AX3000* 用户终端控制与远程显示装置MPXone / *User terminal and remote display for MPXone*

CAREL

NO POWER & SIGNAL CABLES TOGETHER
READ CAREFULLY IN THE TEXT!
阅读并保存这些用法说明
READ AND SAVE THESE INSTRUCTIONS

CHI

代码	型号
AX3000PS2002(0/1)(*)	用户终端：NFC连接，4个按钮，蜂鸣器
AX3000PS2003(0/1)(*)	用户终端：NFC+BLE连接，4个按钮，蜂鸣器
AX3000PS20X1(0/1)(*)	远程显示：不带键盘，只读数据

(*)(0/1): 单个包装/多个包装 (20 个装/包)

ENG

P/N	Model
AX3000PS2002(0/1)(*)	User terminal, NFC conn., 4 buttons, buzzer
AX3000PS2003(0/1)(*)	User terminal, NFC+BLE conn., 4 buttons, buzzer
AX3000PS20X1(0/1)(*)	Remote display without keypad, read-only data

(*)(0/1): single/multiple pack (20 pieces)

配件 / *Accessories*

代码	型号
ACS00CB000020	用户接口电缆：1.5米
ACS00CB000010	用户接口电缆：3米
ACS00CB000022	用户接口电缆：1.5米，10个装/包
ACS00CB000012	用户接口电缆：3米，10个装/包

P/N	Model
ACS00CB000020	User interface cable, 1.5m
ACS00CB000010	User interface cable, 3m
ACS00CB000022	User interface cable, 1.5m, multiple pack of 10
ACS00CB000012	User interface cable, 3m, multiple pack of 10

尺寸 / *Dimensions* - mm (in)

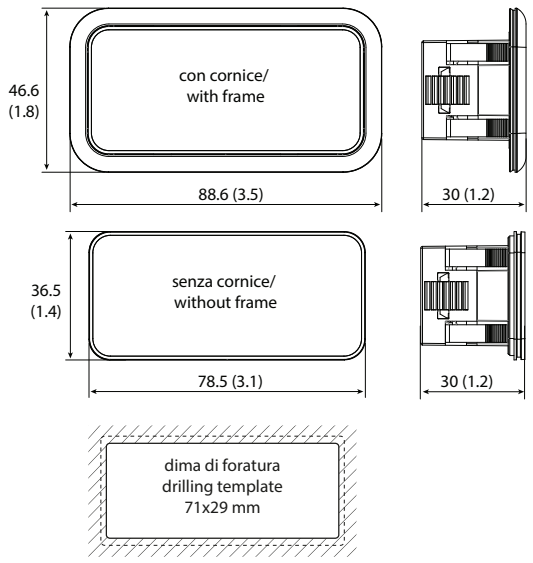


Fig. 1

框架拆卸/ **Frame dismantling**

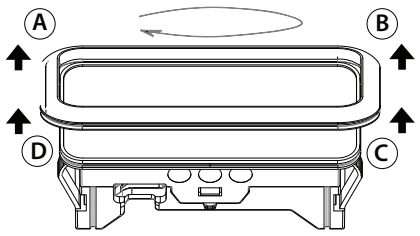


Fig. 2

面板安装/ **Panel mounting**

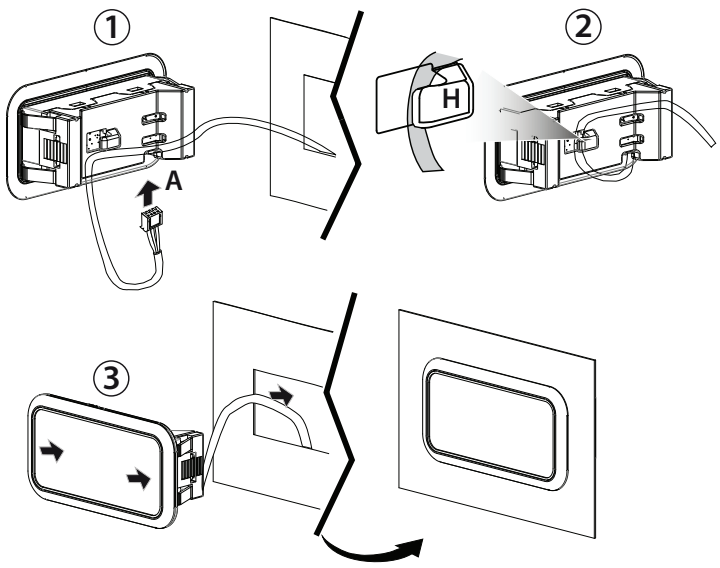


Fig. 3

NO POWER & SIGNAL CABLES TOGETHER
READ CAREFULLY IN THE TEXT!

