

**Description:**

Three-in-one control and balancing valve with ΔP control across the control valve, manual flow limitation and test ports. Max. ΔP 400 kPa, DN15-50.

Application:

For use in heating/air conditioning piping systems to control water (glycol) flows to preset but changeable levels, to prevent overflows in terminal units and provide full control valve authority. Flowmaster control/balancing valves should be installed at the outlet side of fan coil units.

Operation:

The maximum flow for any given is preset using the infinitely variable setting wheel valve connection. The control under the control valve enjoys full stroke operation and has maximum authority. Flow is maintained despite changes in ΔP across the valve due to the automatic flow control valve element.

Materials and spec.:

Body	DZR Brass EN CW602N
DP- Valve	PPS with 40% glass
Flow setting	PPO (Polyphenylene Oxide)
Spring	Stainless steel
O-ring	EPDM
Medium temperature	0°C to 120°C

Specification text assistance

The actuated valve shall operate by means of an automatic balancing cartridge that can be removed without dismantling the valve. The presetting of the valve shall not influence the length of the stroke. The pressure class shall be PN25. The differential pressure operating range shall be up to 400 kPa. The valve shall operate by means of an electrical modulating actuator.

Actuator:

Characteristics: Electrical modulating, normally closed.

Protection class: IP 54

Power supply: 24 V AC $\pm 10\%$

Frequency: 50/60 Hz

Power consumption: 2W

Control signal: 0(2) - 10 V DC/0(4) - 20mA

Feedback signal: 0-10V DC

Actuating force: 250 N for DN15-32, 400 N for DN40-50

Stroke: 5.5 mm for DN15-32, 6.5mm for DN40-50

Ambient operating conditions: 0 to 50°C

Cable length: 1m

CE compliance: 89/336/EEC, 93/68/EEC

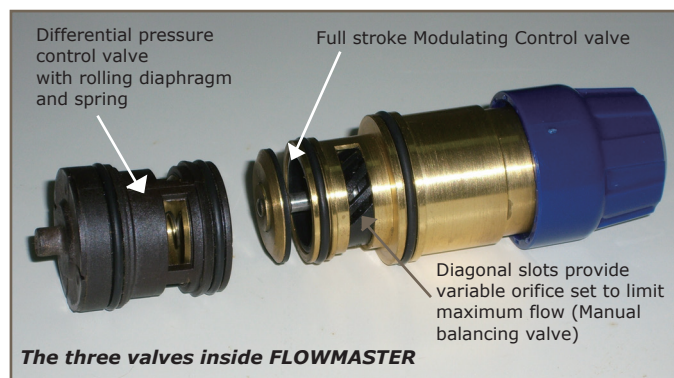
Running time: 28 s for DN15-32, 33s for DN40-50

Weight: 300g



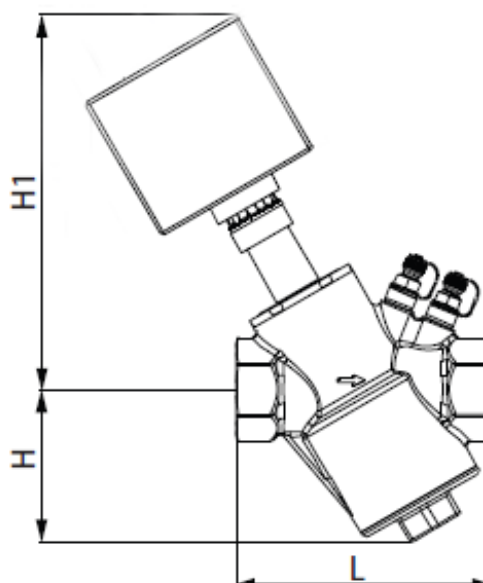
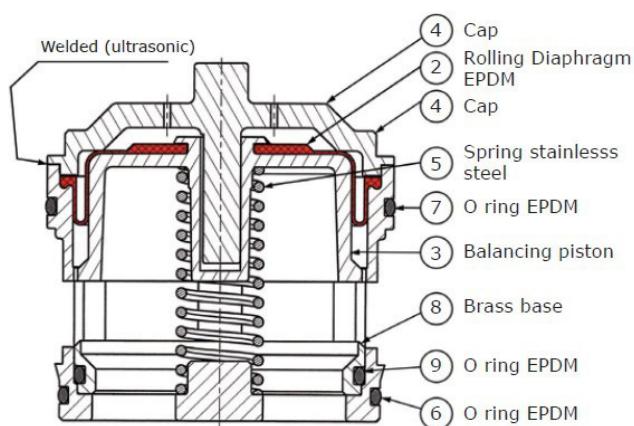
Three-in-one control and balancing valve with ΔP control across the control valve, manual flow limitation and test ports. Max. ΔP 400 kPa, DN15-50.

