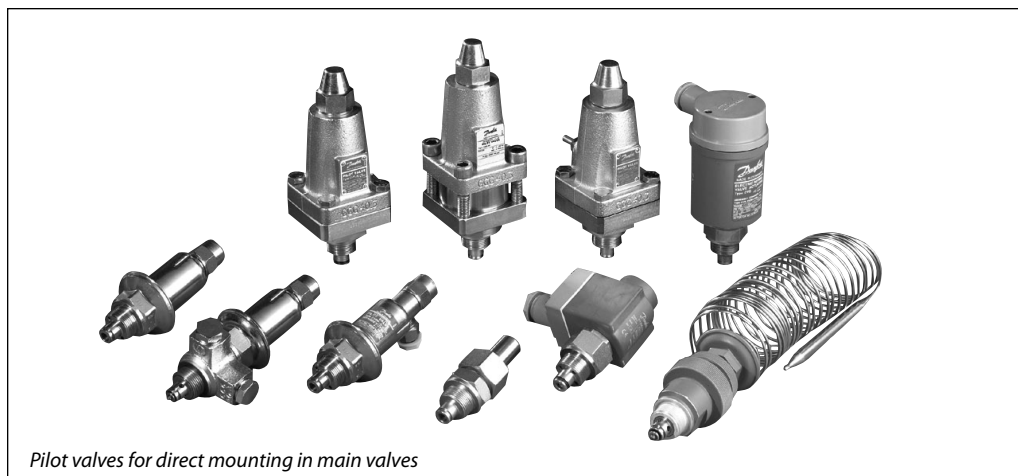


Pilot valves for servo operated main valves

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Introduction



The range of pilot valves consists of:

- Constant-pressure pilot valve, type CVP (LP) and CVP (HP)
- Differential-pressure pilot valve, type CVPP (LP) and CVPP (HP)
- High pressure pilot valve, type CVP (XP) ideal for CO₂ hot gas defrosting
- Pressure-operated pilot valve with reference pressure connection, type CVC
- Temperature-operated pilot valve, type CVT/CVTO (pressure-independent)
- Electronically operated constant-pressure pilot valve, type CVQ (pressure-dependent)
- Motor-operated constant-pressure pilot valve, type CVPM (pressure-dependent)
- Solenoid pilot valve, type EVM (NC)
- Solenoid pilot valve, type EVM (NO)
- Housing, type CVH for pilot valves, for mounting in external pilot lines

Features

- Applicable to all common non flammable refrigerants including R 717 and non corrosive gases/liquids dependent on sealing material compatability.
- The pilot valves can be screwed direct into the main valve, thus avoiding the necessity of welding, soldering and separate pilot lines.
- The pilot valves can be mounted direct in a ICS or PM main valve or be connected via an external pilot line and a CVH housing.
- All pilot valves can be used on all sizes of ICS or PM main valves.
- Extremely accurate pressure and temperature control.
- Several pilot valves can be connected in series or in parallel to provide many functions in the same ICS or PM main valve.

Design

Each pilot valve is designed to give the optimum control accuracy within the specific function range of the valve.

Several pilot valves can be mounted in series and/or in parallel on a ICS or PM main valve to give a very large number of functions. Mounted in a CVH housing, the pilot valves can

be used in external lines, either as independently operating valves or as external control valves for the ICS or PM main valve.

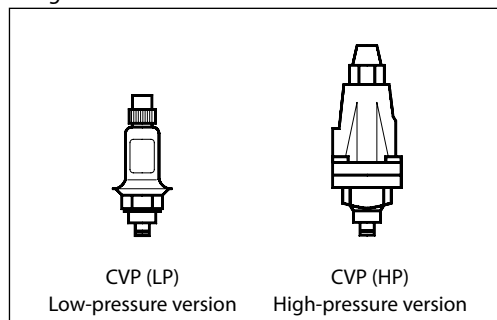
The pilot valves can be used for all sizes of ICS or PM main valves.

Technical data

- **Refrigerants**
Applicable to all common non flammable refrigerants including R 717 and non corrosive gases/liquids dependent on sealing material compatability. For further information please see installation instruction for ICS or PM valves. Flammable hydrocarbons are not recommended. For further information please contact your local Danfoss Sales Company.
- Temperature and pressure ranges are given separately for the specific pilot valve.

Constant-pressure pilot valve, type CVP (LP) and CVP (HP)

Design and function



CVP is a constant-pressure pilot valve available in low-pressure and high-pressure versions.

The pilot valve is used to maintain a constant pressure on the ICS or PM main valve inlet side. The low-pressure version (LP) must not be subjected to pulsation.

When a CVP is mounted in a CVH housing, it can be used as a separate constant-pressure valve or a pressure relief valve (e.g. to prevent hydraulic overpressure of trapped liquid).

MWP: Maximum working pressure.

The k_v/C_v value is measured with the pilot valve mounted in a CVH housing for external pilot lines. The value can vary slightly, depending on the setting value.

When CVP (HP) is used at a temperature lower than -50°C (-58°F) the bolts must be replaced with stainless steel bolts (type 4, quality 80).

Technical data, SI units

Valve type	MWP	k_v -value	Temperature range	Pressure range	Code no.
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Low-pressure version

CVP (LP)	17 bar g	0.40 m ³ /h	-50 to 120°C	0 bar g to 7 bar g	027B1100
CVP (LP)	17 bar g	0.40 m ³ /h	-50 to 120°C	-0.66 bar g to 2 bar g	027B1101

High-pressure version

CVP (HP)	28 bar g	0.40 m ³ /h	-50 to 120°C	4 bar g to 22 bar g	027B1160
CVP (HP)	28 bar g	0.40 m ³ /h	-50 to 120°C	4 bar g to 28 bar g	027B1161
CVP (HP)	28 bar g	0.40 m ³ /h	-50 to 120°C	-0.66 bar g to 7 bar g	027B1164

Technical data, US units

Valve type	MWP	C_v -value	Temperature range	Pressure range	Code no.
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Low-pressure version

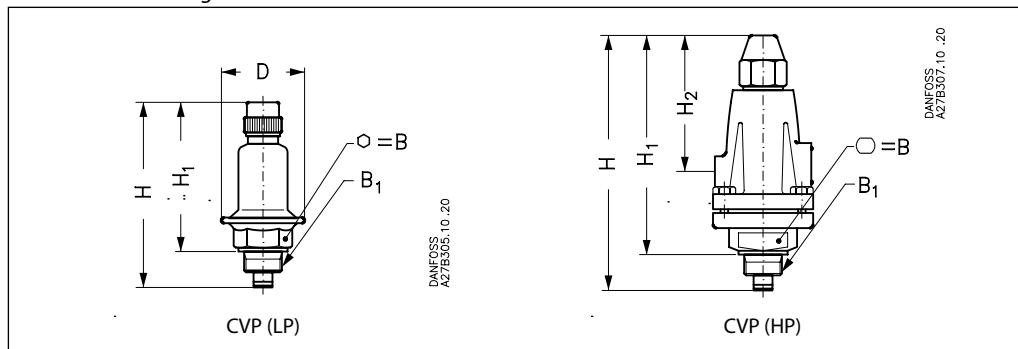
CVP (LP)	247 psi g	0.46 US gal/min	-58 to 248°F	0 psi g to 102 psi g	027B1100
CVP (LP)	247 psi g	0.46 US gal/min	-58 to 248°F	19.5 in. Hg to 29 psi g	027B1101

High-pressure version

CVP (HP)	406 psi g	0.46 US gal/min	-58 to 248°F	58 psi g to 319 psi g	027B1160
CVP (HP)	406 psi g	0.46 US gal/min	-58 to 248°F	58 psi g to 406 psi g	027B1161
CVP (HP)	406 psi g	0.46 US gal/min	-58 to 248°F	19.5 in. Hg to 102 psi g	027B1164

P-band for a valve system regulated by CVP and ICS/PM: < 0.2 bar g (2.9 psi g)

Dimensions and weights



Valve type	H	H ₁	H ₂	D	B	B ₁	Weight
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Low-pressure version

CVP (LP)	mm	122	98		53		0.4 kg
	in.	4.80	3.86		2.09		0.88 lb.