始终将信号电缆和电源电缆放在不同导线管中。

Always keep the signal cables and power cable in separate conduits.

警告

该产品将集成和/或整合到最终的仪器或设备中。制造商有责任验证最终的仪器或设备是否符合其将投入运行的国家的现行法律和技术标准。产品交付之前，Carel已通过典型的测试设置完成了相关欧洲指令和协调标准要求的检查和测试，但不得将所述测试设置视为已代表了一切可能的最终安装条件。

WARNINGS

This product is to be integrated and/or incorporated into the final apparatus or equipment. Verification of conformity to the laws and technical standards in force in the country where the final apparatus or equipment will be operated is the manufacturer's responsibility. Before delivering the product, Carel has already completed the checks and tests required by the relevant European directives and harmonised standards, using a typical test setup, which however cannot be considered as representing all possible conditions of the final installation.

AX3000*小型终端连接到CAREL MPXone控制器时，用作集中商业制冷应用软件的用户界面，其自带3位数字显示，显示数值范围是：-999到999。通过NFC界面（近场通信）和BLE（低功耗蓝牙）实现的无线连接，允许与采用安卓操作系统的移动设备（已安装了CAREL"APPLICA"应用软件，安卓操作系统可以从Google Play中下载（如需）此软件）进行交互作用。四键式键盘可允许用户修改控制器设置。尺寸小、设计简单、与移动设备的可连接性均简化了现场的参数配置和装置调试。更多信息，请参阅MPXone系统手册+0300086EN，购买之前，可以在网站www.carel.com上的"文件"中查阅。

初始操作

用户终端配备了框架，但可以在不影响IP防护等级的情况下轻松拆除框架。

框架拆卸	步骤：在A点（图2）上，按住框架，轻轻向上推，直到听到"咔哒"一声，然后在B点、C点、D点上重复上述操作，直至拆下框架。
框架组装	反向重复拆除框架的操作。

在面板上安装用户终端

重要事项：仅满足以下条件时，才能保证前端的防护等级为IP65：
- 矩形孔与平面的最大偏差：≤0.5毫米；
- 配电盘金属板的厚度：0.8-2毫米；
- 安装垫圈的表面最大粗糙度：≤120微米。

注意：用于制作配电盘的金属板（或材料）的厚度必须能够确保终端安装的安全和牢固。

安装在面板上

前端

1. 将配电盘的电缆插入A点（图3）；
2. 将电缆穿过电缆接头H；
3. 将控制器放置在开孔中，轻轻按住侧面配件，然后推动前端直到完全插入为止（侧面接头会弯曲，搭扣会将控制器连接到面板上）。

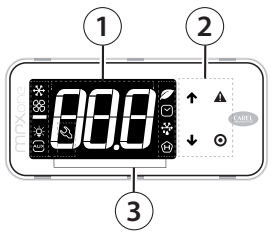
拆除

从后端打开配电盘（图4）：

1. 按住配件，将控制器推出。

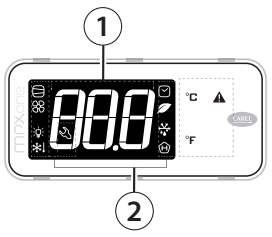
显示屏

用户终端



图例	
1	主域区
2	键盘
3	操作模式

远程显示屏



图例	
1	主域区
2	操作模式

图标

图标	功能	开启	闪烁
	电磁阀/压缩机	电磁阀/压缩机启动	由计时器启动的压缩机操作
	蒸发器风扇	蒸发器风扇启动	-
	照明灯	照明灯点亮	-
AUX	辅助输出	辅助输出启动	-
	时钟	调度机启动	-
	节能	Smooth Lines平滑线启动	-
	除霜	除霜启动	等待除霜
	维修	维护请求	
H	HACCP	HACCP 启动	-

按键

向上 / 向下	• 增大/减小该值 • 滚动选择直接访问功能 • LED点亮：滚动选择菜单、参数、直接访问功能 • LED闪烁：设置参数值
Prg	短按该键： • 保存值，并返回参数代码 • 进入直接访问功能菜单（从主屏幕），并启用/禁用功能 按住该键（3秒）： • 进入编程模式或返回上一级，但是不保存 • LED点亮：主屏幕/编程模式
Alarm	• 短按该键：显示屏报警 • 按住该键（3秒）：重置报警 • LED点亮/闪烁：确认/启动报警

