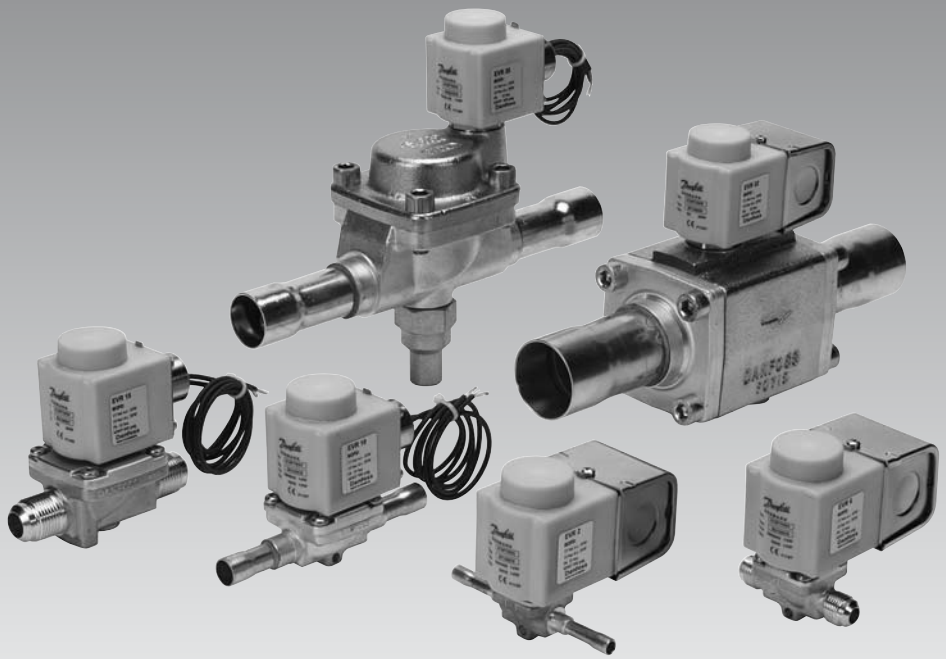


Solenoid valves
Type EVR 2 to 40

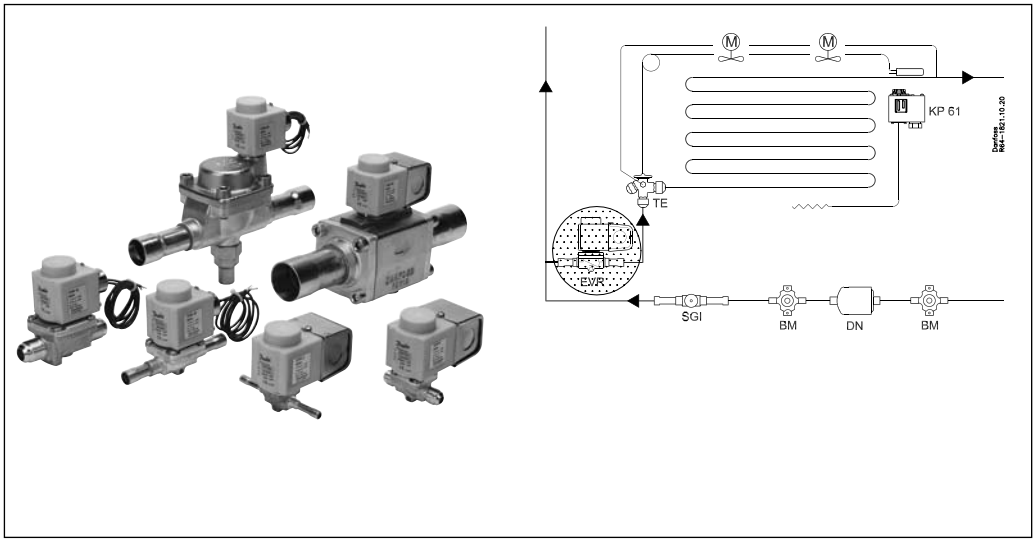
REFRIGERATION AND
AIR CONDITIONING

Technical leaflet

Contents

Metric conversions
1 psi = 0.07 bar
5/9 (t1°F – 32) = t_2°C
1 ton = 3.5 kW
1 in. = 25.4 mm
1 ft = 0.3 m
1 lb = 0.454 kg
1 oz = 28.35
US gal/min = 0.86 m^3/h

Indtroduction



This leaflet presents a newly extended program of Danfoss solenoid valves, type EVR. The program includes a new coil design, type GP, with a quick and easy "clip-on" system.

EVR is a direct or servo operated solenoid valve for liquid, suction, and hot gas lines using fluorinated refrigerants.
EVR valves are supplied as separate components; valve body and coil, if required, can be ordered completely.

Features

- A complete range of solenoid valves for refrigeration, freezing and air conditioning systems
- Normally closed (NC) and normally open (NO) versions available
- AC and DC coils are interchangeable on all valve body versions
- Use with any fluorinated refrigerant
- Designed for media temperatures up to 220°F
- Flare connections up to 5/8 in.
- Solder connections up to 2-1/8 in.
- Solder versions have extended connections; there is no need to dismantle the valve when soldering

Approvals

Note:
These approvals are only recognized when one of the EVR series of solenoid valves found in this leaflet is combined with a GP general purpose coil.

c UL us LISTED UL listed, file MH 7648

Metric conversions
$5/9\ (t_1°F - 32) = t_2°C$
1 in. = 25.4 mm

Technical data

Refrigerant
R 22, R 134a, R 404A, R 507 etc.

Temperature of medium
– 40 to 220°F
Maximum 265°F during defrosting

Maximum working pressure
EVR 2 to 10: MWP = 500 psig
EVR 15 to 22: MWP = 460 psig
EVR 25 to 40: MWP = 460 psig

Enclosure of coil
NEMA 2 or NEMA 4

Valve type	Opening differential pressure Δp psi			Medium temperature	Maximum working pressure MWP	Cv value [1]
	Minimum	Maximum (= MOPD) liquid [2]				
		AC	DC	°F	psig	gal/min
EVR 2	0.0	350	260	– 40 to 220	655	0.19
EVR 3	0.0	300	260	– 40 to 220	655	0.32
EVR 4	0.7	300	260	– 40 to 220	500	0.66
EVR 6	0.7	300	260 [3]	– 40 to 220	500	0.93
EVR 8	0.7	300	260	– 40 to 220	500	1.3
EVR 10	0.7	300	260 [3]	– 40 to 220	500	2.2
EVR 15	0.7	300	260 [3]	– 40 to 220	500	3.0
EVR 18	0.7	300	260	– 40 to 220	500	3.9
EVR 20	0.7	300 [4]	190	– 40 to 220	500	5.8
EVR 22	0.7	300 [4]	190	– 40 to 220	500	6.9
EVR 25	1.0	300	260	– 40 to 220	460	12.0
EVR 32	1.0	300	260	– 40 to 220	460	18.0
EVR 40	1.0	300	260	– 40 to 220	460	29.0

[1] C_v value is the water flow in gal/min at a pressure drop across valve Δp = 1 psi, ρ = 10 lbs/gal
[2] MOPD for media in gas form is approximately 14 psi greater
[3] EVR (NO): 300 psig
[4] EVR (NO): 275 psig

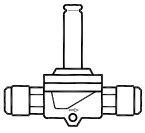
Valve type	Rated capacity1) tons								
	Liquid			Suction vapor			Hot gas		
	R 22	R 134a	R 404A/R 507	R 22	R 134a	R 404A/R 507	R 22	R 134a	R 404A/R 507
EVR 2	1.17	0.89	0.80	0.10	0.07	0.09	0.22	0.18	0.17
EVR 3	2.03	1.55	1.40	0.17	0.13	0.15	0.38	0.31	0.30
EVR 4	4.15	3.16	2.86	0.34	0.26	0.30	0.77	0.63	0.62
EVR 6	5.83	4.43	4.01	0.48	0.37	0.43	1.08	0.88	0.87
EVR 8	8.01	6.09	5.52	0.66	0.51	0.58	1.49	1.21	1.19
EVR 10	13.8	10.5	9.53	1.15	0.88	1.01	2.57	2.10	2.06
EVR 15	18.9	14.4	13.0	1.57	1.20	1.38	3.52	2.87	2.82
EVR 18	24.6	18.7	17.0	2.04	1.56	1.80	4.57	3.73	3.67
EVR 20	36.4	27.7	25.1	3.02	2.31	2.66	6.76	5.51	5.43
EVR 22	43.7	33.3	30.1	3.62	2.78	3.19	8.11	6.62	6.52
EVR 25	72.8	55.4	50.2	6.04	4.63	5.32	13.5	11.0	10.9
EVR 32	116.5	88.7	80.3	9.66	7.40	8.51	21.6	17.7	17.4
EVR 40	182.0	138.5	125.4	16.1	11.6	13.3	33.8	27.6	27.2

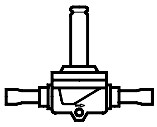
[1]) Rated liquid and suction vapor capacity are based on:
Evaporating temperature t_e = 40°F
Liquid temperature ahead of valve t_l = 100°F
Pressure drop Δp across valve
- with liquid Δp = 2 psi for R 134a
  Δp = 3 psi for R 22, R 404A and R 507
- with suction vapor Δp = 1 psi

