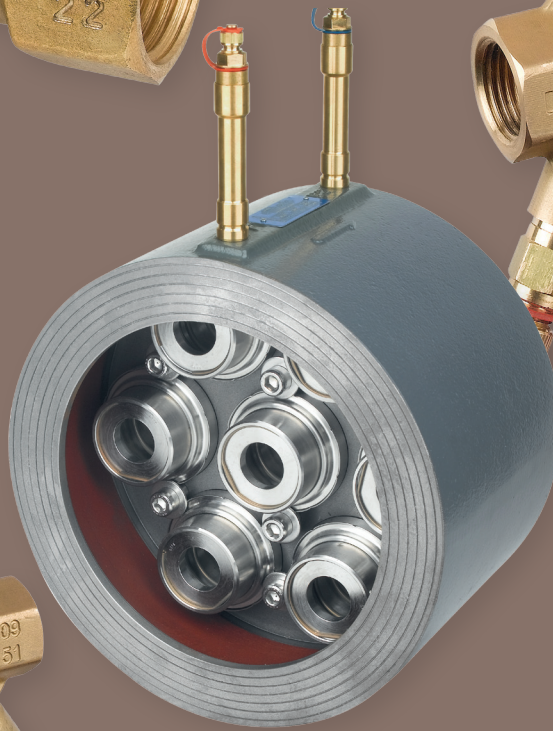


# AVION

## Dynamic Balancing Valves



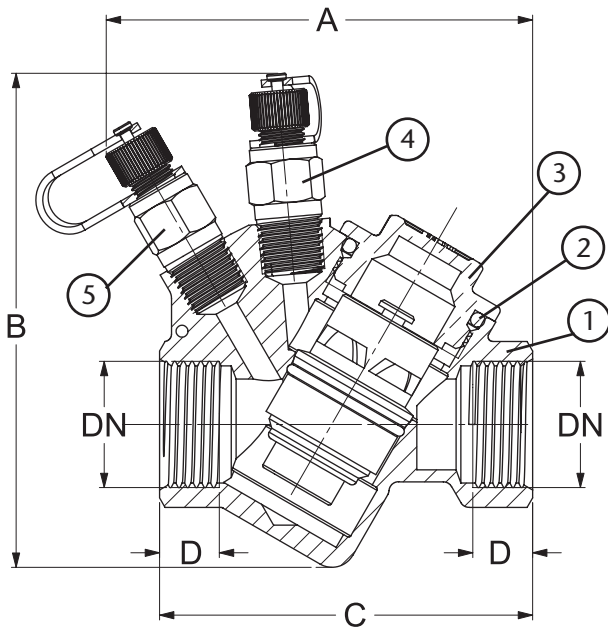
Product information



## Threaded Automatic Flow Balancing Valves

### Features

- Wide cartridge selection available
- 0.007 I/S to 3.154 I/S
- Easy removeable cartridges for inspection and cleaning
- System balancing is assured automatically even under fluctuating pressures.
- Decrease in installation cost due to fewer valves required and no commissioning costs.
- DZR Brass Body
- Threaded BSP Parallel
- Self cleaning cartridge design.



DN	15	20	25	25L	32	40	50
A	89	89	93	125	125	125	130
B	103	103	103	141	141	141	141
C	78	78	85	123	123	123	132
D	11.5	12.5	14.5	14.5	16.8	16.8	21.1
Kgs	0.51	0.53	0.62	1.51	1.53	1.59	1.71

Note: 25L - is 25 large

This is a 32mm body and cartridge but the valve has a 1" BSP connection for increased flow rates.

### Technical Data

Max Pressure	25 bar
Working Temperature	-20°C to +120°C

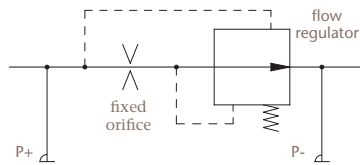
N.	Part Name	Materials
1	Body	DZR Brass
2	'O' Ring	EPDM
3	Plug	DZR Brass
4	Test Point	DZR Brass
5	Test Point	DZR Brass

Dimensions in mm

This data sheet is designed as a guide and should not be regarded as wholly accurate in every detail. We reserve the right to amend the specification of any product without notice.

## Installation notes

- Before installation check that cartridge flow rate is properly matching the project requirements;
- Valves may be installed either on horizontal or vertical pipelines;
- At valve inlet and outlet no minimum straight-piping is required.



