

Data sheet

Indirect servo-operated 2/2-way solenoid valves

Type EV220W 10 - EV220W 22 NC EPDM



EV220W is a range of compact indirect servo-operated 2/2 way solenoid valves, especially designed for water inlet, with EPDM seal and WRAS approval.

Features and versions

- For water
- Flow range for water in Kv: 1.6 – 7 m³/h
- Differential pressure: 0.2 – 10 bar
- Media temperature: 0 – 100 °C
- Ambient temperature: Up to 50 °C
- Thread connections: From G 3/8 – G 1
- DN 10 – 22
- Water hammer damped
- Clip-on coil and cable plug enclosure: IP65
- Complete NC solenoid valves with coil and plug: 230V AC, 24V AC, 24V DC
- NC solenoid valve bodies for separate coil and cable plug: 230V AC, 24V AC, 12V DC, and 24V DC

EV220W
Brass valve body, NC



- WRAS PRODUCT
- RoHS Directive 2011/65/EU
- - Low Voltage Directive 2014/35/EU
 - EN60730-1
 - EN60730-2-8
- UL recognized

ISO228/1 connection	Seal material	Orifice size [mm]	K _v -value [m ³ /h]	Media temp. [°C]	Differential pressure [Bar]	Coil voltage/power consumption	Code no.
G 3/8	EPDM	10	1.6	0 – 100	0.2 – 10	*	042U4410
G 3/8	EPDM	10	1.6	0 – 100	0.2 – 10	230V 50/60Hz 8W	042U471032
G 3/8	EPDM	10	1.6	0 – 100	0.2 – 10	24V 50/60Hz 9.5W	042U471019
G 3/8	EPDM	10	1.6	0 – 100	0.2 – 10	24V DC 6.5W	042U471002
G 1/2	EPDM	14	4	0 – 100	0.3 – 10	*	042U4414
G 1/2	EPDM	14	4	0 – 100	0.3 – 10	230V 50/60Hz 8W	042U471432
G 1/2	EPDM	14	4	0 – 100	0.3 – 10	24V 50/60Hz 9.5W	042U471419
G 1/2	EPDM	14	4	0 – 100	0.3 – 10	24V DC 6.5W	042U471402
G 3/4	EPDM	18	7	0 – 100	0.3 – 10	*	042U4418
G 3/4	EPDM	18	7	0 – 100	0.3 – 10	230V 50/60Hz 8W	042U471832
G 3/4	EPDM	18	7	0 – 100	0.3 – 10	24V 50/60Hz 9.5W	042U471819
G 3/4	EPDM	18	7	0 – 100	0.3 – 10	24V DC 6.5W	042U471802
G 1	EPDM	22	7	0 – 100	0.3 – 10	*	042U4422
G 1	EPDM	22	7	0 – 100	0.3 – 10	230V 50/60Hz 8W	042U472232
G 1	EPDM	22	7	0 – 100	0.3 – 10	24V 50/60Hz 9.5W	042U472219
G 1	EPDM	22	7	0 – 100	0.3 – 10	24V DC 6.5W	042U472202

* See separate table for AC/AZ coils.

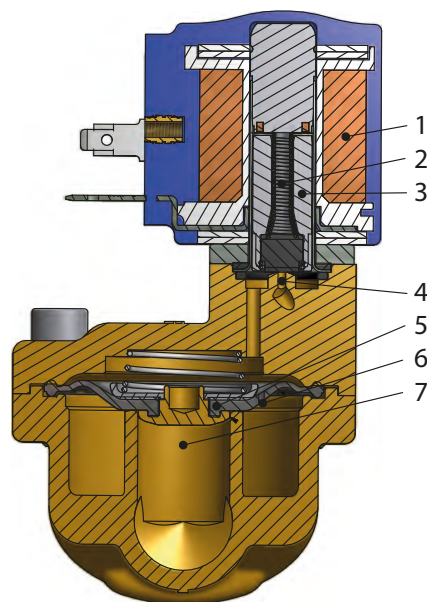
Data sheet | Indirect servo-operated 2/2-way solenoid valves, Type EV220W 10 – EV220W 22 NC EPDM
Technical data

Type	EV220W 10	EV220W 14	EV220W 18	EV220W 22
Time to open [ms] ¹⁾	50	100	200	200
Time to close [ms] ¹⁾	300	400	500	500

¹⁾Times are indicative and apply to water. Exact times will depend on pressure conditions.