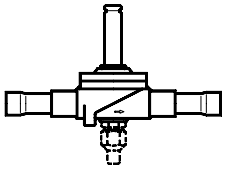
Rated hot gas capacity is based on:
Condensing temperature t_c = 100°F
Hot gas temperature t_h = 140°F
Pressure drop across valve Δp = 2 psi

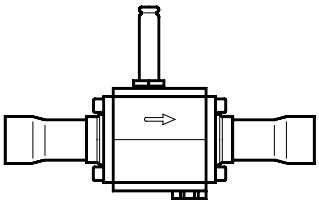
Metric conversions
1 psi = 0.07 bar
5/9 (t1°F – 32) = t2°C
1 ton = 3.5 kW
1 in. = 25.4 mm
US gal/min = 0.86 m3/h

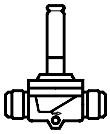
Ordering

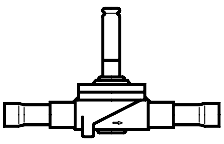












Separate valve bodies for EVR, normally closed (NC)

Type	Rated capacity R 22 (liquid) tons	Connection in.	Port size in.	C_v value gal/min	**Code nos.** valve body excl. coil		
					Flare	Solder ODF	
					Without manual stem in.	With manual stem in.	without manual stem in.
EVR 2	1.17	1/4	3/32	0.19	**32F8058**		**32F7100**
EVR 3	2.03	1/4	1/8	0.32	**32F8106**		**32F7105**
EVR 3	2.03	3/8	1/8	0.32	**32F8115**		**32F1157**
EVR 4	4.15	3/8	5/32	0.66	**32F8087**	**32F7172**	**32F7110**
EVR 4	4.15	1/2	5/32	0.66	**32F8089**		
EVR 6	5.83	3/8	15/64	0.93	**32F8071**	**32F7116**	**32F7115**
EVR 6	5.83	1/2	15/64	0.93		**32F7144**	**32F1162**
EVR 6	5.83	5/8	15/64	0.93			**32F7117**
EVR 8	8.01	3/8	5/16	1.3			**32F7120**
EVR 8	8.01	1/2	5/16	1.3		**032F7148**	**32F7121**
EVR 8	8.01	5/8	5/16	1.3			**32F7122**
EVR 10	13.8	3/8	3/8	2.2			**32F7125**
EVR 10	13.8	1/2	3/8	2.2		**32F1188**	**32F1166**
EVR 10	13.8	5/8	3/8	2.2		**32F7149**	**32F1168**
EVR 15	18.9	5/8	9/16	3.0		**32F1172**	**32F1171**
EVR 15	18.9	7/8	9/16	3.0			**32F7130**
EVR 18	24.6	7/8	19/32	3.9		**32F1004**	
EVR 18	24.6	1 1/8	19/32	3.9			
EVR 20	36.4	7/8	7/8	5.8		**32F1177**	**32F1176**
EVR 20	36.4	1 1/8	7/8	5.8		**32F2272**	
EVR 22	43.7	1 1/8	15/16	6.9		**32F7137**	**32F7145**
EVR 22	43.7	1 3/8	150/16	6.9			**32F7146**
EVR 25	72.8	1 1/8	1	12.0		**32F1190**	**32F1189**
EVR 25	72.8	1 3/8	1	12.0		**32F1194**	**32F1193**
EVR 32	116.5	1 3/8	7/8	18.0		**42H1177**	**42H1176**
EVR 32	116.5	1 5/8	7/8	18.0		**42H1179**	**42H1178**
EVR 32	116.5	2 1/8	7/8	18.0		**42H1181**	**42H1180**
EVR 40	182.0	1 5/8	1	29.0		**42H1186**	**42H1185**
EVR 40	182.0	2 1/8	1	29.0		**42H1188**	

Separate valve bodies for EVR, normally open (NO)

Type	Rated capacity R 22 (liquid) tons	Connection in.	Port size in.	C_v value gal/min	**Code nos.** valve body excl. coil	
					Flare in.	Solder ODF in.
EVR 6	5.8	3/8	1/4	0.93		**32F1164**
EVR 10	13.8	1/2	3/8	2.2		**32F1169**
EVR 15	18.9	5/8	9/16	3.0		**32F1174**

Coils, see next page

Accessories
Mounting bracket for EVR 2, 3, 4, 6 and 10
Code no. 32F0086

Metric conversions
1 psi = 0.07 bar
5/9 (t_1°F – 32) = t_2°C
1 ton = 3.5 kW
1 in. = 25.4 mm
US gal/min = 0.86 m^3/h

Features

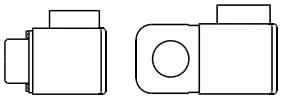
- For high temperatures - class H insulated wire
- Encapsulated coils with long life time
- Wide range of coils
  – from 24 V to 240 V a.c.
  – Junction box and Conduite boss

Approvals

c UL us Listed with EVR, MH7648
CE Conformity with LVD 73/23/EC with amendments EN 60730-2-8

Note: These approvals are only recognized when one of the EVR series of solenoid valves found in this leaflet is combined with a GP (General purpose) coil

Ordering



Voltage V	Frequency Hz	Code no. Junciton Box NEMA 2	Code no. Conduit Boss NEMA 4	Power consumption
24	50/60	**018F7683**	**018F7693**	Holding: 14 W 28 VA Inrush: 49VA
110	50/60	**018F7682**	**018F7692**	
120	60			
208-240	60	**018F7681**	**018F7691**	
230	50			

Technical data

Design	In accordance with UL 429
Power supply	Alternating current (a.c.)
Permissible voltage variation	Alternating current (a.c.): +10 → −15%
Power consumption	Alternating current (a.c.): Inrush: 49 VA; Holding: 28 VA, 14 W
Insulation of coil wire	Class H according to IEC 85
Connection	Junction box or Conduit boss
Enclosure, IEC 529	Junction box NEMA 1 ~ IP 12-32 / Conduit boss NEMA ~ 4 IP 54
Ambient temperature	– 40 → 122°F (−40 → +50°C)

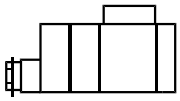
Features

- For high temperatures - class H insulated wire
- Encapsulated coils with long life time
- Wide range of coils
  – from 12 V to 200 V d.c.
  – with terminal box IP 67 ~ NEMA 6

Approvals

Conformity with LVD 73/23/EC with amendments EN 60730-2-8

Ordering



Voltage V	Code no. For EVR 2-15 EVR 25-40	Code no. For EVR 20-22	Power consumption
12	**018F6856**	**018F6886**	Holding: 20 W
12	**018F6857**	**018F6887**	
48	**018F6859**	**018F6889**	
110	**018F6860**	**018F6890**	
115	**018F6861**	**018F6891**	
220	**018F6851**	**018F6881**	

Technical data

Design	In accordance with VDE 0580
Power supply	Direct current (d.c.)
Permissible voltage variation	+10 → −10%
Power consumption	20 W
Insulation of coil wire	Class H according to IEC 85
Connection	Terminal box
Enclosure, IEC 529	IP67 NEMA ~ 6
Ambient temperature	– 40 → 122°F (−40 → +50°C)

Capacity

Note:
Bold figures refer to rated capacity

Liquid

Type	Liquid capacity Q0 tons at a pressure drop across valve Δp psi						
	1	2	3	4	5	6	7
R 22							
EVR 2	0.67	0.95	1.17	1.35	1.50	1.65	1.78
EVR 3	1.18	1.66	2.03	2.35	2.63	2.88	3.11
EVR 4	2.40	3.39	4.15	4.79	5.36	5.87	6.34
EVR 6	3.37	4.76	5.83	6.73	7.52	8.24	8.90
EVR 8	4.62	6.54	8.01	9.24	10.3	11.3	12.2
EVR 10	7.99	11.3	13.8	16.0	17.9	19.6	21.1
EVR 15	10.9	15.5	18.9	21.9	24.4	26.8	28.9
EVR 18	14.2	20.1	24.6	28.4	31.8	34.8	37.6
EVR 20	21.0	29.7	36.4	42.0	47.0	51.5	55.6
EVR 22	25.2	35.7	43.7	50.4	56.4	61.8	66.7
EVR 25	42.1	59.5	72.8	84.1	94.0	103.0	111.0
EVR 32	67.3	95.1	116.5	134.0	150.0	164.8	177.0
EVR 40	105.0	148.6	182.0	210.0	235.0	257.0	278.0
R 134a							
EVR 2	0.63	0.89	1.09	1.25	1.40	1.54	1.66
EVR 3	1.10	1.55	1.90	2.19	2.45	2.68	2.90
EVR 4	2.23	3.16	3.87	4.47	5.00	5.47	5.91
EVR 6	3.14	4.43	5.43	6.27	7.01	7.68	8.30
EVR 8	4.31	6.09	7.46	8.62	9.63	10.6	11.4
EVR 10	7.45	10.5	12.9	14.9	16.7	18.2	19.7
EVR 15	10.2	14.4	17.7	20.4	22.8	25.0	27.0
EVR 18	13.3	18.7	23.0	26.5	29.6	32.4	35.0
EVR 20	19.6	27.7	33.9	39.2	43.8	48.0	51.8
EVR 22	23.5	33.3	40.7	47.0	52.6	57.6	62.2
EVR 25	39.2	55.4	67.9	78.4	87.6	96.0	103.0
EVR 32	62.7	88.7	108.0	125.0	140.0	153.0	165.0
EVR 40	98.0	138.5	169.0	195.0	219.0	239.0	259.0
R 404A and R 507							
EVR	0.46	0.66	0.80	0.93	1.04	1.13	1.23
EVR 3	0.81	1.14	1.40	1.62	1.81	1.98	2.14
EVR 4	1.65	2.33	2.86	3.30	3.69	4.04	4.37
EVR 6	2.32	3.28	4.01	4.63	5.18	5.67	6.13
EVR 8	3.18	4.50	5.52	6.37	7.12	7.80	8.42
EVR 10	5.50	7.78	9.53	11.0	12.3	13.5	14.6
EVR 15	7.53	10.6	13.0	15.1	16.8	18.4	19.9
EVR 18	9.79	13.8	17.0	19.6	21.9	24.0	25.9
EVR 20	14.5	20.5	25.1	29.0	32.4	35.5	38.3
EVR 22	17.4	24.6	30.1	34.7	38.8	42.5	46.0
EVR 25	29.0	40.9	50.2	57.9	64.7	70.9	76.6
EVR 32	46.3	65.5	80.3	92.6	103.6	113.0	121.0
EVR 40	72.4	102.0	125.0	144.0	162.0	177.0	191.0