## Cartridge for valves from DN 15 to DN 25 (0,007 l/s to 0,680 l/s)

cod. (max 350KPa)	cod. (max 600KPa)	Flow (l/s)	Flow (l/h)	Flow (gpm)	Min Δp KPa	Kv
CA1150		0,007	25	0,11	7	0,09
CA1170		0,01	35	0,15	7	0,14
CA1190		0,012	46	0,20	7	0,16
CA1210	CA1210 H	0,015	55	0,24	7	0,21
CA1230	CA1230 H	0,021	75	0,33	8	0,27
CA1260	CA1260 H	0,023	84	0,37	9	0,28
CA1290	CA1290 H	0,029	104	0,46	10	0,33
CA1300	CA1300 H	0,032	114	0,50	10	0,36
CA1320	CA1320 H	0,036	129	0,57	11	0,39
CA1350	CA1350 H	0,043	154	0,68	11	0,46
CA1370	CA1370 H	0,049	175	0,77	12	0,51
CA1400	CA1400 H	0,057	204	0,90	12	0,59
CA1430	CA1430 H	0,067	241	1,06	12	0,70
CA1460	CA1460 H	0,078	279	1,23	12	0,81
CA1490	CA1490 H	0,089	320	1,41	13	0,89
CA1510	CA1510 H	0,097	350	1,54	13	0,97
CA1540	CA1540 H	0,111	400	1,76	13	1,11
CA1570	CA1570 H	0,132	477	2,10	14	1,27
CA1620	CA1620 H	0,151	545	2,40	14	1,46
CA1725	CA1725 H	0,171	615	2,71	14	1,64
CA1730	CA1730 H	0,186	670	2,95	14	1,79
CA1735	CA1735 H	0,204	736	3,24	14	1,97
CA1740	CA1740 H	0,222	799	3,52	16	2,00
CA1745	CA1745 H	0,242	870	3,83	19	2,00
CA1750	CA1750 H	0,260	936	4,12	21	2,01
CA2070	CA2070 H	0,283	1020	4,49	22	2,17
CA2074	CA2074 H	0,300	1081	4,76	22	2,30
CA2077	CA2077 H	0,332	1195	5,26	22	2,55
CA2082	CA2082 H	0,371	1335	5,88	23	2,78
CA2086	CA2086 H	0,412	1483	6,53	23	3,09
CA2088	CA2088 H	0,439	1581	6,96	23	3,30
CA2092	CA2092 H	0,493	1774	7,81	24	3,62
CA2094	CA2094 H	0,509	1833	8,07	24	3,74
CA2099	CA2099 H	0,578	2080	9,16	25	4,16
CA2103	CA2103 H	0,625	2251	9,91	26	4,41
CA2106	CA2106 H	0,644	2319	10,21	27	4,46
CA2109	CA2109 H	0,680	2448	10,78	28	4,63

## Cartridge - Technical data

Cartridges are available in two pressure classes:

- Low pressure up to 350Kpa in "DZR" brass (CA1210);
- High pressure up to 600Kpa in nickel plated "DZR" brass (CA1210H).

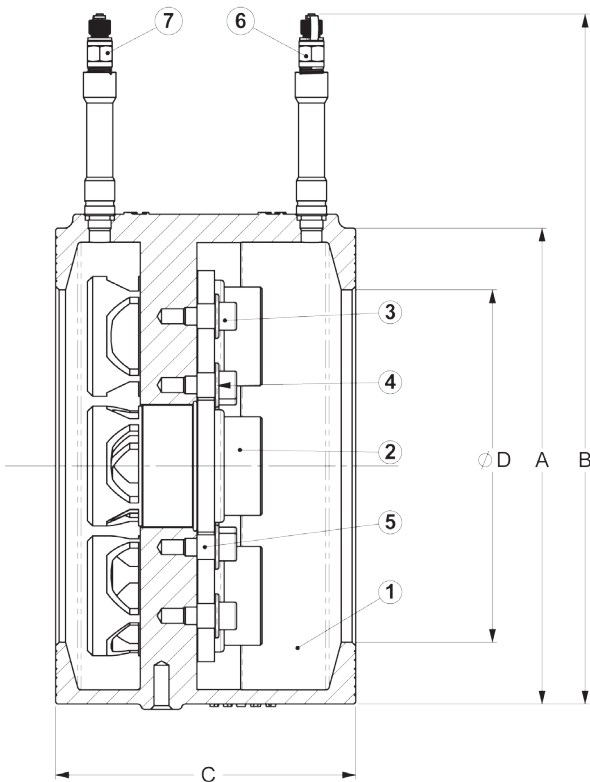
## Cartridge for valves from DN 25L to DN 50 (0,187 l/s to 3,154 l/s)

cod. (max 350KPa)	cod. (max 600KPa)	Flow (l/s)	Flow (l/h)	Flow (gpm)	Min Δp KPa	Kv
CA3073	CA3073 H	0,187	674	2,97	12	1,95
CA3082	CA3082 H	0,239	861	3,79	12	2,49
CA3089	CA3089 H	0,283	1020	4,49	12	2,94
CA3094	CA3094 H	0,315	1136	5,00	12	3,28
CA3096	CA3096 H	0,331	1190	5,24	12	3,44
CA3098	CA3098 H	0,353	1272	5,60	13	3,53
CA3102	CA3102 H	0,375	1349	5,94	13	3,74
CA3107	CA3107 H	0,413	1485	6,54	13	4,12
CA3111	CA3111 H	0,435	1567	6,90	14	4,19
CA3112	CA3112 H	0,453	1631	7,18	14	4,36
CA3118	CA3118 H	0,504	1815	7,99	14	4,85
CA3124	CA3124 H	0,556	2001	8,81	15	5,17
CA3125	CA3125 H	0,568	2044	9,00	16	5,11
CA3129	CA3129 H	0,603	2171	9,56	16	5,43
CA3132	CA3132 H	0,631	2271	10,00	17	5,51
CA3135	CA3135 H	0,661	2380	10,48	17	5,77
CA3138	CA3138 H	0,694	2498	11,00	18	5,89
CA3142	CA3142 H	0,733	2639	11,62	18	6,22
CA3148	CA3148 H	0,797	2871	12,64	19	6,59
CA3156	CA3156 H	0,886	3191	14,05	21	6,96
CA3161	CA3161 H	0,946	3407	15,00	22	7,26
CA3163	CA3163 H	0,986	3486	15,35	22	7,43
CA4148	CA4148 H	1,009	3635	16,00	20	8,13
CA4152	CA4152 H	1,023	3681	16,00	21	8,03
CA4156	CA4156 H	1,136	4090	18,00	21	8,92
CA4164	CA4164 H	1,199	4315	19,00	21	9,42
CA4168	CA4168 H	1,262	4540	20,00	22	9,68
CA4173	CA4173 H	1,325	4770	21,00	22	10,17
CA4176	CA4176 H	1,388	4995	22,00	23	10,42
CA4182	CA4182 H	1,514	5450	24,00	24	11,12
CA4191	CA4191 H	1,640	5905	26,00	25	11,81
CA4194	CA4194 H	1,816	6539	29,00	26	12,82
CA4200	CA4200 H	1,893	6815	30,00	27	13,11
CA4205	CA4205 H	2,019	7265	32,00	28	13,73
CA4211	CA4211 H	2,145	7720	34,00	30	14,10
CA4217	CA4217 H	2,271	8175	36,00	31	14,68
CA4222	CA4222 H	2,397	8630	38,00	33	15,02
CA4229	CA4229 H	2,523	9085	40,00	34	15,58
CA4235	CA4235 H	2,650	9540	42,00	36	15,90
CA4241	CA4241 H	2,776	9990	44,00	38	16,21
CA4248	CA4248 H	2,902	10445	46,00	40	16,51
CA4250	CA4250 H	3,028	10900	48,00	42	16,82
CA4262	CA4262 H	3,154	11355	50,00	44	17,12

