CAREL

Cella Range

Solutions for cold rooms

Connected Efficiency

Cella Range - platform for cold room solutions

A wide range of integrated and inter-communicating controllers and accessories that maximise system efficiency and energy saving and preserve the value of the goods stored, with special focus on simple installation and configuration and user convenience.

- Complete control of all cold room devices;
- Complies with HACCP standards;
- Temperature/humidity management;
- Management of electronic expansion valves;
- Integration with DC inverter solutions;
- All-in-one or remote power management (serial);
- Integrated safety devices and advanced supervision.

CellaRange

A range of modular products for complete management of cold rooms, which can be combined so as to best adapt to system specifications, are easily expandable and can also be integrated into retrofit applications.

1ph/3ph power modules
Power modules for managing single-phase and/or three-phase loads; modular and/or remote connection (RS485).

EVD modules
EVD modules for electronic valve management; modular and/or remote connection (RS485).

Usability
Faster installation and commissioning thanks to error-proof wiring, device pre-configuration and integration with advanced interfaces (multilingual graphics and text).

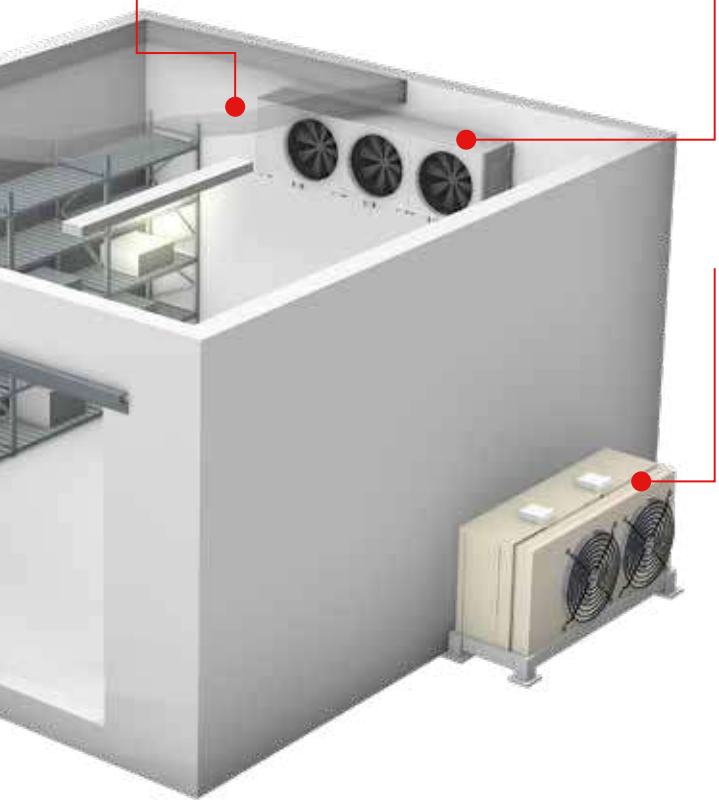
Efficiency
Up to 30% energy savings compared to traditional systems by using the electronic stepper valve. Further advantages in combination with condensing units based on CAREL DC inverter technology.

Product quality
Minimum variation in product storage temperature and total control of humidification in the cold room, with safety guaranteed by the CAREL supervision platform.

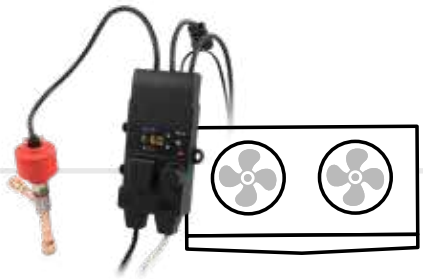
exvsistema

Electronic stepper expansion valves, in inspectable or welded versions, available for different types of applications or refrigerants, including CO_2

up
30%
energy saving



evDice



Invented for cold environments

Ready-to-install solution: evaporator complete with electronic expansion valve and driver, pre-assembled, wired and tested by the manufacturer.

* Ask your dealer for evaporators with embedded CAREL technology

HEcu*

The real capacity modulation technology for condensing units

Solution for variable-speed condensing units, based on DC inverter technology for applications with HFCs, HFOs and natural refrigerants (CO_2).

* Ask your dealer for condensing units with embedded CAREL technology

boss mini

Mobile-ready local supervisor with built-in WiFi

Intuitive and customisable interface, fully compatible with mobile devices.
New alarm notification channels via instant messaging.

Probes and sensors

Wide range of temperature and humidity probes and pressure transducers to manage different types of applications.

Accessories

ColdWatch
Trapped personnel alarm.

Leakage sensor
Refrigerant gas leakage sensor.

humiDisk
Cold room humidity management.

High-efficiency integrated systems

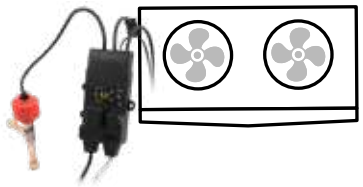
Electronic valve driver mounted on the evaporator

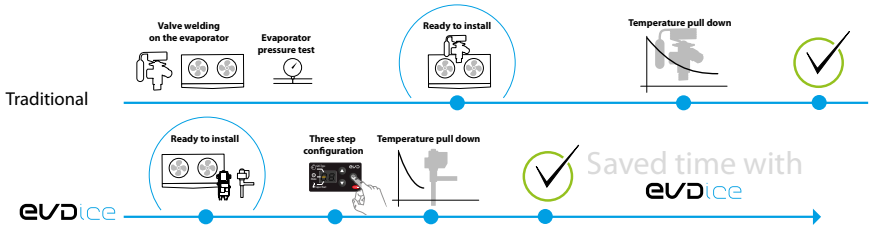
evDice

zero wiring and welding — EEV and drivers already fitted on the evaporator and tested.

three parameters only for set-up — Simple and fast configuration, even via remote (RS485).

half pull-down time — Cold room operating in half the time.



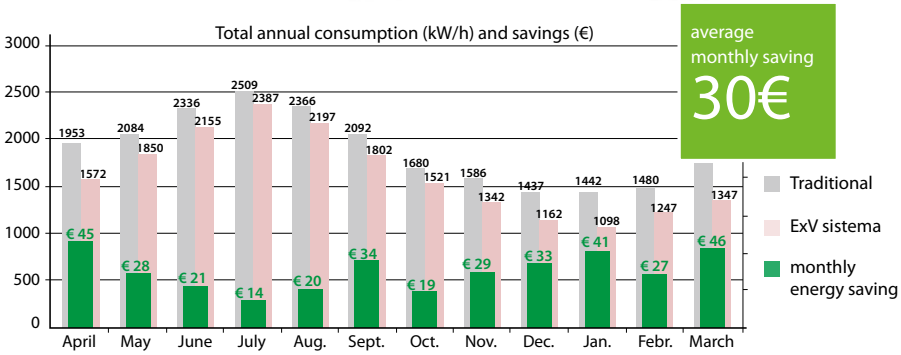


Estimated savings in installation time and configuration of an evaporator with EVD Ice compared to traditional technology.

Technology for the management of electronic expansion valves

exvsistema

- High efficiency and energy savings.
- Reduced configuration, commissioning and maintenance times.
- Suitable for more than 40 types of refrigerant.



Total annual energy consumption based on a 90m3 LT cold room, comparison between EEV and TEV technology (energy savings valued @ 0.12 €/kW/h).
For more information, see Marketing News +4000057EN on www.carel.com.

Modules for direct and remote management of three-phase loads

Cella 3PH SOLUTION

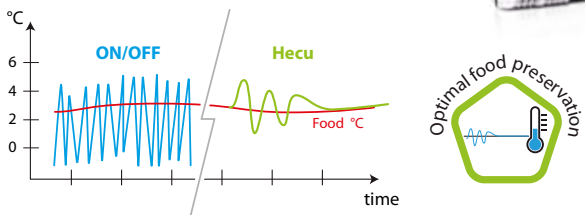
- Range of modules for the management of three-phase compressors, defrosts and fans, ready to install.
- Reduced installation times and costs

Example of installation of a remote power module compared to a traditional three-phase solution.
In a cold room measuring 2.5 m x 5 m x 16 m, the CAREL solution can save up to 34 metres of power cable (and consequent installation time and costs), exploiting the connection via simple RS485 signal cable between UltraCella and the three-phase power module.

Capacity modulation technology for condensing units

HECU

- High efficiency and energy savings.
- Maximum reliability also ensured by compressor envelope and oil return management.
- Preservation of stored product quality and value.



Comparison between the storage temperature in a traditional system based on ON/OFF compressor management and a modulating system based on HECU DC inverter technology.
In the latter case, the cold room temperature remains within a range of ± 1°C around the set point for over 80% of the total time (including defrosting).