Capacities are based on
Liquid temperature t_l = 100°F
Evaporating temperature t_e = 40°F
Superheat temperature (t_e + 10°F) = 50°F

Metric conversions
1 psi = 0.07 bar
5/9 (t_1°F – 32) = t_2°C
1 ton = 3.5 kW

Correction factors for liquid temperature t_l
When liquid temperature tl ahead of the expansion valve is other than 100°F, adjust the table capacities by multiplying them by the appropriate correction factor found in the following table.

t_l °F	80	90	100	110	120
Factor	1.10	1.05	1.00	0.95	0.90

Capacity (continued)

Note:
Bold figures refer to rated capacity

Suction vapor

R 22

Type	Pressure drop across valve Δp psi	Suction vapor capacity Q_0 tons at evaporating temperature t_e °F							
		– 40	– 20	0	+10	+20	+30	+40	+50
EVR 2	1	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11
	2	0.05	0.07	0.09	0.10	0.11	0.12	0.14	0.15
	3	0.06	0.08	0.10	0.12	0.13	0.15	0.17	0.18
EVR 3	1	0.06	0.09	0.11	0.12	0.14	0.15	0.17	0.19
	2	0.09	0.12	0.15	0.18	0.19	0.22	0.24	0.26
	3	0.10	0.14	0.18	0.20	0.23	0.26	0.29	0.32
EVR 4	1	0.13	0.18	0.22	0.25	0.28	0.31	0.34	0.38
	2	0.18	0.24	0.31	0.36	0.40	0.44	0.49	0.54
	3	0.21	0.28	0.37	0.42	0.47	0.54	0.60	0.66
EVR 6	1	0.18	0.25	0.32	0.35	0.39	0.44	0.48	0.53
	2	0.25	0.33	0.43	0.50	0.56	0.62	0.68	0.75
	3	0.29	0.40	0.52	0.59	0.66	0.76	0.84	0.92
EVR 8	1	0.25	0.34	0.43	0.49	0.54	0.60	0.66	0.73
	2	0.34	0.46	0.59	0.69	0.77	0.85	0.94	1.03
	3	0.40	0.55	0.71	0.80	0.91	1.04	1.15	1.26
EVR 10	1	0.44	0.59	0.75	0.84	0.94	1.04	1.15	1.26
	2	0.59	0.79	1.02	1.19	1.32	1.47	1.62	1.78
	3	0.69	0.94	1.23	1.39	1.57	1.80	1.98	2.18
EVR 15	1	0.60	0.81	1.02	1.15	1.28	1.42	1.57	1.72
	2	0.80	1.08	1.40	1.63	1.81	2.01	2.22	2.44
	3	0.94	1.29	1.68	1.90	2.14	2.46	2.71	2.99
EVR 18	1	0.78	1.05	1.33	1.50	1.66	1.84	2.04	2.24
	2	1.04	1.41	1.82	2.12	2.35	2.61	2.88	3.17
	3	1.22	1.68	2.19	2.47	2.79	3.20	3.53	3.88
EVR 20	1	1.15	1.56	1.97	2.22	2.46	2.72	3.02	3.32
	2	1.54	2.08	2.69	3.13	3.48	3.86	4.27	4.69
	3	1.81	2.48	3.23	3.66	4.12	4.73	5.22	5.74
EVR 22	1	1.38	1.87	2.36	2.66	2.95	3.27	3.62	3.98
	2	1.85	2.50	3.23	3.76	4.18	4.63	5.12	5.63
	3	2.17	2.97	3.88	4.39	4.94	5.67	6.26	6.89
EVR 25	1	2.30	3.12	3.94	4.43	4.92	5.45	6.04	6.63
	2	3.09	4.17	5.38	6.27	6.96	7.71	8.53	9.39
	3	3.61	4.96	6.47	7.32	8.24	9.45	10.4	11.5
EVR 32	1	3.68	4.99	6.30	7.09	7.88	8.72	9.66	10.6
	2	4.94	6.67	8.61	10.0	11.1	12.3	13.6	15.0
	3	5.78	7.93	10.4	11.7	13.2	15.1	16.7	18.4
EVR 40	1	5.74	7.80	9.85	11.1	12.3	13.6	16.1	16.6
	2	7.71	10.4	13.5	15.7	17.4	19.3	21.3	23.5
	3	9.03	12.4	16.2	18.3	20.6	23.6	26.1	28.7

The table values refer to evaporator capacity and are given as a function of evaporating temperature te and pressure drop Δp across the valve.
Capacities are based on liquid temperature t_l = 100°F ahead of the expansion valve and superheat t_s = 7°F.
For each additional 10°F of superheat, the table capacities must be reduced by 2%.

Correction factors for liquid temperature tl
When liquid temperature tl ahead of the expansion valve is other than 100°F, adjust the table capacities by multiplying them by the appropriate correction factor found in the following table.

t_l °F	80	90	100	110	120
Factor	1.10	1.05	1.00	0.95	0.90

Metric conversions
1 psi = 0.07 bar
5/9 (t_1°F – 32) = t_2°C
1 ton = 3.5 kW

Capacity (continued)

Note:
Bold figures refer to rated capacity

Suction vapor

R 134a

Type	Pressure drop across valve Δp psi	Suction vapor capacity Q_0 tons at evaporating temperature t_e °F							
		– 40	– 20	0	+10	+20	+30	+40	+50
EVR 2	1	0.02	0.03	0.05	0.05	0.06	0.07	0.07	0.08
	2	0.03	0.04	0.06	0.07	0.08	0.09	0.11	0.12
	3	0.03	0.05	0.07	0.08	0.10	0.11	0.12	0.14
EVR 3	1	0.04	0.06	0.08	0.09	0.10	0.12	0.13	0.14
	2	0.05	0.08	0.10	0.12	0.14	0.16	0.18	0.21
	3	0.06	0.09	0.12	0.14	0.17	0.19	0.22	0.25
EVR 4	1	0.08	0.11	0.16	0.18	0.21	0.24	0.26	0.30
	2	0.10	0.15	0.21	0.25	0.28	0.33	0.37	0.42
	3	0.11	0.18	0.25	0.30	0.34	0.39	0.44	0.51
EVR 6	1	0.11	0.16	0.23	0.26	0.29	0.33	0.37	0.42
	2	0.14	0.22	0.30	0.35	0.40	0.47	0.53	0.59
	3	0.16	0.25	0.35	0.42	0.48	0.55	0.62	0.72
EVR 8	1	0.16	0.22	0.31	0.35	0.40	0.45	0.51	0.57
	2	0.20	0.30	0.41	0.48	0.55	0.64	0.72	0.81
	3	0.22	0.34	0.49	0.57	0.65	0.75	0.85	0.99
EVR 10	1	0.27	0.38	0.54	0.61	0.69	0.79	0.88	0.99
	2	0.34	0.51	0.71	0.82	0.94	1.11	1.25	1.40
	3	0.37	0.59	0.84	0.99	1.13	1.30	1.47	1.71
EVR 15	1	0.37	0.52	0.73	0.84	0.95	1.08	1.20	1.35
	2	0.47	0.70	0.97	1.13	1.29	1.52	1.71	1.91
	3	0.51	0.80	1.15	1.35	1.54	1.78	2.01	2.34
EVR 18	1	0.48	0.68	0.95	1.09	1.23	1.40	1.56	1.75
	2	0.61	0.91	1.26	1.46	1.68	1.98	2.22	2.49
	3	0.67	1.04	1.50	1.75	2.01	2.31	2.62	3.04
EVR 20	1	0.71	1.00	1.41	1.61	1.82	2.07	2.31	2.59
	2	0.90	1.35	1.87	2.17	2.48	2.92	3.28	3.68
	3	0.98	1.54	2.22	2.59	2.97	3.41	3.87	4.50
EVR 22	1	0.85	1.20	1.69	1.93	2.19	2.48	2.78	3.11
	2	1.08	1.62	2.25	2.60	2.97	3.51	3.94	4.41
	3	1.18	1.85	2.66	3.11	3.56	4.10	4.65	5.40
EVR 25	1	1.41	2.00	2.82	3.22	3.64	4.14	4.63	5.19
	2	1.81	2.69	3.74	4.33	4.96	5.84	6.56	7.35
	3	1.97	3.09	4.43	5.19	5.94	6.83	7.75	8.99
EVR 32	1	2.26	3.20	4.52	5.15	5.83	6.62	7.40	8.30
	2	2.89	4.31	5.99	6.93	7.93	9.35	10.5	11.8
	3	3.15	4.94	7.09	8.30	9.51	10.9	12.4	14.4
EVR 40	1	3.53	5.01	7.06	8.04	9.11	10.3	11.6	13.0
	2	4.51	6.73	9.35	10.8	12.4	14.6	16.4	18.4
	3	4.92	7.71	11.1	13.0	14.9	17.1	19.4	22.5

The table values refer to evaporator capacity and are given as a function of evaporating temperature te and pressure drop Dp across the valve.
Capacities are based on liquid temperature t_l = 100°F ahead of the expansion valve and superheat ts = 7°F.
For each additional 10°F of superheat, the table capacities must be reduced by 2%.