Max. working pressure (MWP)	10 bar		
Max. test pressure	EV220W 10	50 bar	
	EV220W 14 – EV220W 22	25 bar	
Ambient temperature	-40 – 50 °C		
Media temperature	-10 – 100		
Media viscosity	Max. 50cSt		
Materials	Valve body	Brass	CW617N
	Armature	Stainless steel	W. no. 1.4105 / AISI 430FR
	Armature stop	Stainless steel	W. no. 1.4105 / AISI 430FR
	Armature tube	Stainless steel	W. no. 1.4303 / AISI 305
	Spring	Stainless steel	W. no. 14310 / AISI 301
	O-ring	EPDM	
	Valve plate	EPDM	
	Diaphragm	EPDM	

Function



Pos. no.	Description
1	Coil
2	Armature spring
3	Armature
4	Pilot orifice
5	Diaphragm
6	Equalizing orifice
7	Main orifice

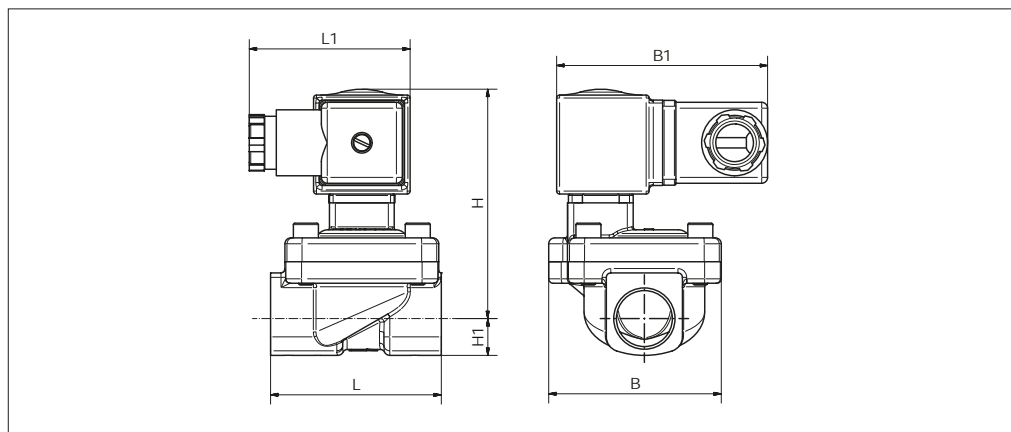
Coil voltage disconnected

When voltage is disconnected, the armature spring (2) presses the armature (3) down against the pilot orifice (4). Pressure builds up over the diaphragm (5) via the equalizing orifice (6). The diaphragm closes the main orifice (7) as soon as the pressure over the diaphragm equals the inlet pressure. The valve stays closed for as long as voltage remains disconnected.

Coil voltage connected (open)

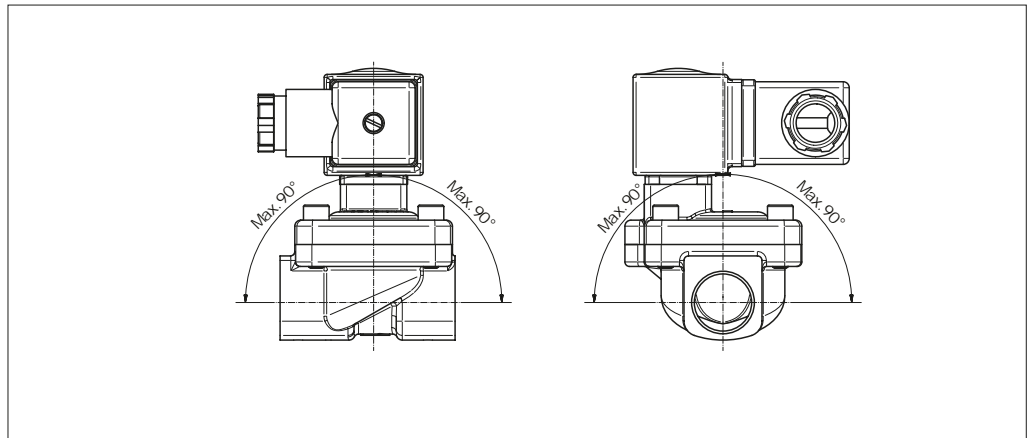
When voltage is applied to the coil (1), the pilot orifice (4) is opened. Since the pilot orifice is larger than the equalizing orifice (6), pressure over the diaphragm (5) falls and the diaphragm is lifted clear of the main orifice (7). The valve stays open for as long as the required minimum differential pressure is present and voltage is applied to the coil.