High-pressure version

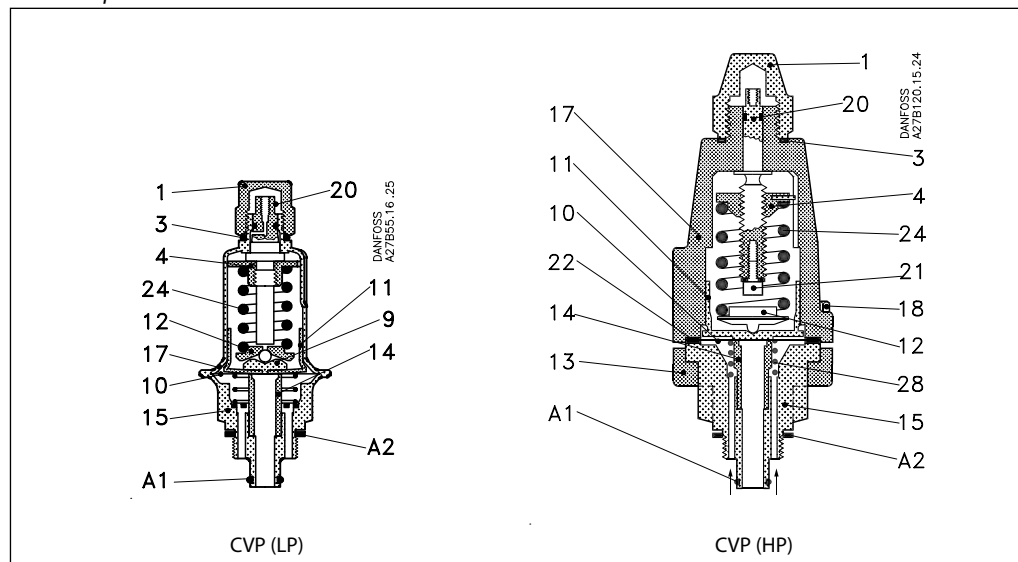
CVP (HP)	mm	170	146	90		32	1.7 kg
	in.	6.69	5.75	3.54			3.75 lb.

Weights are approximate values only

Constant-pressure pilot valve, type CVP (LP) and CVP (HP)

(continued)

Material specification



CVP (LP)

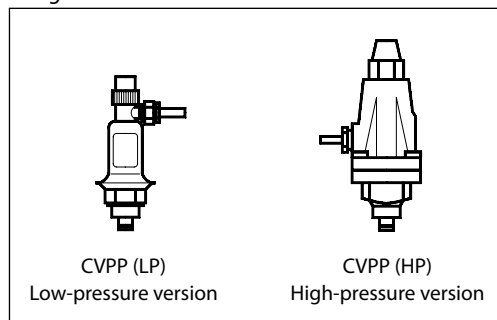
No.	Part	Material
A1	O-ring	Cloroprene (Neoprene)
A2	Seal	Non-asbestos
1	Protective cap	Steel
3	Seal	Cloroprene (Neoprene)
4	Nut	Stainless steel
9	Ball socket	Stainless steel
10	Diaphragm	Stainless steel
11	Thrust pad	Steel
12	Spring guide	Stainless steel
14	Orifice	Stainless steel
15	Base	Steel
17	Valve body	Steel
20	Setting spindle	Stainless steel
24	Spring	Steel

CVP (HP)

No.	Part	Material
A1	O-ring	Cloroprene (Neoprene)
A2	Seal	Non-asbestos
1	Protective cap	Steel
3	Seal	Non-asbestos
4	Nut	Stainless steel
10	Diaphragm	Stainless steel
11	Thrust pad	Stainless steel
12	Spring guide	Stainless steel
13	Flange	Steel
14	Orifice	Stainless steel
15	Base	Stainless steel
17	Valve body	Cast iron
18	Cover bolt	Steel
20	Setting spindle	Stainless steel
21	Screw (M6 × 10)	Steel
22	Cover gasket	Non-asbestos
24	Spring	Steel
28	Spring	Steel

Differential-pressure pilot valve, type CVPP (LP) and CVPP (HP)

Design and function



CVPP is a differential-pressure pilot valve available in low-pressure and high-pressure versions.

The pilot valve is used to maintain a constant differential pressure between the CVPP valve reference pressure connection and the ICS or PM main valve inlet pressure.

CVPP incorporates a diaphragm so that the reference pressure and the refrigerant in the valve are physically separated. The pilot valve can therefore also be used as a pneumatic control valve either to control a ICS or PM main valve or as a separate pneumatic valve mounted in a CVH housing.

MWP: Maximum working pressure.

The k_v/C_v value is measured with the pilot valve mounted in a CVH housing for external pilot lines. The value can vary slightly, depending on the setting value.

When CVPP (HP) is used at a temperature lower than -50°C (-58°F) the bolts must be replaced with stainless steel bolts (type 4, quality 80).

Technical data, SI units

Valve type	MWP	k_v -value	Temperature range	Pressure range (Δp)	Code no.
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Low-pressure version

CVPP (LP)	17 bar g	0.40 m ³ /h	-50 to 120°C	$\Delta p = 0$ to 7 bar g	027B1102
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High-pressure version

CVPP (HP)	28 bar g	0.40 m ³ /h	-50 to 120°C	$\Delta p = 0$ to 7 bar g	027B1162
CVPP (HP)	28 bar g	0.40 m ³ /h	-50 to 120°C	$\Delta p = 4$ to 22 bar g	027B1168
CVPP (HP)	40 bar g	0.40 m ³ /h	-50 to 120°C	$\Delta p = 4$ to 22 bar g	027B1268

Technical data, US units

Valve type	MWP	C_v -value	Temperature range	Pressure range (Δp)	Code no.
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Low-pressure version

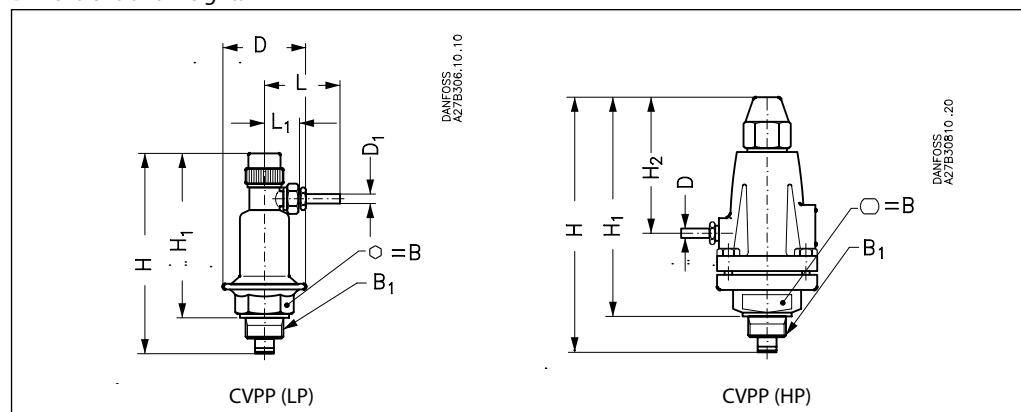
CVPP (LP)	247 psi g	0.46 USgal/min	-58 to 248°F	$\Delta p = 0$ to 102 psi g	027B1102
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High-pressure version