## Wafer Automatic Flow Balancing Valve

### Features

- Automatic system balance
- Self cleaning cartridge design
- Energy saving due to elimination of excessive flow
- Increased comfort due to accurate flow distribution
- Wafer mount between flanges
- Assures system balance even with fluctuating pressures
- Body ductile iron GGG 40
- Supplied with 100mm long test points



DN	50	65	80	100	125	150	200	250
ØA	100	119	131	163	193	216	271	326
B	218	237	249	281	311	334	389	440
C	170	170	170	170	170	170	170	170
ØD	80	80	80	100	125	150	200	260
Max n. of cartrs.	1	1	1	2	3	4	7	12
Flow Rate range (l/h)	3820 45000	3820 45000	3820 45000	3820 90000	3820 135000	3820 180000	3820 315000	3820 540000
Kgs	3.41	4.91	4.79	6.90	9.00	11.73	18.75	23.44

DN	300	350	400	450	500	600	800
ØA	383	443	496	545	601	715	880
B	501	561	614	663	719	833	998
C	170	170	170	170	170	170	170
ØD	315	355	405	455	508	610	760
Max n. of cartrs.	15	19	26	33	40	56	85
Flow Rate range (l/h)	3820 675000	3820 855000	3820 1170000	3820 1485000	3820 1800000	3820 2520000	3820 3825000
Kgs	33.41	44.21	51.63	57.47	67.75	88.90	127.30

### Technical Data

Max Pressure	16 Bar
Working Temperature	-20°C to +110°C

N.	Part Name	Materials
1	Body	Ductile iron
2	Cartridge	AISI 304
3	Screw	AISI 304
4	Washer	AISI 304
5	Socket	AISI 304
6	Test point red	Brass
7	Test point blue	Brass

Dimensions in mm

This data sheet is designed as a guide and should not be regarded as wholly accurate in every detail. We reserve the right to amend the specification of any product without notice.

