Data sheet

Solenoid Valve 2/2 way servo-operated Type EV220T

EV220T 14 – 18 is a servo-operated solenoid valve made from a glass-fiber reinforced polymer material that ensures a strong and durable valve.

The valve is designed specifically for laundry and dishwashing water inlet applications and the valve can be supplied with thread / thread connections and thread / hose connections.

Features and versions

- 2/2 way servo-operated
- Max. ambient temperature: 50 °C
- Media temperature up to 85 °C
- Body material:
  Glass-fiber reinforced polymer
- NC (normally closed)
- Coil type: AM and AP coil
- Orifice: DN 14 – 18
- Connection:
  – G ¾ – G ¾
  – G ¾ – hose
  – ¾ – 14 NPSM ext. – ¾ – 14 NPSM ext
  – ¾ – 14 NPSM ext. – ¾ hose

Polymer valve body, NC

G thread connection program

ISO 228-1 connection		Seal material	Orifice size	k_v-Value	Media temp.	Differential pressure	Code no.
Inlet	Outlet		[mm]	[m^3/h]	[°C]	[bar]	
G ¾ ext.	¾ hose	EPDM	14	4	0 – 85	0.3 – 10	**042U8100**
G ¾ ext.	G ¾ ext.	EPDM	14	4	0 – 85	0.3 – 10	**042U8120**
G ¾ ext.	¾ hose	EPDM	18	6	0 – 85	0.3 – 10	**042U8150**
G ¾ ext.	G ¾ ext.	EPDM	18	6	0 – 85	0.3 – 10	**042U8170**

NPSM thread connection program

NPSM connection		Seal material	Orifice size	C_v-Value	Media temp.	Differential pressure [1]	Code no.
Inlet	Outlet		[mm]	[USgal/min]	[°F]	[psi]	
¾–14 NPSM ext.	¾ hose	EPDM	14	4.7	32 – 185	4.4 – 145	**042U8110**
¾–14 NPSM ext.	¾–14 NPSM ext.	EPDM	14	4.7	32 – 185	4.4 – 145	**042U8130**
¾–14 NPSM ext.	¾ hose	EPDM	18	7.0	32 – 185	4.4 – 145	**042U8160**
¾–14 NPSM ext.	¾–14 NPSM ext.	EPDM	18	7.0	32 – 185	4.4 – 145	**042U8180**

[1] UL recognized approval is pending for pressure level 6 bar / 90 psi.

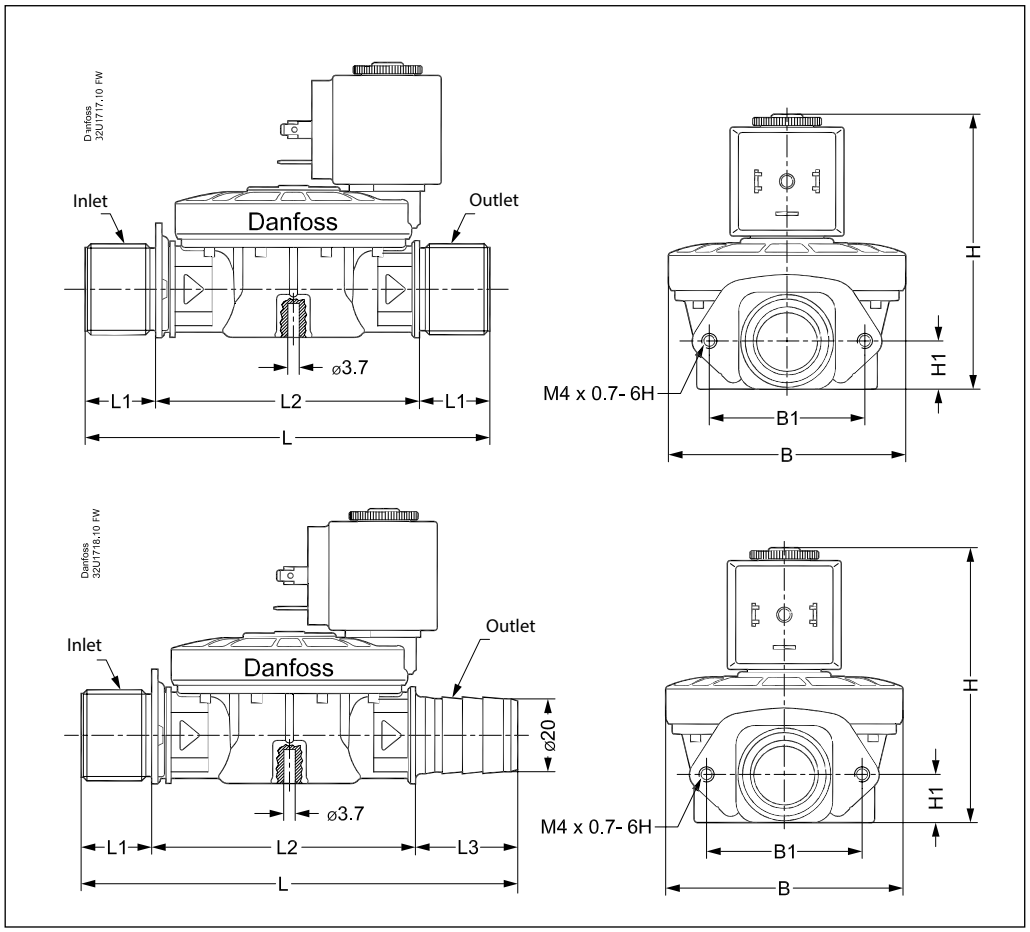
Technical data

	Type EV220T 14	Type EV220T 18
Time to open [ms] [1]	100	200
Time to close [ms] [1]	400	500
Capacity, k_v [m^3/h]	4	6
Capacity [C_v gal/min]	4.7	7
Max. test pressure [bar]	20	20