Dimensions and weight

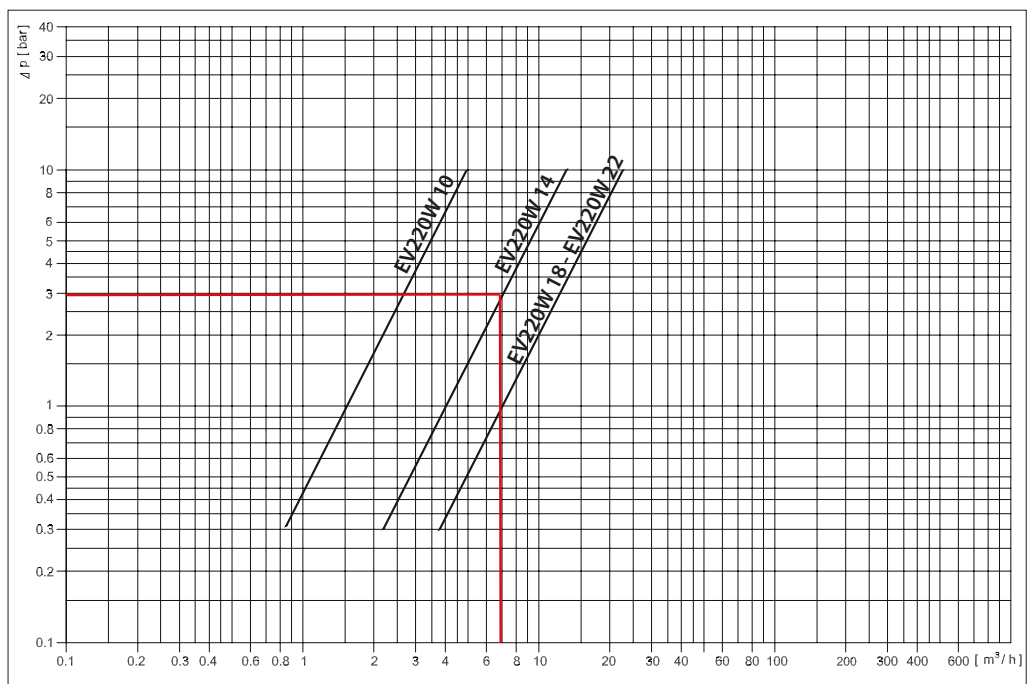


Type	L [mm]	B [mm]	H [mm]	H ₁ [mm]	L ₁ [mm]	B ₁ [mm]	Weight with coil [kg]
EV220W 10	51	50	77	13	50	70	0.56
EV220W 14	58	58	78	13	50	70	0.62
EV220W 18	90	58	79	18	50	70	0.84
EV220W 22	90	58	84	22	50	70	1.12

Mounting angle



Capacity diagram
Example for water:
Capacity for EV220W at
a differential pressure of
3 bar: Approx. 7 m³/h



**AS/AZ,
Compact UL recognised,
clip-on coils**



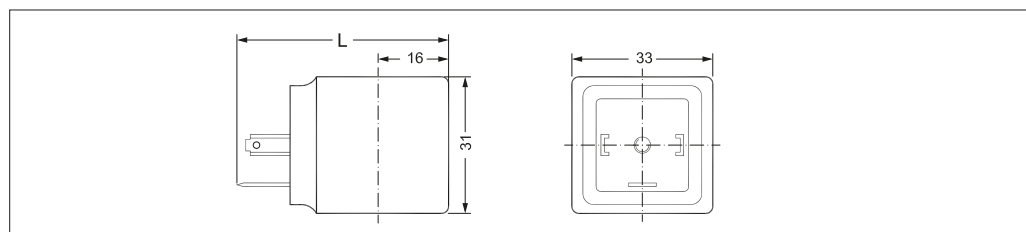
- Enclosure:
Up to IP65 / NEMA 4
- Used with EV220T and EV220W
- For UL recognised valves
- In accordance with:
 - RoHS Directive 2011/65/EU
 - Low Voltage Directive 2014/35/EU
 - EN60730-1
 - EN60730-2-8

