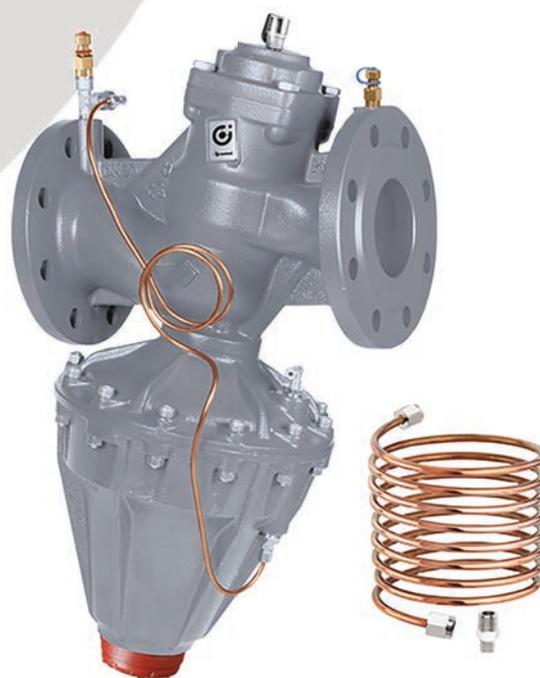
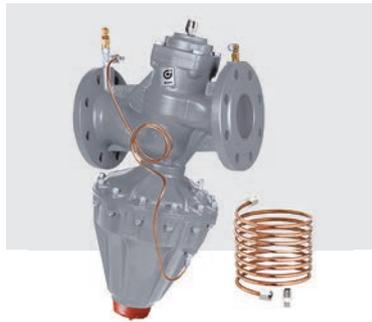


140 DPCV

differential pressure
control valve



140 DPCV differential pressure control valve



Application

The function of a differential pressure control valve (DPCV) is to maintain a constant differential pressure across a sub-circuit.

By protecting the downstream control valves from excessive pressure there by neutralising the effects of pressure variations caused by the regulation of control valves in other circuits.

The position of the control disc is dependent upon the spring and pressure forces acting on the diaphragm.

When the spring and pressure forces are in balance the valve remains in its present position. If the two forces are not in balance the valve moves the position of the disc until the spring and pressures forces are back in balance.

If there is an increase in differential pressure across the sub-circuit the valve will automatically regulate to a more closed position to restore the set differential pressure.

The set differential pressure of the valve is altered by altering the compression of the spring.

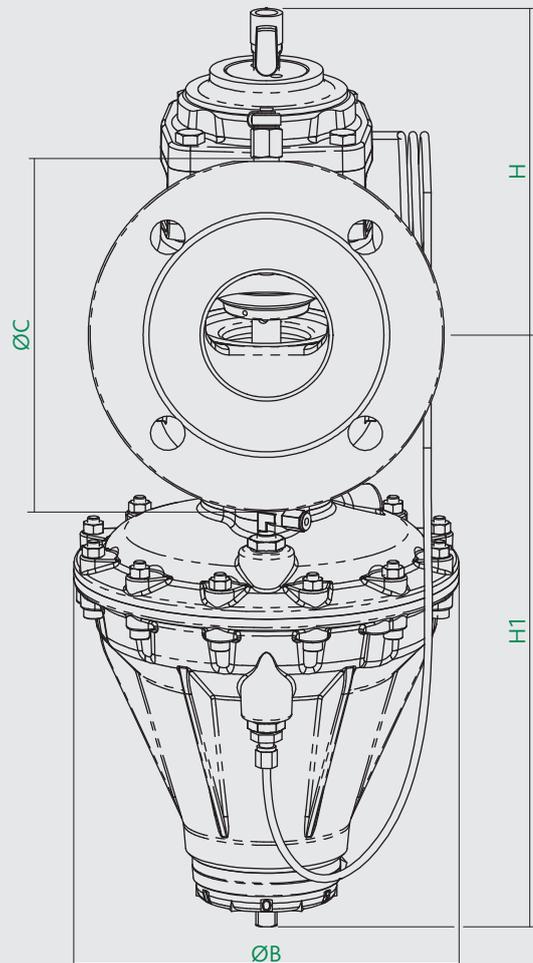
A differential pressure control valve limits the maximum flow rate in a sub-circuit or branch to the design flow rate but the flow rate can be reduced by control valves down stream of the DPCV.

The valve can be used in heating and air-conditioning systems.

