



CAREL

E⁴V-F

The hermetic valve
for medium-capacity chillers

Connected Efficiency

E⁴V-F electronic expansion valve

Greater application flexibility and consolidated technological quality

- **Maximum versatility: sealed stainless steel structure, specifically designed for air-conditioning applications;**
- **Precise superheat control in all operating conditions;**
- **Simplified part numbers, specifically developed for OEMs.**

The main features of the new E4V-F include faster installation and separate multi-packs for valves and stators, adopted specifically to simplify logistics for OEMs.

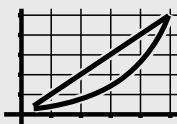
In addition to the renowned control quality and operating reliability of Carel expansion valves, the new E4V-F also introduces the benefits of hermetically-sealed construction on products in this capacity range (up to 180 kW in accordance with AHRI 540), allowing all of the qualities and characteristics of the latest refrigerants to be fully exploited. All at a very competitive price.

Construction

E4V-F is a hermetic valve, comprising a fully stainless steel body, copper fittings and moisture indicator available as an option.

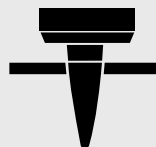
It is manufactured on modern semi-automatic production lines by qualified personnel, applying rigorous quality procedures.

Laser welding robots ensure a sealed construction for maximum precision and repeatability, making E4V-F a product that meets the highest product standards: E4V-F is UL certified.



Equipercentile profile

Ensures accurate control even in operation at part loads.



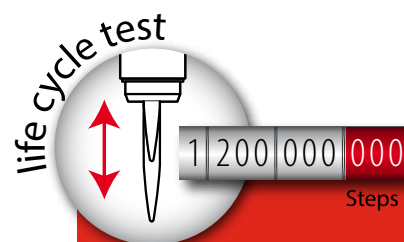
Perfect tightness on closing

In the closed position, the valve guarantees excellent tightness to refrigerant, thanks to the Teflon gasket on the valve member, and the calibrated spring that presses this against the valve port.



High reliability and high-quality materials

The valve's mechanism is made entirely from high-quality materials. The gearless construction means the mechanism is reliable and durable, ensuring long product life.



Precise control

E4V-F guarantees equipercetile control, thus ensuring the highest precision at each specific flow-rate.

This feature is especially effective at part loads, as typically occurs in variable flow-rate circuits, including those with inverter compressors, an area in which CAREL has acquired considerable experience.

E4V-F is a bidirectional valve, giving high performance and precise control in both directions of flow.

Performance

E4V-F ensures perfect CAREL-quality tightness, even with very high pressure differentials, being able to manage a maximum working pressure of up to 48 barg, with UL certification.

The patented design (patented in Europe, USA and China), modern manufacturing procedures and strict quality controls ensure that CAREL performance is maintained throughout the valve's lifetime.

Part numbers

To simplify materials-logistics management, E4V-F is available in separate packs of valves and stators.

In accordance with the CAREL development procedure, E4V-F has also undergone lifetime testing to confirm reliable operation even after 1.2 billion steps completed in the most demanding working conditions.

Technical specifications table

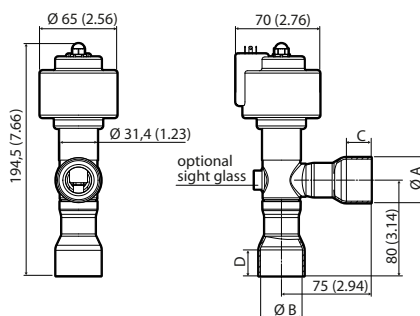
Refrigerants	Group 1 (hazardous refrigerants): R1234yf, R32, R290, R452B, R454B, R600, R600a...
	Group 2 (non-hazardous refrigerants): R1234ze, R134a, R404A, R407C, R407H, R410A, R427A, R452A, R744...
Maximum working pressure (Ps/MWP):	Group 1 (hazardous refrigerants): 48 barg (696 psi _g); E4V**FST**: 31 barg (450 psi _g) Group 2 (non-hazardous refrigerants): 48 barg (696 psi _g)
Maximum operating pressure differential (MOPD):	E4V65F: 40 bar / 580 PSI E4V85F: 40 bar / 580 PSI E4V95F: 35 bar / 507 PSI
Operating cinditions	Room: -30T70°C (-22T158°F) Refrigerant: -40T70°C(-400T158°F)
Leakage values:	Internal: <25 g/min of N2 at 30 bar pressure differential in direct flow mode
Control characteristic:	Equipercetile
Number of control steps:	480
Valve member stroke length:	14 mm
Life test (number of complete cycles):	1 million
Direction of flow:	Both direct and reverse
Ingress protection against water (%):	IP67
Available fittings (ODF):	E4V**FSS**: Ø28 mm E4V**FST**: Ø35 mm (1.3/8") E4V**FWS**: 1.1/8"
Certification	CE/PED: Art. 4, par. 3; E4V**FST** with Group 1 fluids: Cat. I UL USA: File nr. YIOZ2.E304579