## Cartridge for valves from DN 50 to DN 800 (1,061 l/s to 12,500 l/s)

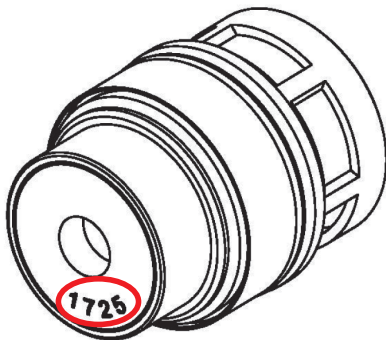
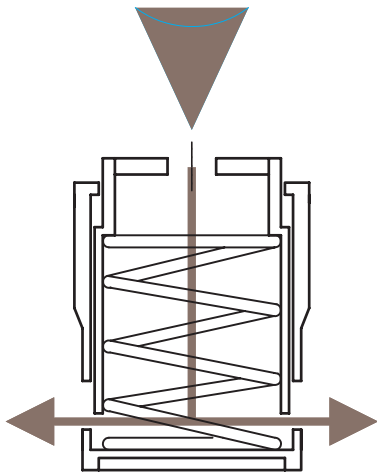
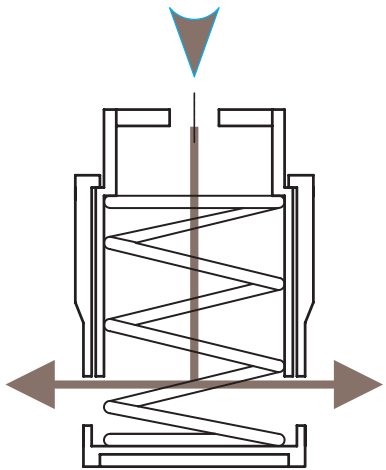
cod. (max 600KPa)	cod. (max 600KPa)	Flow (l/s)	Flow (l/h)	Flow (gpm)	Min Δp (KPa)	Kv
CA5179 H	CA5179 HR	1,061	3820	16,82	13	10,6
CA5184 H	CA5184 HR	1,092	3931	17,31	13	10,9
CA5189 H	CA5189 HR	1,125	4049	17,83	13	11,2
CA5194 H	CA5194 HR	1,166	4199	18,49	13	11,7
CA5200 H	CA5200 HR	1,222	4399	19,37	13	12,2
CA5206 H	CA5206 HR	1,289	4640	20,43	14	12,4
CA5213 H	CA5213 HR	1,375	4951	21,80	14	13,2
CA5220 H	CA5220 HR	1,475	5310	23,38	14	14,2
CA5227 H	CA5227 HR	1,583	5700	25,10	14	15,2
CA5235 H	CA5235 HR	1,725	6209	27,34	14	16,6
CA5243 H	CA5243 HR	1,809	6511	28,67	14	17,4
CA5251 H	CA5251 HR	1,967	7081	31,18	14	18,9
CA5260 H	CA5260 HR	2,195	7901	34,79	15	20,4
CA5269 H	CA5269 HR	2,472	8900	39,19	16	22,3
CA5279 H	CA5279 HR	2,889	10399	45,79	19	23,9
CA5287 H	CA5287 HR	3,154	11355	50,00	21	24,2
CA5292 H	CA5292 HR	3,470	12491	55,00	23	26,1
CA5298 H	CA5298 HR	3,722	13399	59,00	24	27,4
CA5303 H	CA5303 HR	4,100	14762	65,00	27	28,4
CA5308 H	CA5308 HR	4,444	15999	70,45	29	29,7
CA6285 H	CA6285 HR	4,733	17037	75,02	34	29,2
CA6292 H	CA6292 HR	5,041	18148	79,91	34	31,1
CA6301 H	CA6301 HR	5,221	18797	82,77	35	31,8
CA6305 H	CA6305 HR	5,408	19467	85,72	35	32,9
CA6312 H	CA6312 HR	5,684	20464	90,11	35	34,6
CA6319 H	CA6319 HR	5,980	21527	94,79	36	35,9
CA6326 H	CA6326 HR	6,236	22449	98,85	36	37,4
CA6332 H	CA6332 HR	6,523	23482	103,40	36	39,1
CA6338 H	CA6338 HR	6,814	24531	108,02	37	40,3
CA6344 H	CA6344 HR	7,117	25621	112,82	38	41,6
CA6349 H	CA6349 HR	7,369	26528	116,81	38	43,0
CA6356 H	CA6356 HR	7,690	27686	121,91	38	44,9
CA6362 H	CA6362 HR	8,099	29157	128,39	38	47,3
CA6367 H	CA6367 HR	8,321	29954	131,90	39	48,0
CA6373 H	CA6373 HR	8,605	30976	136,40	39	49,6
CA6379 H	CA6379 HR	8,961	32260	142,05	40	51,0
CA6385 H	CA6385 HR	9,324	33565	147,80	40	53,0
CA6391 H	CA6391 HR	9,709	34953	153,91	40	55,3
CA6393 H	CA6393 HR	10,093	36336	160,00	42	56,1
CA6398 H	CA6398 HR	10,468	37685	165,94	43	57,5
CA6400 H	CA6400 HR	10,724	38607	170,00	44	58,2
CA6407 H	CA6407 HR	11,381	40971	180,41	46	60,4
CA6407 HH	CA6407H HR	12,500	45000	198,00	49	64,3

## Cartridge - Technical data

Cartridges are available in two materials having same high pressure class up to 600Kpa

- AISI 304 (CA5179H)
- AISI 316 for high resistance to corrosion (CA5179HR).

Working temperature: -20°C to +120°C



## Cartridge Operations

When the pressure increases, the spring is compressed and the piston reduces outlet windows, in order to maintain the same flow rate; when  $\Delta p$  decreases the windows start to open again (see picture on the right). Constant flow rate is obtained through the valve, despite pressure fluctuations. By simply measuring differential pressure across the valve, the flow through the cartridge is obtained as follows:

- if measured differential pressure is above minimum  $\Delta p$ , the flow rate is the same as the one stated on the cartridge table.
- if measured differential pressure is below minimum  $\Delta p$  stated on cartridge table, flow rate is calculated with one of the following formula.