Product Range

Product Code	Valve Size	Differential Pressure bar
140506	DN65	0.2 to 0.8
140606	DN65	0.8 to 1.6
140508	DN80	0.2 to 0.8
140608	DN80	0.8 to 1.6
140510	DN100	0.2 to 0.8
140610	DN100	0.8 to 1.6
140512	DN125	0.2 to 0.8
140515	DN150	0.2 to 0.8

Dimensions



Code	DN	A*	B	H1	H	C	kg
140506	65	290	200	310	170	185	21.6
140508	80	310	242	400	182	200	28.1
140510	100	350	242	414	200	220	33.6
140512	125	400	242	436	275	250	46.4
140515	150	480	242	460	300	285	75.4

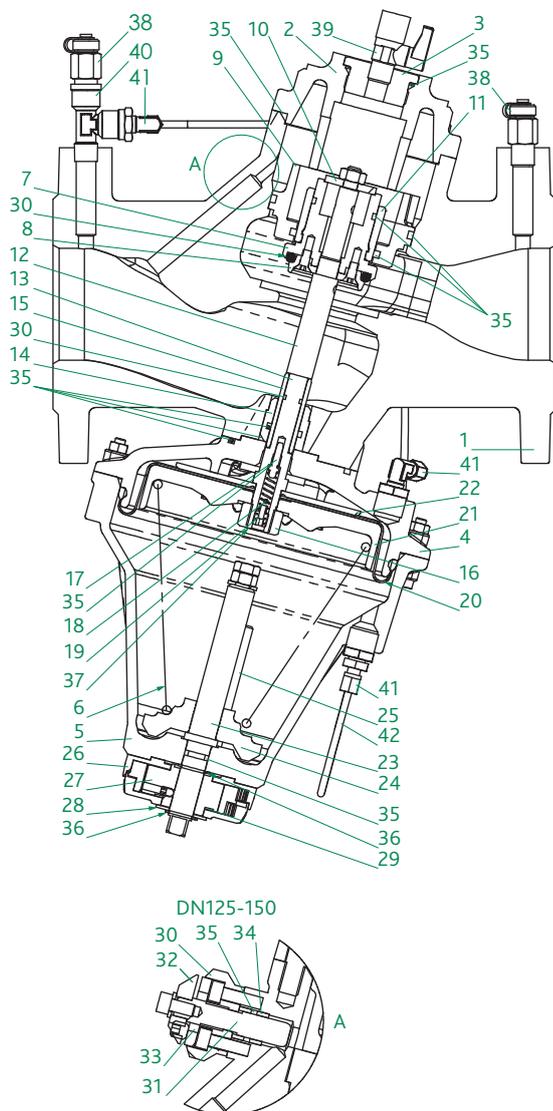
* Face to face dimension of body - not shown

Weight

Size	DN	65	80	100	125	150
Weight	kg	21.6	28.1	33.6	46.4	75.4

140 DPCV differential pressure control valve

Components



Kv Values - valve fully open

140***	506	606	508	608	510	610	512	515
Size DN	65	80	100	125	150			
Kv	44.55	52.01	78.33	83.72	104.63	106.74	152.34	204.0

