



# Solenoid valve

## CSV 2 - CSV 15

Version with PED compliance, Normally Closed (NC)

## Description

CSV is a direct or servo-operated solenoid valve for liquid, suction, and hot gas lines with common fluorinated refrigerants.

CSV valves are for refrigeration, freezing, and air conditioning plants.

CSV valves and coils are sold separately.

## Features & benefits

- Designed for media temperatures up to 120 °C / 248 °F for CSV 2,3,6 and 105 °C / 221 °F for CSV 10,15
- Supplied as normally closed (NC) with de-energized coil
- Wide choice of coils for AC and DC
- Suitable for listed refrigerants, including flammable refrigerants
- Available in flare and solder connection versions flare connections up to ½ inch
- Solder connections up to 1 ⅜ in
- Small encapsulated coils with long life time under extreme conditions
- Compact construction with small dimensions, low weight for both valve and coil
- Simple and fast mounting of coil-clip-ON / OFF

## Ordering

### Product code numbers

#### Solder connection

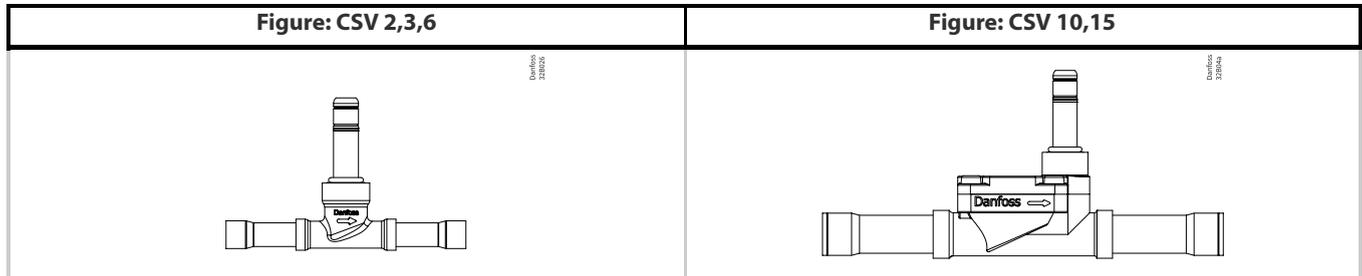


Table: Solder connection

Type	Connection (ODF)		Opening differential pressure with standard coil $\Delta P$ [bar]			$K_v$ m <sup>3</sup> /h	Code no.
	[inch]	[mm]	Min.	Max. (=MOPD liquid <sup>(1)</sup> )			
				AC	DC		
CSV 2	¼	–	0	26	26	0.1	032B2040
	–	6	0	26	26	0.1	032B2000
CSV 3	¼	–	0.05	35	26	0.3	032B2041
	–	6	0.05	35	26	0.3	032B2001
	¾	–	0.05	35	26	0.3	032B2042
	–	10	0.05	35	26	0.3	032B2002
CSV 6	¾	–	0.05	35	26	0.54	032B2043
	–	10	0.05	35	26	0.54	032B2003
	½	–	0.05	35	26	0.54	032B2044
	–	12	0.05	35	26	0.54	032B2004
CSV 10	½	–	0.05	26	26	1.5	032B2045
	–	12	0.05	26	26	1.5	032B2005
	⅝	16	0.05	26	26	1.5	032B2006
CSV 15	⅝	16	0.05	26	26	2.6	032B2007
	⅞	22	0.05	26	26	2.6	032B2008

<sup>(1)</sup> For detailed MOPD, for media in gas form, please contact Danfoss.

**Figure: Flare connection**



**Table: Flare connection**

Type	Connection (flare)		Opening differential pressure with standard coil $\Delta p$ [bar]		$K_v$	Code No.
	[inch]	[mm]	Min.	Max. (=MOPD liquid <sup>(1)</sup> )	m <sup>3</sup> /h	
CSV 2	1/4	–	0	26	0.1	032B2030
CSV 3	1/4	–	0.05	35	0.3	032B2031
	3/8	–	0.05	35	0.3	032B2032
CSV 6	3/8	–	0.05	35	0.54	032B2033
	1/2	–	0.05	35	0.54	032B2034

<sup>(1)</sup> For detailed MOPD, for media in gas form, please contact Danfoss.