The innovative design of ICV Flowmaster includes a modulating control valve that retains full authority and maximum stroke at all times. There are two independent movements for the presetting (manual balancing) and the modulating function. During presetting, the inlet area moves radially without interfering with the length of the stroke, offering an infinitely variable opening. When modulating element is operating, the inlet area moved axially to the stroke direction taking advantage of the full stroke.



Dial under actuator used to set limit to maximum flow

Details of ΔP valve



Three-in-one control and balancing valve with ΔP control across the control valve, manual flow limitation and test ports. Max. ΔP 400 kPa, DN15-50.

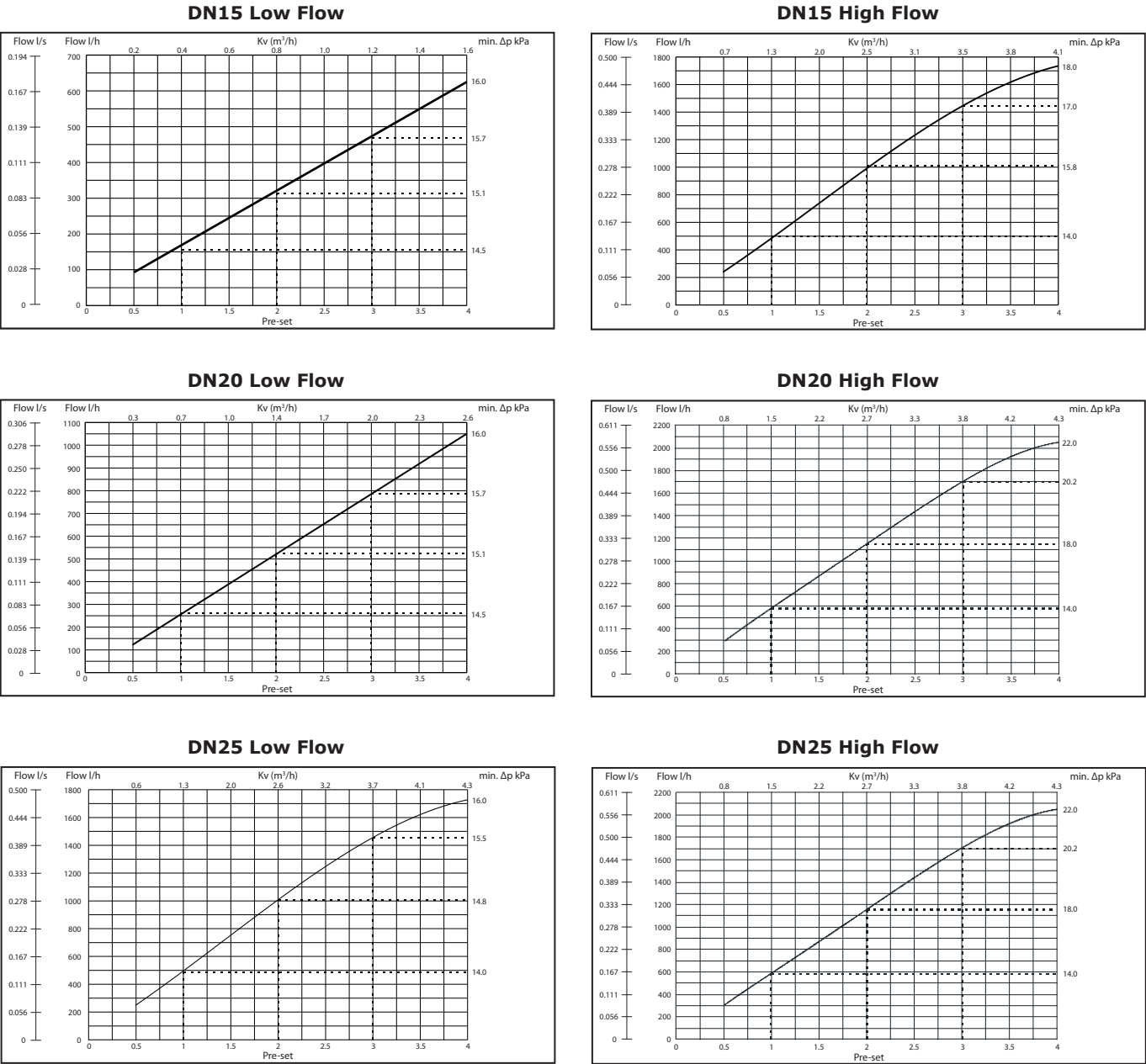
With P/T plugs

Dimensions	High Flow			Low flow			L	H	H1	Weight
Fem/Fem	Product No	Flow* (l/h)	Min ΔP (kPa)	Product No	Flow* (l/h)	Min ΔP (kPa)	mm	mm	mm	kg