Correction factors for liquid temperature t_l
When liquid temperature tl ahead of the expansion valve is other than 100°F, adjust the table capacities by multiplying them by the appropriate correction factor found in the following table.

t_l °F	80	90	100	110	120
Factor	1.10	1.05	1.00	0.95	0.90

Metric conversions
1 psi = 0.07 bar
5/9 (t_1°F – 32) = t_2°C
1 ton = 3.5 kW

Capacity (continued)

Note:
Bold figures refer to rated capacity

Suction vapor

R 404A and R 507

Type	Pressure drop across valve Δp psi	Suction vapor capacity Q_0 tons at evaporating temperature t_e °F							
		– 40	– 20	0	+10	+20	+30	+40	+50
EVR 2	1	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10
	2	0.04	0.05	0.08	0.09	0.10	0.11	0.12	0.13
	3	0.05	0.06	0.09	0.10	0.12	0.13	0.15	0.16
EVR 3	1	0.05	0.07	0.09	0.11	0.12	0.13	0.15	0.17
	2	0.07	0.09	0.13	0.15	0.17	0.19	0.21	0.23
	3	0.08	0.11	0.15	0.18	0.20	0.23	0.26	0.29
EVR 4	1	0.10	0.14	0.19	0.22	0.24	0.27	0.30	0.34
	2	0.14	0.19	0.27	0.30	0.34	0.39	0.43	0.48
	3	0.16	0.23	0.31	0.36	0.42	0.47	0.53	0.59
EVR 6	1	0.14	0.20	0.26	0.30	0.34	0.38	0.43	0.48
	2	0.20	0.27	0.38	0.43	0.48	0.54	0.60	0.67
	3	0.23	0.32	0.44	0.50	0.59	0.66	0.74	0.82
EVR 8	1	0.20	0.27	0.36	0.42	0.47	0.52	0.58	0.65
	2	0.27	0.37	0.52	0.58	0.66	0.74	0.83	0.92
	3	0.32	0.44	0.60	0.69	0.80	0.91	1.01	1.13
EVR 10	1	0.34	0.47	0.62	0.72	0.80	0.90	1.01	1.13
	2	0.47	0.64	0.89	1.01	1.14	1.28	1.43	1.60
	3	0.55	0.77	1.04	1.20	1.39	1.57	1.75	1.96
EVR 15	1	0.47	0.65	0.85	0.99	1.10	1.24	1.38	1.54
	2	0.64	0.88	1.22	1.38	1.55	1.76	1.95	2.18
	3	0.75	1.05	1.43	1.64	1.90	2.15	2.40	2.68
EVR 18	1	0.61	0.84	1.11	1.29	1.43	1.61	1.80	2.01
	2	0.83	1.14	1.59	1.80	2.02	2.29	2.54	2.84
	3	0.98	1.36	1.85	2.13	2.47	2.80	3.12	3.48
EVR 20	1	0.90	1.25	1.64	1.90	2.12	2.38	2.66	2.97
	2	1.23	1.69	2.35	2.66	2.99	3.38	3.76	4.20
	3	1.44	2.02	2.74	3.15	3.66	4.14	4.61	5.15
EVR 22	1	1.08	1.50	1.97	2.28	2.54	2.86	3.19	3.56
	2	1.48	2.03	2.82	3.19	3.58	4.06	4.51	5.04
	3	1.73	2.42	3.29	3.78	4.39	4.96	5.53	6.18
EVR 25	1	1.81	2.49	3.28	3.81	4.23	4.76	5.32	5.94
	2	2.46	3.38	4.69	5.32	5.97	6.76	7.52	8.40
	3	2.89	4.04	5.48	6.30	7.32	8.27	9.22	10.31
EVR 32	1	2.89	3.99	5.25	6.09	6.77	7.62	8.51	9.51
	2	3.94	5.41	7.51	8.51	9.56	10.8	12.0	13.4
	3	4.62	6.46	8.77	10.1	11.7	13.2	14.8	16.5
EVR 40	1	4.51	6.24	8.21	9.5	10.6	11.9	13.3	14.9
	2	6.15	8.45	11.7	13.3	14.9	16.9	18.8	21.0
	3	7.22	10.1	13.7	15.8	18.3	20.7	23.1	25.8

The table values refer to evaporator capacity and are given as a function of evaporating temperature te and pressure drop Δp across the valve.
Capacities are based on liquid temperature t_l = 100°F ahead of the expansion valve and superheat t_s = 7°F.
For each additional 10°F of superheat, the table capacities must be reduced by 2%.

Correction factors for liquid temperature t_l
When liquid temperature tl ahead of the expansion valve is other than 100°F, adjust the table capacities by multiplying them by the appropriate correction factor found in the following table.

t_l °F	80	90	100	110	120
Factor	1.10	1.05	1.00	0.90	0.90

Metric conversions
1 psi = 0.07 bar
5/9 (t_1°F – 32) = t_2°C
1 ton = 3.5 kW

Capacity (continued)

Note:
Bold figures refer to rated capacity

Hot gas

EVR 2 to EVR 18

Type	Pressure drop across valve Δp psi	Hot gas capacity Q_h tons Evaporating temp. t_e = +40°F, hot gas temp. $t_h = t_c$ + 40°F, subcooling Δt_u = 10°F								
		R 22			R 134a			R 404A/R 507		
		Condensing temp. t_c °F			Condensing temp. t_c °F			Condensing temp. t_c °F		
		+ 70	**+100**	+140	+ 70	+100	+140	+ 70	+100	+140
EVR 2	**2**	0.20	**0.22**	0.23	0.16	**0.18**	0.18	0.17	**0.17**	0.17
	5	0.31	0.35	0.37	0.26	0.28	0.29	0.27	0.28	0.27
	10	0.43	0.49	0.53	0.35	0.39	0.42	0.37	0.40	0.38
	15	0.53	0.58	0.65	0.43	0.48	0.52	0.45	0.47	0.47
	20	0.60	0.67	0.73	0.50	0.56	0.59	0.52	0.54	0.53
	25	0.67	0.75	0.81	0.56	0.63	0.66	0.58	0.61	0.59
EVR 3	**2**	0.34	**0.38**	0.41	0.28	**0.31**	0.32	0.29	**0.30**	0.29
	5	0.55	0.60	0.64	0.45	0.49	0.51	0.47	0.48	0.47
	10	0.75	0.86	0.92	0.62	0.69	0.74	0.64	0.70	0.67
	15	0.92	1.02	1.14	0.76	0.84	0.91	0.79	0.82	0.82
	20	1.05	1.18	1.27	0.88	0.97	1.03	0.90	0.94	0.92
	25	1.18	1.31	1.42	0.99	1.09	1.15	1.02	1.06	1.03
EVR 4	**2**	0.70	**0.77**	0.83	0.57	**0.63**	0.66	0.59	**0.62**	0.60
	5	1.12	1.23	1.32	0.92	1.01	1.05	0.95	0.99	0.95
	10	1.54	1.76	1.88	1.26	1.40	1.50	1.30	1.42	1.36
	15	1.87	2.08	2.32	1.54	1.72	1.87	1.60	1.67	1.68
	20	2.15	2.40	2.59	1.79	1.99	2.10	1.85	1.93	1.88
	25	2.40	2.67	2.89	2.01	2.23	2.35	2.07	2.17	2.09
EVR 6	**2**	0.98	**1.08**	1.16	0.80	**0.88**	0.92	0.83	**0.87**	0.84
	5	1.57	1.73	1.85	1.29	1.41	1.47	1.33	1.39	1.34
	10	2.16	2.47	2.63	1.77	1.96	2.11	1.83	1.99	1.91
	15	2.63	2.92	3.26	2.17	2.41	2.62	2.25	2.35	2.36
	20	3.02	3.37	3.64	2.51	2.79	2.94	2.59	2.70	2.63
	25	3.37	3.75	4.06	2.82	3.13	3.30	2.91	3.04	2.94
EVR 8	**2**	1.35	**1.49**	1.60	1.10	**1.21**	1.27	1.14	**1.19**	1.16
	5	2.15	2.37	2.54	1.78	1.94	2.03	1.83	1.91	1.84
	10	2.97	3.40	3.62	2.43	2.70	2.90	2.52	2.74	2.62
	15	3.61	4.01	4.48	2.98	3.31	3.60	3.09	3.23	3.25
	20	4.15	4.62	5.00	3.45	3.83	4.05	3.56	3.71	3.62
	25	4.63	5.16	5.58	3.88	4.30	4.54	4.00	4.18	4.04
EVR 10	**2**	2.33	**2.57**	2.76	1.90	**2.10**	2.20	1.98	**2.06**	2.00
	5	3.72	4.10	4.38	3.07	3.36	3.50	3.16	3.29	3.17
	10	5.13	5.87	6.26	4.20	4.66	5.01	4.35	4.73	4.53
	15	6.24	6.93	7.74	5.15	5.72	6.22	5.34	5.58	5.61
	20	7.17	7.99	8.63	5.96	6.62	6.99	6.15	6.42	6.26
	25	8.00	8.91	9.64	6.70	7.43	7.85	6.90	7.22	6.98
EVR 15	**2**	3.18	**3.52**	3.77	2.60	**2.87**	3.00	2.71	**2.82**	2.73
	5	5.09	5.61	6.00	4.20	4.59	4.79	4.33	4.51	4.34
	10	7.02	8.04	8.56	5.74	6.38	6.85	5.95	6.47	6.20
	15	8.54	9.48	10.6	7.04	7.83	8.51	7.31	7.63	7.67
	20	9.81	10.9	11.8	8.16	9.06	9.57	8.41	8.78	8.56
	25	10.9	12.2	13.2	9.2	10.2	10.7	9.45	9.88	9.55
EVR 18	**2**	4.14	**4.57**	4.90	3.38	**3.73**	3.91	3.52	**3.67**	3.55
	5	6.62	7.29	7.80	5.46	5.97	6.22	5.63	5.86	5.65
	10	9.13	10.5	11.1	7.47	8.29	8.91	7.73	8.41	8.07
	15	11.1	12.3	13.8	9.15	10.2	11.1	9.51	9.92	9.98
	20	12.8	14.2	15.4	10.6	11.8	12.4	10.9	11.4	11.1
	25	14.2	15.9	17.2	11.9	13.2	14.0	12.3	12.9	12.4