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

Valve	**Ambient temperature**	Max. 50 °C / 122 °F	
	Media viscosity	50 cSt	
Materials	**Body**	EMS Grivory HT (Glass-fiber reinforced)	
	Armature	Stainless steel	W no. 1.4105 / AISI 430FR
	Armature stop		W. no. 1.4105 / AISI 430FR
	Armature tube		W. no. 1.4303 / AISI 305
	Spring		W. no. 1.4310 / AISI 301
	O-ring	EPDM	
	Valve plate		
	Diaphragm		
	Screws	Steel zinc plated delta PT	
Features	**Mounting**	Metal bracket (see dimension drawing on page 3)	
	Media quality	Built-in filter mesh width 0.45 mm	

Dimensions and weight



G thread connection program

Orifice	ISO 228-1 connection		L [mm]	L1 [mm]	L2 [mm]	L3 [mm]	B [mm]	B1 [mm]	H [mm]	H1 [mm]
DN 14	G ¾ ext.	G ¾ ext.	117.5	20.5	76.5	—	68.8	45.0	77.7	14.0
DN 14	G ¾ ext.	¾ Hose	127.5	20.5	76.5	30	68.8	45.0	77.7	14.0
DN 18	G ¾ ext.	G ¾ ext.	117.5	20.5	76.5	—	68.8	45.0	79.9	14.0
DN 18	G ¾ ext.	¾" Hose	127.5	20.5	76.5	30	68.8	45.0	79.9	14.0

NPSM thread connection program

Orifice	NPSM connection		L [in.]	L1 [in.]	L2 [in.]	L3 [in.]	B [in.]	B1 [in.]	H [in.]	H1 [in.]
DN 14	¾ – 14 NPSM ext.	¾ Hose	5.0	0.81	2.99	1.18	2.78	1.77	3.03	0.55
DN 14	¾ – 14 NPSM ext.	¾ – 14 NPSM ext.	4.61	0.81	2.99	—	2.78	1.77	3.03	0.55
DN 18	¾ – 14 NPSM ext.	¾ Hose	5.0	0.81	2.99	1.18	2.78	1.77	3.11	0.55
DN 18	¾ – 14 NPSM ext.	¾ – 14 NPSM ext.	4.61	0.81	2.99	—	2.78	1.77	3.11	0.55

Valve type	Gross weight Valve body without coil	Gross weight Valve body including AM coil, plug
EV220T 14 – 18	0.16 / 0.35 [kg/lbs]	0.30 / 0.66 [kg/lbs]

Coil data

Coils AM

Coil type	Supply voltage [V]	Frequency [Hz]	Power consumption	Ambient temperature Max. [°C]	Code number
AM024C	24 a.c.	50 / 60	7.5 W, 15 VA	50	**042N0842**
AM110C	110 a.c.	50 / 60	7.5 W, 15 VA	50	**042N0845**
AM230C	220 – 230 a.c.	50 / 60	7.5 W, 15 VA	50	**042N0840**
AM240C	240 a.c.	50 / 60	7.5 W, 15 VA	50	**042N0841**
AM012D	12 d.c.	—	9.5 W	50	**042N0848**
AM024D	24 d.c.	—	9.5 W	50	**042N0843**

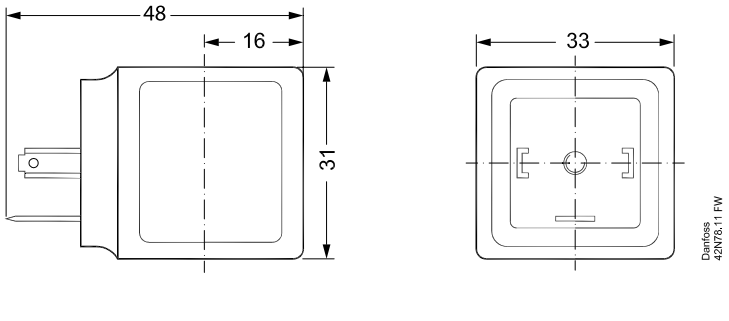
Coils AP

Coil type	Supply voltage [V]	Frequency [Hz]	Power consumption	Ambient temperature Max. [°C]	Code number
AP024B	24 a.c.	60	5W, 10 VA	50	**042N4191**
AP120B	110 – 120 a.c.	60	5W, 10 VA	50	**042N4192**
AP240C	208 – 240 a.c.	60	5W, 10 VA	50	**042N4193**
	230 a.c.	50	6W, 12 VA	50	**042N4193**