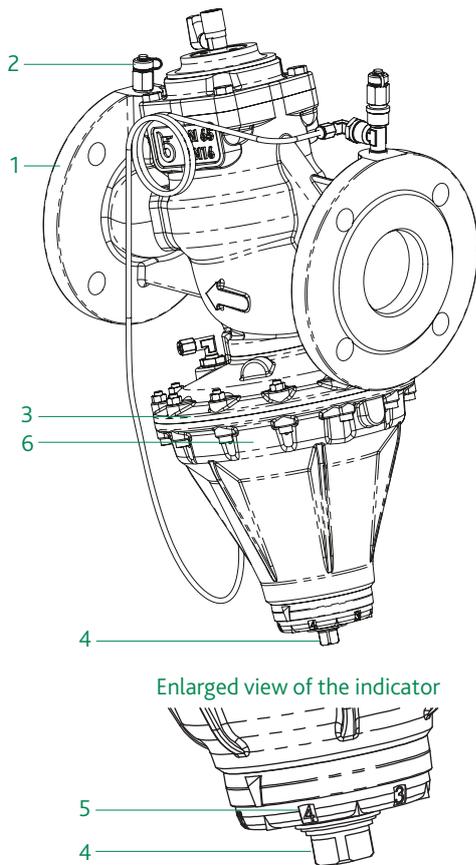
Components

Item	Component	Material
1	Body	Cast iron BS EN GJL 250
2	Bonnet	Cast iron BS EN GJL 250
3	Nut	Aluminium
4	Spring housing cover	Aluminium
5	Spring housing	Aluminium
6	Spring	Stainless steel AISI 302
7	Shutter	Aluminium
8	Shutter cover	Brass BS EN12164 CW617N
9	Guide	Aluminium
10	Plate	Brass BS EN12164 CW617N
11	Bush	R-PTFE
12	Stem	Brass BS EN12164 CW617N
13	Diaphragm stem	Brass BS EN12164 CW617N
14	Stem guide	Brass BS EN12164 CW617N
15	Bush	R-PTFE
16	Hexagonal nut	Brass BS EN12164 CW617N
17	Over pressure relief shutter	Brass BS EN12164 CW617N
18	Over pressure relief spring	Stainless steel AISI 302
19	Over pressure relief cap	Stainless steel AISI 304
20	Diaphragm	EPDM
21	Diaphragm bearing plate	Aluminium
22	Diaphr. upper bearing plate	Stainless steel AISI 304
23	Spring loaded stem	Brass BS EN12164 CW617N
24	Spring support	Aluminium
25	Anti rotation pin	Brass BS EN12164 CW617N
26	Diff. pressure indicator	Polyamide
27	Cam	Aluminium
28	Spacer	Stainless steel AISI 304
29	Spring washer	Stainless steel AISI 304
30	Regulating needle housing	Brass BS EN12164 CW617N
31	Regulating needle	Brass BS EN12164 CW617N
32	Regulating needle indicator	Brass BS EN12164 CW617N
33	Washer	Stainless steel AISI 304
34	Bush	Brass BS EN12164 CW617N
35	'O' ring	EPDM
36	Circlip	Stainless steel AISI 304
37	Spring pin	Stainless steel AISI 304
38	Test plug	Brass - nickel plated
39	Ball valve	Brass - nickel plated
40	Tee fitting	Brass - nickel plated
41	Compression fitting	Brass - nickel plated
42	Capillary tube	Copper - annealed
43	Bolts and nuts	Stainless steel AISI 304

140 DPCV differential pressure control valve

Features

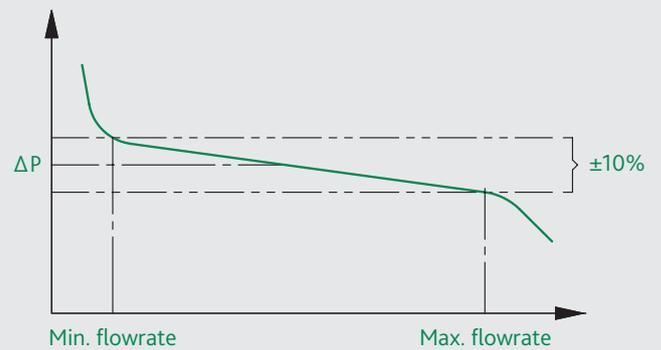
- 1 Internal and external epoxy coating, environmentally friendly water based paint, with high temperature resistance.
- 2 Self sealing test points for pressure or temperature probes.
- 3 Large diameter diaphragm allows accurate pressure measurement.
- 4 Differential pressure regulating screw.
- 5 Indicator allows easy setting of the differential pressure
- 6 Pressure relief bypass limits the allowable differential pressure across the diaphragm preventing the risk of damage or failure.



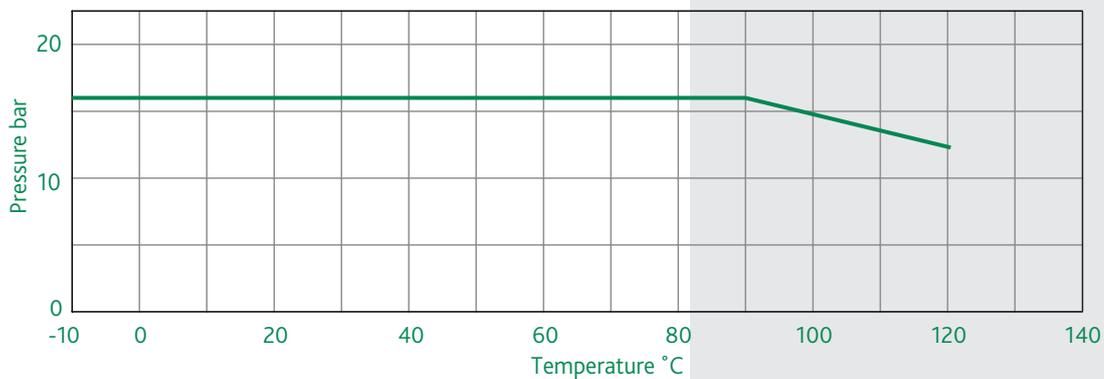
Technical Specification

Face to face:	BS EN 558-1
Flanged PN16:	BS EN 1092 -2
Design:	BS EN13445
Maximum static pressure:	16 bar
Temperature range:	-10 to 120°C
Medium:	water & water glycol mix
Maximum glycol:	50%