Cooling capacity kW (tonnes)

	R410A	PROPANE (R290)	R32	R134a	R1234yf	R1234ze
E4V65F	172 (48,9)	139 (39,5)	254 (72,2)	98 (27,8)	70 (19,9)	68(19,3)
E4V85F	229 (65,1)	185 (52,6)	338 (96,1)	131 (37,2)	94 (26,7)	91 (25,8)
E4V95F	330 (93,8)	267 (75,9)	487 (138,5)	188 (53,4)	135 (38,3)	132 (37,5)

Cooling capacity calculated in the following conditions: tevap = 4.4°C (40°F), tcond = 38°C (100°F), SC = 1.0K (1.8°R).

Dimensions



Hermetic electronic valve code

Part number	Description	A	B	C	D
E4V65FSSB1	E4V-65 - Ø28 mm ODF, without stator - without moisture indicator - multiple pack of 5 pieces	Ø28 mm (1.10")		18,5mm (0.73")	
E4V85FSSB1	E4V-85 - Ø28 mm ODF - without stator - without moisture indicator - multiple pack of 5 pieces				
E4V95FSSB1	E4V-95 - Ø28 mm ODF - without stator - without moisture indicator - multiple pack of 5 pieces				
E4V65FSSA1	E4V-65 - Ø28 mm ODF - without stator - with moisture indicator - multiple pack of 5 pieces				
E4V85FSSA1	E4V-85 - Ø28 mm ODF - without stator - with moisture indicator - multiple pack of 5 pieces				
E4V95FSSA1	E4V-95 - Ø28 mm ODF - without stator - with moisture indicator - multiple pack of 5 pieces				
E4V65FWSB1	E4V-65 - 1.1/8" ODF - without stator - without moisture indicator - multiple pack of 5 pieces	1.1/8" (Ø28 mm)		0.73" (18,5 mm)	
E4V85FWSB1	E4V-85 - 1.1/8" ODF - without stator - without moisture indicator - multiple pack of 5 pieces				
E4V95FWSB1	E4V-95 - 1.1/8" ODF - without stator - without moisture indicator - multiple pack of 5 pieces				
E4V85FWSA1	E4V-85 - 1.1/8" ODF - without stator - with moisture indicator - multiple pack of 5 pieces				
E4V85FWSA1	E4V-85 - 1.1/8" ODF - without stator - with moisture indicator - multiple pack of 5 pieces				
E4V95FWSA1	E4V-95 - 1.1/8" ODF - without stator - with moisture indicator - multiple pack of 5 pieces				
E4V85FSTB1	E4V-85 - Ø35 mm (1.3/8") ODF - without stator - without moisture indicator - multiple pack of 5 pieces	Ø35 mm (1.3/8")		23 mm (0.91")	
E4V85FSTB1	E4V-95 - Ø35 mm (1.3/8") ODF - without stator - without moisture indicator - multiple pack of 5 pieces				
E4V85FSTA1	E4V-85 - Ø35 mm (1.3/8") ODF - without stator - with moisture indicator - multiple pack of 5 pieces				
E4V95FSTA1	E4V-95 - Ø35 mm (1.3/8") ODF - without stator - with moisture indicator - multiple pack of 5 pieces				
E4VSTA0101	Stator for E4VF - E4VB 2.0 - E4VH 2.0 multiple pack of 5 pieces				



exvLab
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/>

Headquarters ITALY

CAREL INDUSTRIES HQs
Via dell'Industria, 11
35020 Brugine - Padova (Italy)
Tel. (+39) 0499 716611
Fax (+39) 0499 716600
carel@carel.com

For more information

CAREL Poland - www.carel.pl
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CAREL Asia - www.carel.hk
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