CVPP (HP)	406 psi g	0.46 USgal/min	-58 to 248°F	$\Delta p = 0$ to 102 psi g	027B1162
CVPP (HP)	406 psi g	0.46 USgal/min	-58 to 248°F	$\Delta p = 58$ to 319 psi g	027B1168
CVPP (HP)	580 psi g	0.46 USgal/min	-58 to 248°F	$\Delta p = 58$ to 319 psi g	027B1268

P-band for a valve system regulated by CVPP and ICS or PM main valve: <0.2 bar g (2.9 psi g).

Dimensions and weights



Valve type	H	H ₁	H ₂	L	L ₁	D	B	B ₁	Weight
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Low-pressure version

CVPP (LP)	mm	136	112		53	26	53	32	M 24 × 1.5	0.5 kg
	in.	5.35	4.41		2.09	1.02	2.09			1.1 lb.

High-pressure version

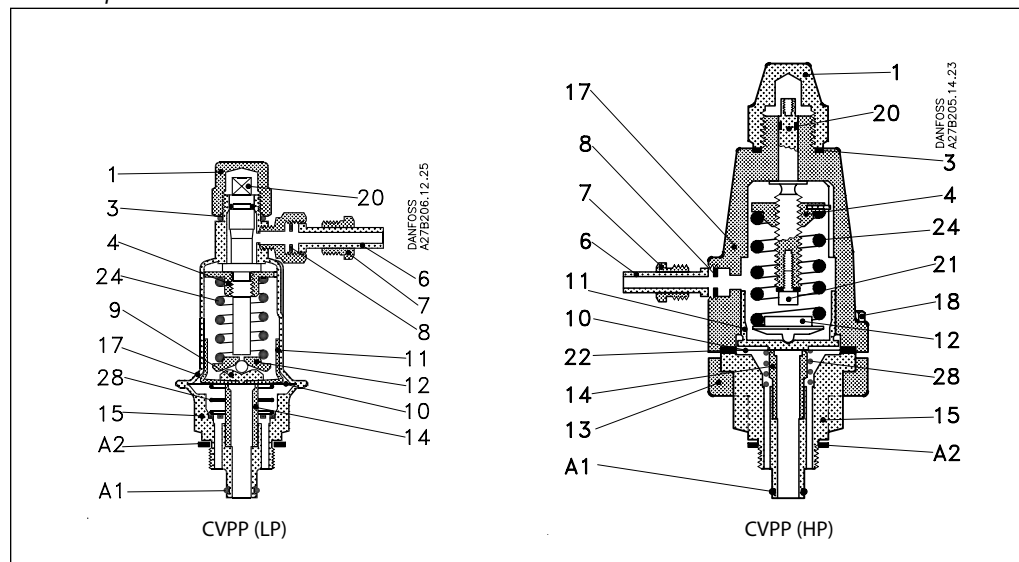
CVPP (HP)	mm	170	146	90			6	32	M 24 × 1.5	1.7 kg
	in.	6.69	5.75	3.54			0.24			3.7 lb.

Weights are approximate values only

Differential-pressure pilot valve, type CVPP (LP) and CVPP (HP)

(continued)

Material specification



CVPP (LP)

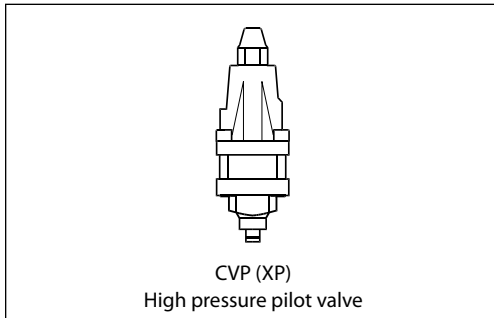
No.	Part	Material
A1	O-ring	Cloroprene (Neoprene)
A2	Seal	Non-asbestos
1	Protective cap	Steel
3	Seal	Cloroprene (Neoprene)
4	Nut	Stainless steel
6	Nipple	Steel
7	Union nut	Steel
8	Seal	Aluminium
9	Ball socket	Stainless steel
10	Diaphragm	Stainless steel
11	Thrust pad	Steel
12	Spring guide	Stainless steel
14	Orifice	Stainless steel
15	Base	Steel
17	Valve body	Steel
20	Setting spindle	Stainless steel
24	Spring	Steel
28	Spring	Steel

CVPP (HP)

No.	Part	Material
A1	O-ring	Cloroprene (Neoprene)
A2	Seal	Non-asbestos
1	Protective cap	Steel
3	Seal	Non-asbestos
4	Nut	Stainless steel
6	Nipple	Steel
7	Union nut	Steel
8	Seal	Aluminium
10	Diaphragm	Stainless steel
11	Thrust pad	Stainless steel
12	Spring guide	Stainless steel
13	Flange	Steel
14	Orifice	Stainless steel
15	Base	Stainless steel
17	Valve body	Cast iron
18	Cover bolt	Steel (8.8)
20	Setting spindle	Stainless steel
21	Screw (M6 × 10)	Steel
22	Cover gasket	Non-asbestos
24	Spring	Steel
28	Spring	Steel

**High pressure pilot valve,
type CVP (XP)**

Design and function



CVP (XP) is a constant-pressure pilot valve available in high-pressure version. The CVP (XP) ensures an efficient and stable CO₂ hot gas defrost process.

The pilot valve is used to maintain a constant pressure on the ICS or PM main valve inlet side.

When a CVP is mounted in a CVH housing, it can be used as a separate constant-pressure valve or a pressure relief valve (e.g. to prevent hydraulic overpressure in an entrapped liquid).

MWP: Maximum working pressure.

The k_v/C_v value is measured with the pilot valve mounted in a CVH housing for external pilot lines. The value can vary slightly, depending on the setting value.

