E²V-CW

High performance and easy installation

Connected Efficiency

CAREL technology for transcritical CO_2 systems with copper pipe circuits

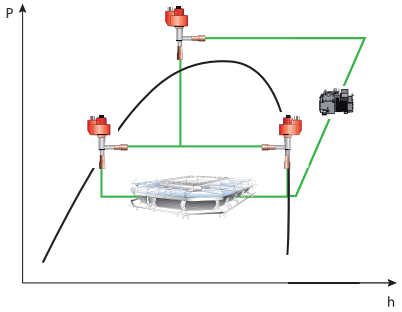
Consolidating the offering of CO_2 flow control valves for both expansion and high pressure, the new E^2V-CW series simplifies installation, with copper fittings suitable for applications up to 140 bars (2030 PSI).

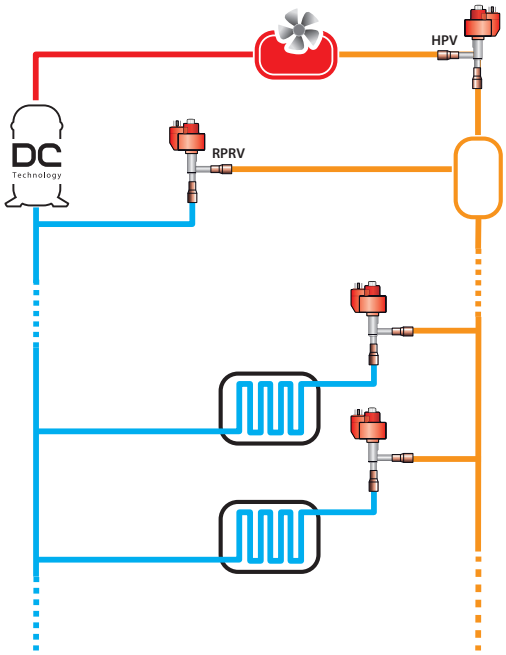
- Equipercentile control
- MWP up to 140 barg (2031 PSIG)
- Excellent tightness on closing
- Compact dimensions

Precision

Perfect adjustment of refrigerant flow guaranteed by equipercentile control means a reduction in operating costs and greater stability of the controlled temperature.
This feature is particularly effective at part loads, the typical operation of transcritical valves (HPV and RPRV) used to control CO_2 refrigeration systems.

Specifically, the E^2V-CW range is perfect for small and medium-sized condensing units fitted with the CAREL Hecu CO_2 controller.





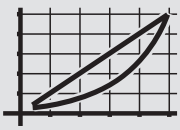
Reliability

The construction philosophy of CAREL EXVs again confirmed in the E^2V-CW involves direct coupling of the motor to the valve member: the CAREL design in fact features a high torque motor, eliminating the need for gears, a source of unreliability.

The reliability of CAREL valves for CO_2 is also guaranteed by extensive, rigorous development tests: > 1.2 billion steps, according to the AHRI standard corresponding to more than 10 years' operation in real applications.

Savings

Copper is nowadays also frequently preferred to steel in high pressure piping circuits. The CAREL E^2V-CW has been designed to support OEMs and installers in these applications, facilitating assembly of the circuit and guaranteeing savings in both installation times and labour costs.



Equipercentile profile

This ensures precise control in all working conditions, from part load to full capacity.

Excellent tightness on closing

In the closed position, the valve ensures excellent tightness to leakages due to the calibrated spring that exerts steady and constant pressure on the Teflon gasket around the valve opening.

High reliability

The gearless valve mechanism, combined with intensive tests of up to 1.2 billion steps under heavy-duty conditions, ensure the highest valve reliability in a variety of applications.

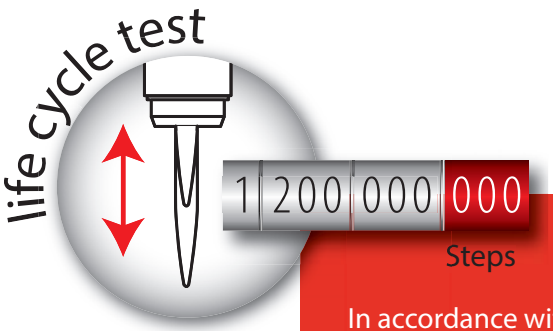
Hermetic seal

The spring-loaded valve member with Teflon gasket ensures constant tightening even when the valve is off, is the technological heart of the hermetic seal ensured by CAREL valves, once again fully confirmed in the E²V-CW series.