报警表

当报警发生时，ALARM图标变为红色，用户终端显示相应报警代码。

代码	说明
rE	控制探头
E1	S1探头故障
E2	S2探头故障
E3	S3探头故障
E4	S4探头故障
E5	S5探头故障
E6	S6探头故障
E11	S11串行探头未更新
E12	S12串行探头未更新
E13	S13串行探头未更新
E14	S14串行探头未更新

The AX3000* compact terminals, when connected to a CAREL MPXone controller, are used as user interfaces for centralized commercial refrigeration applications. They come with a three-digit display showing values from -999 to 999. Wireless connectivity via the NFC interface (Near Field Communication) e BLE (Bluetooth Low Energy), allows interaction with mobile devices (after having installed the CAREL "APPLICA" app, available on Google Play (on request) for the Android operating system). The four-button keypad allows users to modify the controller settings. Compact dimensions, simple design and connection to mobile devices all simplify parameter configuration and unit commissioning in the field. For further information, see the MPXone system manual +0300086EN, also available prior to purchase, on the www.carel.com website under "Documentation".

Preliminary operations

The user terminal is supplied with the frame already fitted. Nonetheless, this can be easily removed without affecting the IP protection rating.

Removing the frame	Procedure: press the frame gently upwards at point A (Fig.2) until hearing a click and repeat the operation at the other points B, C, D so as to detach the frame
Assembling the frame	Repeat the removal operations in reverse order

Mounting the terminal on the panel

Important: front IP65 protection is only guaranteed if the following conditions are met:
- maximum deviation of the drilling rectangle from flat: ≤ 0.5 mm;
- electrical panel sheet metal thickness: 0.8 - 2 mm;
- maximum roughness of the surface where the gasket is applied: ≤ 120 µm.

Note: the thickness of the sheet metal (or other material) used to make the electrical panel must be suitable to ensure safe and stable installation of the terminal.

Mounting on the panel

Front

1. insert the cable from the electrical panel into point A (Fig.3);
2. run the cable through the cable gland H;
3. place the controller in the opening, press lightly on the side tabs and then on the front until fully inserted (the side tabs will bend, and the catches will attach the controller to the panel).

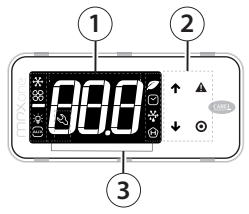
Removal

Open the electrical panel and from the rear (Fig.4):

1. press on the mounting tabs and then push the controller out.

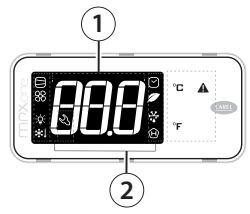
Displays

User terminal



Key	
1	Main field
2	Keypad
3	Operating mode

Remote display



Key	
1	Main field
2	Operating mode

Icons

Icona	Function	On	Flashing
	Solenoid/ compressor	Solenoid/compressor active	Compressor operationforced by timers
	Evaporator fan	Evaporator fan on	-
	Lights	Light on	-
AUX	Auxiliary output	Auxiliary output active	-
	Clock	Scheduler active	-
	Energy saving	Smooth Lines active	-
	Defrost	Defrost active	Awaiting defrost
	Service	Maintenance request	
H	HACCP	HACCP active	-

Keypad

UP / DOWN	• Increase/decrease value • Scroll functions with direct access • LED on: scroll menu, parameters, direct access functions • LED flashing: modify parameter values
Prg	Pressed briefly: • save value and return to parameter code • enter direct access functions menu (from main screen) and activate/deactivate functions Pressed and held (3 s): • enter programming mode or return to previous level without saving • LED on: standard display/programming mode
Alarm	• Pressed briefly: display alarms • Pressed and held (3s): reset alarms • LED on/flashing: acknowledged/active alarm

Alarm table

When an alarm occurs, the LED on the controller turns red and the user terminal displays the code corresponding to the alarm

Code	Description
rE	Control probe
E1	Probe S1
E2	Probe S2
E3	Probe S3
E4	Probe S4
E5	Probe S5
E6	Probe S6
E11	Serial probe S11 not updated
E12	Serial probe S12 not updated

拆卸/ **Dismantling**

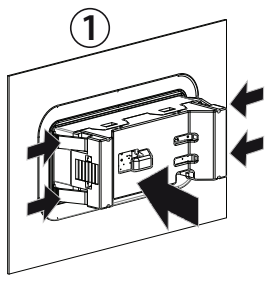


Fig. 4

更换

如需更换用户终端，为避免发生故障：
1. 关掉该装置的电源；
2. 更换用户终端；
3. 重新启动装置。

Replacing

In case of replacing the user terminal, to avoid malfunctions:
1. switch off (unplug) the unit;
2. replace the user terminal;
3. restart the unit.