Technical data, SI units

Valve type	MWP	k_v -value	Temperature range	Pressure range	Code no.
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High-pressure version

CVP (XP)	52 bar g	0.45 m ³ /h	–50 to 120°C	25 bar g to 52 bar g	027B0080
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Technical data, US units

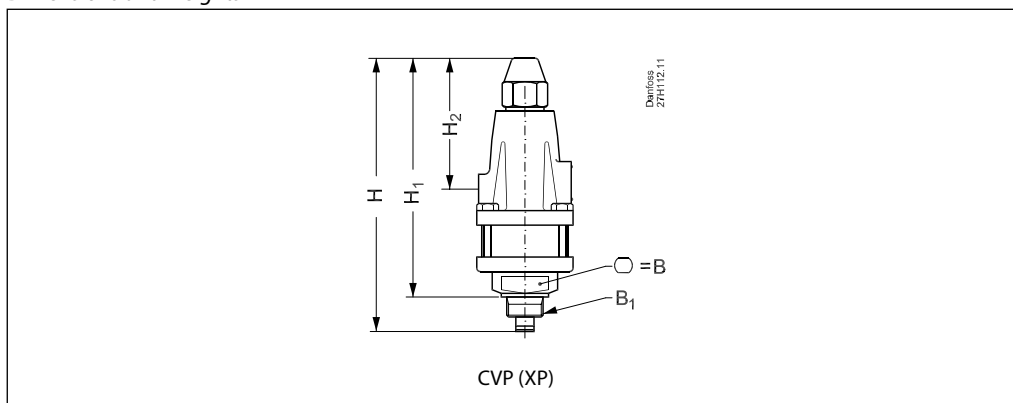
Valve type	MWP	C_v -value	Temperature range	Pressure range	Code no.
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High-pressure version

CVP (XP)	754 psi g	0.52 USgal/min	–58 to 248°F	363 psi g to 754 psi g	027B0080
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P-band for a valve system regulated by CVP and ICS or PM main valve: < 1.6 bar g (23.2 psi g)

Dimensions and weights

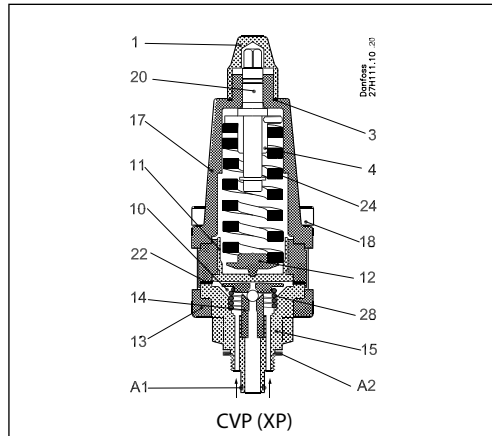


Valve type		H	H ₁	H ₂	B	B ₁	Weight
CVP-XP	mm	190	166	90	32	M24 × 1.5	1.9 kg
	in.	7.48	6.54	3.54			4.2 lb

**High pressure pilot valve,
type CVP (XP)**

(continued)

Material specification

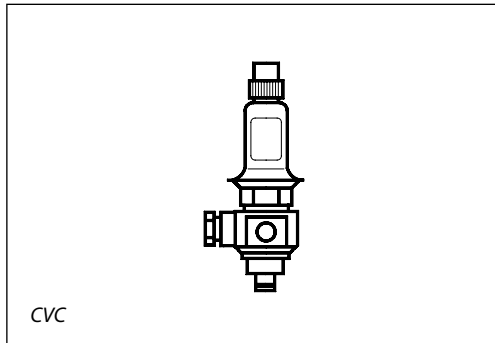


CVP (XP)

No.	Part	Material
1	Protective cap	Steel
3	Seal	Cloroprene (Neoprene)
4	Nut	Stainless steel
10	Diaphragm	Stainless steel
11	Thrust pad	Steel
12	Spring guide	Stainless steel
14	Orifice	Stainless steel
15	Base	Steel
17	Valve body	Steel
20	Setting spindle	Stainless steel
24	Spring	Steel
28	Spring	Steel
A1	O-ring	Cloroprene (Neoprene)
A2	Seal	Non-asbestos

Pressure-operated pilot valve with reference pressure connection, type CVC

Design and function



CVC is a pressure-operated pilot valve with a connection that can be used to obtain an indication of the system reference pressure. CVC valves are used:

- together with a PMC main valve to regulate capacity using hot gas bypass;
- together with a ICS or PM main valve to regulate max. suction pressure, e.g. as a compressor crankcase pressure regulator;
- together with a ICS or PM main valve as a pressure limiter, e.g. for hot gas defrost of hot gas lines.

The maximum working pressure (MWP) refers to the high-pressure side of the valve (28 bar); the reference pressure (17 bar) refers to the low-pressure side of the system.

The reference pressure must be connected to the low-pressure side of the system.

The k_v/C_v value is measured with the pilot valve mounted in a CVH housing for external pilot lines. The value can vary slightly, depending on the setting value.

Technical data, SI units

Valve type	MWP	k_v -value	Temperature range	Pressure range	Code no.
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Low-pressure version

CVC	28/17 bar g	0.20 m ³ /h	-50 to 120°C	-0.45 bar g to 7 bar g	027B1070
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Technical data, US units

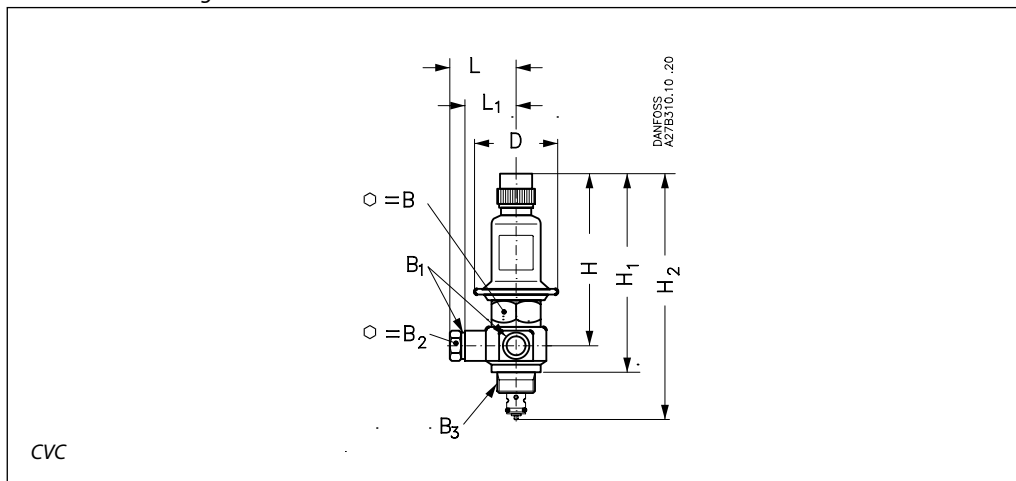
Valve type	MWP	C_v -value	Temperature range	Pressure range	Code no.
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High-pressure version

CVC	406/247 psi g	0.23 USgal/min	-58 to 248°F	13.3 in. Hg to 102 psi g	027B1070
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P-band for a valve system regulated by CVC and ICS/PM/PMC: < 0.3 bar g (4.4 psi g)

Dimensions and weights



Valve type	H	H ₁	H ₂	L	L ₁	D	B	B ₁	B ₂	B ₃	Weight
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Low-pressure version

CVC	mm	110	129	153	43	33	53	32	G 1/4	19	M 24 × 1.5	0.7 kg
	in	4.33	5.08	6.02	1.69	1.30	2.09					1.5 lb.

Weights are approximate values only

(continued)

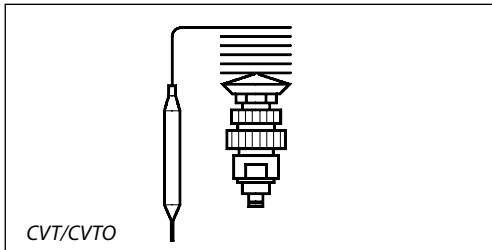
105
112
□=7mm
106
111
110
109
43
44
○=19mm
104
81
82
17
32mm
103
107
G $\frac{1}{4}$
M24 x 1.5
108

Danfoss
A27/B109.10..16

No.	Part	Material
43	Seal	Aluminium
44	Blanking plug for	Stainless steel
	pressure gauge	
	connection	
A2	Seal	Non-asbestos
A1	O-ring	Cloroprene (Neoprene)
103	Banjo fitting	Steel
104	O-ring	Cloroprene (Neoprene)
105	Protective cap	Steel
106	O-ring	Cloroprene (Neoprene)
107	Signal connection	
108	Pilot orifice	Stainless steel
109	Connector on	
	banjo fitting 103	Steel
110	Diaphragm	Stainless steel
111	Spring	Steel
112	Setting spindle	Stainless steel
17	Valve body	Stainless steel

Temperature-operated pilot valve (pressure-independent), type CVT/CVTO

Design and function



CVT/CVTO is a temperature-operated pilot valve that operates through its sensor temperature, independently of pressure changes in the system regulated by the valve.

