µchiller process

The solution for chillers in industry

Connected Efficiency

The complete solution for process chillers with ON/OFF and BLDC compressors

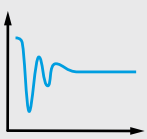
The controller manages traditional process chiller functions plus high-efficiency modes with brushless DC compressors and innovative connectivity services.

- integrated management of BLDC compressors and electronic expansion valves;
- hot gas bypass and storage tank management;
- independent auxiliary control with autotuning;
- integrated connectivity to the display with dedicated app for installers and/or maintenance technicians;
- data logs can be exported in the event of serious alarms.

European eco-design regulations, specifically "ENER Lot 21" (Regulation 2016/2281 of the European Commission) define new efficiency and performance requirements for process chillers. These come at a time when connectivity is becoming increasingly important for industrial machinery: a situation that will further drive the growth of IoT in industry.

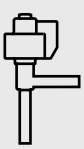
It is therefore essential to combine the reliability of traditional design with innovative elements for high efficiency and connectivity so as to respond to the demands of end users and comply with regulations.

µChiller Process is the CAREL solution that meets these needs, allowing complete management of process chillers with On-Off and variable-capacity BLDC compressors, as well as innovative connectivity features. In addition, the thermostat or external control function, which typically requires a separate device, is included on µChiller Process using an auxiliary regulation loop, with autotuning of the three PID settings.



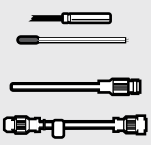
Auxiliary loop with autotuning

An independent control loop can be set in addition the main one, with PID settings automatically determined by the controller.



ExV for hot gas bypass

The precision and wide range of modulation of ExV electronic valves are made available to also manage the hot gas bypass.



Wide choice of probes

NTC and Pt1000, level sensors and pressure transducers are all managed and available in the CAREL portfolio.

APPLICA

The distinctive feature of the µChiller Process range is wireless connectivity with NFC (Near Field Communication) as standard, as well as Bluetooth on dedicated models, allowing interaction with mobile devices using the CAREL "APPLICA" app, making it easier to configure parameters and commission the unit in the field. On specific models, a data log relating to a serious alarm event can also be exported.

µChiller Process APPLICA

APPLICA for µChiller Process, available for smartphones, has been designed to revolutionise and simplify commissioning and maintenance of process chillers, all simply using a mobile device. This is made possible by:

- a simple and intuitive user interface;
- no new technology or experience needed: smartphones and apps are commonly used by over 80% of the world's population;
- wireless connectivity with devices via Bluetooth and NFC, thus avoiding the need for additional wiring in the field.

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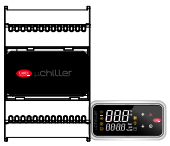
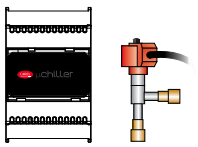
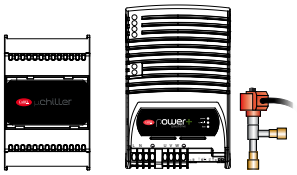
Available versions

µChiller Process has been designed on a flexible and scalable platform.
The table below summarises the technical specifications that differentiate the three models available.

Feature	Basic	Enhanced	High efficiency
			
Panel mounting	●		
DIN rail mounting	●	●	●
EVD EVO or EVD mini driver*	●	●	●
Built-in driver for unipolar EEV*		●	●
Number of refrigerant circuits managed	1	1	1
Number of compressors per circuit	max 2	max 2	max 2 (1BLDC + 1 On/Off)
Data logging**	●	●	●
Modbus BMS RS485	●	●	●
LED display	built-in (panel) external (DIN)	external	external
Clock	●	●	●
NFC	●	●	●
Bluetooth	option on specific models	option on specific models	option on specific models
Power supply	24 V	24 V	24 V
Analogue inputs	6 (panel) 7 (DIN)	7	7
Digital inputs	5 (panel) 6 (DIN)	6	6
Analogue outputs	2	2	2
Digital outputs	5 (panel) no SSR 5 (DIN) + 1SSR	5 + 1 SSR	5 + 1SSR

* freely configurable for superheat control and/or hot gas bypass
** available on specific models

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