NFC/蓝牙通讯

近场通信（NFC）简单快速，可在与控制器通信时使用。更多信息，请参阅MPXone系统手册+0300086EN。

NFC/BLE communication

NFC (Near Field Communication) is simple and fast and can be used when commissioning the controller. For further information, see the MPXone system manual +0300086EN.

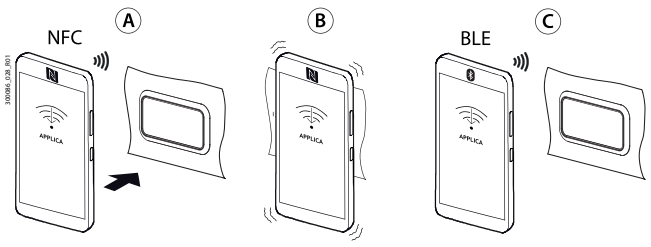


Fig. 5

（1）符合“微功率短距离无线电发射设备目录和技术要求”的具体条款和使用场景，采用的天线类型和性能，控制、调整及开关等使用方法；

（2）不得擅自改变使用场景或使用条件、扩大发射频率范围、加大发射功率（包括额外加装射频功率放大器），不得擅自更改发射天线；

（3）不得对其他合法的无线电台（站）产生有害干扰，也不得提出免受有害干扰保护；

（4）应当承受辐射射频能量的工业、科学及医疗（ISM）应用设备的干扰或其他合法的无线电台（站）干扰；

（5）如对其他合法的无线电台（站）产生有害干扰时，应立即停止使用，并采取措施消除干扰后方可继续使用；

（6）在航空器内和依据法律法规、国家有关规定、标准划设的射电天文台、气象雷达站、卫星地球站（含测控、测距、接收、导航站）等军

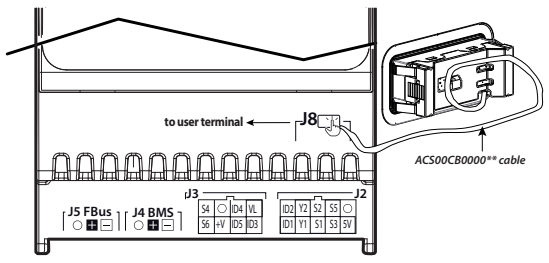
民用无线电台（站）、机场等的电磁环境保护区域内使用微功率设备，应当遵守电磁环境保护及相关行业主管部门的规定；

（7）禁止在以机场跑道中心点为圆心、半径5000米的区域内使用各类模型遥控器；

（8）微功率设备使用时温度和电压的环境条件。

电气接线图 / **Electrical connections**

用户终端 *User terminal*



远程显示 *Remote display*

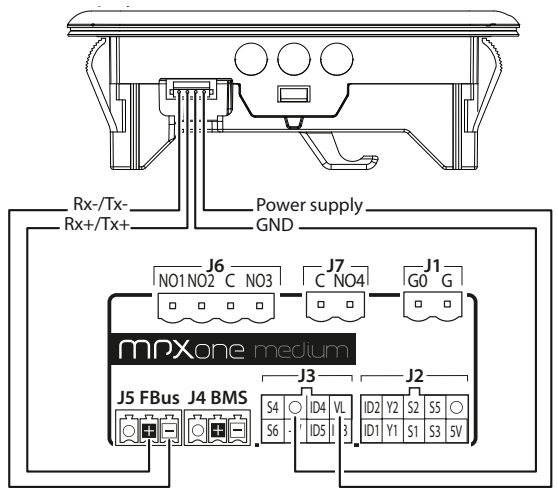


Fig. 6

产品的处置 / *Disposal of the product*

根据当地现行的废物处置法规必须单独处置本设备（或本产品）。/ *The appliance (or the product) must be disposed of separately in compliance with the local standards in force on waste disposal.*