Technical data

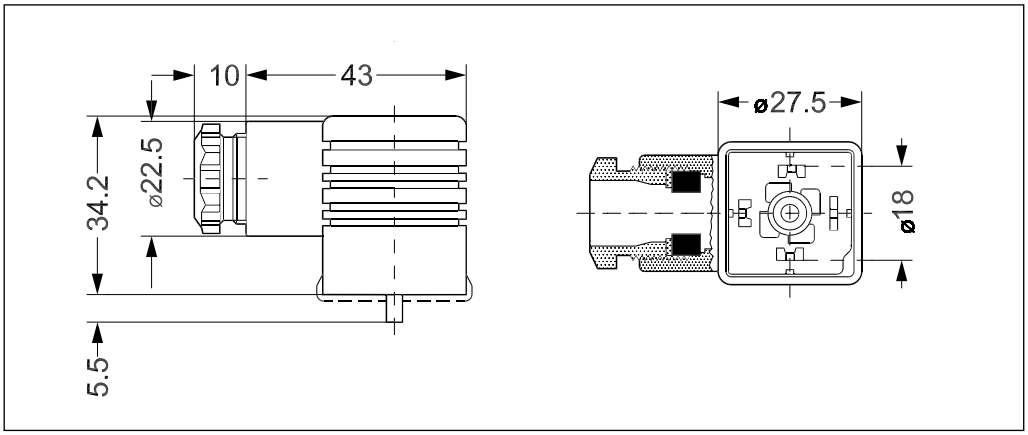
Design	In accordance VDE 0580
Voltage tolerance	± 10%
Power construmption, cut in	a.c. coils only - Type AM: 22.5 VA, Type AP: 15 VA
Insulation of coil windings	Class H according to IEC 85
Connection	Spade connector in accordance with DIN 43650 form A
Enclosure IEC 529 (only plug)	IP00 with spade connector IP65 with cable plug
Ambient temperature	Max. 50 °C
Duty Rating	Continuous
Net weight	0.10 kg

Dimensions [mm]



Accessories: Cable plug

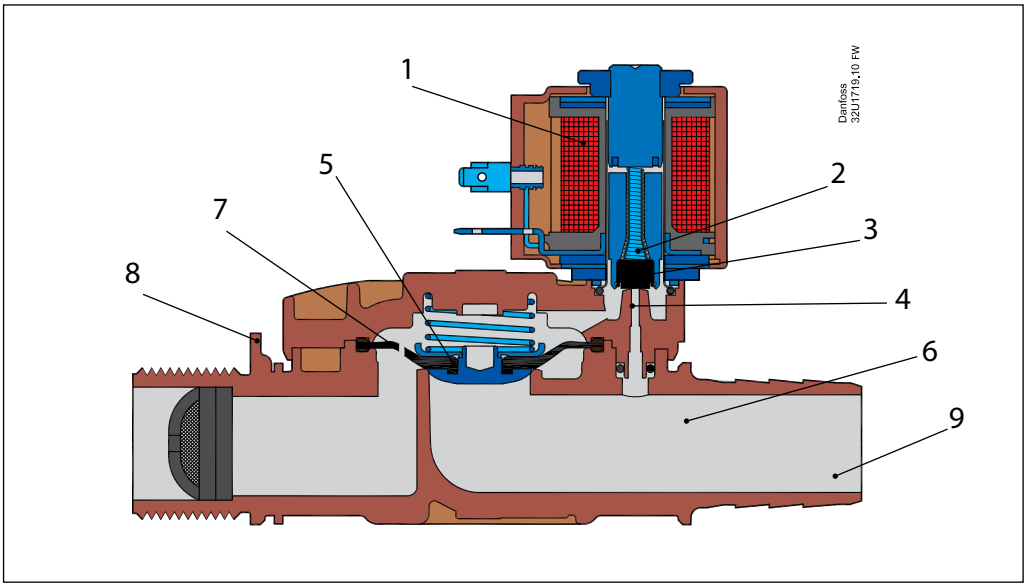
Type, Form A	Code number
GDM 2011 (grey) cable plug according to DIN 43650-A PG11	042N0156



Built-in filter

Type	Code number
Built-in filter mesh width 0.45 mm	042U8199

Function, NC



1. Coil
2. Armature spring
3. Valve plate
4. Pilot orifice
5. Diaphragm
6. Main orifice
7. Equalizing orifice
8. Mounting bracket
9. Hose

De-energized closed version

Coil voltage disconnected
When the voltage is disconnected, the armature spring (2) pressure the armature clock (3) down against the pilot orifice (4). Pressure builds up over the diaphragm (5) via the equivalent orifice (7). The diaphragm closes the main orifice (6) as soon as the pressure over the diaphragm equals the inlet pressure. The valve stays closed for as long as voltage to 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 equalising orifice (7), pressure over the diaphragm (5) falls and is lifted clear of the main orifice (6). The valve stays open for as long as the requlred least differential pressure is present and voltage is applied to the coil.

Capacity diagram