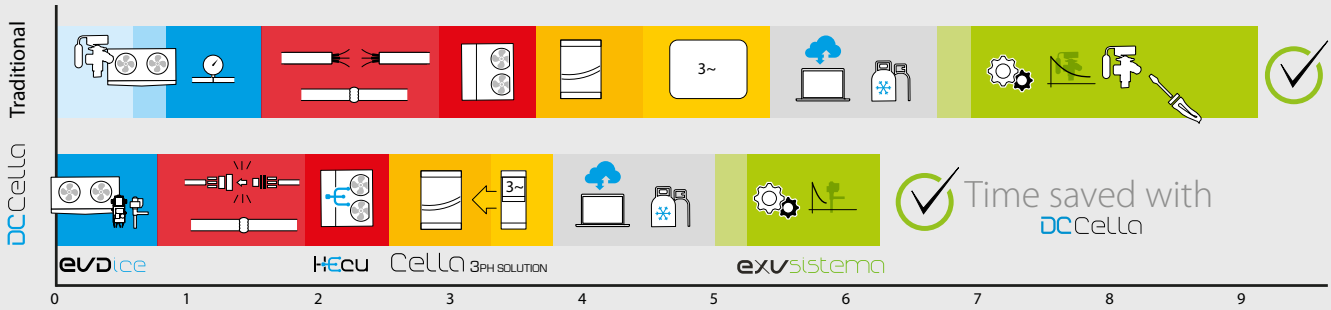
up to -30% Installation time

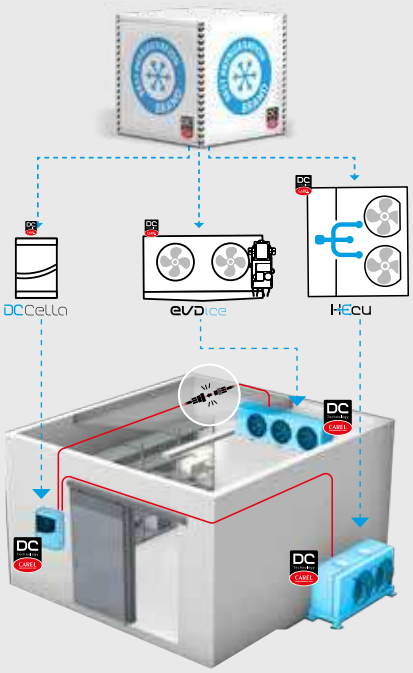
DC Technology CAREL

DC Cella SPLIT

Cold room reinvented, out of the box

Cold room timeline: from installation to steady operating conditions





DC Cella SPLIT is the new solution for high performance cold rooms. Based on the experience acquired from innovative products such as Hecu, EVD ice and UltraCella, DC Cella SPLIT combines the high performance of DC inverter applications and CO_2 technology with the installation simplicity of a home air-conditioner.

An integrated system with real-time management of evaporators and condensing units, with the same easy installation and use as a traditional product.

CO_2 up to 15% Energy saving CO_2 vs AC inv	up to 25% Energy saving HFC vs AC inv	Optimal food preservation	up to <30db* low noise and less vibrations

* depending on insulation

*** Ask your dealer for cold room solutions with CAREL technology**

Part number guide

Type of compressor	Management of evaporator loads	Cold room controller: Relays	Cold room controller: Protection functions	Advanced functions	Application diagram (on next page)	Main controller: Cold room controller	Main controller: Service display (opt.)	Main controller: Control/ defrost probes
1ph	-	1	-		1	WE00S***00 SmartCella	-	NTC0******
1ph	1ph, 1ph	3	-		5	MD33A***00 MasterCella	-	NTC0****** (2x)
		4	-		1	WE00C***00 SmartCella	-	NTC0****** (2x)
					2	WE00C***00 SmartCella	-	NTC0****** (2x)
		5	-		5	MD33D***00 MasterCella	-	NTC0****** (2x)
		6	-		3/14	WB000**0F0 UltraCella	PGDEWB0FZK	NTC0****** (2x)
					4/14	WB000**0F0 UltraCella	PGDEWB0FZK	NTC0****** (2x)
	3ph, 1ph	4			6	WE00C***00 SmartCella	-	NTC0****** (2x)
		6			8/14	WB000**0F0 UltraCella	PGDEWB0FZK	NTC0****** (2x)
	3ph, 3ph	4	KLX		7	WE00C***00 SmartCella	-	NTC0****** (2x)
		6	KLX		9/14	WB000**0F0 UltraCella	PGDEWB0FZK	NTC0****** (2x)
			KLX	3PH	10/14	WB000**0F0 UltraCella	PGDEWB0FZK	NTC0****** (2x)
3ph	3ph, 1ph /3ph	5	KRI, KLX, bar		11	WP00E****U0 SmartCella 3PH EVD	-	NTC0****** (2x)
					12	WP00E****00 SmartCella 3PH	-	NTC0****** (2x)
	3ph, 3ph	6	KRI, KLX, bar	3PH	13/14	WB000**0F0 UltraCella	PGDEWB0FZK	NTC0****** (2x)

Key

- *single-phase compressor or solenoid valve/condensing unit enabling signal*
- *three-phase compressor*
- *single phase defrost*
- *three-phase defrost*
- *single-phase evaporator fans*
- *three-phase evaporator fans*
- *residual-current circuit breaker*
- *controller protection fuse*
- *defrost + fan four-pole circuit breaker*
- *defrost four-pole circuit breaker*
- *Kriwan*
- *evaporator fan thermal protection*

Load management	Electronic valve management			Accessories (optional)			
Power module	EVD module	Electronic valve	Valve probes	Humidity management	Connectivity card	Supervision	Safety
-	WM00E*S*00 EVDIS00**0	E2V**Z**** E2VCABS*I0	NTC0**HF03; SPKT00*; SPKC00*	-	IROPZSER30	BMEST0**** boss mini BMESTPWA00 power supply	CM0000**** Coldwatch GDW****A00 refrigerant gas
-	WM00EUC000 EVDIS00**0	E2V**Z**** E2VCABS*I0	NTC0**HF03; SPKT00*; SPKC00*	-	IROPZSEM30		
-	WM00E*S*00 EVDIS00**0	E2V**Z**** E2VCABS*I0	NTC0**HF03; SPKT00*; SPKC00*	-	IROPZSER30		
WM00P000*N protection	WM00E*S*00 EVDIS00**0	E2V**Z**** E2VCABS*I0	NTC0**HF03; SPKT00*; SPKC00*	-	IROPZSER30		
-	WM00EUC000 EVDIS00**0	E2V**Z**** E2VCABS*I0	NTC0**HF03; SPKT00*; SPKC00*	-	IROPZSEM30		
-	WM00E*N*00 (14)	E2V**Z**** E2VCABS*I0	NTC0**HF03; SPKT00*; SPKC00*	DPPC***000 humidity probe UC0**0D*00 humiDisk	included		
WM00P000*N protection	WM00E*N*00 (14)	E2V**Z**** E2VCABS*I0	NTC0**HF03; SPKT00*; SPKC00*				
WT00SD00N0 3ph direct	WM00E*S*00 EVDIS00**0	E2V**Z**** E2VCABS*I0	NTC0**HF03; SPKT00*; SPKC00*	-	IROPZSER30		
WT00SD00N0 3ph direct	WM00E*N*00 (14)	E2V**Z**** E2VCABS*I0	NTC0**HF03; SPKT00*; SPKC00*	DPPC***000 humidity probe UC0**0D*00 humiDisk	included		
WT00CDG0N0 3ph direct	WM00E*S*00 EVDIS00**0	E2V**Z**** E2VCABS*I0	NTC0**HF03; SPKT00*; SPKC00*	-	IROPZSER30		
WT00CDG0N0 3ph direct	WM00E*N*00 (14)	E2V**Z**** E2VCABS*I0	NTC0**HF03; SPKT00*; SPKC00*	DPPC***000 humidity probe UC0**0D*00 humiDisk	included		
WT00E*00N0 3ph remote	WM00E*N*00 (14)	E2V**Z**** E2VCABS*I0	NTC0**HF03; SPKT00*; SPKC00*				
included	included (add EVDIS00**0)	E2V**Z**** E2VCABS*I0	NTC0**HF03; SPKT00*; SPKC00*	-	IROPZSER30		
included	-	-	-	-	IROPZSER30		
WT00F**0N0 3ph remote	WM00E*N*00 (14)	E2V**Z**** E2VCABS*I0	NTC0**HF03; SPKT00*; SPKC00*	DPPC***000 humidity probe UC0**0D*00 humiDisk	included		

(14): for cold rooms with two evaporators, two driver modules are required, including at least one WM00E*S*00 with EVDIS00**0 display + two electronic valves + two pressure transducers and cables + two temperature sensors.

defrost safety thermostat

energy saving

remote power management

high/low pressure switch

advanced energy saving

datalogger function (USB)

main disconnect switch

built-in serial connectivity

humidification/dehumidification management

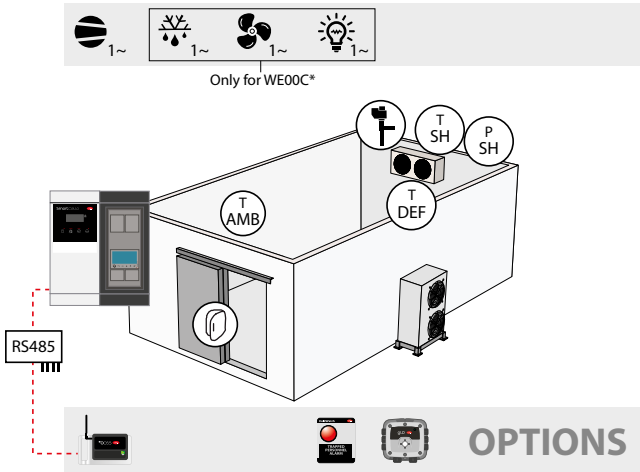
adjustable manual motor starter (compressor)

condenser fan management

1ph cold rooms

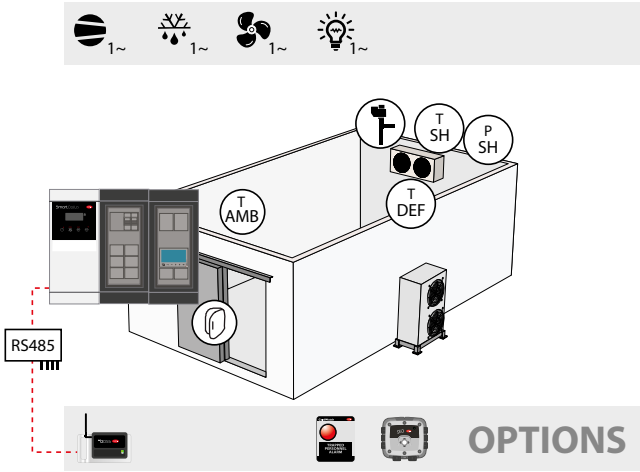
1 SmartCella + EVD module

(WE00C***00 + WM00E*S*00 +EVDIS00**0)