## Solenoid coil with DIN Terminal box IP65

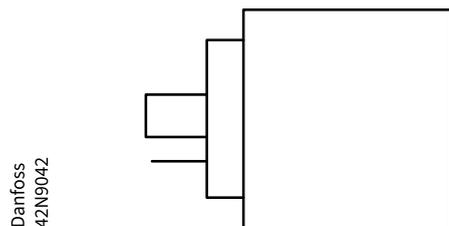
**NOTE:**

- Please make sure that there is no spark, arc on the spade connection during the application.
- If coils are below IPx5, they must be protected against ultraviolet, moisture and major impact, especially the connection of coils.
- Always install a fuse ahead of the coil to avoid short circuit.
- The coil should be used in area of not more than pollution degree 2.
- Use of socket cable with suitable mechanical lock function to connect with coils.
- Follow the installation guide to mount the coil correctly.

**NOTE:**

Please follow specific selection criteria stated in the data sheet for this particular refrigerant.

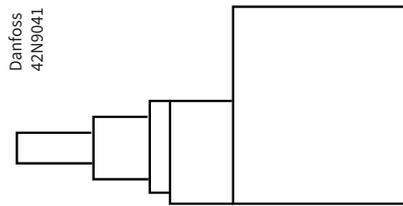
**Figure: Coil with DIN spade connection**



**Table: Coil - DIN spade connection**

Type	Voltage[V]	Frequency	Power consumption	Code number	
	[AC]	[Hz]		Industrial pack	Single pack
CSV2-15	24	50/60	Holding: 6W 12VA Inrush: 26VA	042N8606	042N7608
	230	50/60		042N8601	042N7601
	240	50/60		–	042N7602
	12	DC	14W	042N8686	–
	24	DC	14W	042N8687	042N7687

**Figure: Coil cable connection**

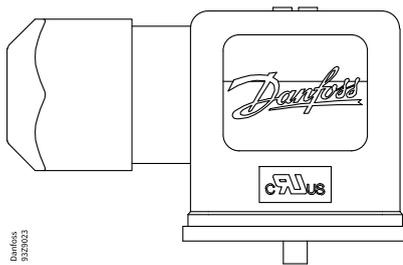


**Table: Coil cable connection**

Type	Voltage[V]	Frequency	Power consumption	Code number	
	[AC]	[Hz]		Industrial pack	Single pack
CSV2-15	115	50/60	Holding: 6W 12VA Inrush: 26VA	–	042N7662
	230	50/60		042N8651	042N7651
	240	50/60		042N8652	042N8662

**Accessories code numbers**

**Figure: DIN Plug**



**Table: Accessories**

Description	Code no.
DIN Plug (EN175301-803 type A)	042N1278

## Media

**Table: Media features**

Features	Description
Refrigerant	R22, R134a, R404A, R507, R407C, R513A, R452A, R1234ze, R600, R600a and R290.
Temperature of medium	CSV 2,3,6: -40 – 120 °C / -40 – 248 °F CSV 10,15: -40 – 105 °C / -40 – 221 °F (Maximum 130 °C / 265 °F during deforest)
Maximum working pressure	CSV 2,3,6: 45 bar / 653 psi CSV 10,15: 35 bar / 508 psi

For a complete list of approved refrigerants, visit [store.danfoss.com](https://store.danfoss.com) and search for individual code numbers, where refrigerants are listed as part of technical data.

**NOTE:**

Special note for R1234ze(E), R290, R600 and R600a: Ignition risk is evaluated in accordance with ISO 5149 and IEC 60335. EX range Zone 2(category 3 IIA).

For countries where safety standards are not an indispensable part of the safety system Danfoss recommends the installer gets a third-party approval of any system containing flammable refrigerant.

**NOTE:**

- Please follow specific selection criteria stated in the data sheet for these particular refrigerants.
- CSV is not suitable for oil free application. For detailed information please contact Danfoss
- Flare connections are only approved for A1 and A2L refrigerants.

