ENGINEERING
TOMORROW

EVR series of solenoid valves

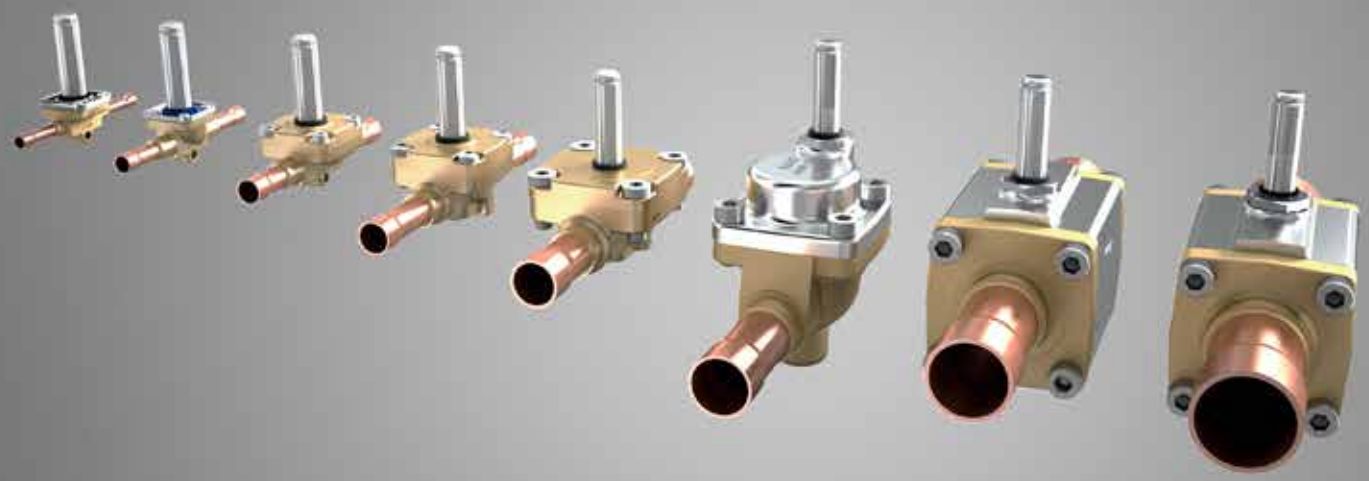
Enhanced **reliability** and **savings** in HVACR applications

The Danfoss range of EVR solenoid valves has undergone a wide series of improvements throughout 2017. Reinforcements and rationalization make them capable of accommodating the higher pressures of refrigerants and a broader range of applications while reducing the references, inventory, and servicing time.

New streamlined platform approved with more than

25

refrigerants reduces inventory



danfoss.com

Improved performance and reliability **in standard** and niche **applications**

The new EVR range covers four product envelopes, including valves to replace previous Danfoss models.

Typical applications include refrigeration systems in the air conditioning and food service industry, such as walk-in cold rooms, display freezers, and refrigerators. EVR valves are also suitable for icemakers and ice cream machines where they undergo additional stress due to the rapid defrosting cycles and/or short hot gas injection cycles, depending on the application. EVR works smoothly and reliably even in such challenging systems.

The more robust EVR valves improve the reliability and service life of the products in which they are used.

The streamlining of the range makes life easier for you since you can catalog and stock fewer articles that meet a broader range of needs.

As a manufacturer, the reduction in the number of models means the valves you need are more likely to be available. It will help you manage inventory and avoid logistics issues.

EVR offers numerous opportunities to improve the reliability of your food service solutions. In cold rooms and food retail display cases, for example, a well-functioning system with a long service life minimizes the risks of contamination.

Upgrades and **new features compatible** with modern refrigerants

EVR valves are optimized for the business success of our customers, manufacturers, and end users. All innovations were tested to ensure they improved the product and optimized it to meet the needs of today's customers.

More robust design and system reliability
Several design features enable operation with a higher maximum working pressure (MWP). The new EVR range is compatible with higher pressure refrigerants such as R410A, and suitable for applications such as heat pumps and chillers running in extreme ambient temperatures during periods of maximum load.