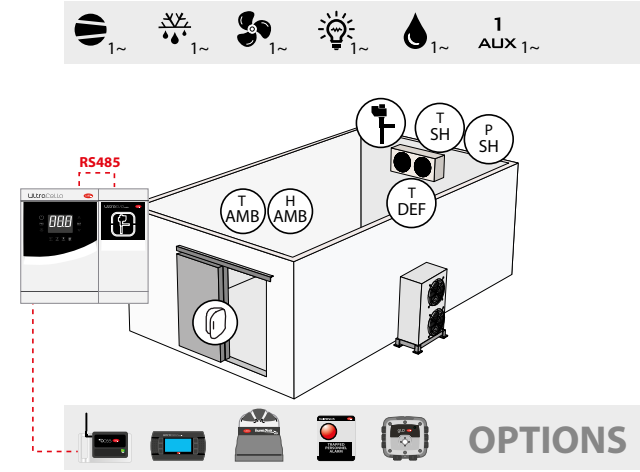
2 SmartCella + EVD module + 1ph power module

(WE00C***00 + WM00E*S*00 +EVDIS00**0 + WM00P000*N)



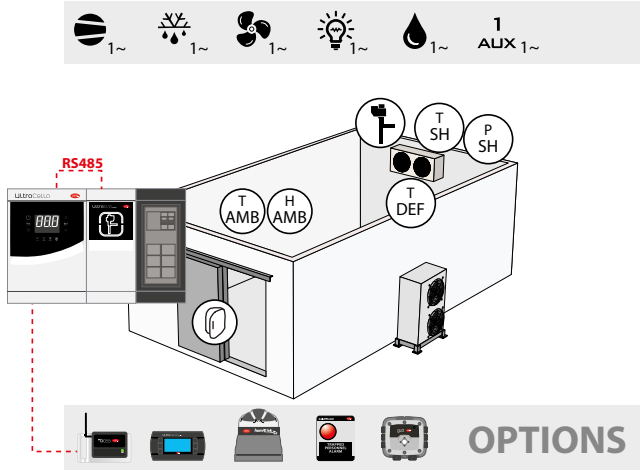
3 UltraCella + EVD Module

(WB000**0F0 + WM00E*N*00)



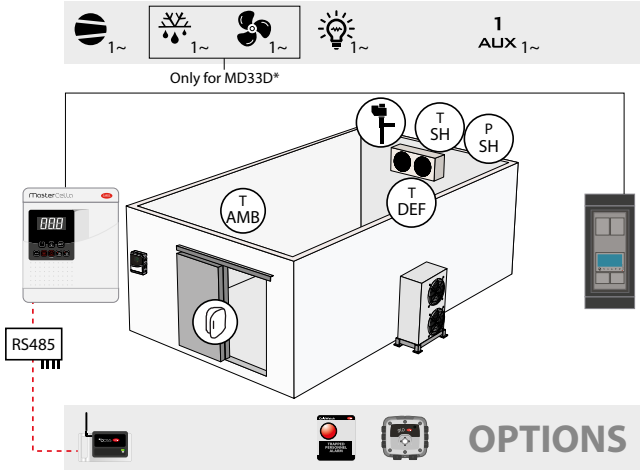
4 UltraCella + EVD module + 1ph power module

(WB000**0F0 + WM00E*N*00 + WM00P000*N)



5 MasterCella + EVD Module

(MD33D***00 + WM00EUC000 + EVDIS00**0)

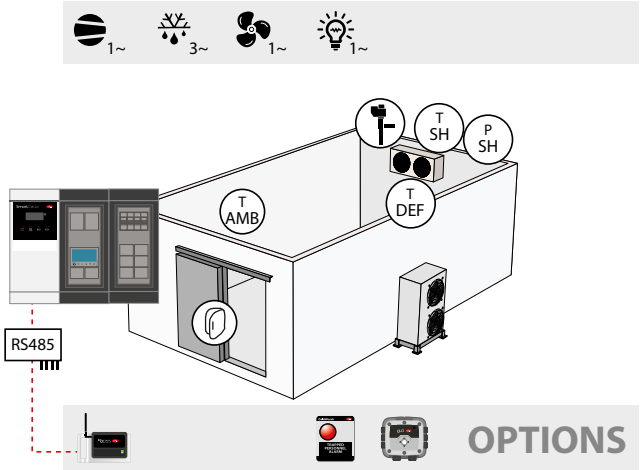


See diagram 14 for cold rooms with two evaporators.

1ph cold rooms with 3ph defrost and fans

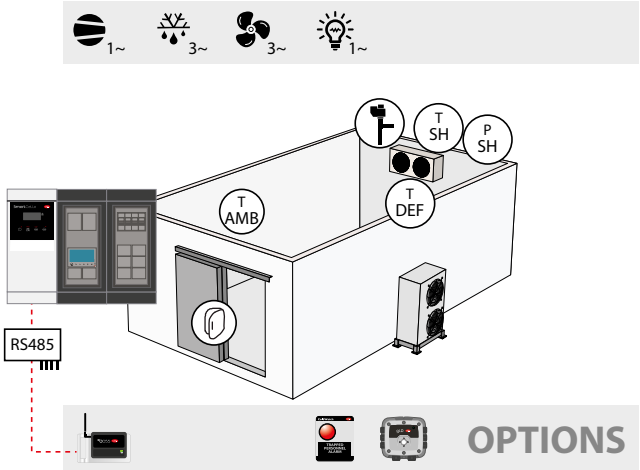
6 SmartCella + EVD module + 3ph power module (defrost)

(WE00C***00* + WM00E*S*00+EVDIS00**0 + WT00SD00N0)



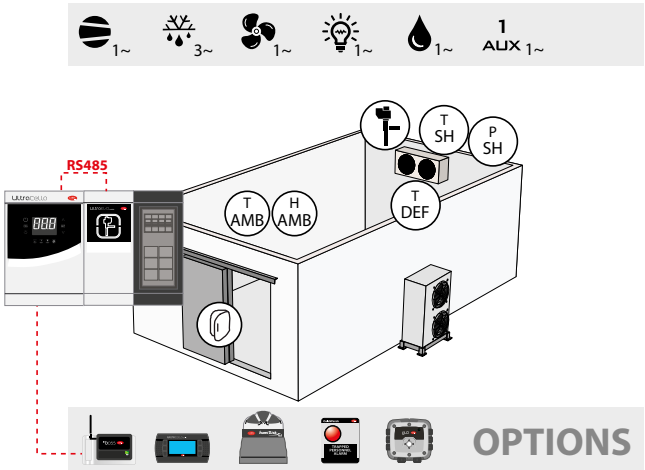
7 SmartCella + EVD module + 3ph power module (defrost + fans)

(WE00C***00 + WM00E*S*00+EVDIS00**0 +WT00CDG0N0)



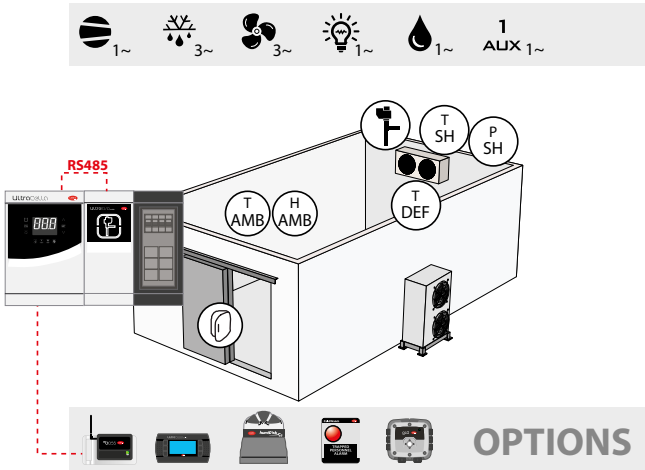
8 UltraCella + EVD module + 3ph power module (defrost)

(WB000**0F0 + WM00E*N*00 + WT00SD00N0)



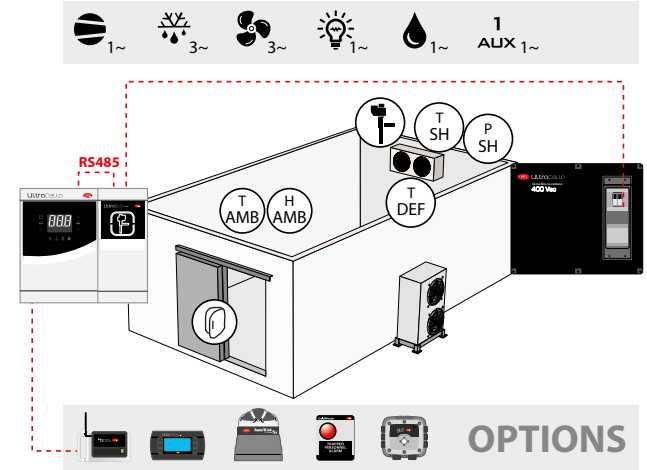
9 UltraCella + EVD module + 3ph power module (defrost + fans)