重要警告

CAREL始终致力于为您提供最先进的产品和服务，相关操作方法已在产品随附的技术文档中加以说明，也可以在购买前从www.carel.com网站下载。客户（制造商、开发商或最终设备的安装人员）承担与产品配置有关的所有责任和风险，旨在实现与特定最终装置和/或设备有关的预期结果。如果未能完成用户手册中要求/指明的此类操作，可能会导致最终产品出现故障；在这种情况下，CAREL不承担任何责任。客户须按照与产品有关的文档中所述的方式使用本产品。CAREL的通用合同条款规定了CAREL公司对其产品的责任，该条款可从www.CAREL.com网站和/或与客户达成的特定协议中获得。

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 client (builder, developer or installer of the final equipment) assumes every responsibility and risk relating to the phase of configuration the product in order to reach the expected results in relation to the specific final installation and/or equipment. The lack of such phase of study, which is requested/indicated in the user manual, can cause the final product to malfunction of which CAREL can not be held responsible. The final client must use the product only in the manner described in the documentation related to the product itself. The liability of CAREL in relation to its own product is regulated by CAREL's general contract conditions edited on the website www.carel.com and/or by specific agreements with clients.

LO	低温
HI	高温
LO2	低温2
HI2	高温2
IA	外部触点瞬时报警
dA	外部触点延迟报警
dor	门开启过长
Etc	实时时钟未更新
LSH	低过热
LSA	低吸气温度
MOP	高蒸发温度
LOP	低蒸发温度
bLo	阀门阻塞
Edc	与步进驱动器的通讯误差
EFS	步进电机损坏/未接通
HA	HA型HACCP报警
HF	HF型HACCP报警
MA	与主机通信误差（仅在从机上）
u1...u9	与从机通信误差（仅在主机上）
n1...n9	网络中装置1... 9的报警
GPE	自定义气体参数误差

技术规范

电源	13 Vdc ± 10% ACU控制器电源；最大电流 250 mA. 控制器连接推荐电源：SELV或PELV
接头 (内置式)	JST 4-针 ZH P/N S4B-ZR-SM4A-TF
控制器连接电缆	最大长度：10米。B如果其长度超过2米，且没有内置设备，那么使用屏蔽电缆。 尺寸: AWG: 26 连接器： • 终端侧：JSTZH 4条引线；外壳：ZHR-4；终端 SZH-002T-P0.5 • 控制侧： – 用户终端：JSTXH 4路，外壳：XHP-4，终端 SXH-002T-P0.6 – 远程显示：线对线
蜂鸣器	所有机型均配备
温度传感器	内置
壳体	聚碳酸酯材料 尺寸：见图纸
组装	面板安装
显示	3位数字、小数点及多功能图标
操作温度	-20T60℃
操作湿度	<90%rH 无冷凝
储存温度	-35T70℃
储存湿度	<90%rH 无冷凝
NFC	最大距离：10毫米，可根据使用的移动设备进行调整。
低功耗蓝牙	最大长度：10米，根据使用的移动设备确定
防护等级	IP65 前端, IP20 后端
环境污染等级	3
球压试验	125℃
额定冲击电压	0.8 kV
启动和断开类型	1.Y
控制设备的结构	设备将进行整合
防电击等级	整合为1类或2类器械
串行接口	RS485以上的Modbus通讯协议
软件类和结构	A类
前端清洁	只能使用柔软、非研磨抹布和中性洗涤剂或水

合规性

电气安全	UL/IEC	EN/UL60730-1, EN/UL60335-1
EMC	CE	EN61000-6-1, EN61000-6-2, EN61000-6-3, EN61000-6-4
Radio	Red	EN301489-1/EN301489-1-17, EN300328
	FCC	Contains FCC ID: WAP2001
	IC	Contains IC: 7922A-2001
	ANATEL	*ID: 03780-21-05684* *Este equipamento não tem direito à proteção contra interferência prejudicial e não pode causar interferência em sistemas devidamente autorizados.*

合规性

易燃制冷剂气体的应用 **(*)**

关于本产品（SSR 版本除外）与 A3、A2 或 A2L易燃制冷剂的使用，经评估判定符合以下要求：
- 参照IEC 60335-2-24:2010的附录CC条款22.109以及IEC 60335-2-89:2019的附录BB条款22.113；在正常运行期间产生电弧或火花的部件已经通过测试，并符合UL/IEC 60079-15的要求；
- IEC 60335-2-24:2010（条款22.110）
- IEC 60335-2-24:2010（条款22.116，22.117 ）
- IEC 60335-2-89:2019（条款22.114 ）

