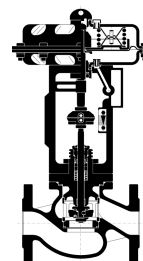


# Technical Data Sheet ECOTROL® Control Valve



TD\_8C

## General Data

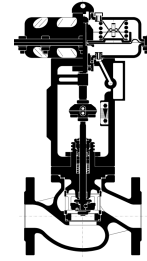
<b>Series</b>	8C
<b>Nominal size DN /NPS</b>	15-100 / ½" – 4"
<b>Nominal pressure PN / ANSI</b>	16-40 / 150-300
<b>Characteristic</b>	equal percentage or linear
<b>Rangeability</b>	50:1
<b>Plug guide</b>	stem guided, option: integrated double guiding (retrofittable) for DN40 – DN100 (1½" – 4")
<b>Seat leakage</b>	metal sealing: IEC 50534-4 leakage rate IV (0.01% Kvs value); optional: leakage rate V; soft sealing: IEC 50534-4 leakage rate VI
<b>Bellows seal (optional)</b>	seamless, double walled, made of 1.4571; option: Hastelloy and other materials
<b>Heating jacket (optional)</b>	connections DN 15 PN 40 (1/2" ANSI 300) flanges
<b>Low-temperature version (optional)</b>	down to -196°C, with cover flange if required

## Materials

Body material	EN	for temperatures	ASTM	for temperatures		
	1.0619 GP240GH	-10 to 400°C	A 216 WCB	-29°C to 400°C		
	1.4408 G-X 5 CrNiMo 19 11 2	-196 to 400°C	A 351 CF8M	-196°C to 400°C		
	1.4581 GX5CrNiMoNb 19-11-2	-10 to 450°C	-	-		
	1.6220 G20Mn5	-40 to 400°C	A 352 LCB	-50°C to 400°C		
	1.6982 GX3CrNi13-4	-120 to 400°C	-	-		
	1.7357 G17CrMo5-5	-10 to 530°C	A 217 WC6	-29°C to 530°C		
<b>Bonnet material</b>	≤ DN 65: 1.4571 (AISI 316Ti) ≥ DN 80: same material as body, stuffing box sleeve made of 1.4571 (AISI 316Ti)					
Valve trim materials						
Material no.	Parabolic plug	Double-guided parabolic plug P1 <sup>1)</sup>	Perforated plug L1	Seat	Seat seal	Max. medium temperature
1	1.4571	-	-	1.4571	Metal	same as stem seal
2	-	1.4571	1.4571 nitrided	1.4571	Metal	same as stem seal
3	-	-	1.4122 nitrided	1.4021	Metal	same as stem seal
4	1.4112 hardened	1.4112 hardened	1.4112 hardened	1.4112 hardened	Metal	same as stem seal
5	1.4571	-	-	1.4571	PTFE/FKM	-50 ~ 160°C
6	1.4571	-	-	1.4571	PTFE/EPDM	-50 ~ 140°C
7	1.4571	-	-	1.4571	PTFE	-196 ~ 180°C

1) only as of DN ≥ DN50 (2") with KVs ≥ 40 (Cvs ≥ 46)

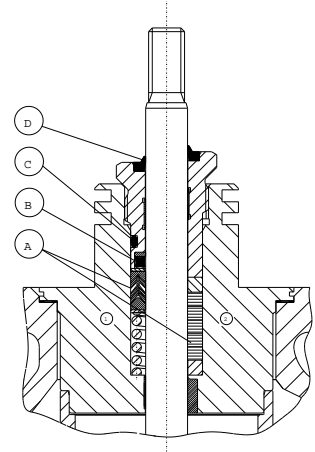
# Technical Data Sheet ECOTROL® Control Valve



