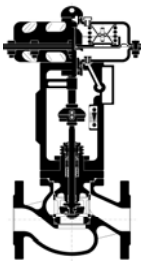
Technical Data Sheet ECOTROL® Control Valve



TD_8C

General Data

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

Materials

	EN	for temperatures	ASTM	for temperatures
Body material	1.0619 GP240GH	-10 to 400°C	A 216 WCB	-29°C to 425°C
	1.4408 G-X 5 CrNiMo 19 11 2	-29 to 400°C	A 351 CF8M	-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
	1.6220 G20Mn5	-50 to 345°C	A 352 LCC	-50°C to 345°C
	1.7357 G17CrMo5-5	-10 to 530°C	A 217 WC6	-10°C to 530°C
Bonnet material	≤ DN 65: 1.4408 (A 351 CF8M)			
	≥ DN 80: same material as body, but for body materials 1.0619/ A216WCB, 1.6220/ A352LCC and 1.7357/ A217WC6 c/w stuffing box sleeve made of 1.4571 (AISI 316TI)			

Valve trim materials

Material no.	Parabolic plug	Double-guided parabolic plug P1 [1)]	Perforated plug L1	Seat	Seat seal	Max. medium temperature
1	1.4571	1.4571	-	1.4571	Metal	same as stem seal
2	-	-	1.4571	1.4571 nitrided	Metal	same as stem seal
3	1.4112 hardened	1.4112 hardened	1.4112 hardened	1.4112 hardened	Metal	same as stem seal
4	1.4571	-	-	1.4571	PTFE/FKM	-20 ~ 180°C
5	1.4571	-	-	1.4571	PTFE/EPDM	-29 ~ 140°C
6	1.4571	-	-	1.4571	PTFE	-196 ~ 180°C

1) only as of DN ≥ DN40 (1 ½”) with KVs ≥ 25 (Cvs ≥ 29)

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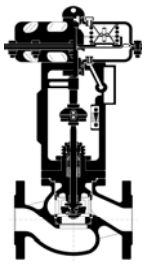

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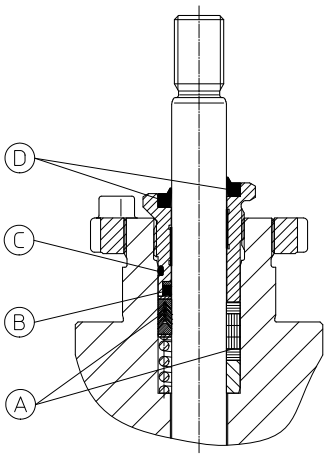
Temperature range for stem sealing

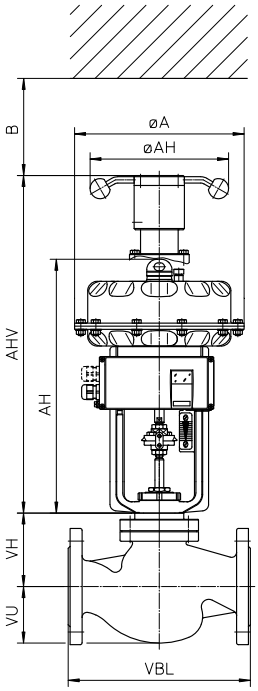
Seal type	Seal (pos. A)	Profile ring (pos. B)	O-ring (pos. C)	Wiper ring (pos. D)	Medium temperature	Bonnet flange	Comments
maintenance-free double seal	PTFE V-ring	EPDM	EPDM	NBR	-29°C~180°C	standard	preloaded with stainless steel spring
maintenance-free double seal	PTFE V-ring	FKM	FKM	NBR	-20°C~200°C	standard	preloaded with stainless steel spring
adjustable	reinforced graphite / Inconel	-	-	NBR	-29°C~400°C	standard/ cooling fins	adjustable
adjustable	pure graphite	-	-	NBR	-29°C~530°C	standard/ cooling fins	adjustable
adjustable	braided graphite / PTFE	-	-	NBR	-196°C~200°C	insulating column	low temperature
Bellow sealing made of 1.4571 or Hastelloy C	PTFE V-ring	EPDM (FKM)	EPDM (FKM)	NBR	-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“	-	1“	-	1 1/2“	2“	-	3“	4“
	VBL PN16-PN40		130	150	160	180	200	230	290	310	350
	VBL Class 150 RF		178	-	184	-	222	254	-	298	352
	VBL Class 150 RTJ		-	-	197	-	235	267	-	311	365
	VBL Class 300 RF		190	-	197	-	235	267	-	317	368
	VBL Class 300 RTJ		202	-	210	-	248	282	-	333	384
Valve Type 8C	VH	DEK1	114				105			156	181
		DEK3	170				167			248	267
		DEK4	228				233			365	389
		DEK5	on request								
		DEK7								196	221
		DEK8								261	286
	VU		48	59	62	70	78	83	93	106	136
	ØA	MFI	270							270	
		MFIII								400	
	AH	MFI	346							404	
		MFIII								489	
Actuator Type 812	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 (DEK1) + actuator without manual operation											



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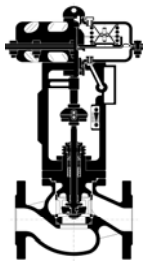