$$Q = K_v * \sqrt{\Delta p}$$

$$Q = m^3/h$$

$$\Delta p = \text{bar}$$

$$Q = 100 * K_v * \sqrt{\Delta p}$$

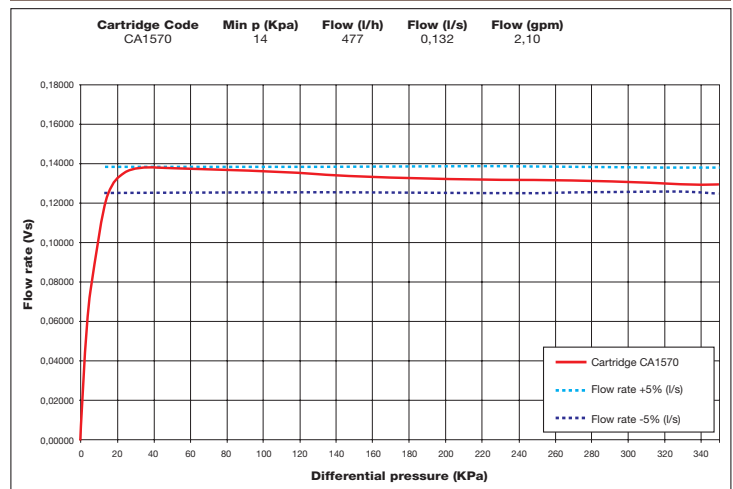
$$Q = l/h$$

$$\Delta p = \text{KPa}$$

$$Q = 1/36 * K_v * \sqrt{\Delta p}$$

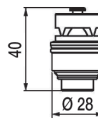
$$Q = l/s$$

$$\Delta p = \text{KPa}$$



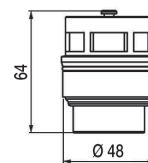
29  
DN 15 - 20 - 25

CARTRIDGES  
from 0.007 l/s to 0.680 l/s  
25 l/h - 2448 l/h



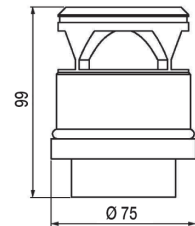
29  
DN 25L - 32 - 40 - 50

CARTRIDGES  
from 0.188 l/s to 3.154 l/s  
674 l/h - 11355 l/h



229  
DN 50 - DN 800

CARTRIDGES  
from 1.0061 l/s to 12.5 l/s  
3820 l/h - 45000 l/h



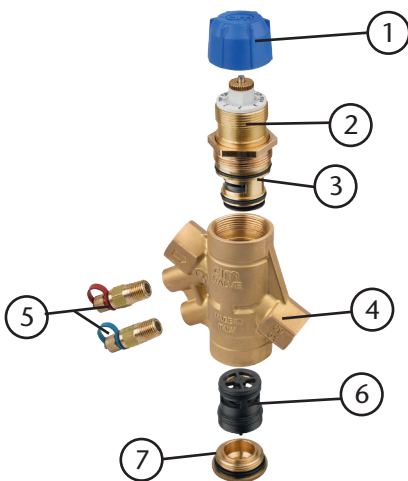
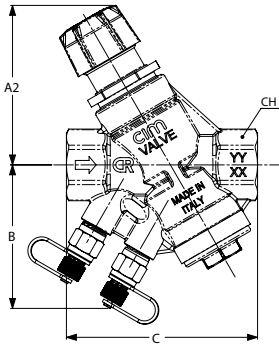
## Orifice Plate Marking

On the orifice plate is engraved a four digit code number, corresponding to the last four digits of the cartridge code.

Cartridges can be identified by above mentioned four digits numbers; the corresponding flow rate and minimum  $\Delta p$  can be read on specific tables.

cod. (max 350KPa)	cod. (max 600KPa)	Flow (l/s)	Flow (l/h)	Flow (gpm)	Min $\Delta p$ (KPa)
CA1620	CA1620 H	0,151	545	2,40	14
CA1725	CA1725 H	0,171	615	2,71	14
CA1730	CA1730 H	0,186	670	2,95	14

## Pressure Independent Control Balancing Valve



### Technical Data

Max Pressure	25 Bar
Working Temperature	0°C to +120°C

### Features

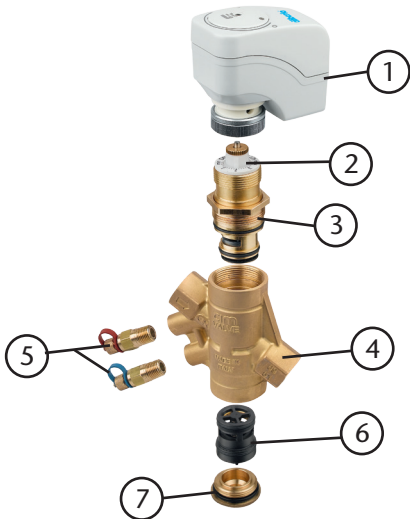
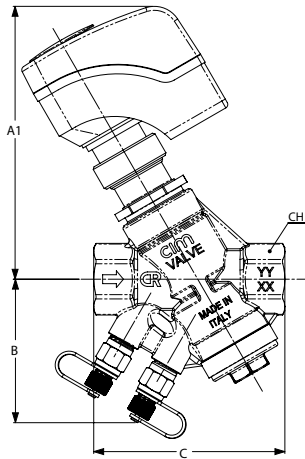
- Screwed BSP Parallel
- DZR Brass Body
- PN 25 Rated
- Easy flow selection via preset dial
- Automatic balancing even with fluctuating pressures
- Easy flow modification after installation
- Easy flush due to simple removal of control cartridge

DN	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
A2	81	81	81	87	120	130
B	72	72	72	76	87	93
C	95,5	96,5	102,5	128	144	155
CH	27	32	39	49	54	68
Kgs	1.11	1.13	1.26	1.55	2.55	3.20

N.	Part Name	Materials
1	Cap	Plastic
2	Presetting Dial	Plastic
3	Modulating Control	DZR Brass
4	Valve Body	DZR Brass
5	Test Points	DZR Brass
6	DPC Cartridge	Plastic
7	Plug	DZR Brass

Dimensions in mm

This data sheet is designed as a guide and should not be regarded as wholly accurate in every detail. We reserve the right to amend the specification of any product without notice.



## Pressure Independent Control Balancing Valve

### Features

- Screwed BSP Parallel
- DZR Brass Body
- PN 25 Rated
- Easy flow selection via preset dial
- Automatic balancing even with fluctuating pressures
- Motor allows flow rate modulation
- Easy flow modification after installation
- Easy flush due to simple removal of control cartridge
- Low Flow and High Flow versions available
- 3 Actuators available (21, 22, 23)

DN	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
A1	138	138	138	144	219	225
B	72	72	72	76	87	93
C	95,5	96,5	102,5	128	144	155
CH	27	32	39	49	54	68
Kgs	1.11	1.13	1.26	1.55	2.55	3.20