CVT opens on rising temperature.

CVTO closes on rising temperature.

Length of capillary tube: 5m (197 in.)

MWP: Maximum working pressure.

The k_v/C_v value is measured with the pilot valve mounted in a CVH housing for external pilot lines. The value can vary slightly, depending on the setting value.

Technical data, SI units

Valve type	MWP	k_v -value	Temperature range	Pressure range	Code no.
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Opens on rising temperature

CVT	22 bar g	0.20 m ³ /h	Max. 150°C	–40 to 0°C	027B1110
CVT	22 bar g	0.20 m ³ /h	Max. 150°C	–10 to 25°C	027B1111
CVT	22 bar g	0.20 m ³ /h	Max. 150°C	20 to 60°C	027B1112
CVT	22 bar g	0.20 m ³ /h	Max. 150°C	80 to 140°C	027B1116

Closes on rising temperature

CVTO	22 bar g	0.20 m ³ /h	Max. 150°C	–40 to 0°C	027B1117
CVTO	22 bar g	0.20 m ³ /h	Max. 150°C	–10 to 25°C	027B1118
CVTO	22 bar g	0.20 m ³ /h	Max. 150°C	20 to 60°C	027B1119

Technical data, US units

Valve type	MWP	C_v -value	Temperature range	Pressure range	Code no.
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Opens on rising temperature

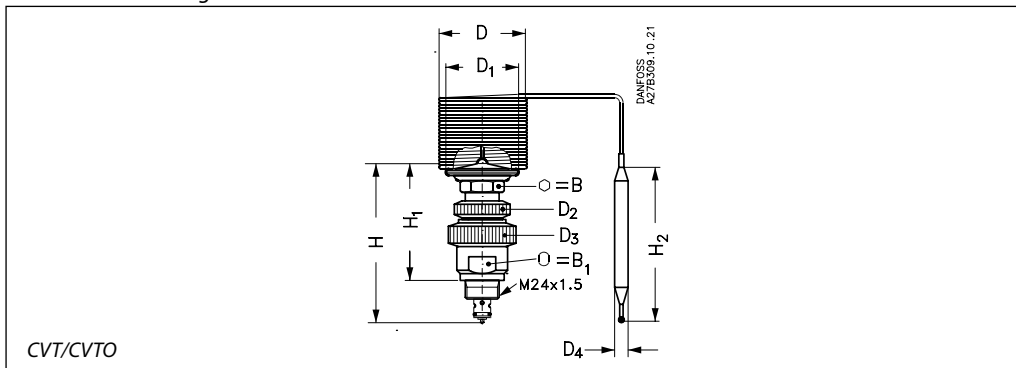
CVT	319 psi g	0.23 USgal/min	Max. 302°F	–40 to 32°F	027B1110
CVT	319 psi g	0.23 USgal/min	Max. 302°F	14 to 77°F	027B1111
CVT	319 psi g	0.23 USgal/min	Max. 302°F	68 to 140°F	027B1112
CVT	319 psi g	0.23 USgal/min	Max. 302°F	176 to 284°F	027B1116

Closes on rising temperature

CVTO	319 psi g	0.23 USgal/min	Max. 302°F	–40 to 32°F	027B1117
CVTO	319 psi g	0.23 USgal/min	Max. 302°F	14 to 77°F	027B1118
CVTO	319 psi g	0.23 USgal/min	Max. 302°F	68 to 140°F	027B1119

P-band for a valve system regulated by CVT/CVTO and ICS/PM: <5°C (41°F)

Dimensions and weights



Valve type	H	H ₁	H ₂	D	D ₁	D ₂	D ₃	D ₄	B	B ₁	Weight
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Opens on rising temperature

CVT	mm	117	90	110	65	53	42	50	9.5	27	32	0.8 kg
	in.	4.61	3.54	4.33	2.56	2.09	1.65	1.97	0.37			1.8 lb.

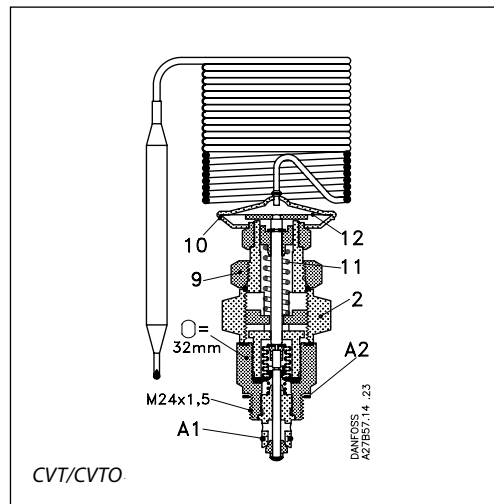
Closes on rising temperature

CVTO	mm	117	90	110	65	53	42	50	9.5	27	32	0.8 kg
	in.	4.61	3.54	4.33	2.56	2.09	1.65	1.97	0.37			1.8 lb.

**Temperature-operated
pilot valve (pressure-
independent), type CVT/
CVTO**

(continued)

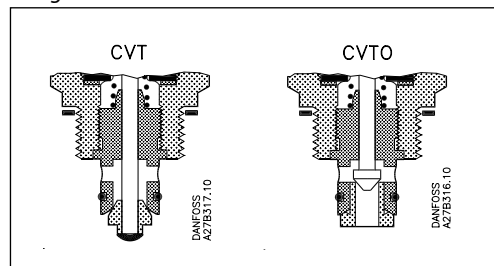
Material specification



CVT/CVTO

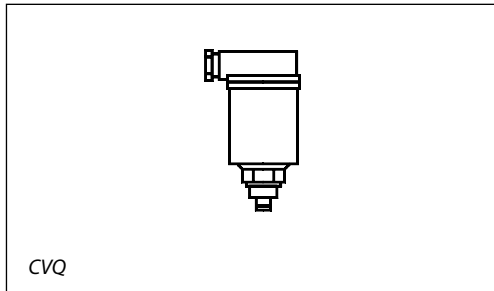
No.	Part	Material
2	Setting ring	Aluminium
A2	Seal	Non-asbestos
A1	O-ring	Cloroprene (Neoprene)
9	Locking ring	Aluminium
10	Thermostatic element	Stainless steel
11	Spring	Stainless steel
12	Diaphragm	Stainless steel

Design and function



Electronically operated constant-pressure pilot valve, type CVQ (pressure-dependent)

Design and function



CVQ

CVQ is an electronically operated constant-pressure pilot valve that functions together with the EKC 361 electronic system or an EKC 366 controller.

CVQ enables the electronic (and thus the remote) control of a ICS or PM main valve.

The CVQ valve is used to maintain a constant pressure at the ICS or PM main valve inlet side and can, via suction pressure regulation, very accurately control the temperature of a medium from an air or liquid cooler, etc.

MWP: Maximum working pressure.