DN 15	951-015-20-12	244-1724	18	951-015-20-11	75-625	16	88	65	145	0.90
DN 20	951-020-20-12	292-2039	22	951-020-20-11	131-1050	16	88	65	145	0.91
DN 25	951-025-20-12	292-2039	22	951-025-20-11	231-1722	16	92	66	145	1.00
DN 32	951-032-20-12	465-3056	18				128	72	152	1.52
DN 40	951-040-20-12	2022-7105	16				144	87	219	2.55
DN 50	951-050-20-12	2204-8586	16				155	93	225	3.20

*(example: for high flow DN15, the maximum flow can be set between 244and 1724l/h, according to design specifications)

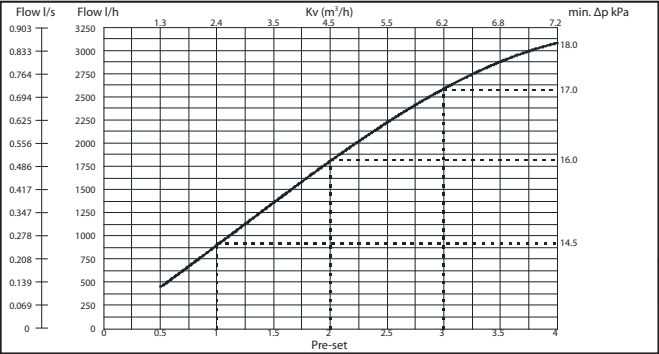
Modulating actuator 24V / 0-10V	951-000-9804(for DN15-32)	951-000-9808(for DN40-50)
---------------------------------	---------------------------	---------------------------

Flowmaster flow rate chart

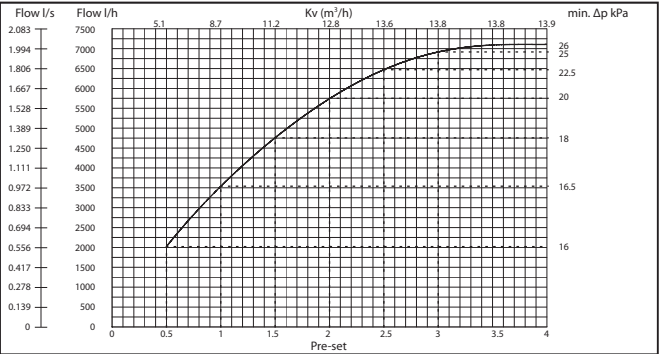


Three-in-one control and balancing valve with ΔP control across the control valve, manual flow limitation and test ports. Max. ΔP 400 kPa, DN15-50.