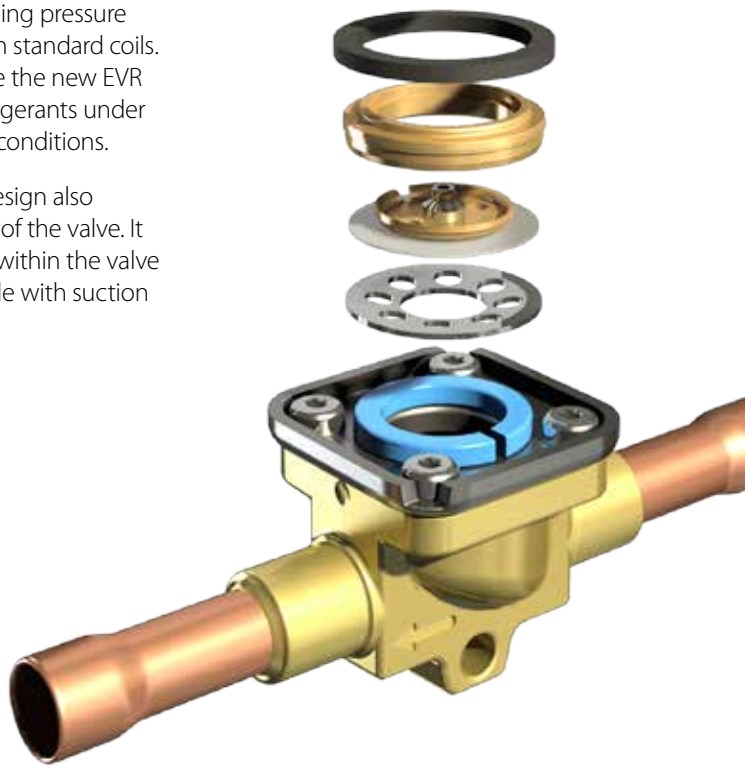
- Increased diameter of cover screws enhance the reinforced covers for greater reliability under higher pressures.
- Robust housing design and stronger covers make EVR valves more reliable, extending their MWP up to 45 bar.
- Thicker copper connections reduce the risk of valve failure raising MWP.
- Improved gasket design increases the valve's robustness and reliability.

Enhanced functionality
Other design features within the new EVR range enhance its functionality making it suitable for applications, which operate at part load for long periods, such as chillers. It can also now be used in applications such as icemakers and ice cream machines where a suction line solenoid valve is required for defrosting.

- Single-layer diaphragm instead of the usual two optimizes the opening of the valve and increases versatility and reliability. In high-capacity applications and tough operating conditions (e.g. hot gas defrost), the Danfoss single-layer solid 'monophragm' eliminates the risk of delamination.
- New pilot orifice design allows a higher maximum opening pressure differential (MOPD) with standard coils. This means you can use the new EVR with high-pressure refrigerants under demanding operating conditions.
- The new pilot orifice design also optimizes the opening of the valve. It reduces pressure drop within the valve and makes it compatible with suction line applications.

Easier service
EVR valves are ideal for applications such as food retail display cases since they enable service and maintenance to be carried out quickly, with no disruption to store trading hours. There is no need to de-solder the complete valve and put a new one into the system. Just leave the valve body in place, replace the internal parts as required and you can get the system up and running again quickly. Service kits are also available.

- New EVR features the same easy and fast serviceability as the current solenoid valves from Danfoss.



Switch to lower wattage coils
In addition to all the features mentioned above, the overall improvements in our EVR valves open up the possibility of changing to standard coils in applications where the operating conditions allow it. This would further streamline logistics and reduce your costs.

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Fewer models. Broader scope.

Our revitalized EVR range saves on applied, development, and storage costs. Fewer more versatile products are applicable to more applications and refrigerants while being backward compatible.

30%
Range streamlining for optimized logistics

Air Conditioning:
Superior performance in high temperature applications (105 °C) and optimized for variable refrigerant flow conditions due to superior max. OPD and min. OPD. Available connection sizes from 6 mm to 42 mm - 1/4" to 2 1/8". Reliable and versatile design.

Refrigeration:
Reliable and versatile valve platform covers a wide range of functions, applications, and refrigerants. Improves life of refrigeration systems contributing to food safety while reducing energy consumption. Best in class product features.

Food Retail:
One platform approved for lower-GWP (Global Warming Potential) refrigerants, including R290 propane. Tight solenoid closure safeguards the system and with enhanced flow characteristics for high efficiency.