### Technical Data

Max Pressure	25 Bar
Working Temperature	0°C to +120°C

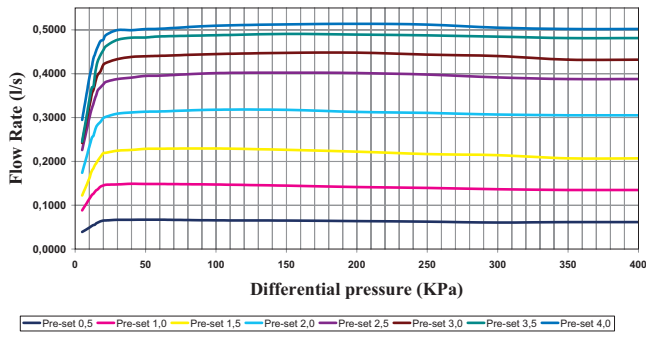
N.	Part Name	Materials
1	Actuator	Plastic Body
2	Presetting Dial	Plastic
3	Modulating Control	DZR Brass
4	Valve Body	DZR Brass
5	Test Points	DZR Brass
6	DPC Cartridge	Plastic
7	Plug	DZR Brass

Dimensions in mm

This data sheet is designed as a guide and should not be regarded as wholly accurate in every detail. We reserve the right to amend the specification of any product without notice.



Flow rate - Differential pressure



## Balancing process

- Totally open the valve by means of the presetting dial;
- Check the differential pressure, which shall be higher than the minimum value stated on relevant tables;
- Adjust the flow rate up to the required flow rate value. For each adjustment position, tables on the following pages show the relevant flow rate;
- Lock presetting dial position and assemble the electric actuator.

## Regulation

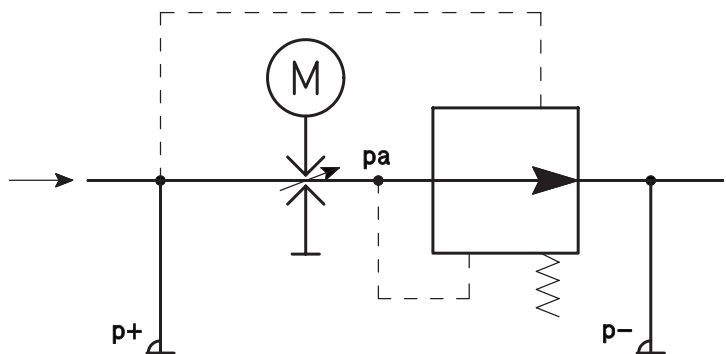
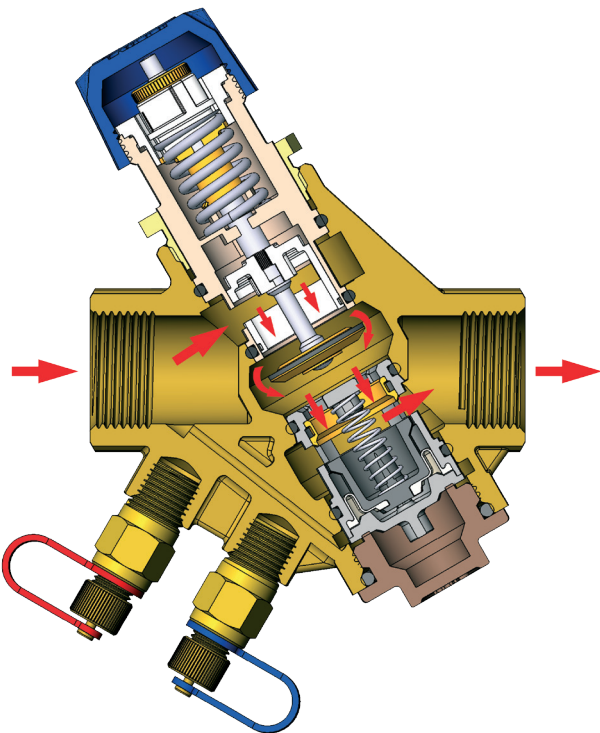
The presetting dial device shows an index scale ranging from a minimum value of 0,5 up to a maximum value of 4. Each point of this scale is corresponding to one flow rate listed in the tables of following pages. The inlet water goes through a modulating control component whose geometry can be modified by turning the presetting dial.

## Control

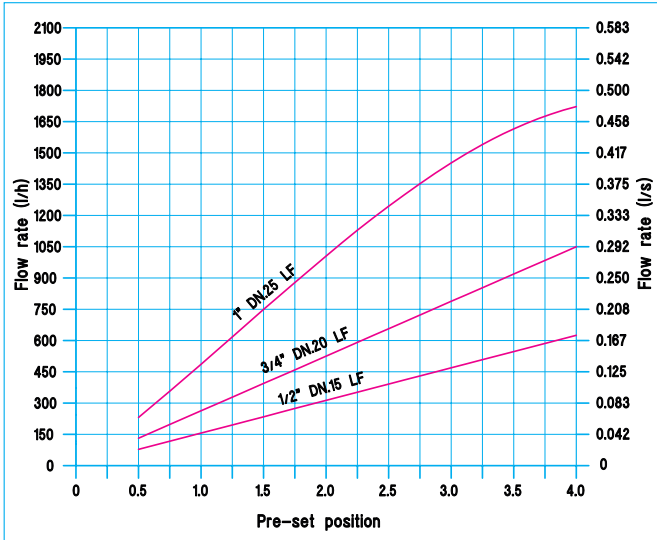
Two different pressures operate on the DPC cartridge. The first one is transmitted through the passage connecting the valve inlet to the lower section of "pa" cartridge. The second one is registered at valve outlet by the flow rate selecting device "pa". In order to keep constant the difference between the mentioned pressures, the cartridge obturator operates by closing the water outlet bore to reach the preset flow rate, regardless of fluctuating pressure conditions of the system.