Heavy-duty applications

Transcritical CO_2 circuits represent the most extreme application in terms of the need to withstand high pressures. Thanks to a maximum operating pressure of 140 barg, E²V-CW can also be used as a back-pressure valve downstream of the gas cooler, offering extreme simplicity and fast installation, with the guarantee of a product that has passed the most stringent tests, including UL certification.

A metal filter completes the standard equipment on E²V-CW, protecting the valve from any impurities that may be in the circuit.
The E²V-CW stator can be chosen from a wide range of versions, including E2VSTAS*3* designed for installations in particularly demanding temperature and humidity conditions.



In accordance with the CAREL development procedure, E2V-CW has also undergone lifetime testing to confirm reliable operation even after 1.2 billion steps completed in the most demanding working conditions.

A complete range

A wide range (7 models) for all applications in transcritical CO_2 circuits.

		E2V03	E2V05	E2V09	E2V11	E2V14	E2V18	E2V24
Flow coefficient	kV [m3/h] @ 1 bar Δ p	0.009	0.014	0.024	0.042	0.066	0.09	0.180
	Cv [USGPM] @ 1 PSI Δ p	0.011	0.017	0.028	0.049	0.076	0.10	0.21

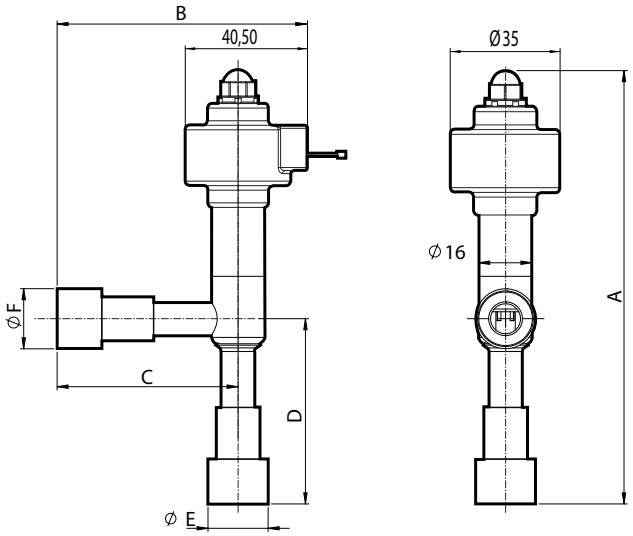
Accuracy, proven reliability, application versatility, hermetic seal on closing and a very high maximum working pressure (MWP = 140 barg) summarise the very high performance that E2V-CW can offer every CO_2 circuit.

CAREL E²V-CWA operating specifications

Maximum operating pressure (MOP):	140 barg (2031 PSI)
Maximum operating pressure difference (MOPD)	120 barg (1740 PSI) - for E2V24C 85 bar (1233 PSI)
Burst pressure	> 700 barg (> 10150 PSIG) - limits verified in UL testing
Refrigerant temperature	-40T70°C(-40T158°F)
Ambient temperature	-30T70°C(-22T158°F)

Contact CAREL for different operating conditions or alternative refrigerants.

Dimensions



Code	A	B	C	D	E	F
E2V**CWAC*	125.8 mm (4.95 inch)	82.6 mm (3.25 inch)	52.3 mm (2.06 inch)	53.3 mm (2.10 inch)	In 9.5/ Out 13 mm (in 0/8 out 0.51 inch)	In 9.5/ Out 13 mm (in 0/8 out 0.51 inch)

exv lab
the right choice

CAREL exv lab is the tool that helps users select and use CAREL valves. It is a web environment where both expert designers and novice users can find tools to select the right valve for their application, and identify the possible operating range of the EXV.

https://exvselectiontool.CAREL.com/ExVLab/

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