Differential Pressure Δp Accuracy vs Flowrate



Pressure - Temperature Chart



140 DPCV differential pressure control valve

Flow Range

Code	Size		Differential pressure Δp bar									
			0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.2	1.4	1.6
		DN	Flow rate l/s									
140506	65	Min Max	0.28 11.1	0.28 16.6	0.42 18.0	0.42 18.0	0.42 20.8	0.42 20.8				
140606	65	Min Max						0.55 20.8	0.55 20.8	0.55 20.8	0.83 20.8	0.83 20.8
140508	80	Min Max	0.33 16.6	0.42 19.4	0.42 23.6	0.42 23.6	0.42 23.6	0.42 23.6				
140608	80	Min Max						0.83 27.7	0.83 27.7	0.83 27.7	0.83 27.7	1.11 27.7
140510	100	Min Max	0.42 27.7	0.55 33.3	0.55 33.3	0.55 33.3	0.55 33.3	0.83 33.3				
140610	100	Min Max						0.83 38.8	0.83 38.8	0.83 38.8	1.11 41.6	1.11 41.6
140512	125	Min Max	0.83 30.5	1.11 38.8	1.11 38.1	1.22 41.6	1.38 47.2	1.38 47.2				
140515	150	Min Max	1.11 33.3	1.38 44.4	1.38 44.4	1.38 55.5	1.38 63.8	1.94 63.8				

Setting the Differential Pressure

Code	Size		Differential pressure Δp bar									
			0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.2	1.4	1.6
		DN	Indicator Position									
140506	65		0	1	1.5	2	2.3	2.8				
140606	65							0	.5	1	1.5	2
140508	80		0	.5	.8	1.2	1.7	3				
140608	80							0	1	1.7	2.2	2.5
140510	100		0	1	1.5	2	2.7	3.5				
140610	100							0	1	2	2.3	2.5
140512	125		0	0.5	1	1.5	2	3				
140515	150		0	0.5	1	1.5	2	3				

140 DPCV differential pressure control valve

Setting the Differential Pressure

- 1 To regulate the differential pressure, turn the regulating screw (4), turn clockwise to increase the differential pressure, and to stabilize it up to the required value, as indicated in the flow range chart.

Refer to the digital position indicator as shown in the Setting the Differential Pressure table to set the required differential pressure.

- 2 **WARNING:** for valves DN125 and DN150, to assure the correct operation, the regulation needle (N) needs to be adjusted to match the value set for the position indicator of the regulating screw (4).

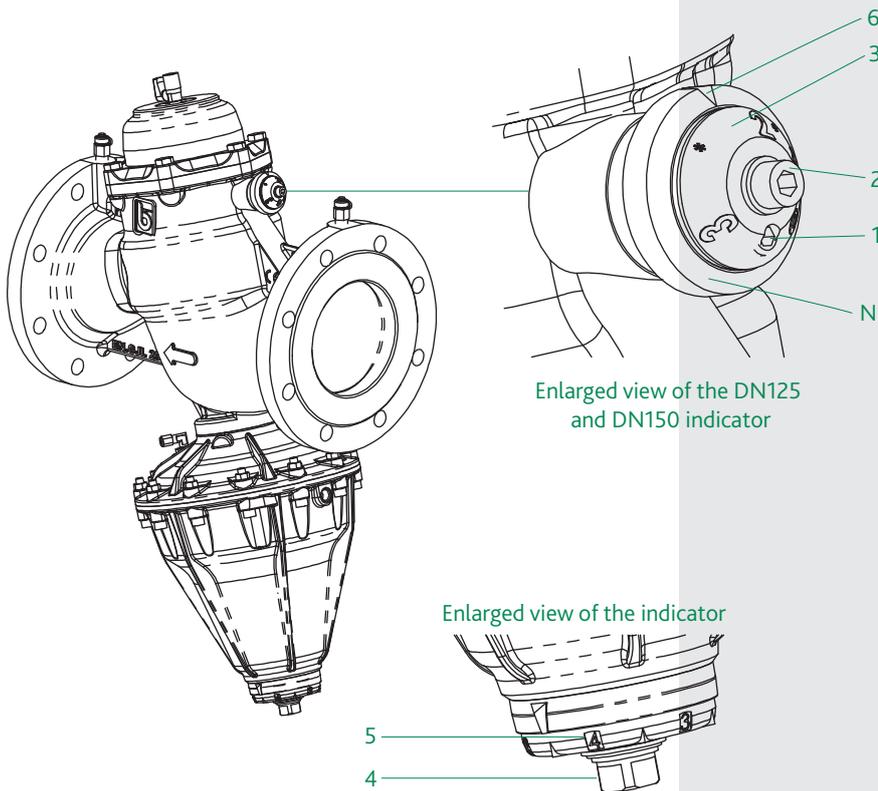
- 3 Adjusting the DN125 and DN150 Sizes

Loosen the socket head screw (1)

Turn the screw (2) and the indicator (3), until the required value is read in correspondence of notch (6)

Tighten socket head screw (1) to lock the position.

Note: the Setting the Differential Pressure table is given to ease the set-up and should not be a substitute a direct pressure measurement.



140 DPCV differential pressure control valve

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