Type	Tambient [°C]	Supply voltage [V]	Voltage variation	Frequency [Hz]	Power consumption		Approval	Code no.
					[W]	[VA]		
AS024CS	-40T50	24	-10%, 6%	50	9,5	18		042N7608
		24	-10%, 6%	60	7,0	14		
AS230CS	-40T50	230	-10%, 6%	50	8,0	16		042N7601
		208 – 240	±6%	60	7,0	14		
AZ012DS	-40T50	12	-10%, 6%	DC	6,0	-		042N7616
AZ024DS	-40T50	24	-10%, 6%	DC	6,5	-		042N7617

Technical data

Design	In accordance with UL 429
Insulation of coil windings	Class H according to IEC 85
Connection	Spade connector in accordance with DIN 43650 form A
Enclosure, IEC 529	IP00 with DIN spade connector, IP65 with cable plug
Plug type	Cable plug (042N0156)

Dimensions and weight



L without cable plug [mm]	L with cable plug [mm]	L with protective cap [mm]	Weight [kg]
48	70	64	0.11

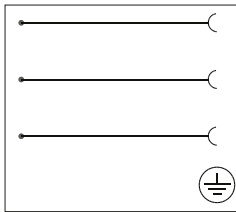
Cable plug



- Enclosure:
Up to IP65
- AC / DC all voltages up to 250 V
- Approved in accordance with:
CSA
- In accordance with:
- RoHS 2011/65/EU
- LVD 2014/35/EU

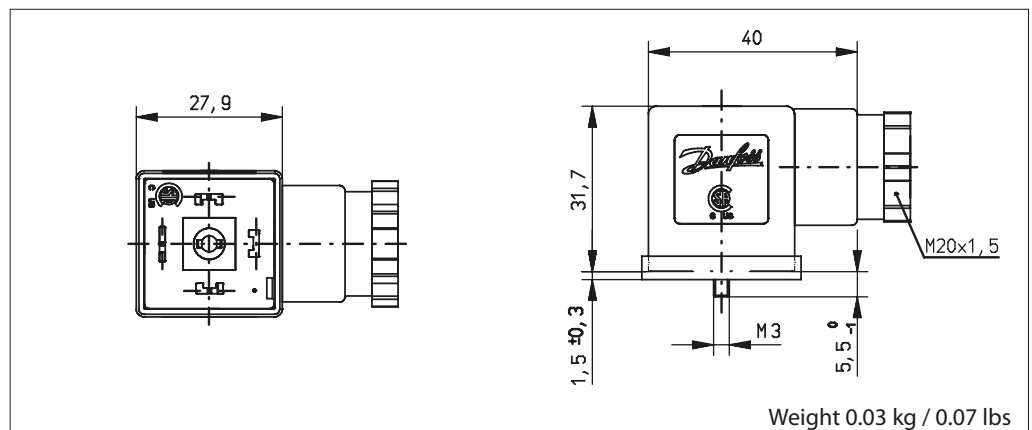
Cable plug size	Description	Code no.
DIN 18	Cable plug with form A	042N0178

Technical data



Design	EN 175301-803 Form A	
Cable gland	PG 11	
Poles	2 + PE	
Max. voltage	250 V AC / DC	
Approvals	CSA	
Enclosure	IP65	
Max. operating current	16 A	
Contact resistance	< 4m Ω	
Cable diameter	ø6 – 8 / 8 – 10 mm	
Wire cross section	Max. 1.5 mm ²	
Ambient temperature	-25 – 80 °C / -13 – 176 °F	
Materials	Contacts	CuZn, Cu/Sn - plated
	Terminal block	PA 6 GF
	Profiled gasket	NBR
	Housing	PA 6 GF

Dimensions and weight



Danfoss can accept no responsibility for possible errors in catalogues, brochures and other printed material. Danfoss reserves the right to alter its products without notice. This also applies to products already on order provided that such alterations can be made without consequential changes being necessary in specifications already agreed. All trademarks in this material are property of the respective companies. Danfoss and the Danfoss logotype are trademarks of Danfoss A/S. All rights reserved.