Correction factors for t_h and t_e
The table values refer to hot gas capacity and are given as a function of condensing temperature t_c and pressure drop Δp across the valve.
Capacities are based on a hot gas temperature superheated 40°F above condensing temperature ($t_h = t_c$ + 40°F).
For each additional 10°F of superheat above 40°F, the table capacities must be reduced by 1%.

When the valve is used in a hot gas defrost circuit, evaporator temperature affects the capacity. When the evaporator temperature differs from + 40°F, adjust the table capacities by multiplying them by the appropriate correction factor found in the following table.

t_e °F	– 40	– 20	0	20	40	50
Factor	1.18	1.14	1.09	1.04	1	0.97

Metric conversions
1 psi = 0.07 bar
5/9 (t_1°F – 32) = t_2°C
1 ton = 3.5 kW

Capacity (continued)

Note:
Bold figures refer to rated capacity

Hot gas

EVR 20 to EVR 40

Type	Pressure drop across valve Δp psi	Hot gas capacity Q_h tons Evaporating temp. t_e = + 40°F, hot gas temp. $t_h = t_c$ + 40°F, subcooling Δt_u = 10°F								
		R 22			R 134a			R 404A/R 507		
		Condensing temp. t_c °F			Condensing temp. t_c °F			Condensing temp. t_c °F		
		+ 70	+100	+140	+ 70	+100	+140	+ 70	+100	+140
EVR 20	2	6.12	6.76	7.25	5.01	5.51	5.78	5.20	5.43	5.25
	5	9.80	10.8	11.5	8.07	8.83	9.21	8.32	8.67	8.35
	10	13.5	15.5	16.5	11.1	12.3	13.2	11.4	12.4	11.9
	15	16.4	18.2	20.4	13.5	15.1	16.4	14.1	14.7	14.8
	20	18.9	21.0	22.7	15.7	17.4	18.4	16.2	16.9	16.5
	25	21.0	23.5	25.4	17.6	19.6	20.7	18.2	19.0	18.4
EVR 22	2	7.35	8.11	8.71	6.01	6.62	6.93	6.24	6.52	6.30
	5	11.8	12.9	13.9	9.69	10.6	11.1	9.99	10.4	10.0
	10	16.2	18.6	19.8	13.3	14.7	15.8	13.7	14.9	14.3
	15	19.7	21.9	24.4	16.3	18.1	19.6	16.9	17.6	17.7
	20	22.7	25.2	27.3	18.8	20.9	22.1	19.4	20.3	19.8
	25	25.3	28.1	30.5	21.2	23.5	24.8	21.8	22.8	22.0
EVR 25	2	12.2	13.5	14.5	10.0	11.0	11.6	10.4	10.9	10.5
	5	19.6	21.6	23.1	16.2	17.7	18.4	16.6	17.3	16.7
	10	27.0	30.9	32.9	22.1	24.5	26.4	22.9	24.9	23.9
	15	32.9	36.5	40.7	27.1	30.1	32.7	28.1	29.4	29.5
	20	37.8	42.1	45.4	31.4	34.9	36.8	32.4	33.8	32.9
	25	42.1	46.9	50.8	35.3	39.1	41.3	36.3	38.0	36.7
EVR 32	2	19.6	21.6	23.2	16.0	17.7	18.5	16.7	17.4	16.8
	5	31.4	34.5	36.9	25.8	28.3	29.5	26.6	27.7	26.7
	10	43.2	49.5	52.7	35.3	39.2	42.2	36.6	39.8	28.2
	15	52.6	58.4	65.2	43.3	48.2	52.4	45.0	47.0	47.2
	20	60.4	67.3	72.7	50.2	55.8	58.9	51.8	54.0	52.7
	25	67.3	75.1	81.2	56.4	62.6	66.1	58.1	60.3	58.8
EVR 40	2	30.6	33.8	36.3	25.0	27.6	28.9	26.0	27.2	26.3
	5	49.0	53.9	57.7	40.4	44.2	46.0	41.6	43.3	41.8
	10	67.5	77.3	82.3	55.2	61.3	65.9	57.2	62.2	59.7
	15	82.1	91.1	101.0	67.7	75.3	81.8	70.3	73.4	73.8
	20	94.4	105.0	113.0	78.5	87.2	92.0	80.9	84.4	82.3
	25	105.0	117.0	126.0	88.1	97.8	103.0	90.8	95.0	91.8

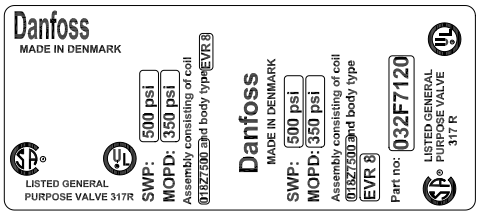
Correction factors for th and t_e
The table values refer to hot gas capacity and are given as a function of condensing temperature t_c and pressure drop Δp across the valve.
Capacities are based on a hot gas temperature superheated 40°F above condensing temperature ($t_h = t_c$ + 40°F).
For each additional 10°F of superheat above 40°F, the table capacities must be reduced by 1%.

When the valve is used in a hot gas defrost circuit, evaporator temperature affects the capacity.
When the evaporator temperature differs from + 40°F, adjust the table capacities by multiplying them by the appropriate correction factor found in the following table.

t_e °F	–40	–20	0	20	40	50
Factor	1.18	1.14	1.09	1.04	1	0.97

Metric conversions
1 psi = 0.07 bar
5/9 (t_1°F – 32) = t_2°C
1 ton = 3.5 kW

Identification



Essential valve data is given on the label

Example

EVR 8	=	Valve type and size
HFC-HCFC	=	Fluorinated refrigerants
SWP	=	Safe Working Pressure (MWP) in psig
018Z7600	=	Coil group for the EVR
MOPD	=	Maximum Operating Pressure in psi
S and A	=	Approvals in USA and Canada

Valve selection example

Note: When selecting the appropriate solenoid valve, it is easier to convert the actual required capacity to that of the rated capacities listed in the tables. This is done by utilizing various correction factors in the selection process. The following examples illustrate how this is done.

Liquid line solenoid valve selection example
Refrigerant = R134a
Condensing temperature tc = 100°F
Liquid temperature ahead of valve t_l = 90°F
Maximum allowable pressure drop across valve Δp = 2 psi
Evaporator capacity Q_o = 10 tons (required valve capacity)

Step 1:
Determine the correction factor for liquid temperature. From the correction factor table found on page 7, a liquid temperature of 90°F corresponds to a factor of 1.05.

Step 2:
Correct the required valve capacity. This is done by dividing the evaporator capacity by the liquid correction factor.
$Q_{corrected}$ = 10/1.05 = 9.5 tons

Step 3:
Select the appropriate capacity table and choose the first valve whose capacity is greater than or equal to $Q_{corrected}$ at the required pressure drop. Using the R 134a liquid capacity table found on page 7, the EVR 10 is selected as it has a capacity of 10.5 tons at a Δp = 2 psi.