## Modulation

The electrical actuator performs the modulating function changing the section of flow passage. When continuous modulation is carried out, the temperature is kept under control. **21, 22, 23** keeps the same obturator stroke, regardless of the presetting dial position. With continuous modulation, control is excellent even with small flow opening. This eliminates on/off effect.



## 20 - 23 Low Flow - Graphs



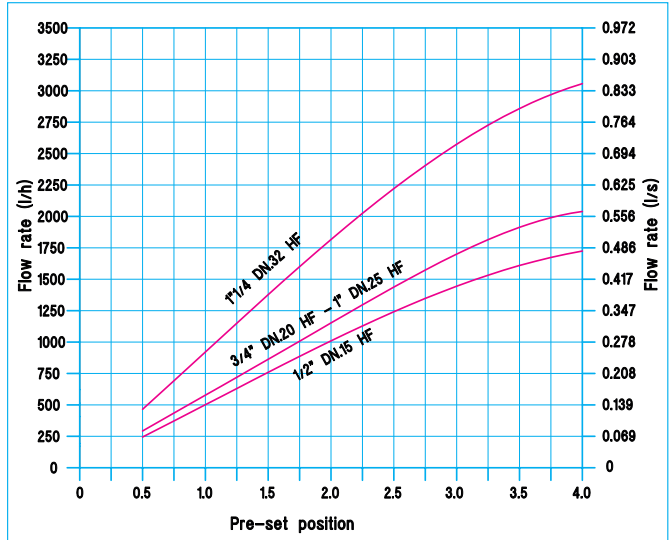
		20 - 23 - LOW FLOW - 1/2" DN 15															
Pre-set position		0,50	0,75	1,00	1,25	1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50	3,75	4,00	
FLOW RATE	l/h	78	117	156	195	234	274	313	352	391	430	469	508	547	586	625	
	l/s	0,022	0,033	0,043	0,054	0,065	0,076	0,087	0,098	0,109	0,119	0,130	0,141	0,152	0,163	0,174	
	gpm*	0,34	0,52	0,69	0,86	1,03	1,20	1,38	1,55	1,72	1,89	2,06	2,24	2,41	2,58	2,75	
min. ΔP (kPa)		14,5	14,5	14,5	15,1	15,1	15,1	15,1	15,7	15,7	15,7	15,7	16,0	16,0	16,0	16,0	
Kv		0,21	0,31	0,41	0,50	0,60	0,70	0,81	0,89	0,99	1,08	1,18	1,27	1,37	1,47	1,57	

		20 - 23 - LOW FLOW - 3/4" DN 20															
Pre-set position		0,50	0,75	1,00	1,25	1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50	3,75	4,00	
FLOW RATE	l/h	131	197	263	328	394	459	525	591	656	722	788	853	919	984	1050	
	l/s	0,036	0,055	0,073	0,091	0,109	0,128	0,146	0,164	0,182	0,201	0,219	0,237	0,255	0,273	0,292	
	gpm*	0,58	0,87	1,16	1,44	1,73	2,02	2,31	2,60	2,89	3,18	3,47	3,76	4,04	4,33	4,62	
min. ΔP (kPa)		14,5	14,5	14,5	15,1	15,1	15,1	15,1	15,7	15,7	15,7	15,7	16,0	16,0	16,0	16,0	
Kv		0,34	0,52	0,69	0,84	1,01	1,19	1,35	1,49	1,65	1,83	1,99	2,13	2,30	2,46	2,63	

		20 - 23 - LOW FLOW - 1" DN 25															
Pre-set position		0,50	0,75	1,00	1,25	1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50	3,75	4,00	
FLOW RATE	l/h	231	357	486	617	749	878	1005	1128	1244	1352	1452	1540	1615	1676	1722	
	l/s	0,064	0,099	0,135	0,171	0,208	0,244	0,279	0,313	0,346	0,376	0,403	0,428	0,449	0,466	0,478	
	gpm*	1,02	1,57	2,14	2,72	3,30	3,87	4,43	4,96	5,48	5,95	6,39	6,78	7,11	7,38	7,58	
min. ΔP (kPa)		14,0	14,0	14,0	14,8	14,8	14,8	14,8	15,5	15,5	15,5	15,5	16,0	16,0	16,0	16,0	
Kv		0,62	0,95	1,30	1,60	1,95	2,28	2,61	2,86	3,16	3,44	3,69	3,85	4,04	4,19	4,30	

\* The "gpm" values are corresponding to US gallon per minute.

## 20 - 23 High Flow - Graphs



		20 - 23 - HIGH FLOW - 1/2" DN 15															
Pre-set position		0,50	0,75	1,00	1,25	1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50	3,75	4,00	
FLOW RATE	l/h	244	372	501	630	759	886	1009	1128	1241	1347	1444	1532	1609	1673	1724	
	l/s	0,068	0,103	0,139	0,175	0,211	0,246	0,280	0,313	0,345	0,374	0,401	0,426	0,447	0,465	0,479	
	gpm*	1,08	1,64	2,20	2,77	3,34	3,90	4,44	4,97	5,46	5,93	6,36	6,74	7,08	7,37	7,59	
min. ΔP (kPa)		14,0	14,0	14,0	15,8	15,8	15,8	15,8	17,0	17,0	17,0	17,0	18,0	18,0	18,0	18,0	
Kv		0,65	0,99	1,34	1,58	1,91	2,23	2,54	2,73	3,01	3,27	3,50	3,61	3,79	3,95	4,06	