Cooling capacity in kW	R134a			R290			R600a			R407C			R22			R404A			R410A			R32		
	Liquid	Suction vapour	Hot gas	Liquid	Suction vapour	Hot gas	Liquid	Suction vapour	Hot gas	Liquid	Suction vapour	Hot gas	Liquid	Suction vapour	Hot gas	Liquid	Suction vapour	Hot gas	Liquid	Suction vapour	Hot gas	Liquid	Suction vapour	Hot gas
EVR 2	2.8	0.2	1.1	3.4	0.4	1.6	3.4	0.2	1.0	2.9	0.3	1.5	3.0	0.3	1.4	2.0	0.3	1.2	3.0	0.4	1.8	4.2	0.5	2.3
EVR 3	4.8	0.4	1.9	5.8	0.7	2.8	5.9	0.4	1.7	5.0	0.5	2.6	5.2	0.6	2.4	3.5	0.5	2.1	5.1	0.7	3.0	7.3	0.9	3.9
EVR 4	13.0	1.1	5.1	15.7	1.9	7.6	15.8	1.1	4.7	13.4	1.4	7.0	14.1	1.6	6.6	9.5	1.4	5.6	13.8	2.0	8.2	19.7	2.5	10.6
EVR 6 man	14.9	1.3	5.9	17.9	2.2	8.7	18.0	1.2	5.4	15.4	1.6	7.9	16.1	1.8	7.5	10.9	1.6	6.4	15.8	2.2	9.4	22.6	2.9	12.1
EVR 6	18.6	1.6	7.3	22.4	2.7	10.9	22.6	1.5	6.7	19.2	2.1	9.9	20.1	2.2	9.4	13.6	1.9	8.0	19.7	2.8	11.7	28.2	3.6	15.2
EVR 8 man	18.6	1.6	7.3	22.4	2.7	10.9	22.6	1.5	6.7	19.2	2.1	9.9	20.1	2.2	9.4	13.6	1.9	8.0	19.7	2.8	11.7	28.2	3.6	15.2
EVR 8	21.4	1.9	8.4	25.8	3.1	12.5	25.9	1.7	7.7	22.1	2.4	11.4	23.1	2.6	10.8	15.7	2.2	9.2	22.7	3.2	13.5	32.4	4.1	17.4
EVR 10 man	39.1	3.4	15.4	47.0	5.7	22.9	47.4	3.2	14.1	40.3	4.3	20.8	42.2	4.7	19.7	28.6	4.1	16.8	41.4	5.9	24.6	59.2	7.5	31.8
EVR 10	40.9	3.6	16.1	49.3	6.0	24.0	49.6	3.3	14.7	42.2	4.5	21.8	44.3	4.9	20.6	30.0	4.3	17.6	43.4	6.1	25.7	62.0	7.9	33.3
EVR 15	61.4	5.3	24.2	73.9	9.0	36.0	74.4	5.0	22.1	63.3	6.8	32.7	66.4	7.3	30.9	45.0	6.4	26.4	65.1	9.2	38.6	93.0	11.8	50.0
EVR 18	72.6	6.3	28.6	87.3	10.6	42.5	87.9	5.9	26.1	74.8	8.0	38.7	78.4	8.7	36.5	53.1	7.6	31.2	76.9	10.9	45.6	109.9	13.9	59.1
EVR 20	111.7	9.7	44.0	134.4	16.3	65.4	135.3	9.1	40.1	115.1	12.3	59.5	120.7	13.3	56.2	81.7	11.6	48.1	118.3	16.7	70.2	169.1	21.4	90.9
EVR 22	111.7	9.7	44.0	134.4	16.3	65.4	135.3	9.1	40.1	115.1	12.3	59.5	120.7	13.3	56.2	81.7	11.6	48.1	118.3	16.7	70.2	169.1	21.4	90.9
EVR 25	138.2	11.8	71.9							142.5	15.1	97.2	149.4	16.4	91.8	101.2	14.3	78.5	146.4	20.6	114.6			
EVR 32	235.4	20.1	122.5							242.7	25.7	165.7	254.5	27.9	156.4	172.3	24.3	133.8	249.5	35.1	195.3			
EVR 40	341.1	29.1	177.6							351.7	37.3	240.1	368.7	40.4	226.7	249.7	35.2	193.8	361.5	50.9	283.0			

Liquid
Operating conditions

Pressure drop across valve	0.150 bar
Liquid temperature	25.0 °C
Subcooling	4.0 K
Evaporating temperature	-10.0 °C
Superheat	0 K

Suction vapour
Operating conditions

Pressure drop across valve	0.150 bar
Liquid temperature	25.0 °C
Subcooling	4.0 K
Evaporating temperature	-10.0 °C
Superheat	0 K

Hot gas
Operating conditions

Pressure drop across valve	0.800 bar
Liquid temaperature	40.0 °C
Subcooling	4.0 K
Evaporating temperature	-10.0 °C
Superheat	10 K

Note: only solder versions are allowed for flammable refrigerants. This product is approved for R290, R600a and R1270 by ignition source assessment in accordance to standard EN13463-1.

For more information with other refrigerants, scan here and access our Danfoss Coolselector® software.
coolselector.danfoss.com

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