Suction line solenoid valve selection example
Refrigerant = R134a
Liquid temperature ahead of expansion valve t_l = 90°F
Evaporator temperature t_e = 30°F
Superheat ahead of valve t_s = 17°F
Maximum allowable pressure drop across valve Δp = 3 psi
Evaporator capacity Q_o = 10 tons (required valve capacity)

Step 1:
Determine the correction factor for superheat ahead of the valve by increasing the required valve capacity by 2% for each 10°F of actual superheat above the table rated value of 7°F. In the example, a superheat of 17°F corresponds to a 10°F increase above the table value which is equivalent to a superheat correction factor of 1.02.

Step 2:
Determine the correction factor for liquid temperature. From the correction factor table found on page 9, a liquid temperature of 90°F corresponds to a factor of 1.05.

Step 3:
Correct the required valve capacity. This is done by first multiplying the evaporator capacity by the superheat correction factor and then dividing it by the liquid correction factor.
$Q_{corrected}$ = (10 x 1.02) / 1.05 = 9.7 tons

Step 4:
Select the appropriate capacity table and choose the first valve whose capacity is greater than or equal to Qcorrected at the required evaporating temperature and pressure drop. Using the R 134a suction vapor capacity table found on page 9, the EVR 32 is selected as it has a capacity of 10.9 tons at t_e = 30°F and Δp = 3 psi.

Metric conversions
1 psi = 0.07 bar
5/9 (t_1°F – 32) = t_2°C
1 ton = 3.5 kW

Valve selection example
(continued)

Metric conversions
1 psi = 0.07 bar
5/9 (t_1°F – 32) = t_2°C
1 ton = 3.5 kW

Hot gas line solenoid valve selection example
With hot gas defrost, pressure in the evaporator quickly rises to a value near that of the condensing pressure and remains there until the defrost cycle has been completed. Therefore, when selecting valves for hot gas applications, sizing is based primarily on the condensing temperature t_c and the pressure drop Dp across the valve.

Example (with heat recovery)
Refrigerant = R134a
Evaporator temperature t_e = 0°F
Condensing temperature t_c = 100°F
Hot gas temperature ahead of valve t_h = 180°F
Maximum allowable pressure drop across valve Δp = 5 psi
Output of heat recovery condenser Q_h = 15 tons (required valve capacity)

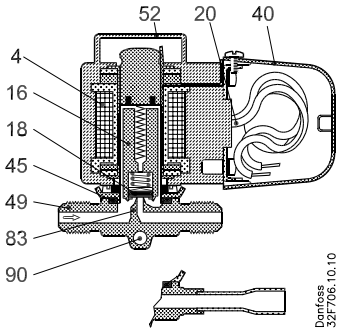
Step 1:
Determine the correction factor for hot gas temperature ($t_h = t_c + 40$°F) by increasing the required valve capacity by 1% for each 10°F of actual superheat above the table rated superheat value of 40°F.
In the example, an actual hot gas temperature of 180°F is 40°F higher than the calculated table value of (th = tc + 40°F = 140°F). This is equivalent to a hot gas correction factor of 1.04 (4% higher).

Step 2:
Determine the correction factor for evaporator temperature. From the correction factor table found on page 11, an evaporator temperature of 0°F corresponds to a factor of 1.09.

Step 3:
Correct the required valve capacity. This is done by first multiplying the heat recovery capacity by the hot gas correction factor and then dividing it by the evaporator correction factor.
$Q_{corrected}$ = (15 x 1.04) / 1.09 = 14.3 tons

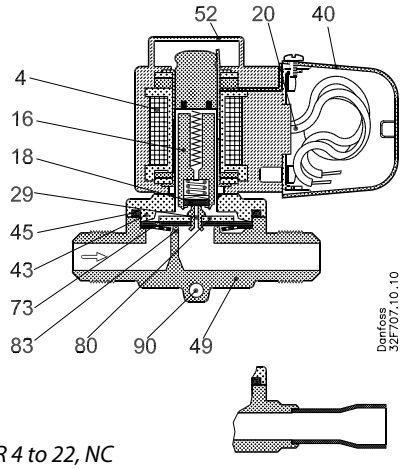
Step 4:
Select the appropriate capacity table and choose the first valve whose capacity is greater than or equal to Qcorrected at the required condensing temperature and pressure drop. Using the R 134a hot gas capacity table found on pages 11 and 12, the EVR 25 is selected as it has a capacity of 17.7 tons at t_c = 100°F and Δp = 5 psi.

Design

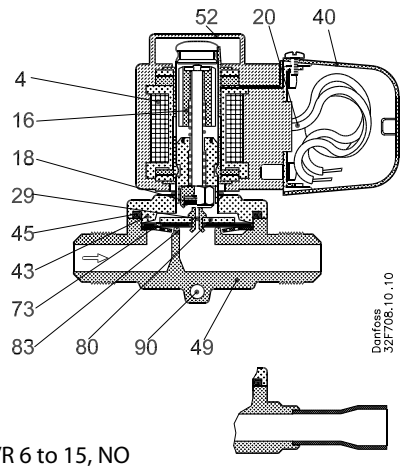


EVR 2 and 3, NC

4. Coil
16. Armature
18. Valve plate
20. Earth terminal
29. Pilot orifice
40. Junction box
43. Valve cover
45. Gasket
49. Valve body
54. Spacer ring
73. Equalizing hole
80. Diaphragm
83. Valve seat
90. Fixing hole



EVR 4 to 22, NC



EVR 6 to 15, NO

Function

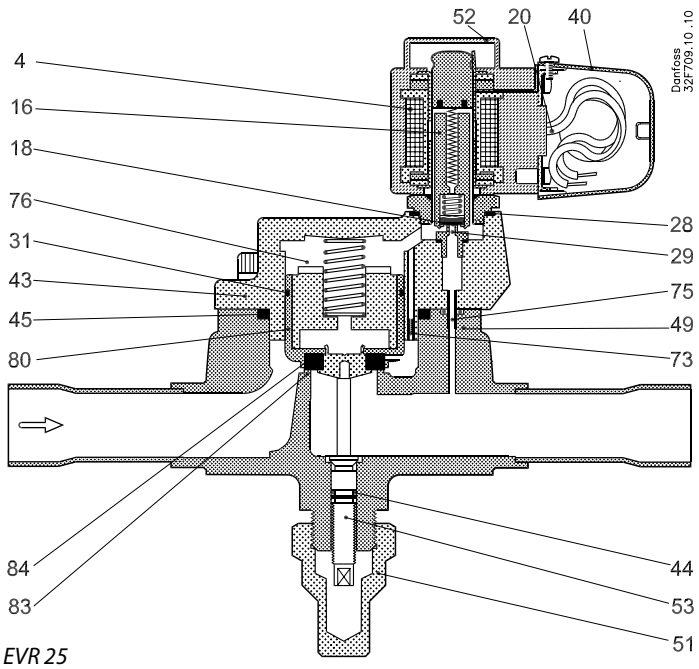
EVR solenoid valves are based on two different design principles:
1. Direct operation
2. Servo operation

1: Direct operation
EVR 2 and 3 are direct-operated. The valves opens to admit full flow when the armature (16) is moved up into the magnetic field of the coil.
The valves operates with a minimum differential pressure of 0 psi.
The valve plate (18) is made of teflon and is fitted directly to the armature (16).
Inlet pressure, spring force and armature weight act to close the valve when the coil is de-nergized.

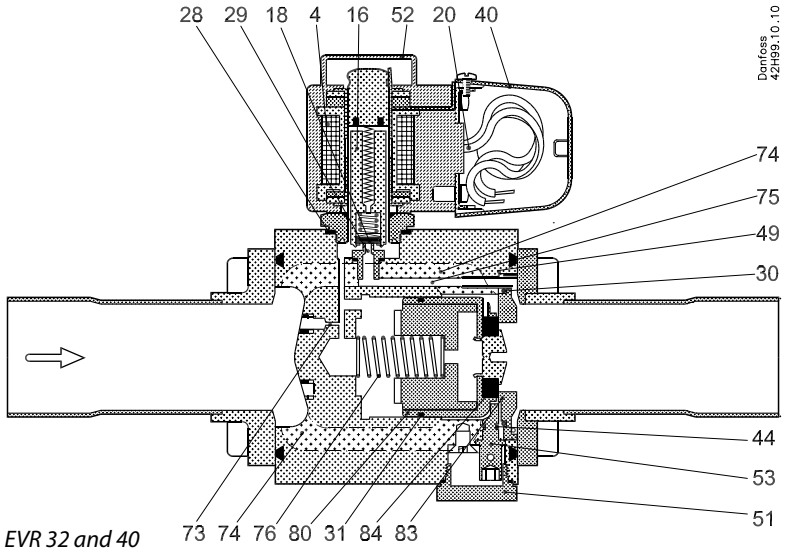
2a: EVR 4 to 22 are servo-operated with a "floating" diaphragm (80). The pilot orifice (29) is located in the center of the diaphragm.
The teflon pilot valve plate (18) is fitted directly to the armature (16).
When the coil is de-energized, the valve port and pilot orifice are closed and the inlet pressure acts both above and below the diaphragm.
The valve port and pilot orifice are kept closed by the weight of the armature, armature spring force and the differential pressure between inlet and outlet sides.
When current is applied to the coil, the armature is pulled up into the magnetic field and the pilot orifice opens. This relieves pressure above the diaphragm because the space above it becomes connected to the outlet side of the valve. The differential pressure between inlet and outlet presses the diaphragm away from the valve seat (83) and the valve opens to admit full flow. A minimum differential pressure (0.7 psi for EVR 4 to 22) is necessary to open the valve and keep it open.
When the coil is de-energized, the pilot orifice closes. Then, via the equalizing port (73) the pressure above the diaphragm rises to the same value as the inlet pressure, which results in the valve port being closed by the diaphragm.