		20 - 23 - HIGH FLOW - 3/4" DN 20								20 - 23 - HIGH FLOW - 1" DN 25							
Pre-set position		0,75	1,00	1,25	1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50	3,75	4,00		
FLOW RATE	l/h	292	435	577	719	863	1007	1152	1296	1437	1573	1700	1815	1913	1990	2039	
	l/s	0,081	0,121	0,160	0,200	0,240	0,280	0,320	0,360	0,399	0,437	0,472	0,504	0,531	0,553	0,566	
	gpm*	1,28	1,91	2,54	3,17	3,80	4,43	5,07	5,70	6,33	6,92	7,48	7,99	8,42	8,76	8,98	
min. ΔP (kPa)		14,0	14,0	18,0	18,0	18,0	18,0	20,0	20,0	20,0	20,0	22,0	22,0	22,0	22,0	22,0	
Kv		1,16	1,54	1,70	2,04	2,38	2,72	2,90	3,21	3,52	3,80	3,87	4,08	4,24	4,34		

		20 - 23 - HIGH FLOW - 1 1/4" DN 32															
Pre-set position		0,50	0,75	1,00	1,25	1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50	3,75	4,00	
FLOW RATE	l/h	465	692	921	1150	1377	1600	1816	2024	2221	2405	2574	2726	2858	2969	3056	
	l/s	0,129	0,192	0,256	0,319	0,382	0,444	0,504	0,562	0,617	0,668	0,715	0,757	0,794	0,825	0,849	
	gpm*	2,05	3,05	4,05	5,06	6,06	7,04	7,99	8,91	9,78	10,59	11,33	12,00	12,58	13,07	13,45	
min. ΔP (kPa)		14,5	14,5	14,5	16,0	16,0	16,0	16,0	17,0	17,0	17,0	17,0	18,0	18,0	18,0	18,0	
Kv		1,22	1,82	2,42	2,87	3,44	4,00	4,54	4,91	5,39	5,83	6,24	6,42	6,74	7,00	7,20	

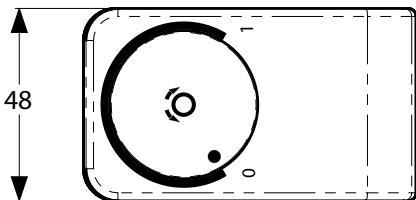
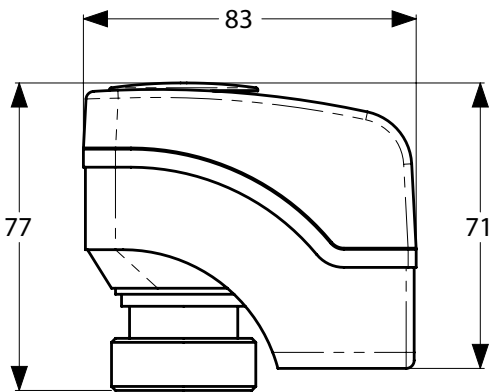
\* The "gpm" values are corresponding to US gallon per minute.

## Electric Actuators DN15 to DN32

- EMV210/145: 24VAC - proportional; (Art 21)
- EMV210/146: 24VAC - 3 positions; (Art 22)
- EMV210/147: 230VAC - 3 positions. (Art 23)

Their main features are the following:

- Maximum stroke: 5,5 mm;
- 3 positions or 0..10Vdc control signal;
- Swivel nut easy assembling;
- Manual operation by 3 mm hexagonal key;
- Short circuit resistance;
- Protection against polarity reversal.



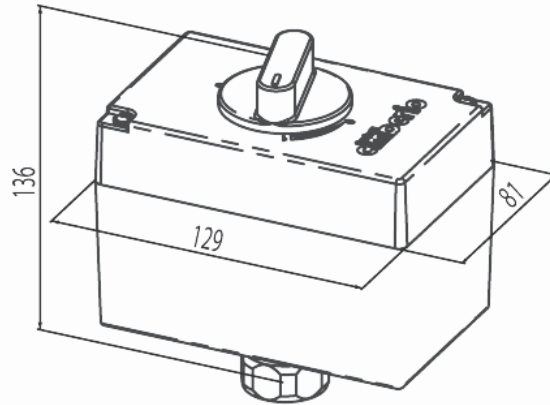
Voltage:	230VAC; 24VAC
Frequency:	50/60 Hz
Manual operation:	3mm hexagonal key
Cable length:	1,5
Protection Class:	IP 40
Ambient operating conditions:	0°C ÷ 50°C - Warehousing + 10°C ÷ 80°C - Humidity rate according to EN 60730-1
Weight:	350 grms
Actuating force:	250N
Input impedance:	> 100 k Ohm (DC 0-10v)

## Electric Actuators DN40 to DN50

- EMV210/148: 24VAC - proportional; (Art 21)
- EMV210/149: 24VAC - 3 positions; (Art 22)
- EMV210/150: 230VAC - 3 positions. (Art 23)

Their main features are the following:

- Maximum stroke: 6,5 mm;
- Manual operation by adjusting handle;
- 3 positions or 0..10Vdc control signal.



Voltage:	230VAC; 24VAC
Frequency:	50/60 Hz
Manual operation:	adjusting handle
Cable length:	no cable
Protection Class:	IP 54
Weight:	450 grms
Actuating force:	400N
Input impedance:	> 100 k Ohm (DC 0-10v)



Certificate No. 1437B



Certificate No. 1437A

Distributor