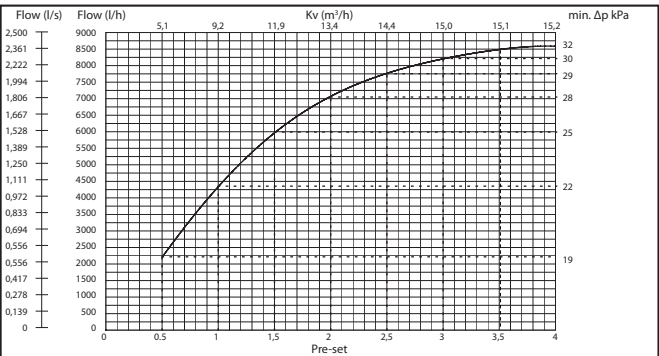
DN32



DN40



DN50



Setting and flow

DN15 Low Flow				DN15 High Flow			DN20 Low Flow		
Pre-set	Flow l/h	Flow l/s	Flow gpm	Flow l/h	Flow l/s	Flow gpm	Flow l/h	Flow l/s	Flow gpm
0.50	78	0.022	0.34	244	0.068	1.08	131	0.036	0.58
0.75	117	0.033	0.52	372	0.103	1.64	197	0.055	0.87
1.00	156	0.043	0.69	501	0.139	2.20	263	0.073	1.16
1.25	195	0.054	0.86	630	0.175	2.77	328	0.091	1.44
1.50	234	0.065	1.03	759	0.211	3.34	394	0.109	1.73
1.75	274	0.076	1.20	886	0.246	3.90	459	0.128	2.02
2.00	313	0.087	1.38	1009	0.280	4.44	525	0.146	2.31
2.25	352	0.098	1.55	1128	0.313	4.97	591	0.164	2.60
2.50	391	0.109	1.72	1241	0.345	5.46	656	0.182	2.89
2.75	430	0.119	1.89	1347	0.374	5.93	722	0.201	3.18
3.00	469	0.130	2.06	1444	0.401	6.36	788	0.219	3.47
3.25	508	0.141	2.24	1532	0.426	6.74	853	0.237	3.76
3.50	547	0.152	2.41	1609	0.447	7.08	919	0.255	4.04
3.75	586	0.163	2.58	1673	0.465	7.37	984	0.273	4.33
4.00	625	0.174	2.75	1724	0.479	7.59	1050	0.292	4.62

DN20 High Flow				DN25 Low Flow			DN25 High Flow		
Pre-set	Flow l/h	Flow l/s	Flow gpm	Flow l/h	Flow l/s	Flow gpm	Flow l/h	Flow l/s	Flow gpm
0.50	292	0.081	1.28	231	0.064	1.02	292	0.081	1.28
0.75	435	0.121	1.91	357	0.099	1.57	435	0.121	1.91
1.00	577	0.160	2.54	486	0.135	2.14	577	0.160	2.54
1.25	719	0.200	3.17	617	0.171	2.72	719	0.200	3.17
1.50	863	0.240	3.80	749	0.208	3.30	863	0.240	3.80
1.75	1007	0.280	4.43	878	0.244	3.87	1007	0.280	4.43
2.00	1152	0.320	5.07	1005	0.279	4.43	1152	0.320	5.07
2.25	1296	0.360	5.70	1128	0.313	4.96	1296	0.360	5.70
2.50	1437	0.399	6.33	1244	0.346	5.48	1437	0.399	6.33
2.75	1573	0.437	6.92	1352	0.376	5.95	1573	0.437	6.92
3.00	1700	0.472	7.48	1452	0.403	6.39	1700	0.472	7.48
3.25	1815	0.504	7.99	1540	0.428	6.78	1815	0.504	7.99
3.50	1913	0.531	8.42	1615	0.449	7.11	1913	0.531	8.42
3.75	1990	0.553	8.76	1676	0.466	7.38	1990	0.553	8.76
4.00	2039	0.566	8.98	1722	0.478	7.58	2039	0.566	8.98



Three-in-one control and balancing valve with ΔP control across the control valve, manual flow limitation and test ports. Max. ΔP 400 kPa, DN15-50.

	DN32 Flow			DN40 Flow			DN50 Flow		
Pre-set	Flow l/h	Flow l/s	Flow gpm	Flow l/h	Flow l/s	Flow gpm	Flow l/h	Flow l/s	Flow gpm
0.50	465	0.129	2.05	2022	0.562	8.90	2204	0.612	9.70
0.75	692	0.192	3.05	2825	0.785	12.44	3325	0.924	14.64
1.00	921	0.256	4.05	3538	0.983	15.58	4337	1.205	19.09
1.25	1150	0.319	5.06	4179	1.161	18.40	5218	1.449	22.97
1.50	1377	0.382	6.06	4758	1.322	20.95	5963	1.657	26.25
1.75	1600	0.444	7.04	5279	1.466	23.24	6577	1.827	28.95
2.00	1816	0.504	7.99	5741	1.595	25.27	7070	1.964	31.12
2.25	2024	0.562	8.91	6139	1.705	27.03	7459	2.072	32.84
2.50	2221	0.617	9.78	6470	1.797	28.48	7766	2.157	34.19
2.75	2405	0.668	10.59	6729	1.869	29.62	8009	2.225	35.25
3.00	2574	0.715	11.33	6916	1.921	30.44	8024	2.279	36.11
3.25	2726	0.757	12.00	7033	1.954	30.96	8362	2.323	36.81
3.50	2858	0.794	12.58	7090	1.969	31.21	8486	2.357	37.36
3.75	2969	0.825	13.07	7105	1.974	31.28	8568	2.380	37.72
4.00	3056	0.849	13.45	7105	1.974	31.28	8586	2.385	37.80