TD\_8C

## Temperature range for stem sealing

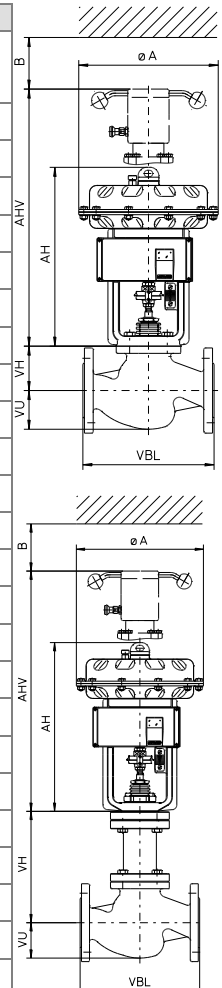
Seal type	Seal (pos. A)	Profile ring (pos. B)	O-ring (pos. C)	Wiper ring (pos. D)	Medium temperature	Bonnet flange	Comments
maintenance-free double seal	PTFE V-ring	EPDM (FKM)	EPDM	NBR	-25°C ~ 180 (200)°C	standard	preloaded with stainless steel spring
adjustable	reinforced graphite / inconel	-	-	NBR (FKM)	-29°C ~ 400°C	standard/ cooling fins	standard operation
adjustable	pure graphite	-	-	VITON	-29°C ~ 530°C	standard/ cooling fins	high temperature
adjustable	braided graphite / PTFE	-	-	NBR	-196°C ~ 200°C	insulating column	low temperature
bellows with double safety seal	PTFE V-ring bellows 1.4571 or Hastelloy C	EPDM (FKM)	EPDM	NBR (FKM)	-100°C ~ 200°C	bellows	preloaded with stainless steel spring



## Weight and dimensions

### ECOTROL® globe valve with multi-spring actuator type 812 ARCAPAQ

		Dimensions (in mm) of valves with flanges to DIN EN 1092-1 or ANSI class 150/300 RF/RTJ											
		DN	15	20	25	32	40	50	65	80	100		
		ANSI NPS	1/2"	3/4"	1"	-	1 1/2"	2"	-	3"	4"		
Valve		VBL PN16 /PN40	130	150	160	180	200	230	290	310	350		
		VBL Class 150 RF	178	181	184	-	222	254	-	298	352		
		VBL Class 150 RTJ	-	-	197	-	235	267	-	311	365		
		VBL Class 300 RF	190	194	197	-	235	267	-	317	368		
		VBL Class 300 RTJ	202	206	210	-	248	282	-	333	384		
Valve	Type 8C	VH	DEK1	114				105			156	181	
			DEK2	170				167			248	267	
			DEK3	170				167			248	267	
			DEK4	228				233			365	389	
			DEK5	on request									
			DEK6	75				87			-	-	
			DEK7								196	221	
			DEK8								261	286	
		VU	48	59	62	70	78	83	93	106	136		
Actuator	Type 812	ØA	MFI	270						270			
			MFIII	400						400			
		AH	MFI	346						404			
			MFIII							489			
		AHV	MFI	493						551			
			MFIII							651			
Weight * approx. kg		MFI	20.5	22.5	23	24	31	33	41,5	70	93		
		MFIII							96	119			
B		150											

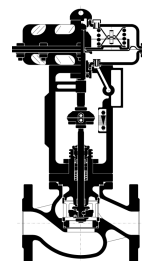


\* Weight: valve (DN15-50 with DEK6 / DN80-100 with DEK1) + actuator without manual operation



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# Technical Data Sheet ECOTROL® Control Valve



TD\_8C

Max. shut off differential pressure in bar (closed position)

ECOTROL® 8C PN16 / PN40; ANSI Class 150 / ANSI Class 300

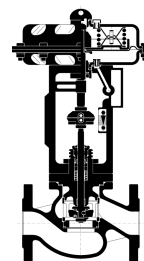
PTFE packing (V-rings), leakage rate class IV

Flow to open (FTO)