(WB000**0F0 + WM00E*N*00 + WT00CDG0N0)



10 UltraCella + EVD module + Remote 3ph power module (evaporator)

(WB000**0F0 + WM00E*N*00 + WT00E*00N0)

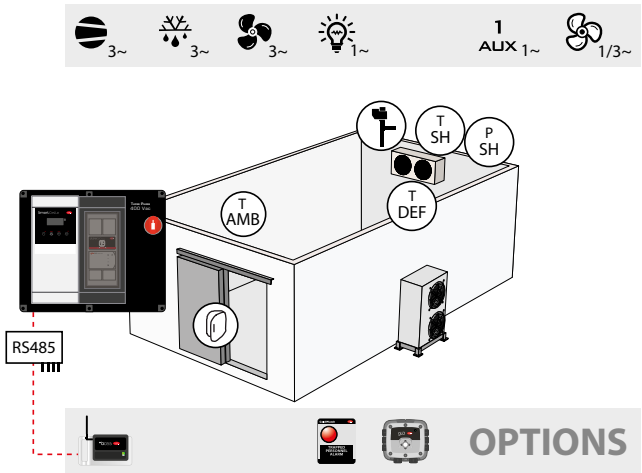


See diagram 14 for cold rooms with two evaporators.

3ph cold rooms

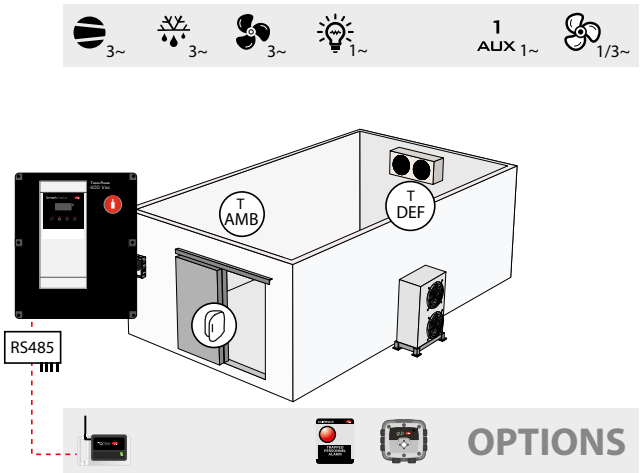
11 SmartCella 3PH EVD

(WP00E****U0 + EVDIS00**0)



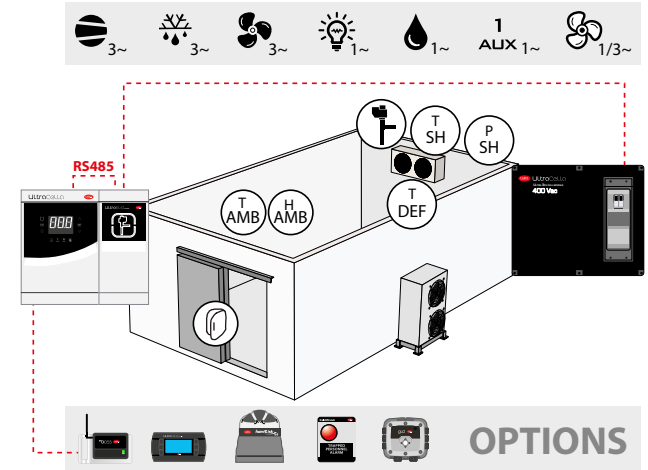
12 SmartCella 3PH

(WP00E****00)



13 UltraCella + EVD module + Remote 3ph power module (full)

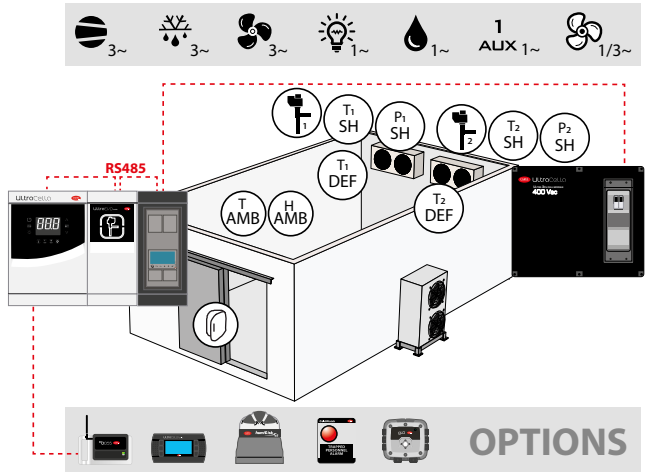
(WB000**0F0 + WM00E*N*00 + WT00F**0N0)



3ph cold rooms with two evaporators

14 UltraCella + 2 EVD modules + Remote 3ph power module (full)

(WB000**0F0 + WM00E***00 + WM00E*S*00 + EVDIS00**0 +WT00F**0N0)
(For cold rooms with two evaporators)



(14): for cold rooms with two evaporators, two driver modules are required, including at least one WM00E*S*00 with EVDIS00**0 display + two electronic valves + two pressure transducers and cables + two temperature sensors.

SmartCella

IP65 cold room front panel, available in version with 1 or 4 relays with power up to 2 HP. Defrost by compressor stop, heater or hot gas. Can be combined with EVD modules for electronic valve management and direct power modules for three-phase load management. Can be connected to supervision system via RS485 serial card.

Accessories

IROPZSER30: RS485 serial card for connection to supervision system.

Plus

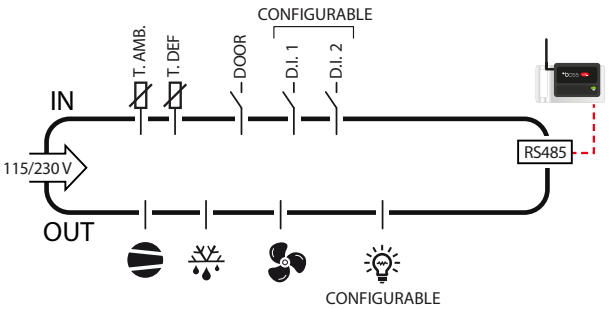
EEV control

3PH direct management

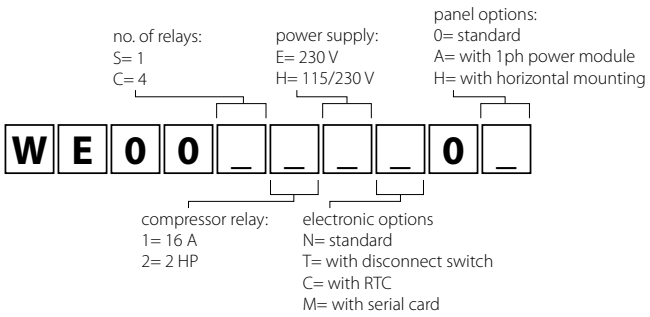
RS485 connectivity

Specifications	WE00S1EN00	WE00S1EN0A	WE00S1ET00	WE00C2HN00	WE00C2HN0A	WE00C2HT00	WE00C2HC00	WE00C2HM00	WE00C2HN0H	WE00C3HN00
Main	1 relay	1 relay with circuit breaker	1 relay with disconnect switch	4 relays	4 relays with circuit breaker	4 relays with disconnect switch	4 relays with RTC	4 relays with serial card included	4 relays, box for horizontal installation	4 relays with 3HP support relay
Dimensions	128x290x100 mm									
Ingress protection	IP65		IP54	IP65		IP54	IP65			
Power supply	230 Vac			115/230 Vac						
Power input	3 VA, 25 mA~ max			6 VA, 50 mA~ max						
Inputs										
Total	5									
Analogue (type)	2 (NTC/NTC*HT)									
Digital (type)	3 (configurable)									
Outputs (EN60730-1/UL873) - sum of load currents max. 12 A										
Compressor	**16A** (12(2)A/12A res. 5FLA 30LRA C300)			**2HP** (10(10)A/12A res. 12FLA 72LRA C300)						
Defrost	-	-	-	**16A** (12(2)A/12A res. 5FLA 30LRA C300)						
Evaporator fan	-	-	-	**8A** (8(4)A/8A res. 2FLA 12LRA C300)						
Light or AUX, configurable	-	-	-	**8A** (8(4)A/8A res. 2FLA 12LRA C300)						
Additional functions/modules										
Electronic valve management	Optional (with WM00E*S*00)									
Residual current circuit breaker	Optional (with WM00P000*N)	YES	Optional (with WM00P000*N)		YES	Optional (with WM00P000*N)				
Three-phase power management	Optional (direct with WT00S*or with WT00C*)									
Other specifications										
Connectivity (serial) RS485	Optional (with IROPZSER30)							YES	Optional (with IROPZSER30)	
Internal clock	-	-	-	-	-	-	YES	-	-	-
Main disconnect switch	-	-	YES	-	-	YES	-	-	-	-

Functional diagram



Product part number



UltraCella

NEW Software release 3.x

IP65 cold room front panel, 6 relays with power up to 2 HP. Defrost by compressor stop, heater or hot gas. USB datalogging function. Humidification/ dehumidification and dual evaporator management. Can be combined with two EVD modules for managing two electronic valves and direct or remote power modules for three-phase load management. Can be connected to supervision system via built-in RS485. Can interface with condensing units using CAREL DC INVERTER technology.