EVR 6 to 15, NO, function in a manner opposite to the NC valves; they are open when the coil is de-energized.
Normally open (NO) EVR valves are available with servo operation only.

Design



EVR 25



EVR 32 and 40

4. Coil
16. Armature
18. Pilot valve plate
20. Earth screw
28. Gasket
29. Pilot orifice
30. O-ring
31. Piston ring
40. Junction box
43. Valve cover
44. O-ring
45 Valve cover gasket
49. Valve body
51.Protective cap/blanking plug
53. Manual stem
73. Equalizing hole
74. Main passage
75. Pilot passage
76. Return spring
80. Servo piston
83. Main valve seat
84. Main valve plate

Function

2b. Servo operation of EVR 25 to 40

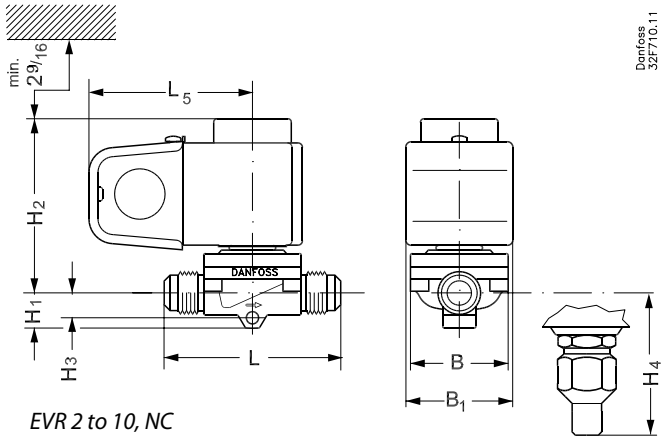
EVR 25, 32 and 40 are servo-operated piston valves.

The valves are closed when the coil is de-energized. In operation, EVR 25 is the same as for EVR 4 to 22, but the design is different. The pilot unit is located in the cover and the servo unit is a piston (80) with a cast iron piston ring.

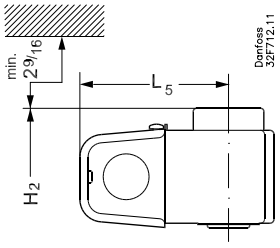
For EVR 25 to 40, piston (80) and valve plate (84) will close against the valve seat (83) due to the differential pressure between inlet and outlet plus the force from the return spring (76) and the weight of the piston.

When the coil is energized, the pilot orifice (29) is opened and pressure on the spring side of the piston is relieved. The pressure differential now opens the valve. The minimum differential required to keep the valve fully open is 1 psi.

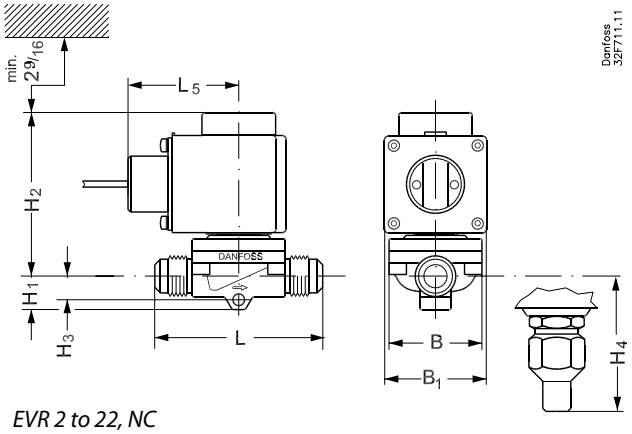
Dimensions and weights



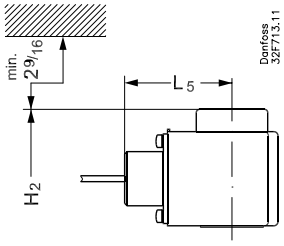
EVR 2 to 10, NC



EVR 6, 10 and 15, NO



EVR 2 to 22, NC



EVR 6, 10 and 15, NO

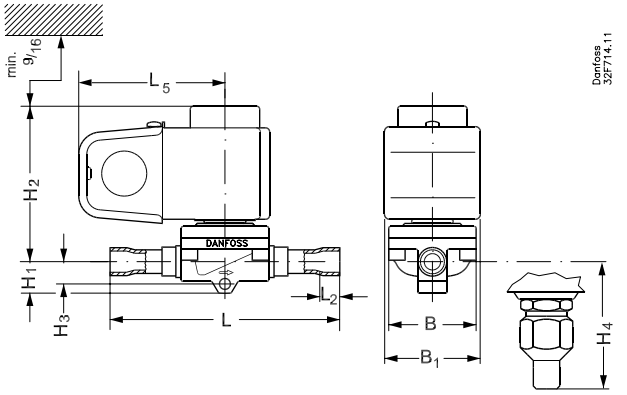
Flare connection

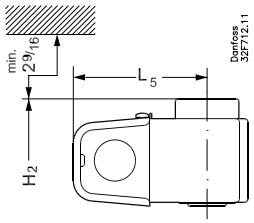
Type	Connection		L	L_5	H_1	H_2 NC	H_3	H_4	B	B_1	Weight with coil
	normal size	oversize									
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	lbs
EVR 2, NC	1/4		2 5/16	2 3/4	9/16	2 13/16	5/16		1 5/16	2 1/16	1.3
EVR 3, NC	1/4		2 5/16	2 3/4	9/16	2 13/16	5/16		1 5/16	2 1/16	1.3
EVR 3, NC		3/8	2 7/16	2 3/4	9/16	2 13/16	5/16		1 5/16	2 1/16	1.3
EVR 4, NC	3/8		2 3/4	2 3/4	9/16	2 7/8	3/8		1 7/16	2 1/16	1.4
EVR 4, NC		1/2	3	2 3/4	9/16	2 7/8	3/8		1 7/16	2 1/16	1.4
EVR 6, NC	3/8		2 3/4	2 3/4	9/16	2 7/8	3/8		1 7/16	2 1/16	1.4
EVR 6, NC	3/8		2 3/4	2 3/4	9/16	2 7/8		2 3/16	1 7/16	2 1/16	1.4
EVR 6, NC		1/2	3	2 3/4	9/16	2 7/8	3/8		1 7/16	2 1/16	1.4
EVR 8, NC	1/2		3 5/16	2 3/4	9/16	2 7/8	3/8		1 7/16	2 1/16	1.4
EVR 10, NC	1/2		3 5/16	2 3/4	9/16	3 1/8	7/16		1 13/16	2 1/16	1.8
EVR 10, NC	1/2		3 5/16	2 3/4	9/16	3 1/8		2 3/16	1 13/16	2 1/16	1.8
EVR 10, NC		5/8	3 5/8	2 3/4	9/16	3 1/8	7/16		1 13/16	2 1/16	1.8