根据IEC 60335第11条和第19条要求，对所有零部件的表面温度进行了测量和验证，发现其温度不超过268° C。带有SSR的型号如果使用A2L制冷剂（例如R32），符合标准IEC 60335-2-40:2018；具体而言，在正常操作下可能成为点火源的电气部件符合附录JJ的要求，并且在正常操作期间，所有部件的表面最高温度不超过268° C。这些控制器在使用易燃制冷剂的最终用途的应用中的可接受性应在最终用途的应用中进行审查和判断。

（*）适用于1.5xx以上版本的产品。

有关本产品的用户手册完整版（代码+0300086EN）可从www.carel.com网站中的“Services / Documentation”（“服务/文档”）板块下载，或通过扫一扫左侧二维码获取。

E13	Serial probe S13 not updated
E14	Serial probe S14 not updated
LO	Low temperature
HI	High temperature
LO2	Low temperature
HI2	High temperature
IA	Immediate alarm from external contact
dA	Delayed alarm from external contact
dor	Door open for too long
Etc	Real time clock not updated
LSH	Low superheat
LSA	Low suction temperature
MOP	Max evaporation pressure
LOP	Low evaporation pressure
bLo	Valve blocked
Edc	Communication error with stepper driver
EFS	Stepper motor broken/not connected
HA	HACCP type HA
HF	HACCP type HF
MA	Communication error with the Master (only on Slave)
u1...u9	Communication error with the Slave (only on Master)
n1...n9	Alarm on unit 1 ... 9 in the network
GPE	Error in the custom gas parameters

Technical specifications

Power supply	13 Vdc ± 10% supplied by ACU controller; max current 250 mA. Power supply recommended for the connected controller: SELV or PELV
Connector (built-in)	JST 4 pin ZH P/N S4B-ZR-SM4A-TF
Controller connection cable	Max length: 10m. If of lengths longer than 2m and device not uilt-in, use shielded cable. Size: AWG: 26 **Connectors:** • terminal side: JST ZH 4 pin; housing ZHR-4; terminal SZH-002T-P0.5 • control side: – user terminal: JST XH 4 way, housing XHP-4, terminal SXH-002T-P0.6 – remote display: wires to wire
Buzzer	Available on all models
Temperature sensor	Built-in
Casing	Polycarbonate material Dimensions: see figures
Assembly	Panel mounting
Display	3 digits, decimal point and multifunction icons
Operating temperature	-20T60℃
Operating humidity	<90% RH non-condensing
Storage temperature	-35T70℃
Storage humidity	<90% RH non-condensing
NFC	Max distance 10 mm, variable according to the mobile device used
Bluetooth Low Energy	Max length 10m, depend on the used mobile device
Index protection	IP65 at front, IP20 at rear
Environmental pollution	3
Ball pressure test	125℃
Rated impulse voltage	0.8 kV
Type of action and disconnection	1.Y
Construction of the control device	Device to be incorporated
Classification according to protection against electric shock	To be incorporated in class 1 or 2 appliances
Serial interface	Modbus over RS485
Software class and structure	Class A
Cleaning the front side	Only use a soft, non-abrasive cloth and neutral detergents or water

Conformity

Safety	UL	UL60730-1
	Sch. CB	IEC60730-1
EMC	CE	EN61000-6-1, EN61000-6-2, EN61000-6-3, EN61000-6-4 EN55014-1, EN55014-2, EN61000-3-2
Radio	Red	EN301489-1/EN301489-17, EN300328
	FCC	Contains FCC ID: WAP2001
	IC	Contains IC: 7922A-2001
	ANATEL	*ID: 03780-21-05684* *Este equipamento não tem direito à proteção contra interferência prejudicial e não pode causar interferência em sistemas devidamente autorizados.*

Applications with flammable gas refrigerant (*)

About the use of this product with A3, A2 or A2L flammable refrigerants, it has been evaluated and judged compliant with the following requirements:
- Annex CC of IEC 60335-2-24:2010 referenced by clause 22.109 and Annex BB of IEC 60335-2-89:2019 referenced by clause 22.113; 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 60335-2-24:2010 (clauses 22.110)
- IEC 60335-2-40:2018 (clauses 22.116, 22.117)
- IEC 60335-2-89:2019 (clauses 22.114)

Surface temperatures of all components and parts have been measured and verified during the tests required by IEC 60335 cl. 11 and 19, and found not exceeding 268 °C.
Acceptability of these controllers in end use application where flammable refrigerant is used shall be reviewed and judged in the end use application.
(*) Applicable to the products with revision above 1.5xx.

The complete user manual (+0300086EN) for the product can be downloaded at www.carel.com under the “Services / Documentation” section or via QR Code.

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