The k_v/C_v value is measured with the pilot valve mounted in a CVH housing for external pilot lines. The value can vary slightly, depending on the setting value.

Technical data, SI units


Valve type	MWP	k_v -value		Pressure range	Code no.
CVQ	17 bar g	0.45 m ³ /h		-1 bar g to 5 bar g	027B1139
CVQ	17 bar g	0.45 m ³ /h		0 bar g to 6 bar g	027B1140
CVQ	17 bar g	0.45 m ³ /h		1.7 bar g to 8 bar g	027B1141

Technical data, US units

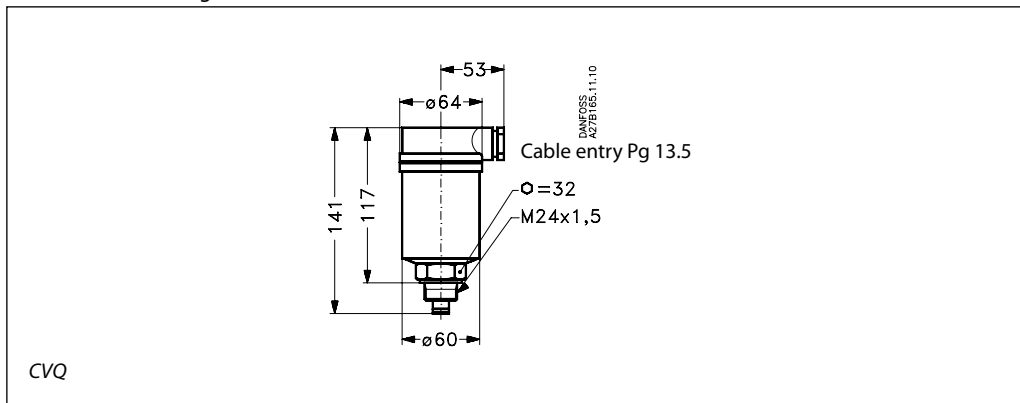
Valve type	MWP	C_v -value		Pressure range	Code no.
CVQ	246 psi g	0.52 USgal/min		-29.5 in. Hg to 72.5 psi g	027B1139
CVQ	246 psi g	0.52 USgal/min		0 psi g to 87 psi g	027B1140
CVQ	246 psi g	0.52 USgal/min		24.7 psi g to 116 psi g	027B1141

The P-band for a valve system regulated by CVQ and ICS/PM depends on the control parameters of the EKC 361 or EKC 366.

Electrical data

Supply voltage	24V a.c. ±10%
Frequency	50 to 60 Hz
Power consumption, operation start	50 VA 75 VA
Enclosure	NEMA 3 / IP 55
Cable entry	Pg 13.5
Ambient temperature, operation transport	-30 to 50°C (-22 to 122°F) -50 to 70°C (-58 to 158°F)
 -marking	EMC-Directive 89/336/EEC, EMC-Directiv 89/336/ EN 50081-1 and EN 50082-1

Dimensions and weights



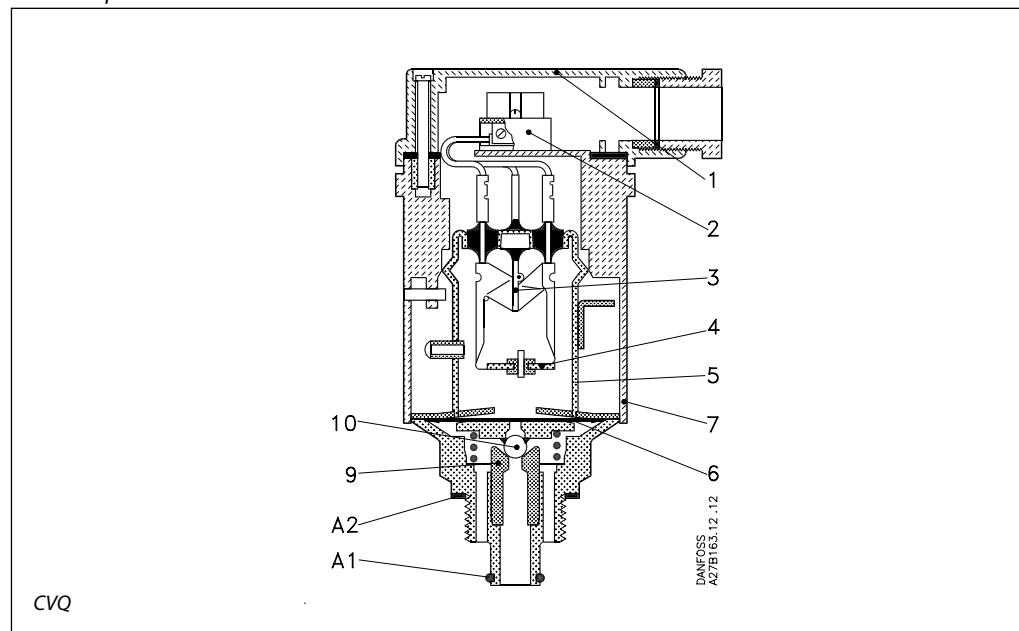
CVQ

Valve type		H	H _i	L		D	D _i	B	B _i	Weight
CVQ	mm	141	117	53		64	60	32	M 24 × 1.5	0.4 kg
	in.	5.55	4.61	2.09		2.52	2.36			0.9 lb.

**Electronically
operated constant-pressure
pilot valve, type CVQ
(pressure-dependent)**

(continued)

Material specification



Design and function

CVQ consists of a reservoir containing a charge at a given pressure, a heating element and a temperature sensor.

When the temperature in the container is regulated, the corresponding and precise pressure change created changes the degree of opening of the orifice (9 and 10) and thus the control pressure sent by the CVQ valve to the connected ICS or PM main valve.

If pressure in the container becomes too high, an internal protection system short-circuits the heating element and thus stops pressure build-up.

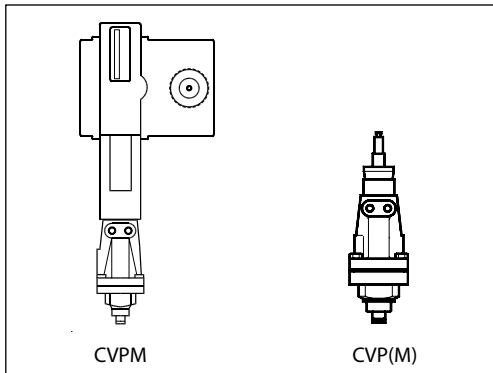
CVQ

No.	Part	Material
1	Cover	Plastic
2	Connection terminals	
3	NTC resistor	
4	PTC resistor (heating element)	
5	Reservoir	Steel
6	Diaphragm	Stainless steel
7	Capsule	Plastic
9	Orifice	Stainless steel
10	Thrust pad with throttle ball	Stainless steel
A1	O-ring	Cloroprene (Neoprene)
A2	Seal	Non-asbestos

Motor-operated constant-pressure pilot valve, type CVPM (pressure-dependent)

Pilot valve for motor-operated constant-pressure pilot valve, type CVP(M)

Design and function



CVPM is a complete motor-operated pressure-dependent pilot valve comprising an AMV 523 motor and a CVP(M) pilot valve.

MWP: Maximum working pressure.

The k_v/C_v value is measured with the pilot valve mounted in a CVH housing for external pilot lines. The value can vary slightly, depending on the setting value.