Accessories

PGDEWB0FZK: UltraCella Service Terminal + cable

Plus

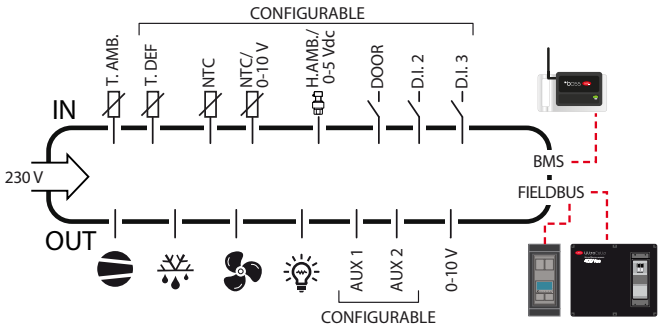
2x EEV control

remote management

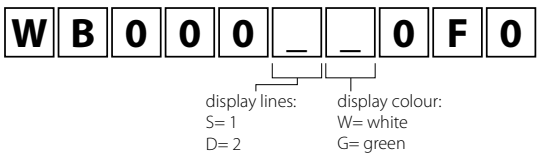
datalogging function

Specifications	WB000SG0F0	WB000SW0F0	WB000DG0F0	WB000DW0F0
Main	Single line display, Green LED	Single line display, White LED	Two line display, Green LED	Two line display, White LED
Dimensions	128x290x100 mm			
Ingress protection	IP65			
Power supply	230 Vac			
Power input	18 VA, 100 mA~ max			
Inputs				
Total	8			
Analogue (type)	3 (NTC, PT1000), 1 (NTC, 0-10 Vdc), 1 (0-5 Vdc, 4-20 mA)			
Digital (type)	3 (configurable)			
Outputs (EN60730-1/UL873) - sum of load currents max. 20 A				
Compressor	**2HP** (12(10 A)/12 A res. 12FLA 72LRA C300)			
Defrost	**2HP** (12(10 A)/12A res. 12FLA 72LRA C300)			
Evaporator fan	**16A** (10(5)/10 A res. 5FLA 18LRA C300)			
Light	**16A** (10(5)/10 A res. 5FLA 18LRA C300)			
AUX 1 (configurable)	**8A** (8(4) on NO, 6(4) on NC, 2(2) on NC and NO/8 A res. 2FLA 12LRA C300)			
AUX 2 (configurable)	**8A** (8(4) on NO, 6(4) on NC, 2(2) on NC and NO / 8 A res. 2FLA 12LRA C300)			
Analog output	0 to 10 Vdc, 10 mA max			
Additional functions/modules				
Electronic valve management	Optional (with WM00E*N*00 for one evaporator or WM00E*S*00 for two evaporators)			
Residual current circuit breaker	Optional (with WM00P000*N)			
Three-phase power management	Optional (remote with WT00E*or WT00F*, direct with WT00S*or WT00C*)			
Other specifications				
Connectivity (serial) RS485	YES (1 BMS, 1 FieldBus)			
Internal clock	YES			
Datalogger function	YES (USB)			
Humidity management	YES			

Functional diagram



Product part number



MasterCella

IP65 cold room front panel, available in version with 3 or 5 relays with power up to 2 HP. Defrost by compressor stop, heater or hot gas. Can be combined with stand-alone EVD modules for electronic valve management. Can be connected to supervision system via RS485 serial card.

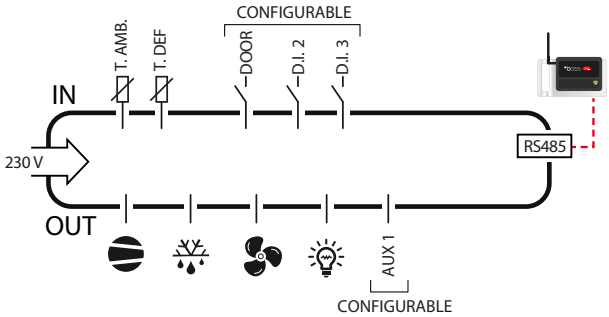
Accessories

IROPZSEM30: RS485 serial card for connection to supervision system

Plus

Specifications	MD33A5ER00	MD33D0EN00	MD33D5EN00	MD33D5EB00	MD33D5FB00
Main	3 relays	5 relays (CMP 16 A)	5 relays (CMP 30 A)	5 relays (CMP 30 A) with RTC	5 relays (CMP 30 A) with RTC and disconnect switch
Dimensions	200x240x93 mm				
Ingress protection	IP65				IP54
Power supply	230 Vac				
Power input	11.3 VA, 50 mA~ max				
Inputs					
Total	5				
Analogue (type)	2 (NTC/NTC*HT)				
Digital (type)	3 (configurable)				
Outputs (EN60730-1/UL873) - sum of load currents max. 12 A					
Compressor	**30 A** (12(10 A)/12 A res. 2 HP 72LRA C300)	**16 A** (10(5)/10 A res. 5FLA 18LRA C300)	**30 A** (12(10A)/12 A res. 2HP 72LRA C300)		
Defrost	-	**16 A** (10(5)/10 A res. 5FLA 18LRA C300)			
Evaporator fan	-	**8 A** (8(4) on NO, 6(4) on NC, 2(2) on NC and NO/8 A res. 2FLA 12LRA C300)			
AUX 1 configurable	**8 A** (8(4) on NO, 6(4) on NC, 2(2) on NC and NO / 8 A res. 2FLA 12LRA C300)				
AUX 2 configurable	**2HP** (12(10 A)/12A res. 12FLA 72LRA C300)	**16A** (10(5)/10 A res. 5FLA 18LRA C300)	**2HP** (12(10 A)/12A res. 12FLA 72LRA C300)		
Additional functions/modules					
Electronic valve management	Optional, not modular (with WM00EUC000)				
Residual current circuit breaker	-				
Three-phase power management	-				
Other specifications					
Connectivity (serial) RS485	Optional (with IROPZSEM30)				
Internal clock	-	-	-	YES	YES
Infrared receiver	YES	-	-	YES	YES
Main disconnect switch	-	-	-	-	YES

Functional diagram



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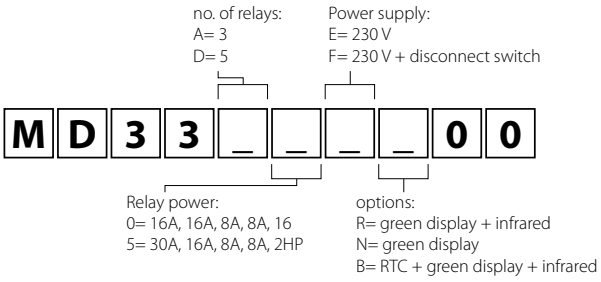


SmartCella three-phase

IP56 cold room front panel for three-phase applications, electronic, with 5 relays. Defrost by compressor stop, heater or hot gas. Available in the version with electronic valve driver included. Can be connected to supervision system via RS485 serial card.

Accessories

IROPZSER30: RS485 serial card for connection to supervision system.

Plus

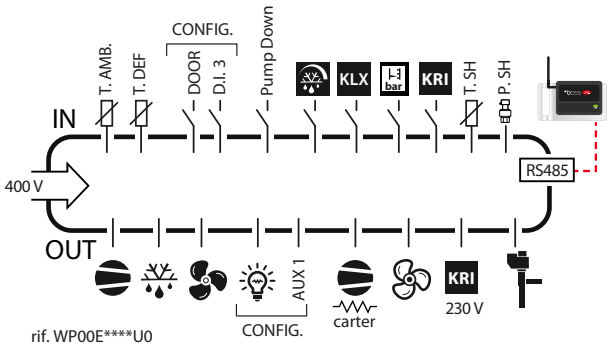
EEV control

3PH direct management

RS485 connectivity

Specifications	WP00E11A1*0	WP00E21A1*0	WP00E31A1*0	WP00E41A1*0	WP00E51A1*0	WP00E42A2*0	WP00E62A2*0	WP00E72A2*0	WP00E73B3*0
Main	Three-phase up to 4 HP					Three-phase up to 7.5 HP			Three-phase up to 10 HP
Electronic valve driver	Included in models with *= U (e.g. WP00E11A1**U**0); not included in models with *= 0 (e.g. WP00E11A1**0**0)								
Dimensions	460x380x127 mm								
Ingress protection	IP56								
Power supply	400 Vac								
Protection functions									
Main disconnect switch	40 A								
Compressor (manual motor starter)	1.6 to 2.5 A	2.5 to 4 A	4 to 6.3 A	6.3 to 10 A	8 to 12 A	6.3 to 10 A	10 to 16 A	16 to 20 A	16 to 20 A
Evaporator, condenser, defrost (circuit breaker)	10 A								
Auxiliary circuit (circuit breaker)	6 A								
Inputs									
Totals (electronic controller)	4								
Analogue (type)	2 (NTC/NTC*HT)								
Digital (type)	2 (configurable)								
Other inputs provided (contact)	Safety thermostat (defrost); thermal protection (evaporator fans); compressor Kriwan; high/low pressure switch, pump down								
Fan speed control pressure switch	-								YES
Outputs									
Compressor	1.6 to 2.5 A	2.5 to 4 A	4 to 6.3 A	6.3 to 10 A	8 to 12 A	6.3 to 10 A	10 to 16 A	16 to 20 A	16 to 20 A
Defrost	9000 W - 3ph					9000 W - 3ph			12000 W - 3ph
Evaporator fan	1000 W - 1ph / 1500 - 3ph					2000 W - 1ph / 3000 W - 3ph			3500 W - 3ph
Condenser fan	900 W - 1ph					2000 W - 3ph			2000 W + 2000 W 3ph
Light	800 W								
Other outputs	AUX configurable; solenoid valve output; compressor crankcase heater; power supply Kriwan								
Other specifications									
Connectivity (serial) RS485	Optional (with IROPZSER30 card)								