## Product details

### Capacity

**Table: Rated capacity [KW] for Liquid**

Type	$K_v$ (m <sup>3</sup> /h)	R22/R407C	R134a	R404A/R507	R290	R513A	R452A	R600	R600a	R1234ze(E)
CSV 2	0.1	2.01	1.86	1.36	2.24	1.66	1.38	2.53	2.25	1.66
CSV 3	0.3	6.03	5.58	4.09	6.72	4.97	4.15	7.6	6.76	4.99
CSV 6	0.54	10.86	10.05	7.35	12.09	8.95	7.48	13.69	12.18	8.98
CSV 10	1.5	30.17	27.91	20.43	33.59	24.85	20.76	38.02	33.82	24.93
CSV 15	2.6	52.3	48.38	35.41	58.22	43.07	35.99	65.89	58.62	43.22

**Table: Rated capacity [KW] for Suction**

Type	$K_v$ (m <sup>3</sup> /h)	R22/R407C	R134a	R404A/R507	R290	R513A	R452A	R600	R600a	R1234ze(E)
CSV 2	0.1	0.22	0.16	0.19	0.27	0.16	0.19	0.13	0.15	0.13
CSV 3	0.3	0.67	0.48	0.58	0.82	0.47	0.56	0.38	0.45	0.39
CSV 6	0.54	1.2	0.87	1.05	1.47	0.84	1	0.68	0.82	0.7
CSV 10	1.5	3.33	2.42	2.91	4.08	2.35	2.78	1.89	2.27	1.95
CSV 15	2.6	5.77	4.2	5.04	7.07	4.07	4.81	3.27	3.93	3.38

- Evaporating temperature  $t_e = -10$  °C
- Liquid temperature ahead of valve  $t_l = 25$  °C
- Pressure drops in valve  $\Delta p = 0.15$  bar

**Table: Rated capacity [KW] for Hot gas**

Type	$K_v$ (m <sup>3</sup> /h)	R22/R407C	R134a	R404A/R507	R290	R513A	R452A	R600	R600a	R1234ze(E)
CSV 2	0.1	0.9	0.69	0.74	1.02	0.64	0.76	0.56	0.63	0.56
CSV 3	0.3	2.69	2.08	2.22	3.07	1.93	2.29	1.68	1.89	1.67
CSV 6	0.54	4.85	3.75	3.99	5.53	3.48	4.12	3.03	3.4	3.01
CSV 10	1.5	13.46	10.38	11.05	15.35	9.66	11.44	8.42	9.45	8.37
CSV 15	2.6	23.34	17.99	19.15	26.61	16.75	19.83	14.6	16.38	14.51

Rated hot gas capacity is based on:

- Condensing temperature  $t_c = 40$  °C
- Pressure drops across valve  $\Delta p = 0.8$  bar
- Hot gas temperature  $t_h = 65$  °C
- Subcooling of refrigerant  $\Delta t_{sub} = 4$  K

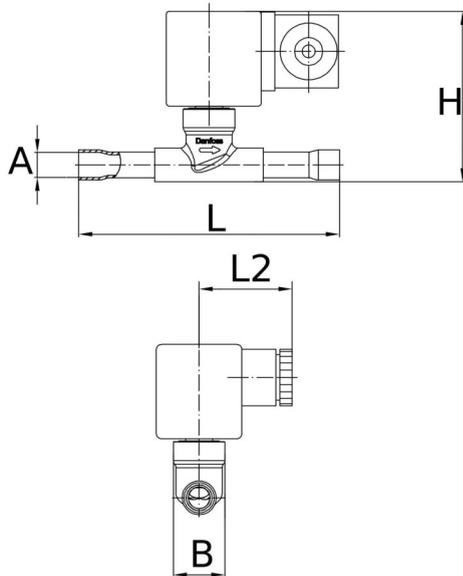
### Valve selection based on capacity calculation

As for extended capacity calculations and valve selection based on capacities and refrigerants, please refer to Coolselector®2. Rated and extended capacities are calculated with the Coolselector®2 calculation engine to ARI standards with the ASEREP equations based on laboratory measurements of selected valves.