Actuator type 812						air to open/spring to close no. of springs				air to close/spring to open no. of springs					
						3	6	9	12	3	3	3	6	6	
DN (mm)	Max. stroke (mm)	Actuator size	Kv	Cv	Seat-Ø (mm)	p instrument air, min. (bar)									
						bar	bar	bar	bar	3.0	4.5	6.0	4.5	6.0	
15 1/2"	16 5/8"	MFI-20 320 cm <sup>2</sup> 50 in <sup>2</sup>	4.0	4.7	15	50.0					50.0	50.0	50.0	50.0	50.0
			1.6	1.9	10	50.0					50.0	50.0	50.0	50.0	50.0
			0.63	0.73	5	50.0					50.0	50.0	50.0	50.0	50.0
25 1"	16 5/8"	MFI-20 320 cm <sup>2</sup> 50 in <sup>2</sup>	10	11.5	25	32.7	50.0				50.0	50.0	50.0	50.0	50.0
			4.0	4.7	15	50.0	50.0				50.0	50.0	50.0	50.0	50.0
			1.6	1.9	10	50.0	50.0				50.0	50.0	50.0	50.0	50.0
40 1 1/2"	16 5/8"	MFI-20 320 cm <sup>2</sup> 50 in <sup>2</sup>	25	29	36	14.1	37.7				37.7	50.0	50.0	37.7	50.0
			16	19	30	21.6	50.0				50.0	50.0	50.0	50.0	50.0
			10	11.5	25	32.7	50.0				50.0	50.0	50.0	50.0	50.0
50 2"	16 5/8"	MFI-20 320 cm <sup>2</sup> 50 in <sup>2</sup>	40	46	46	7.1	21.5				21.5	50.0	50.0	21.5	50.0
			25	29	36	13.1	36.7				36.7	50.0	50.0	36.7	50.0
			16	19	30	20.2	50.0				50.0	50.0	50.0	50.0	50.0
65 2 1/2"	16 5/8"	MFI-20 320 cm <sup>2</sup> 50 in <sup>2</sup>	63	73	50	5.7	17.9				17.9	42.3	50.0	17.9	42.3
			40	46	46	7.1	21.5				21.5	50.0	50.0	21.5	50.0
			25	29	36	13.1	36.7				36.7	50.0	50.0	36.7	50.0
80 3"	30 1 3/16"	MFI-30 320 cm <sup>2</sup> 50 in <sup>2</sup>	100	116	80	1.3	6.1				6.1	15.6	25.2	6.1	15.6
			63	73	50	5.7	17.9				17.9	42.3	50.0	17.9	42.3
			40	46	46	7.1	21.5				21.5	50.0	50.0	21.5	50.0
		MFIII-30 720 cm <sup>2</sup> 111 in <sup>2</sup>	100	116	80	6.5	16.4	22.4	28.3	18.8	40.3	50.0	20.0	41.5	
			63	73	50	18.9	44.4	50.0	50.0	50.0	50.0	50.0	50.0	50.0	
			40	46	46	22.7	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	
100 4"	30 1 3/16"	MFI-30 320 cm <sup>2</sup> 50 in <sup>2</sup>	160	186	100	0.4	3.5				3.5	9.6	15.7	3.5	9.6
			100	116	80	1.3	6.1				6.1	15.6	25.2	6.1	15.6
			63	73	50	5.7	17.9				17.9	42.3	50.0	17.9	42.3
		MFIII-30 720 cm <sup>2</sup> 111 in <sup>2</sup>	160	186	100	3.7	10.1	13.9	17.7	11.6	25.4	39.1	12.4	26.1	
			100	116	80	6.5	16.4	22.4	28.3	18.8	40.3	50.0	20.0	41.5	
			63	73	50	18.9	44.4	50.0	50.0	50.0	50.0	50.0	50.0	50.0	