Functional diagram



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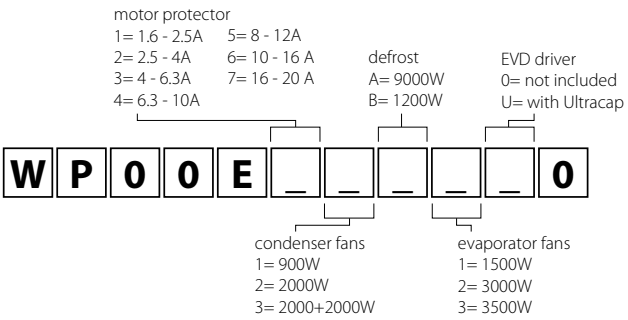


Driver modules

"blind" version

version with display

Control module for bipolar electronic valve, IP65, available in modular or stand-alone version, with and without connectable display. Optional Ultracap technology. Advanced two-way communication via RS485 (UltraCella) or one-way via control signal (SmartCella, MasterCella). Configurable auxiliary relay.

Accessories

EVDIS00**IT**0: display for EVD evolution in Italian. Also available in **EN**-English, **FR**-French, **DE**-German, **ES**-Spanish, **RU**-Russian, **SE**-Swedish, **CN**-Chinese and **CZ**-Czech.

Plus

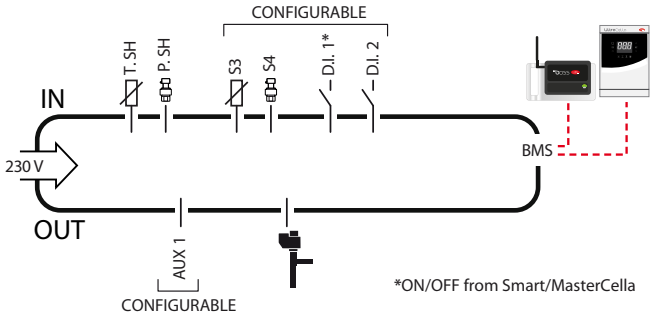
EEV control

Ultracap technology

configurable by UltraCella

Specifications	WM00ENSI00	WM00ENS000	WM00ENNI00	WM00EUS000	WM00EUN000	WM00EUC000	WM00EUK000
Main	with display included (Italian/English)	connectable display (not included)	"blind" module	connectable display (not included), with Ultracap	"blind" module, with Ultracap	connectable display (not included) with Ultracap, stand-alone	"blind" module, with Ultracap, stand-alone
Compatibility	SmartCella, UltraCella	SmartCella, UltraCella	UltraCella	SmartCella, UltraCella	UltraCella	SmartCella, MasterCella, UltraCella	UltraCella
Dimensions	128x290x110 mm						
Ingress protection	IP65						
Power supply	230 Vac						
Ultracap (safety power supply)	-			YES			
Inputs							
Total	6						
Analogue (type)	4 (0-5 V; 4-20 mA; NTC; 0-10 V)						
Digital (type)	2						
Outputs							
Electronic valve	Bipolar						
Auxiliary relay	5(2) A @250 V						
Other specifications							
Connectivity (serial) RS485	YES						
Stand-alone installation (no side knock-outs)	-					YES	

Functional diagram



Product part number

Options:
N= display not connectable
K= display not connectable, stand-alone installation
S= display connectable
C= display connectable, stand-alone installation

W M 0 0 E _ _ _ 0 0

Ultracap:
N= not included
U= included

language:
0= no display
1= Italian

Electronic espansion valve

Complete range of bipolar electronic stepper valves for HFC, HFO, subcritical CO_2 (E^2V-Z and E^3V-S max 60 barg) and transcritical CO_2 (E^2V-CW and E^3V-CW max 140 barg). E^2V-Z, E^3V-S and E^3V-CW versions with "smart" technology, which can be disassembled and inspected, with built-in removable filter, E^2V-CW version in welded technology.

Accessories

E2VCABS*I0: shielded cable for E^2V-Z and E^2V-CW with superseal connector (* = 3, 6 and 9 m long).
E2VCABS*00: shielded cable for E^3V-S and E^3V-CW (* = 3, 6 and 9 m long).
E2VSTAS220: bipolar stator with superseal connector for E^2V-CW.

Plus

energy saving | food preservation | fast pull-down | performance

E^2V-Z (PS 60 barg)

Specifications (mm)	E2V03ZSF03	E2V03ZSF13	E2V05ZSF03	E2V05ZSF13	E2V09ZSF03	E2V09ZSF13	E2V11ZSF03	E2V11ZSF13	E2V14ZSF03	E2V14ZSF13	E2V18ZSF03	E2V18ZSF13	E2V24ZSF03	E2V24ZSF13	E2V24ZSM03	E2V24ZSM13	E2V30ZSM03	E2V30ZSM13	E2V35ZSM03	E2V35ZSM13
Stator type	Bipolar, with IP67 superseal connector																			
Fittings (in/out)	12 - 12 mm ODF														16 mm (5/8" - 5/8" ODF)					
Size (mm)	03		05		09		11		14		18		24		24		30		35	
Sight glass	YES	-	YES	-	YES	-	YES	-	YES	-	YES	-	YES	-	YES	-	YES	-	YES	-

Specifications (mm)	E2V03ZWF03	E 2V03ZWF13	E2V05ZWF03	E2V05ZWF13	E2V09ZWF03	E2V09ZWF13	E2V11ZWF03	E2V11ZWF13	E2V14ZWF03	E2V14ZWF13	E2V18ZWF03	E2V18ZWF13	E2V24ZWF03	E2V24ZWF13
Stator type	Bipolar, with IP67 superseal connector													
Fittings (in/out)	½" - ½" ODF													
Size (mm)	03		05		09		11		14		18		24	
Sight glass	YES	-	YES	-	YES	-	YES	-	YES	-	YES	-	YES	-

E^3V-S (PS 60 barg)

Specifications (mm/inch)	E3V45SSR00	E3V45SSR10	E3V55SSR00	E3V55SSR10	E3V55SSS00	E3V55SSS10	E3V65SSS00	E3V65SSS10	E3V45SWR00	E3V45SWR10	E3V55SWR00	E3V55SWR10	E3V65SWS00	E3V65SWS10
Stator type	Bipolar								Bipolar					
Fittings (in/out)	18 -22 mm				22-28 mm				3/4" - 7/8"				7/8" - 1"+1/8"	
Size (mm)	45		55				65		45		55		65	
Sight glass	YES	-	YES	-	YES	-	YES	-	YES	-	YES	-	YES	-

E^2V-CW for transcritical CO_2 (PS 140 barg)

Specifications (mm)	E2V03CWAC0	E2V05CWAC0	E2V09CWAC0	E2V11CWAC0	E2V14CWAC0	E2V18CWAC0	E2V24CWAC0
Stator type	not included (E2VSTAS220)						
Fittings (in/out)	3/8" - 3/8" ODF						
Size (mm)	03	05	09	11	14	18	24
Sight glass	-						

E^3V-CW for transcritical CO_2 (PS 140 barg)

Specifications (mm/inch)	E3V30CWM00	E3V35CWM00	E3V45CWM00	E3V55CWR00	E3V65CWR00
Stator type	Bipolar				
Fittings (in/out)	16 mm (5/8" - 5/8" ODF)			22 mm ID (7/8" - 7/8" ODF)	
Size (mm)	30	35	45	55	65
Sight glass	-				