## Dimensions

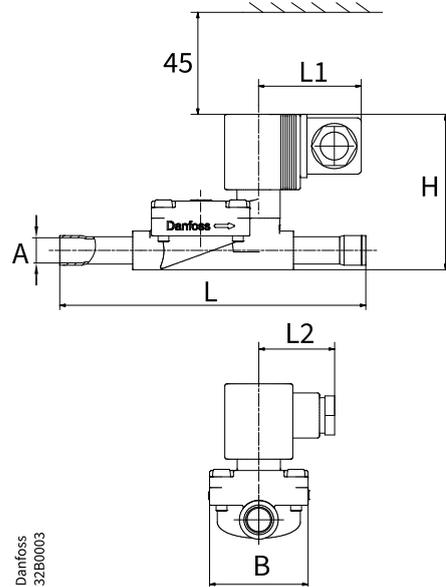
### Solder connection

Figure: CSV 2 – CSV 6



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Figure: CSV 10 – CSV 15

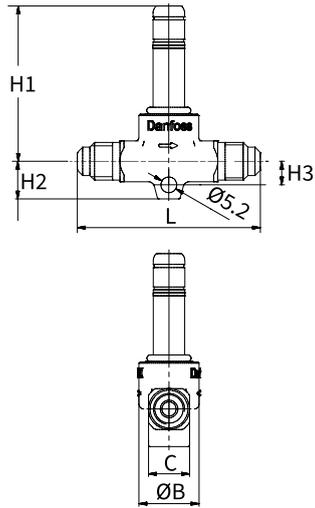


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Table: Solder connection

Type	A Connection (ODF)		B [mm]	H [mm]	L [mm]	L1 [mm]	L2 [mm]	Weight [kg]
	[inch]	[mm]						
CSV 2	¼	6	19	56	82	–	34	0.1
CSV 3	¼	6	19	65	92	–	34	0.1
	⅜	10	19	65	96	–	34	0.1
CSV 6	⅜	10	19	65	96	–	34	0.1
	½	12	19	65	112	–	34	0.1
CSV 10	½	12	46	73	142	50	34	0.2
	⅝	16	46	73	142	50	34	0.2
CSV 15	⅝	16	46	74	167	62	34	0.4
	⅞	22	46	76	167	62	34	0.4
Coil	–	–	–	–	–	–	–	0.1

Figure: Flare connection



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Table: Flare connection

Type	Connection (flare)		B [mm]	H [mm]	L [mm]	C [mm]	H1 [mm]	H2 [mm]	H3 [mm]	Weight [kg]
	[in]	[mm]								
CSV 2	¼	6	19	63	58	13	49	12	7.5	0.085
CSV 3	¼	6	19	69	58	13	55	12	7.5	0.096
	⅜	10	19	69	76	15	54	13	8.5	0.128
CSV 6	⅜	10	19	70	76	15	55	13	8.5	0.128
	½	12	19	70	76	15	55	13	8.5	0.137

## Certificates, declarations and approvals

The list contains all certificates, declarations, and approvals for this product type. Individual code number may have some or all of these approvals, and certain local approvals may not appear on the list.

When you click on the link you will be directed to the latest version of the 'Declaration of Conformity'. Products developed and sold before this date of issue conform to the directives/standards in force at the time of their sale.

Approval type	Title	Certification body	Approval topic
UA Declaration	<a href="#">Danfoss UA 8481</a>	Danfoss	UA RoHS
Export Control Declaration	<a href="#">Commercial refrigeration solenoid valves and coils - Other - Polymer, Bronze, Brass and cast iron</a>	Danfoss	
UA Declaration	<a href="#">Danfoss UA 2023-01-10 Valves PL01 PL40</a>	Danfoss	PED, Pressure
Manufacturer's Declaration	<a href="#">Danfoss MD 032B9610.AF</a>	Danfoss	EU RoHS, PED, Pressure
Manufacturer's Declaration	<a href="#">Danfoss MD 033F4006</a>	Danfoss	China RoHS
Pressure Safety Certificate	<a href="#">LLC CDC EURO-TYSK UA.TR.089.1015.02-22</a>	LLC CDC EURO TYSK - Ukraine	PED, Pressure

## Contact details

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