For a list of other valve/packing versions, see sizing data sheet AD\_8C\_gb

# Technical Data Sheet ECOTROL® Control Valve



TD\_8C

## ECOTROL® 8C type code

0. Operating data		7. Material (cont.)		16. Seat/plug seal 1)	
Medium:		6	A216WCB	0	Leakage class IV metal
Temp.:	°C	7	A351CF8M	1	Leakage class V (metal, superfinished)
Press. P <sub>1</sub> :	bar abs	8	A217WC6	2	Soft seal PTFE/EPDM
Press. P <sub>2</sub> :	bar abs	9	Other (in acc. with order)	3	Soft seal PTFE/FKM
<b>1. Series</b>		<b>8. Guide 1)</b>		4	
8C		0	Stem guide (standard)	9	Soft seal PTFE/trapezoidal
<b>2. Bonnet</b>		1		<b>17. Cage retainer 1)</b>	
1	Standard	9	Bottom guided in seat	0	Standard
2	Double stuffing box	<b>9. KVs value</b>		1	LN (low noise), not controlled
3	Cooling fins	xxx	acc. to order	2	LN, controlled
4	Bellows	<b>10. Kennlinie</b>		9	other (in acc. with order)
5	Extension (insulating column)	l	linear	<b>18. Low-noise cage 1)</b>	
6	Clamped top flange (8C DN 15-65 only)	g	=%	0	Standard (none)
7	Standard balanced	s	On/off	1	LK1
8	Cooling fins balanced	m	modified	2	LK2
9	Special version in acc. with order	<b>11. Plug material 1)</b>		3	LK3
<b>3. Plug version</b>		1	1.4571	4	LK4
P1-P3-P5	Parabolic plug (1-3-5 step)	3	1.4112	5	SLK1
L1-L2-L3	Perforated plug (1-2-3 step)	4	1.4122	6	SLK2
S	On/off plug	9	other (in acc. with order)	9	other (in acc. with order)
<b>4. Nominal diameter (DN) – DIN/ ANSI</b>		<b>12. Plug wear/tear protection 1)</b>		<b>19. Stem seal 1)</b>	
15	DN 15 / ANSI ½"	0	Standard (without)	1	PTFE/V-ring/EPDM quad ring
20	DN 20 / ANSI ¾"	1	Nitrided	2	PTFE/V-ring/VITON quad ring
25	DN 25 / ANSI 1"	2	Hardened	3	Latty 6118/ETF Inconel
32	DN 32 (available in DIN only)	3	Plug face stellite	4	Graphite 0901
40	DN 40 / ANSI 1½"	4	Completely stellite	5	Graphite/PTFE 6226/6232
50	DN 50 / ANSI 2"	5	Colsterised	9	other (in acc. with order)
65	DN 65 (available in DIN only)	9	other (in acc. with order)	<b>20. Special version</b>	
80	DN 80 / ANSI 3"	<b>13. Balancing 1)</b>		0	Standard
100	DN 100 / ANSI 4"	0	Standard (without)	1	AD2000
<b>5. Nominal pressure (PN)</b>		1	Piston ring	2	NACE
16	PN 16	2	EPDM quad ring	3	Oxygen version
40	PN 40	3	FKM quad ring	9	other (in acc. with order)
150	Class 150 to ANSI B16.10	5	PTFE spring loaded	<b>21. Material inspection (pressure-retaining parts)</b>	
300	Class 300 to ANSI B16.10	9	other (in acc. with order)	0	None
<b>6. Connections</b>		<b>14. Seat material</b>		1	EN 10204-2.1
0	Flange with sealing strip (standard)/ RFSF	1	1.4571	2	EN 10204-3.1
1	Flange with groove	3	1.4112	3	EN 10204-3.2
2	Flange with tongue	4	1.4122	9	other (in acc. with order)
3	Flange with projection/ recess	9	other (in acc. with order)	<b>22. Final inspection</b>	
4	Butt weld ends	<b>15. Seat wear/tear protection</b>		0	None
5	Butt weld ends with spool pieces	0	Standard (without)	1	EN 10204-2.1
7	RTJ	1	Nitrided	2	EN 10204-2.2
9	other (in acc. with order)	2	Hardened	3	EN 10204-3.1
<b>7. Body material 1)</b>		3	Seat face stellite	4	EN 10204-3.2
2	1.0619	4	Completely stellite	9	other (in acc. with order)
3	1.4581	5	Colsterised		
4	1.7357	9	other (in acc. with order)		
5	1.6620				

1) In accordance with customer specifications, or selected by the manufacturer in accordance with customer specifications (medium, pressure, temperature, etc.).

### Example:

**8C - 1 - P1 - 15 - 40 - 0 - 2**      *Position 1-7 / basic data*

Series 8C - with standard bonnet – one-step parabolic plug - DN15 – PN40 – flange EN1092 B1 – body 1.0619

**0 - 4,0 - g - 1 - 0 - 0 - 1 - 0 - 0 - 0 - 0 - 1**      *Position 8-19 / valve trims*

Single stem guide – KVs 4.0 – equal percentage – plug made of 1.4571 – no wear/tear protection – not balanced – seat made of 1.4571 – no wear/tear protection – leakage class IV – standard cage retainer – no low-noise cage – stem seal PTFE V-ring / EPDM quad ring

**0 - 1 - 1**      *Position 20-22 / version/inspections*

Standard version – material inspection EN 10204 3.1 – final specification EN 10204 3.1