Carel control SELV/Class 2 13-42Vdc , only for legacy version	
	Tensione di alimentazione operativa	12 Vdc, by Carel control SELV/Class 2 13-42Vdc , only for legacy version	
	Maximum current draw	260 mA, power supply by Carel control SELV/ Class 2	
	Min/Max power consumption	700mW /3.6W	
	Software class and structure	A	
	Environmental pollution class	3	
	Class of protection against electric shock	To be incorporated in class I or II appliances	
User interface	Rated impulse voltage	0,5 kV	
	Control device construction	Device to be incorporated	
	Terminal block	S1H, D1H, GND: - Plug-in male-female 30÷17 AWG/ 0,05÷1 mm² Power supply and comunication with Carel control: - JST ZH connector 32÷26 AWG / 0,03÷0,13 mm² - Plug-in male-female 30÷17 AWG/ 0,05÷1 mm²	
	Purpose of the controller	Electrical operating control	
	Buzzer	Built-in	
	Display	3 digits, decimal point and multi-function icons	
	Keyboard	Max 6 keys	
Connectivity	NFC	Max distance 10 mm, variable according to the mobile device used	
	Bluetooth Low Energy (opt.)	Max distance 10 m, variable according to the mobile device used	
	Carel control	RS485, non optoisolata	
Analogue inputs	S1H: D1H configurable as NTC	NTC: resolution 0.1 °C; 10 kΩ@25 °C; beta 3435; error: ±1 °C in the range -50T50 °C, ±3 °C in the range 50T90 °C	
Digital inputs	D1H	Voltage-free contact, not optically-isolated, typical closing current 5mA, voltage with contact open 3.3V, max contact resistance 500hm	
Cable lengths	Analogue inputs, digital inputs	< 10 m	
	Carel control	< 10 m Note: In domestic environments, for cable lengths exceeding 2 m and for applications with control and HMI not integrated in the same chassis, the use of a shielded cable is recommended	
Conformity	Electrical safety compliance - LVD directive and UL certif.	IEC/EN/UL 60730-1, CSA E60730-1, IEC 60335-1 (sections 29 & 30)	
		For use with flammable refrigerant gases, the controllers described in this document have been evaluated and judged compliant with the following requirements of IEC 60335 series standards: - Annex CC of IEC 60335-2-24:2010 referenced by clause 22.109 and Annex BB of IEC 60335-2-89:2010 referenced by clause 22.108; components that produce arcs or sparks during normal operation have been tested and found to comply with the requirements in UL/IEC 60079-15; - IEC/EN/UL 60335-2-24 (clauses 22.109, 22.110) for household refrigerators and freezers; - IEC/EN/UL 60335-2-40 (clauses 22.116, 22.117) for electrical heat pumps, air-conditioners and dehumidifiers; - IEC/EN/UL 60335-2-89 (clauses 22.108, 22.109) for commercial refrigerated appliances.	
		The controllers have been verified for the maximum temperatures of all components, which during the tests required by IEC 60335 cl. 11 and 19 do not exceed 268 ° C. Acceptability of these controllers in end use application where flammable refrigerant gases are used shall be reviewed and judged in the end use application.	
	Wireless compliance	RED Directive (EN 301489-1), FCC (Part 15, Subpart B), IC.	

USER INTEFACE

Horizontal version

Legenda:

- display
- icons/backlit buttons
- icons
- icon/button PRG (Program)*
- LED bar

* the PRG "⏻" button provides access to programming menù; if there is a another button, for example, "❄️" "⏻" ask the manufacturer for the specific manual.