Coil weight:1lb

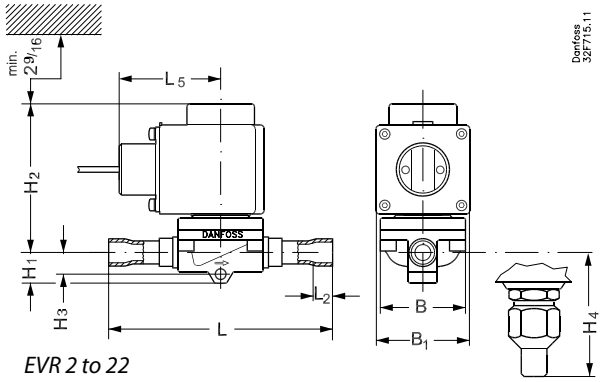
Metric conversions
1 in. = 25.4 mm

Dimensions and weights

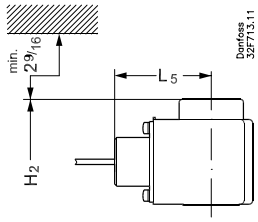




EVR 6 to 15, NO



EVR 2 to 22



EVR 6 to 15, NO

Solder connection

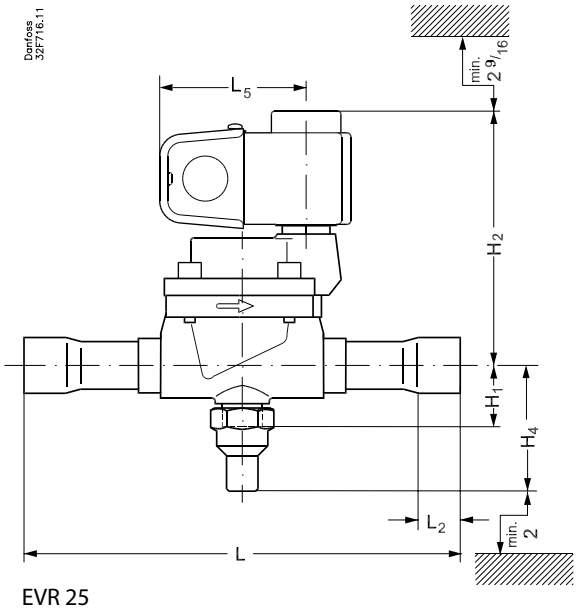
Type	Connection		L	L2	L5	H1	H_2 NC	H_3	H_4	B	B_1	Weight with coil
	normal size in.	oversize in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	lbs
EVR 2 NC	1/4		4 5/8	3/8	2 3/4	9/16	2 13/16	5/16		1 5/16	2 1/16	1.3
EVR 3 NC	1/4		4 5/8	3/8	2 3/4	9/16	2 13/16	5/16		1 5/16	2 1/16	1.3
EVR 3 NC		3/8	4 5/8	3/8	2 3/4	9/16	2 13/16	5/16		1 5/16	2 1/16	1.3
EVR 4 NC	3/8		4 3/8	3/8	2 3/4	9/16	3 1/16	3/8		1 7/16	2 1/16	1.4
EVR 4 NC		1/2	5	3/8	2 3/4	9/16	3 1/16	3/8		1 7/16	2 1/16	1.4
EVR 6 NC	3/8		4 3/8	3/8	2 3/4	9/16	3 1/16	3/8		1 7/16	2 1/16	1.4
EVR 6 NC	3/8		4 3/8	3/8	2 3/4		3 1/16		2 3/16	1 7/16	2 1/16	1.4
EVR 6 NC		1/2	5	3/8	2 3/4	9/16	3 1/16	3/8		1 7/16	2 1/16	1.4
EVR 6 NC		5/8	6 1/2	1/2	2 3/4	9/16	3 1/16	3/8		1 7/16	2 1/16	1.4
EVR 8 NC	3/8		4 5/8	3/8	2 3/4	9/16	3 1/16	3/8		1 7/16	2 1/16	1.4
EVR 8 NC		1/2	5	3/8	2 3/4	9/16	3 1/16	3/8		1 7/16	2 1/16	1.4
EVR 8 NC		5/8	6	1/2	2 3/4	9/16	3 1/16	3/8		1 7/16	2 1/16	1.4
EVR 10 NC	3/8		4 5/8	3/8	2 3/4	5/8	3 1/8	7/16		1 13/16	2 1/16	1.8
EVR 10 NC		1/2	5	3/8	2 3/4	5/8	3 1/8	7/16		1 13/16	2 1/16	1.8
EVR 10 NC		1/2	5	3/8	2 3/4		3 1/8		2 3/16	1 7/16	2 1/16	1.8
EVR 10 NC		5/8	6 5/16	1/2	2 3/4	5/8	3 1/8	7/16		1 13/16	2 1/16	1.8
EVR 15 NC	5/8		6 7/8	1/2	2 3/4	3/4	3 3/8	3/4		2 3/16	2 1/16	2.4
EVR 15 NC	5/8		6 7/8	1/2	2 3/4		3 3/8		2 1/8	2 3/16	2 1/16	2.4
EVR 15 NC		7/8	7 1/8	5/8	2 3/4	3/4	3 3/8	3/4		2 3/16	2 1/16	2.4
EVR 18 NC	7/8		7 1/8	5/8	2 3/4	3/4	3 3/8	3/4		2 3/16	2 1/16	2.4
EVR 18 NC		1 1/8	8 1/2	7/8	2 3/4	3/4	3 3/8	3/4		2 3/16	2 1/16	2.4
EVR 20 NC	7/8		7 1/2	5/8	2 3/4	25/32	3 9/16			2 13/16	2 1/16	3.4
EVR 20 NC	7/8		7 1/2	5/8	2 3/4		3 9/16		2 3/8	2 13/16	2 1/16	3.4
EVR 20 NC		1 1/8	8 1/2	7/8	2 3/4	25/32	3 9/16			2 13/16	2 1/16	3.4
EVR 22 NC	1 1/8		10 1/16	7/8	2 3/4	25/32	3 9/16			2 13/16	2 1/16	3.4
EVR 22 NC		1 3/8	11 1/16	1	2 3/4	25/32	3 9/16			2 13/16	2 1/16	3.4

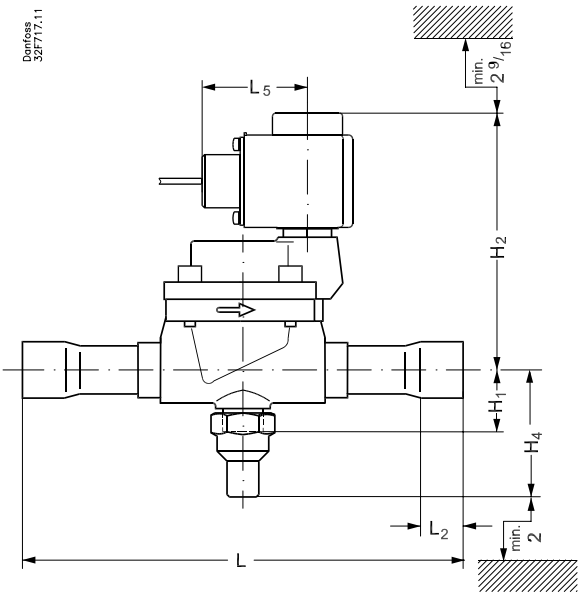
[1] H_2 for NO coils = H_2 for NC + 3/16 in.

Coil weight: 1 lb

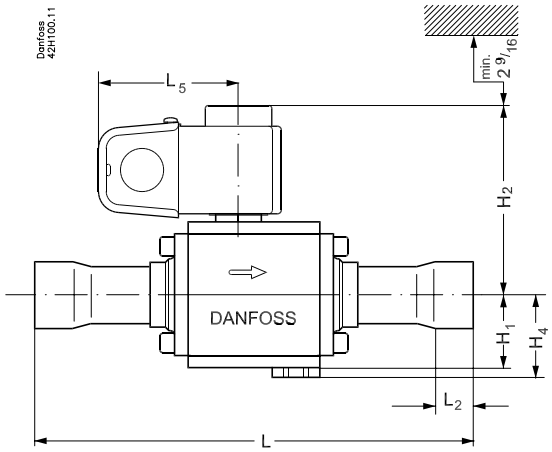
Metric conversions: 1 in. = 25.4 mm

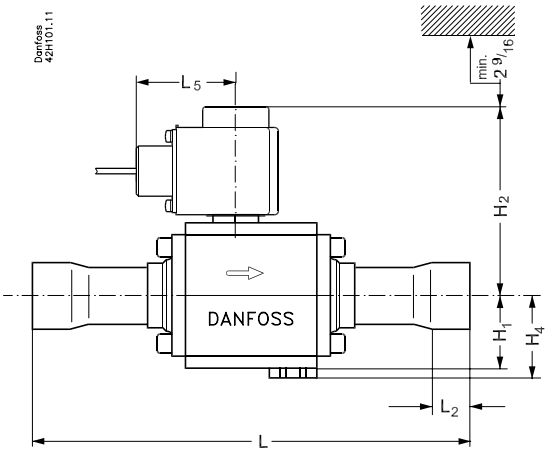
Dimensions and weights





EVR 25





EVR 32 and 40

Solder connections

Type	Connection		L	L_2	L_5	H_1	H_2	H_4	B	Weight with coil
	normal size in.	oversize in.	in.	in.	in.	in.	in.	in.	in.	lbs
EVR 25	1 1/8		10 1/16	7/8	2 3/8	1 ½	5 7/16	2 13/16	3 ¼	6.9
EVR 25		1 3/8	11 1/16	1	2 3/8	1 ½	5 7/16	2 13/16	3 ¼	7.7
EVR 32	1 3/8		11 1/16	1	2 3/8	1 7/8	4 3/8	2 1/8	3 3/16	9.5
EVR 32		1 5/8	11 1/16	1 1/8	2 3/8	1 7/8	4 3/8	2 1/8	3 3/16	9.7
EVR 40	1 5/8		11 1/16	1 1/8	2 3/8	1 7/8	4 3/8	2 1/8	3 3/16	10.0
EVR 40		2 1/8	11 1/16	1 1/8	2 3/8	1 7/8	4 3/8	2 1/8	3 3/16	10.0

Coil weight: 1 lb

Metric conversions
1 in. = 25.4 mm

Spare parts, code nos.

Type	Seal kit	Service kit	Piston service kit	Pilot service kit
EVR 2	**032F0220**	**032F0230**		
EVR 3	**032F0220**	**032F0230**		
EVR 4	**032F0221**			
EVR 6	**032F0221**	**032F0231**		
EVR 8	**032F0221**	**032F0231**		
EVR 10	**032F0222**	**032F0233**		
EVR 15	**032F0223**	**032F0235**		
EVR 18	**032F0223**	**032F0235**		
EVR 20	**032F0224**	**032F0237**		
EVR 22	**032F0224**	**032F0237**		
EVR 25	**032F3235**			
EVR 32	**042H0160**		**042H0176**	**042H0178**
EVR 40	**042H0160**		**042H0177**	**042H0178**
EVR 6 NO	**032F0221**	**032F0232**		
EVR 10 NO	**032F0222**	**032F0234**		
EVR 15 NO	**032F0223**	**032F0236**		

Spare parts, contents

	Seal kit	Service kit	Piston service kit	Pilot service kit
	O-ring Gasket	Diaphragm assembly Armature assembly Rubber gasket Screws Torx key Snap fastener Nut	Piston assembly Plastic block Spring Piston ring Rubber gasket Snap fastener Nut	Armature tube assembly Snap fastener Armature Orifice Gaskets Nut