Valve sizing table

Maximum cooling capacity (kW) based on evaporation temperature (°C)	Valve type											
	E2V									E3V		
	03	05	09	11	14	18	24	30	35	45	55	65
R404A												
0 °C	1,04	1,47	2,45	4,30	6,80	9,20	18,50	27,70	37,50	66,00	97,00	130,00
-10 °C	1,05	1,48	2,48	4,34	6,80	9,30	18,60	28,00	37,90	66,00	98,00	131,00
-30 °C	1,00	1,42	2,37	4,15	6,50	8,90	17,80	26,60	36,20	64,00	94,00	125,00
R410A												
7 °C	1,65	2,35	3,95	6,90	10,90	14,80	29,8	44,5	60,5	106,0	175,0	210,00
0 °C	1,78	2,50	4,15	7,30	11,50	15,70	31,0	46,5	63,5	112,0	165,0	220,00
-10 °C	1,80	2,60	4,35	7,60	11,90	16,30	32,5	48,5	66,0	115,0	172,0	229,00
R407C												
7 °C	1,47	2,10	3,50	6,10	9,60	13,00	26,00	39,00	53,00	93,00	137,00	183,00
0 °C	1,53	2,15	3,60	6,30	9,90	13,50	27,00	40,50	55,00	96,00	142,00	191,00
-10 °C	1,57	2,22	3,70	6,50	10,20	13,90	27,50	41,50	56,00	99,00	146,00	195,00
R407F												
0 °C	1,63	2,30	3,80	6,70	10,50	14,30	28,50	43,20	58,50	103,00	152,00	202,00
-10 °C	1,67	2,34	3,94	6,85	10,80	14,80	29,50	44,40	60,40	105,00	155,00	207,00
-30 °C	1,68	2,35	3,95	6,86	10,90	14,80	29,60	44,50	60,40	105,00	156,00	208,00
R134a												
7 °C	1,11	1,58	2,64	4,55	7,20	9,80	19,80	29,50	40,30	70,00	104,00	139,00
0 °C	1,14	1,60	2,66	4,65	7,40	10,10	20,10	30,30	41,00	72,00	106,00	142,00
-10 °C	1,12	1,61	2,63	4,60	7,20	10,10	19,60	29,30	40,00	71,00	104,00	139,00
R448A												
0 °C	1,46	2,05	3,45	6,02	9,50	12,90	25,90	38,70	52,50	92,00	136,00	182,00
-10 °C	1,49	2,12	3,52	6,15	9,70	13,30	26,50	39,50	53,80	95,00	140,00	186,00
-30 °C	1,47	2,10	3,50	6,10	9,60	13,10	26,20	39,20	53,20	94,00	138,00	184,00
R449A												
0 °C	1,43	2,02	3,38	5,90	9,30	12,70	25,30	38,00	51,50	90,00	133,00	178,00
-10 °C	1,46	2,07	3,45	6,05	9,50	13,00	25,90	38,90	52,50	92,00	137,00	182,00
-30 °C	1,45	2,05	3,40	5,95	9,40	12,80	25,60	38,30	52,00	91,00	135,00	180,00
R452A												
7 °C	1,10	1,56	2,61	4,56	7,20	9,80	19,50	29,30	39,60	70,00	103,00	138,00
0 °C	1,11	1,58	2,62	4,60	7,20	9,90	19,80	29,60	40,10	70,00	104,00	139,00
-10 °C	1,06	1,51	2,51	4,40	6,90	9,40	18,90	28,30	38,40	67,00	99,00	133,00
R513A												
7 °C	0,90	1,28	2,13	3,71	5,80	8,00	16,00	23,80	32,50	57,00	84,00	112,00
0 °C	0,93	1,31	2,20	3,83	6,00	8,20	16,50	24,80	33,50	58,00	87,00	115,00
-10 °C	0,94	1,32	2,22	3,85	6,10	8,30	16,60	25,00	33,70	59,00	88,00	117,00
R1234ze												
0 °C	0,81	1,15	1,91	3,35	5,30	7,10	14,30	21,50	29,20	51,00	76,00	101,00
-10 °C	0,83	1,19	1,98	3,47	5,40	7,40	14,80	22,30	30,20	53,00	78,00	105,00
-30 °C	0,85	1,20	2,00	3,51	5,50	7,50	15,00	22,50	30,60	54,00	79,00	106,00

Condensing temperature = 45°C, subcooling = 4°K. (The maximum cooling capacity refers to the valve when fully open)

Valve sizing table for CO_2

Maximum cooling capacity (kW) based on evaporation temperature (°C)	Valve type													
	E2V									E3V				
	03	05	09	11	14	18	24	30	35	30	35	45	55	65
R774														
0 °C	1,30	1,90	3,10	5,50	8,70	11,80	23,70	35,60	48,20	49,90	61,00	83,20	111,00	143,50
-10 °C	2,10	2,90	4,90	8,70	13,70	18,60	37,30	56,00	75,70	77,90	95,90	130,80	174,40	225,40
-30 °C	2,80	4,00	6,70	11,80	18,60	25,40	50,80	76,30	105,30	106,80	130,60	178,10	237,40	290,00

Receiver pressure = 40 bars, subcooling = 0 ° K. (The maximum cooling capacity refers to the valve when fully open)

1 ph protection modules and direct 3 ph power modules

Protection and power modules, IP65, available in the version for modular connection to the cold room panel. Single-phase version with protection via residual-current circuit breaker and management of loads up to 3HP. Three-phase version with four-pole circuit breaker and management of defrosts up to 11 kW and evaporator fans up to 4 kW.

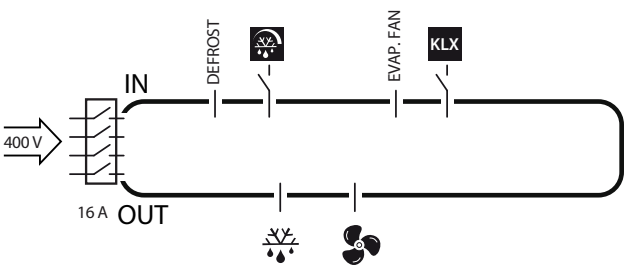
Plus

3PH
direct management

electromechanical protection

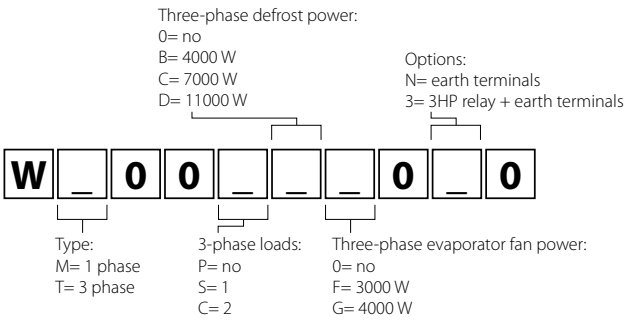
Specifications	WM00P000NN	WM00P0003N	WT00SD00N0	WT00CBF0N0	WT00CCG0N0	WT00CDG0N0
Main	1ph residual-current circuit breaker	1ph residual-current circuit breaker and 3 HP contact relay	3ph defrost	3ph defrost and 1/3ph evaporator fans		
Compatibility	SmartCella, UltraCella					
Dimensions	128x290x110 mm					
Front ingress protection	IP65					
Power supply	230 Vac		400 Vac			
Main protection (circuit breaker)	20 A @ 230 Vac		16 A @ 400 Vac	6 A @ 400 Vac	10 A @ 400 Vac	16 A @ 400 Vac
Panel protection (fuse)	-			6 A @ 230 Vac		
Inputs						
Other inputs provided (contact)	-			Evaporator fan thermal protection, safety thermostat (defrost)		
Outputs						
1ph support relay	-	3HP (30A res.)	-	-	-	-
400 V defrost	-	-	11000 W - 3ph	4000 W - 3ph	7000 W - 3ph	11000 W - 3ph
400 V/230 V evaporator fans	-	-	-	3000 W - 3ph / 1100 W - 1ph	4000 W - 3ph / 1700 W - 1ph	4000 W - 3ph / 2200 W - 1ph

Functional diagram



rif. WT00CDG0N0

Product part number



Remote 3ph power modules

Protection and power modules, IP56, for remote serial connection to UltraCella. Version for management of three-phase evaporator only with defrost up to 20 kW or version for complete management of three-phase cold room with compressor up to 20 A.

Plus

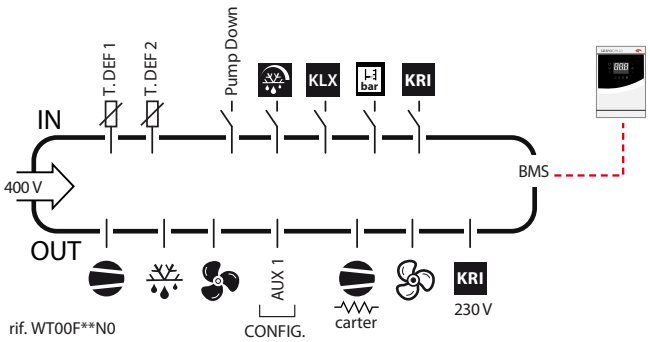
remote management

electromechanical protection

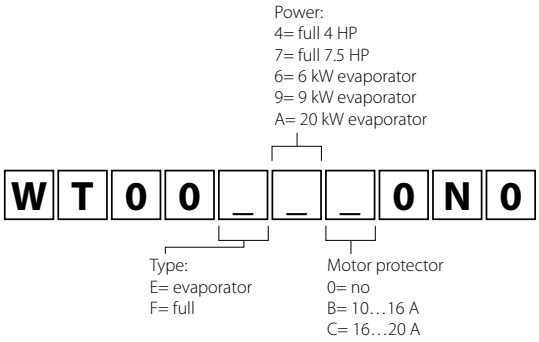
configurable by UltraCella

Specifications	WT00E600N0	WT00E900N0	WT00EA00N0	WT00F4B0N0	WT00F7C0N0
Main	Evaporator module 6 kW	Evaporator module 9 kW	Evaporator module 20 kW	Full module 4 HP	Full module 7.5 HP
Dimensions	452x380x186 mm				
Ingress protection	IP56				
Power supply	400 Vac				
Protection functions					
Compressor (manual motor starter)	-			10 to 16 A	16 to 20 A
Evaporator, condenser, defrost (circuit breaker)	16 A	25 A	40 A	16 A	25 A
Inputs					
Defrost/auxiliary defrost probe (type)	2 (NTC)				
Condenser probe (type)	-			1 (NTC)	
Condenser fan speed control	-			YES	
Evaporator safety devices (contact)	Safety thermostat (defrost), thermal protection (evaporator fans)				
Other inputs provided (contact)	-			Compressor Kriwan, high/low pressure switch, pump down	
Outputs					
Compressor	-			10 to 16 A	16 to 20 A
Defrost	6000 W - 3ph	9000 W - 3ph	20000 W - 3ph	6000 W - 3ph	9000 W - 3ph
Evaporator fan	550 W - 3ph / 0 to 10 Vdc	2000 W - 3ph / 0 to 10 Vdc	4000 W - 3ph / 0 to 10 Vdc	550 W - 3ph / 0 to 10 Vdc	2000 W - 3ph / 0 to 10 Vdc
Condenser fan 1/2	-			800 W - 1ph	
Other outputs	AUX configurable, solenoid valve				
	-			compressor crankcase heater, power supply Kriwan	
Other specifications					
Connectivity (serial) RS485	YES				

Functional diagram



Product part number



Connectivity

boss mini

System for monitoring, management and optimisation of small-medium installations. Full compatibility with mobile devices and built-in WiFi allow direct and simple access to the system, including during installation and configuration. Plug-ins are available that enable advanced features (for information, contact your local dealer)

Accessories
BMESTPWA00: 230 Vac power supply.