Technical data, SI units

Valve type	MWP	k_v -value	Pressure range	Code no.
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Motor-operated constant-pressure pilot valve, 220 V a.c., 50/60 Hz

CVPM	28 bar g	0.40 m ³ /h	–0.66 to 7 bar g	027B1171
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Motor-operated constant-pressure pilot valve, 24 V a.c.

CVPM	28 bar g	0.40 m ³ /h	–0.66 to 7 bar g	027B1173
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Pilot valve for motor-operated constant-pressure pilot valve

CVP(M)	28 bar g	0.40 m ³ /h	–0.66 to 7 bar g	027B1170
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Technical data, US units

Valve type	MWP	C_v -value	Pressure range	Code no.
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Motor-operated constant-pressure pilot valve, 220 V a.c., 50/60 Hz

CVPM	406 psi g	0.46 USgal/min	19.5 in. Hg to 102 psi g	027B1171
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Motor-operated constant-pressure pilot valve, 24 V a.c.

CVPM	406 psi g	0.46 USgal/min	19.5 in. Hg to 102 psi g	027B1173
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Pilot valve for motor-operated constant-pressure pilot valve

CVP(M)	406 psi g	0.46 USgal/min	19.5 in. Hg to 102 psi g	027B1170
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P-band for a valve system regulated by CVP(M) and ICS/PM: < 0.2 bar g (2.9 psi g)

Technical data AMV 523

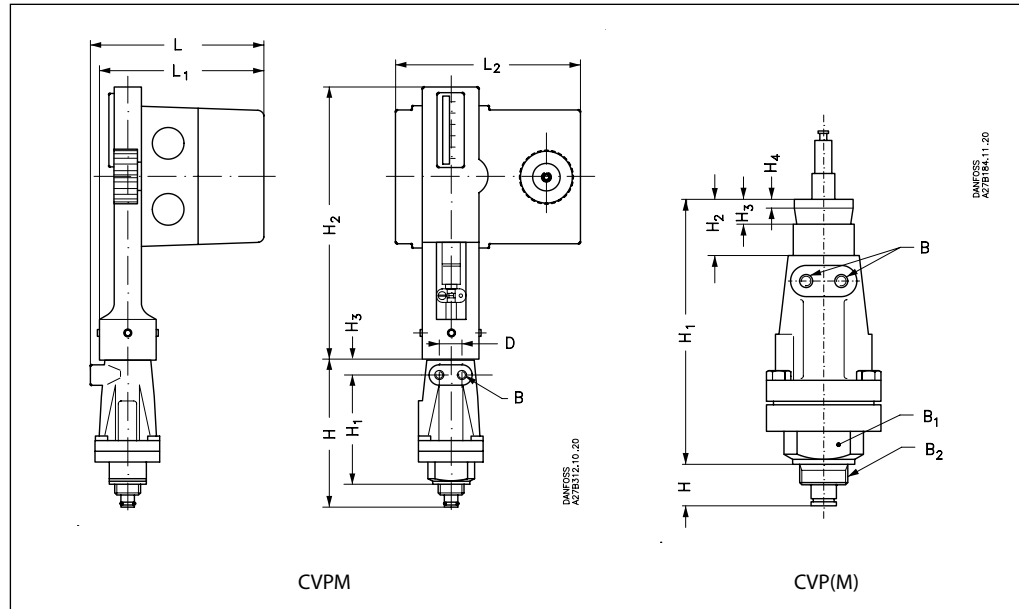
Supply voltage	24V a.c. ± 10% 230/240 V a.c. +6% / –10%
Frequency	50 Hz / 60 Hz
Power consumption	24V a.c.: 12 VA 230/240 V a.c.: 12VA
Function	3-point (open, neutral, closed) Optional 0 to 10 V, 0 to 20 mA with AMES modul installed
Spindle force	1200 N (270 lb.)
Nominal spindle travel	0 to 50 mm (0 to 1.97 in.)
Spindle travel	50 Hz: 11 s/mm (279 s/in.) 60 Hz: 9.25 s/mm (235 s/in.)
Enclosure	IP 55 (NEMA 3)
Cable entry	2 × Pg 9, 2 × Pg 13.5
Ambient temperature, operation transport	–15 to 50°C (5 to 122°F) –40 to 70°C (–40 to 158°F)
Weight	3.3 kg (7.3 lb)
CE - marking	EMC-Directiv 89/336/EEC, 92/31/EEC, 93/68/EEC, EN 50081-1 and EN 50082-1, in accordance with Low Current Directive 73/23/EEC and 93/68/EEC, EN 60730/2/14.

Motor-operated constant-pressure pilot valve, type CVPM (pressure-dependent)

Pilot valve for motor-operated constant-pressure pilot valve, type CVP(M)

(continued)

Dimensions and weights



Valve type	H	H ₁	H ₂	H ₃	L	L ₁	L ₂	D	B	Weight
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Motor-operated constant-pressure pilot valve

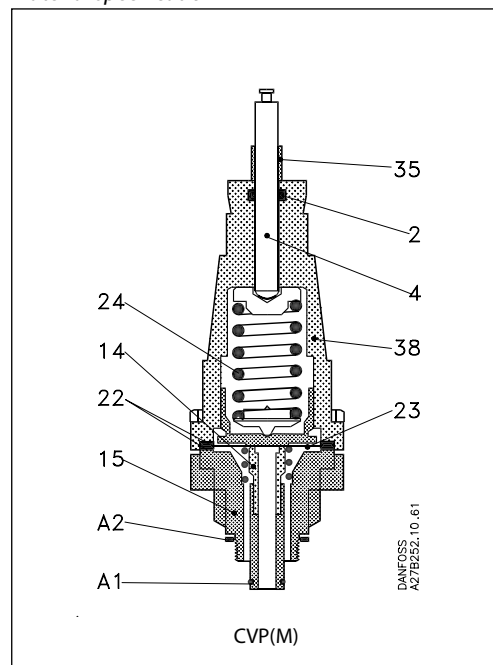
CVPM	mm	138	148	246	14	153	145	163	20	M 8	5.0 kg
	in.	5.43	5.83	9.69	0.55	6.02	5.71	6.42	0.79		11.3 lb.

Valve type	H	H ₁	H ₂	H ₃	H ₄	B	B ₁	B ₂	Weight
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Pilot valve for motor-operated constant-pressure pilot valve

CVP(M)	mm	24	148	35.5	15	5	M 8	32	M 24 × 1.5	1.7 kg
	in.	0.94	5.83	1.40	0.59	0.20				3.7 lb.

Material specification



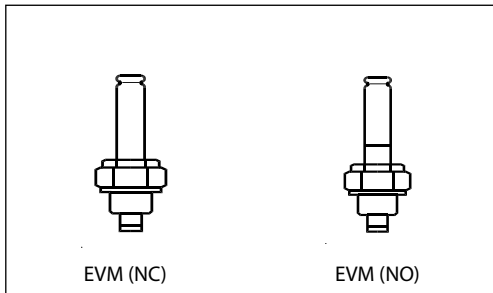
CVP(M)

No.	Part	Material
A1	O-ring	Cloroprene (Neoprene)
A2	Seal	Non-asbestos
2	Spindle seal	Cloroprene (Neoprene)
4	Spindle	Stainless steel
14	Spring	Stainless steel
15	Base	Stainless steel
22	Cover gasket	Non-asbestos
23	Diaphragm	Stainless steel
35	Bush	Brass
38	Valve body	Cast iron
24	Spring	Steel

**Solenoid pilot valve,
type EVM (NC)**

**Solenoid pilot valve,
type EVM (NO)**

Design and function



EVM is a solenoid pilot valve for use when on/off operation of the ICS or PM main valve is required. EVM valves are intended for use with Danfoss solenoid valve coils ("Coils for solenoid valves", data sheet RD3JB). Together with CVH, an EVM can also be used as an independent solenoid valve.