Vertical version

Backlit buttons/Icons

Button/icon	Description	On	Flashing
	Set point/Up arrow	- Increase value - Scroll menu - Direct access to change set point	-
	PRG (Program)	Pressed briefly: - enter menu branch - Save value and return to the parameter code Pressed and held (3 s): - enter programming mode - return to the previous level	-
	On-Off/Down arrow	- Unit ON - Decrease value - Scroll menu - Switch unit on and off	-
	Defrost	Active/ Can be deactivated from the keypad	Waiting/ Can be activated from the keypad
	Continuous cycle	Active/ Can be deactivated from the keypad	Waiting/ Can be activated from the keypad
	Lights	Active/ Can be deactivated from the keypad	Can be activated from the keypad
	Compressor	Active	Waiting
	Evaporator fan	Active	-
	Clock	Scheduler active	-
	HACCP	Active HACCP alarms	-
	°C	Unit of measure °C	-
	°F	Unit of measure °F	-
	Service Maintenance	Active alarms	-

LED Bar	The LED bar will allow, based on the color and whether it is steady or flashing, to recognize certain machine operating conditions. Below are the possible signals in order of priority: - Steady red: active alarm - Bar off: machine OFF (if Bluetooth connection is active, "bLE" will flash) - Bar off and flashing "bLE": Bluetooth connection active - Flashing white: connection with commissioning tool or keyboard unlocked - Steady white: control in progress - Steady green: ECO mode
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Standard product configuration.

Masks			
Terminal		Status	Description
		Standby	The display shows the main value alternated with alarms and signalling
		Active loads visualization	The terminal shows active loads and the keyboard is disabled
		Direct activation of loads and functions from keyboard	It is possible to activate/ deactivate loads and to enter direct functionalities from keyboard
		Programming menu	Menu scrolling by arrow keys
		Parameters programming / visualizzazione	Parameters modification by arrow keys or read only values visualization
		Bluetooth connection	The display is disabled since the control is connected to an APP by Bluetooth Low Energy

INITIAL CONFIGURATION PARAMETERS							
Par.	Menu	Descrizione	Def.	Min	Max	U.M.	Vis. (*)
St	Ctl	Temperature control set point	50/122	r1	r2	°C/°F	U
/5	Pro	Unit of measure: 0 = °C; 1 = °F.	0	0	1	-	U
/6	Pro	Display decimal point (main screen only) 0 = visible; 1 = not visible.	0	0	1	-	S
/t1	Pro	Value shown on the LED display: 0 = not configuration; 1 = S1 value; 2 = S2 value; 3 = S3 value; 4 = S4 value (disponibile on large split model) 5 = S5 value (disponibile on split model with 07 option); 6 = S1H value (optional; information obtainable from the product description); 7 = not available; 8 = not available; 9 = Mitigated virtual probe according to /3; 10 = virtual probe; 11...14 = not available; 15 = current set point.	9	0	15	-	S
d6	dEF	Display during defrost 0 = temperature alternating with 'dEF' 1 = display locked; 2 = 'dEF'	1	0	2	-	S
dl	dEF	Maximum interval between defrosts	8	0	240	h	S
dP1	dEF	Maximum defrost duration	45	1	240	min	S
AH	ALM	High temperature relative alarm threshold	0	0	555/ 999	Δ °C/°F	S
AL	ALM	Low temperature relative alarm threshold	0	0	200/ 360	Δ °C/°F	S
Hb	CnF	Enable buzzer: 0 = disabled; 1 = enabled.	1	0	1	-	U

(*): U/S = User/Service

ALARMS			
	Description		Description
AFr	Frost protection	GLO	Generic alarm low threshold
AtS	Restart in pump down	HA	Type HA HACCP alarm (high temp. during normal working)
CE	Configuration write error	HF	Type HF HACCP alarm (high temp. after blackout)
CHt	High condenser temperature alarm	HI	High temperature
cht	High condenser temperature warning	IA	Immediate alarm from external contact
COM	VCC communication error	LO	Low temperature
dA	Delayed alarm from external contact	LP	Low pressure
dor	Door open	MAn	Outputs status forced in manual mode
E*	Probe * broken or disconnected	Pd	Maximum pump down time
Ed1	Defrost terminated after max. time	rE	Control probe broken or disconnected
Ed2	Defrost on second evaporator terminated after maximum time	rSF	Refrigerant system failure alarm
EHI	High supply voltage alarm	SF	Configuration not completed correctly
ELO	Low supply voltage alarm	SrC	Maintenance request
Etc	Clock error	UCF	VCC operation error
GHI	Generic alarm high threshold	IOC	IO fault configuration

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