Specifications	BMEST00LE0	BMEST00RE0	BMEST00RS0
Version	advanced	basic	basic
Number of devices/variables logged	50/500	50/500	30/300
Dimensions	143x100x30 mm		
Power supply	24 Vdc (optional 230 Vac power supply)		
Hardware			
Built-in Wi-Fi connectivity to mobile devices	YES	NO	NO
Video output	YES: micro HDMI	NO	NO
Double Ethernet port (separation of LAN/Internet connections)	YES		
Built-in backup memory expansion	YES with SD card		
Embedded RS485 ports	1 opto-isolated 1 not opto-isolated		
Built-in digital outputs	3 outputs powered at +24Vdc		
USB host ports	1		
Status LED	2 front (ON/OFF, alarm)		
Possibility to connect an external UMTS modem to send SMS messages	YES		
Software			
Web connection with encrypted protocol (HTTPS)	YES		
Third-party device integration	YES (using device creator tool)		
Minimum variable sampling time	30 sec		
Other specifications	Modbus RTU master prot.; Modbus TCP/IP master prot.; send emails, send instant messages (Telegram), send SMS; manual and/or automatic reports as CSV and PDF; scheduled activity management		

I-O Logger

10 or 20 channel logging system for monitoring and recording at regular intervals temperature, pressure and humidity values, digital inputs and alarms. All of the information can be viewed on the built-in touch display and exported via USB key, printed and sent by email.

The devices in the installation can be integrated via an RS485 serial connection.

Specifications	PW3C000TP100	PW3C000TP200
Number of input channels	10	20
Built-in digital outputs	2	
Number of devices/variables logged	15/300	
Dimensions	380x300x120 mm	
Front ingress protection	IP56	
Power supply	230 Vac max 50W	
Main display	LCD TFT, 800x480 (WVGA), resistive touch, 64k colours	
Connectivity	2 LAN ports (internal switch); 2 embedded RS485 ports	
Storage	1 USB and 1 SD card slot	
Configurable variable sampling time	30 sec, 1 min, 3 min, 5 min, 15 min (default=15min)	
Data log capacity	1 year with sampling frequency = 15 minutes	
Other specifications	Send emails; manual and/or automatic reports in CSV format	

Accessories

Centrifugal humidifier - humiDisk

Compact centrifugal humidifier, with atomisation by spinning disk. It operates with both mains and demineralised water, automatic emptying of the tank after each operating cycle.

Specifications	UC0100DK00	UC0650D000	UC0650D100
main	humiDisk10; capacity: 1 kg/h	humiDisk65; capacity: 6.5 kg/h	humiDisk65; capacity: 6.5 kg/h
Dimensions	312x302x390 mm	565x505x610mm	
Power supply	230 Vac max 50 W		
Operating conditions	1 to 35 °C		-2 to 35 °C
Other specifications	piping + wall bracket kit	-	frost protection heater

ColdWatch

Trapped personnel alarm kit, safety device for low temperature cold rooms, compliant with EN 378-1.
Kit comprising an external control unit with siren, flashing light, backup battery and emergency button (mushroom-head with light). On request, versions are available for Denmark, Australia, Portugal, Sweden, Poland, the Netherlands.

Specifications	CM00006079	CM00005953	CM00006080	CM00006081	CM00006056	CM00006237	CM00006433
Main (language)	Italian	English	Spanish	German	French	Portuguese	Swedish
Dimensions	external control unit: 200x240x88mm; button: 64x70x73mm						
Power supply	mains: 230 Vac; backup battery: 12 Vdc 2 Ah						
Operating conditions	external control unit: -10 to 40°C, button: -25 to 40 °C						
Ingress protection	external control unit: IP54, button: IP65						
Auxiliary relay	5 A 250 Vac - NC or NO logic, selectable						

Refrigerant gas leakage detector

Refrigerant gas leak detectors with built-in or remote sensor. Integration with CAREL or third-party controllers via analogue, digital or RS485 serial communication. On request, version available with complete 230 Vac panel with flashing light and siren.

Specifications	GDW*S02A00	GDW*S04A00	GDW*S06A00	GDW*S08A00	GDW*S09A00	GDW*S11A00	GDW*S18A00	GDW*I20A00
Refrigerant	R134a	R404A	R407F	R448A	R449A	R452A	R513A	R744
Dimensions	built-in: 165×165×87 mm - remote: 115×136×68 mm							
Power supply	24 Vac / 19.5-28.5 Vdc							
Operating conditions	from -40°C to 50°C							
Ingress protection	IP66							
Outputs	1 analogue output: 4-20 mA, 0-5 V, 0-10 V, 1-5 V, 2-10 V - 3 digital outputs							
Communication	Bluetooth - RS485 Modbus serial							

* : B = built-in sensor, R = remote sensor

Sensors

Range of sensors and transducers for measuring temperature, temperature/ humidity and pressure. Suitable for installation inside the cold room and/or on the evaporator.

		Description	Operating conditions	Cable length (m)
	Active sensors - temperature and humidity			
T AMB H AMB	DPPC112000	Power supply: 18/32 Vdc - 12/24 Vac Output: 0 to 10 Vdc	Temperature (-10 to 60°C) and humidity (10 to 90% RH)	-
	DPPC212000	Power supply: 18/32 Vdc - 12/24 Vac Output: 0 to 10 Vdc	Temperature (-20 to 70 °C) and humidity (0 to 100 % RH)	-
	DPPC110000	Power supply: 8/32 Vdc - 12/24 Vac Configurable output: -0.5 to 1 Vdc or 4 to 20 mA	Temperature (-10 to 60°C) and humidity (10 to 90% RH)	-
	DPPC210000	Power supply: 8/32 Vdc - 12/24 Vac Configurable output: -0.5 to 1 Vdc or 4 to 20 mA	Temperature (-20 to 70 °C) and humidity (0 to 100% RH)	-
	Temperature sensors			
T AMB T DEF T SH	NTC015HP03	NTC HP probe	-50 to 105 °C	1,5
	NTC030HP03	NTC HP probe	-50 to 105 °C	3
	NTC060HP03	NTC HP probe	-50 to 105 °C	6
	NTC030HF03	NTC HF probe (strap-on)	-50 to 90 °C	3
	NTC060HF03	NTC HF probe (strap-on)	-50 to 90 °C	6
	Ratiometric pressure transducers			
P SH	SPKT0053P0	0 to 5 V ratiometric	-1 to 4.2 bars	-
	SPKT0013P0	0 to 5 V ratiometric	-1 to 9.3 bars	-
	SPKT00E3P0	0 to 5 V ratiometric	-1 to 12.8 bars	-
	SPKT0043P0	0 to 5 V ratiometric	0 to 17.3 bars	-
	SPKT00F3P0	0 to 5 V ratiometric	0 to 20.7 bars	-
	SPKT0033P0	0 to 5 V ratiometric	0 to 34.5 bars	-
	SPKT00B6P0	0 to 5 V ratiometric	0 to 45 bars	-
	SPKT00G1S0	0 to 5 V ratiometric	0 to 60 bars	-
	SPKT00L1S0	0 to 5 V ratiometric	0 to 90 bars	-
	4 - 20 mA pressure transducers			
P SH	SPKT0021C3	4 to 20 mA	-0.5 to 7 bars	-
	SPKT0011C3	4 to 20 mA	0 to 10 bars	-
	SPKT0041C0	4 to 20 mA	0 to 18.2 bars	-
	SPKT0031C3	4 to 20 mA	0 to 30 bars	-
	SPKT00B1C3	4 to 20 mA	0 to 44.8 bars	-
	SPKT00G1C0	4 to 20mA	0 to 60 bars	-
	Pressure sensor cables			
	SPKC002313	Cable with IP67 connector	-20 to 105 °C	2
	SPKC005313	Cable with IP67 connector	-20 to 105 °C	5
	SPKC00A310	Cable with IP67 connector	-20 to 105 °C	12

Information and support

In addition to the corporate website www.carel.com and the Customer Service department, available at cst@carel.com, CAREL provides a series of before- and after-sales support services on its products and solutions.

Tools

Electronic valve sizing tool
Available for air-conditioning and refrigeration applications, including for CO_2 systems.
https://exvselectiontool.carel.com/ExVLab/index.jsp

Knowledge sharing area

- Before- and after-sales training and support material;
- software for updating products and supervision systems;
- document repository: certification and declarations.

https://ksa.carel.com

Apps

Quick Finder
the selection tool for refrigeration applications, designed and developed for distributors and installers.
Available for Android and IOS
https://www.carel.com/apps

Video

The official CAREL You Tube channel features videos presenting the CAREL product solutions, tutorials for correct installation and configuration, interviews during exhibitions and events and much more.

CAREL UltraCella installation

CAREL E²V-Z tutorial

CAREL boss tutorial

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