

# The D6..N range of butterfly valves. Economical and efficient control.



Water is our element.

[www.belimo.eu](http://www.belimo.eu)

## Integrated solutions for medium or high volumetric flows.

With its comprehensive range of motorised butterfly valves, Belimo offers integrated and remarkably cost-efficient solutions for controlling medium-to-high volumetric flows. The exceptionally low pressure losses of the D6..N series assure optimum energy efficiency. Premium product quality and intelligent actuator concepts guarantee long-term protection for investments.

### **Broad spectrum of applications**

The D6..N range of butterfly valves comprises nominal widths from DN 25 to DN 350. In the opening range between 0 and 54°, they achieve an almost equal-percentage characteristic curve. Owing to the minimal pressure losses, significant energy savings are possible in applications like 2-way injection circuits, open cooling towers or hot and cold water distribution systems. These butterfly valves and actuators have demonstrated their unrivalled operational reliability in tests under extreme conditions. In practice, this means lower costs both for the purchase of Belimo's low-priced valve/actuator combinations and for their operation.

### **New actuator range**

A new range of modulating actuators with torques from 18 to 500 Nm (up to 3500 Nm for retrofit business) is now available for motorising our D6..N butterfly valves. Their fast running times improve the quality of control. Special MF types allow each actuator to be optimised on site for its respective application. Alternatively, our MP types permit up to eight actuators to be grouped together in an MP-Bus® line and integrated in any popular fieldbus system. The wiring costs for bus integration are reduced by up to 90 percent as a result.

# The D6..N range of butterfly valves. Open-close applications / control mode.

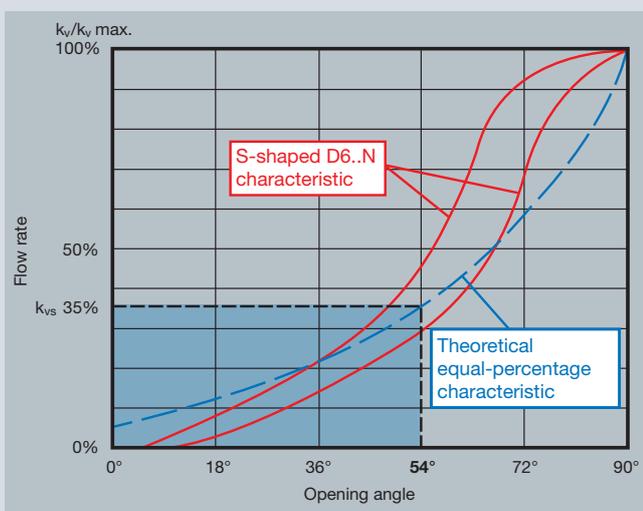
Valve range / table of flow rates and differential pressures



Valve type	Nominal width	Max. permissible media rate: 4m/s			
	DN [mm]	$k_v$ max. [m <sup>3</sup> /h]	$\Delta p_v$ 100 <sup>1)</sup> [kPa]	$k_{vs}$ @ 54° [m <sup>3</sup> /h]	$\Delta p_v$ @ 54° <sup>2)</sup> [kPa]
D625N	25	45	1.6	16	2.9
D632N	32	55	2.5	19	5.0
D640N	40	70	3.4	25	6.8
D650N	50	90	3.1	32	8.2
D665N	65	180	2.4	63	6.6
D680N	80	300	2.4	105	5.1
D6100N	100	580	2.1	203	4.8
D6125N	125	820	2.0	287	5.1
D6150N	150	1600	1.5	560	3.5
D6200N	200	2900	1.5	1015	3.1
D6250N	250	4400	1.4	1540	3.3
D6300N	300	7300	1.2	2555	2.6
D6350N	350	10900	0.8	3815	1.8

The differential pressures  $\Delta p_v$  @ 54° [kPa] indicated in the table must not be exceeded.