MWP: Maximum working pressure.

The k_v/C_v value is measured with the pilot valve mounted in a CVH housing for external pilot lines.

MOPD: Maximum opening differential pressure with a 10 W a.c. coil.

MCPD: Maximum closing differential pressure with a 12 W a.c. coil.

Technical data, SI units

Valve type	MWP	k_v -value		Pressure range	Code no.
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Normally closed

EVM (NC)	35 bar g	0.37 m ³ /h		MOPD: 21 bar g	027B1120
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Normally open

EVM (NO)	35 bar g	0.12 m ³ /h		MCPD: 21 bar g	027B1130
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Technical data, US units

Valve type	MWP	C_v -value		Pressure range	Code no.
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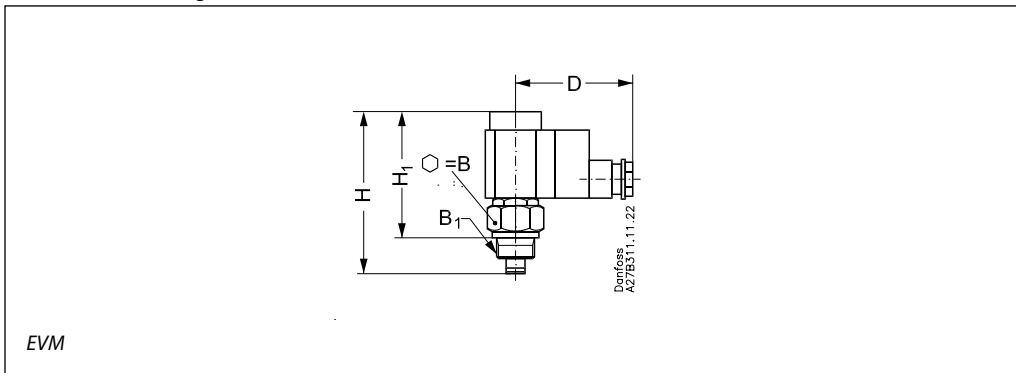
Normally closed

EVM (NC)	508 psi g	0.43 USgal/min		MOPD: 305 psi g	027B1120
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Normally open

EVM (NO)	508 psi g	0.14 USgal/min		MCPD: 305 psi g	027B1130
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Dimensions and weights



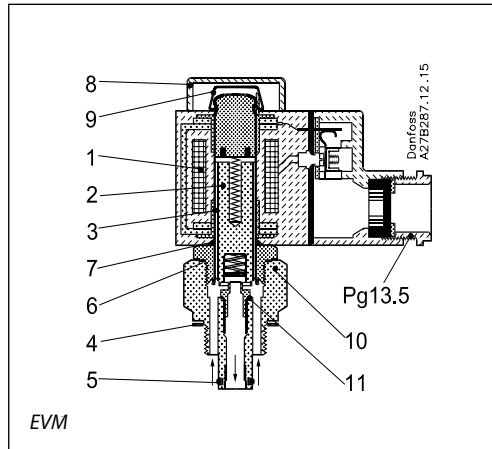
Valve type		H	H ₁	B	B ₁	D (12 Wa.c./d.c.)	D (10 Wa.c.)	Weight
EVM	mm	107	83	32	M 24 × 1.5	82	72	0.5 kg
	in.	4.21	3.27			3.23	2.83	1.1 lb.

**Solenoid pilot valve,
type EVM (NC)**

**Solenoid pilot valve,
type EVM (NO)**

(continued)

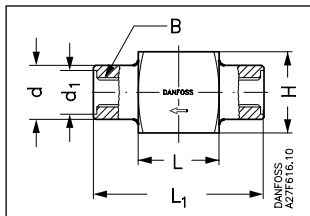
Material specification



EVM

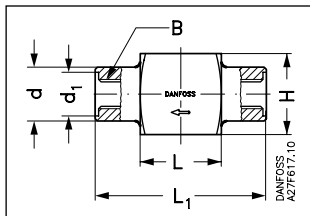
No.	Part	Material
1	Coil	
2	Armature	Stainless steel
3	Armature tube	Stainless steel
A2	Seal	Non-asbestos
A1	O-ring	Cloroprene (Neoprene)
6	Seal	Aluminium
7	Spacing ring	
8	Nut	
9	Lock button	
10	Valve body	Steel
11	Valve seat	Teflon (PTFE)

Housing for pilot valves, type CVH, for mounting in external pilot lines



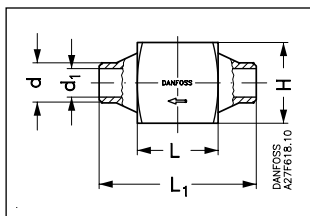
DN	d	d ₁	H	L	L ₁	B	Standard	Material	Code no.	
<i>Internal pipe thread</i>										
6	mm	24	19.5	36	36	76	1/4 in. NPT	ANSI B1.20.1	DIN 9SMnPb 28 W no. 1.0718	027F1159
	in.	0.94	0.77	1.42	1.42	2.99				

Weight: 0.4 kg. (0.9 lb.)



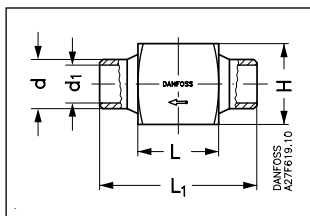
DN	d	d ₁	H	L	L ₁	B	Standard	Material	Code no.	
<i>Internal pipe thread</i>										
6	mm	24	19.5	36	36	76	G 1/4 A	ISO 228-1	DIN 9SMnPb 28 W no. 1.0718	027F1160
	in.	0.94	0.77	1.42	1.42	2.99				

Weight: 0.4 kg. (0.9 lb.)



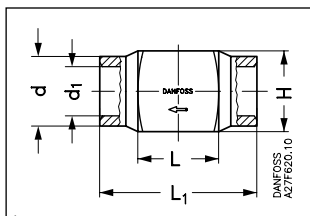
DN	d	d ₁	H	L	L ₁		Standard	Material	Code no.
<i>3/8 in. butt weld</i>									
10	mm	18	12.7	36	36	70	Weld connection DIN 2559 - 22	DIN. CK 15. W no. 1.1141	027F1047
	in.	0.71	0.5	1.42	1.42	2.76			

Weight: 0.4 kg. (0.9 lb.)



DN	d	d ₁	H	L	L ₁		Standard	Material	Code no.
<i>1/2 in. butt weld</i>									
15	mm	22	17	36	36	70	Weld connection DIN 2559 - 22	DIN. CK 15. W no. 1.1141	027F1090
	in.	0.87	0.67	1.42	1.42	2.76			

Weight: 0.4 kg. (0.9 lb.)



DN	d	d ₁	H	L	L ₁		Standard	Material	Code no.
<i>1/2 in. socket weld</i>									
15	mm	31	22	36	36	70	DIN 3259 - T2 ASME B.16.113M	DIN. CK 15. W no. 1.1141	027F1091
	in.	1.22	0.87	1.42	1.42	2.76			

Weight: 0.4 kg. (0.9 lb.)