## D6..N flow characteristics



The S-shaped characteristic of the D6..N butterfly valve approximates the equal-percentage characteristic described in VDI2176. In the rotation angle between 0 and 54°, it is accurate to refer to it as an equal-percentage characteristic curve. At an opening angle of 54°, the  $k_{vs}$  corresponds to 35% of the max.  $k_v$  value for a 90° opening angle. The equal-percentage valve characteristic has a factor of equivalence  $n(ep) \approx 2.5$ .

The effective volumetric flow is calculated as follows:

$$1) \dot{V}_{100} = k_v \text{ max.} \cdot \sqrt{\frac{\Delta p_v \cdot 100}{100}}$$

$$2) \dot{V}_{@54^\circ} = k_{vs} @ 54^\circ \cdot \sqrt{\frac{\Delta p_v @ 54^\circ}{100}}$$

Units

- $\dot{V}_{100}$ ,  $\dot{V}_{@54^\circ}$  [m<sup>3</sup>/h]
- $k_v$  max.,  $k_{vs}$  @ 54° [m<sup>3</sup>/h]
- $\Delta p_v$  100,  $\Delta p_v$  @ 54° [kPa]

## Valve specifications

- Butterfly valve with epoxy coating, valve cone / trim made of stainless steel
- Rated pressure ps: 1600 kPa
- Flanges:
  - DN 25...DN 200: PN6, PN10, PN16
  - DN 250...DN 350: PN16
- Media: Cold or warm water (water with glycol up to max. 50% vol.)
- Medium temperature: -20°C to +120°C (peaks: +130°C/1 h)
- Leakage rate: A (tight acc. to EN 12266-1)
- Angle of rotation: Max. 90°
- Maintenance-free

# Modulating actuators for butterfly valves. Suitable for Belimo or third-party valves.

Electric rotary actuators / table of closing pressure  $\Delta p_s$  in kPa

								
IP54	IP66/67	IP54	IP54	IP54	IP67		IP67	
SR...-5 [20 Nm]	SR..P-R [18 Nm]	GR...-5 [40 Nm]	GR..-7 [40 Nm]	DGR..-7 [60 Nm]	SY2 [90 Nm]	SY3 [150 Nm]	SY4 [400 Nm]	SY5 [500 Nm]
1200	1200							
1200	1200							
1200	1200							
1200	1200							
1200	1200							
1200	1200							
200		1200						
			600	1200	1200			
				600	1200			
						1200		
							1200	
							600	1200
								600

Motorisation of third-party valves (90...3500 Nm): IP67

							
F07	F10	F14		F16			
SY2/SY3 [90/150 Nm]	SY4... SY6 [400...650 Nm]	SY7 [1000 Nm]	SY8 [1500 Nm]	SY9 [2000 Nm]	SY10 [2500 Nm]	SY11 [3000 Nm]	SY12 [3500 Nm]

## Actuator specifications

- SR types: Non-parameterisable
- MF types: Angle of rotation, running time (not SY..) and control and feedback signals can be customised on site
- MP types: Integration in any popular fieldbus system, parameterisable similar to MF types
- 24 V: SR..-5, SR..P-R, GR..-5, GR..-7, DGR..-7 and SY2..-SY5.. (available in -SR, -MF and -MP versions)
- 230 V: SR..-5, SR..P-R and SY2..-SY5.. (available in -SR and -MF versions)
- SY actuators: Suitable for electrical installation with a 3 or 4-wire system. Unrestricted cable length if a 4-wire system is used

## Motorisation of third-party valves

- Compatible adapters for motorising rotary valves and butterfly valves from other manufacturers available on request.
- On request: SY6...SY12 actuators for 650...3500 Nm
- Versions:
  - 24 V: SY2..-SY5.. (available in -SR, -MF and -MP versions)
  - 230 V: SY2..-SY12.. (available in -SR and -MF versions)

# All-inclusive.



5 year warranty



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Comprehensive support

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