TD_8C

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

ECOTROL® 8C PN16 - PN40 / ANSI Class 150 / ANSI Class 300
Valves w/o balancing c/w PTFE-packing / V-Rings, leakage class IV
Flow to open (FTO)

Actuator series 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	Stroke (mm)	Actuator size	P1		L1 lin		L1 =%		Seat-Ø (mm)				bar	bar	bar	bar	P Instrument Air, min (bar)				
			Kv	Cv	Kv	Cv	Kv	Cv									3.0	4.5	6.0	4.5	6.0
15 1/2"	20	MFI-20 320 cm² 50 in²	4.0	4.6	4.0	4.6	4.0	4.6	16				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
			0.63	0.73	-	-	-	-	5				50.0	50.0			50.0	50.0	50.0	50.0	50.0
20	20	MFI-20 320 cm² 50 in²	4.0	4.6	4.0	4.6	4.0	4.6	16				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
			0.63	0.73	-	-	-	-	5				50.0	50.0			50.0	50.0	50.0	50.0	50.0
25 1"	20	MFI-20 320 cm² 50 in²	10	11.6	10	11.6	8,5	9,9	25				30,3	50.0			50.0	50.0	50.0	50.0	50.0
			4.0	4.6	4.0	4.6	4.0	4.6	16				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
			0.63	0.73	-	-	-	-	5				50.0	50.0			50.0	50.0	50.0	50.0	50.0
32	20	MFI-20 320 cm² 50 in²	10	11.6	10	11.6	8,5	9,9	25				30,3	50.0			50.0	50.0	50.0	50.0	50.0
			4.0	4.6	4.0	4.6	4.0	4.6	16				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
			0.63	0.73	-	-	-	-	5				50.0	50.0			50.0	50.0	50.0	50.0	50.0
40 1 1/2"	20	MFI-20 320 cm² 50 in²	25	29	25	29	18	21	37				12,1	33,3			35,5	50.0	50.0	35,5	50.0
			16	19	15	17.4	10	11.6	30				19,9	50.0			50.0	50.0	50.0	50.0	50.0
			10	11.6	10	11.6	8.5	9.9	25				30,3	50.0			50.0	46,7	50.0	50.0	50.0
50 2“	20	MFI-20 320 cm² 50 in²	40	46	40	46	20	23	48				6,2	18,8			20,2	50.0	50.0	20,2	46,7
			25	29	25	29	18	21	37				12,1	33,3			35,5	50.0	50.0	35,5	50.0
			16	19	15	17.4	10	11.6	30				19,9	50.0			50.0	50.0	50.0	50.0	50.0
			10	11.6	10	11.6	8.5	9.9	25				30,3	50.0			50.0	46,7	50.0	50.0	50.0
65	20	MFI-20 320 cm² 50 in²	40	46	40	46	20	23	48				6,2	18,8			20,2	50.0	50.0	20,2	46,7
			25	29	25	29	18	21	37				12,1	33,3			35,5	50.0	50.0	35,5	50.0
			16	19	15	17.4	10	11.6	30				19,9	50.0			50.0	50.0	50.0	50.0	50.0
			10	11.6	10	11.6	8.5	9.9	25				30,3	50.0			50.0	15.6	50.0	50.0	50.0
80 3"	30	MFI-30 320 cm² 50 in²	100	116	100	116	75	87	80				1,0	5,6			6.1	28,9	25.2	6.1	15.6
			63	73	63	73	55	64	62				2,7	10,2			11,0	46,1	45,9	11,9	28,9
			40	46	40	46	20	23	48				5,7	18,3			19,6	39,5	50	19,6	46,1
		MFIII-30 720 cm² 111 in²	100	116	100	116	75	87	80				6,0	15,4	21,1	26,8	18,0	50,0	50,0	18,0	39,5
			63	73	63	73	55	64	62				10,9	26,6	36,0	45,5	30,9	50,0	50,0	30,9	50,0
			40	46	40	46	20	23	48				19,3	45,6	50,0	50,0	50,0	9,6	50,0	50,0	50,0
100 4“	30	MFI-30 320 cm² 50 in²	160	186	140	162	80	93	100				0,3	3,2			3,5	15.6	15,7	3,5	9,6
			100	116	100	116	75	87	80				1,0	5,6			6.1	28,9	25.2	6.1	15.6
			63	73	63	73	55	64	62				2,7	10,2			11,0	46,1	45,9	11,9	28,9
			40	46	40	46	20	23	48				5,7	18,3			19,6	2,9	50	19,6	46,1
		MFIII-30 720 cm² 111 in²	160	186	140	162	80	93	100				3,4	9,5	13,1	16,7	11,1	39,5	38,6	11,1	24,9
			100	116	100	116	75	87	80				6,0	15,4	21,1	26,8	18,0	50,0	50,0	18,0	39,5
			63	73	63	73	55	64	62				10,9	26,6	36,0	45,5	30,9	50,0	50,0	30,9	50,0
			40	46	40	46	20	23	48				19,3	45,6	50,0	50,0	50,0		50,0	50,0	50,0

Please pay attention to the Pressure/ Temperature rating of the valve body!

For a list of other valve/packing versions, see sizing data sheet AD_8C_gb.

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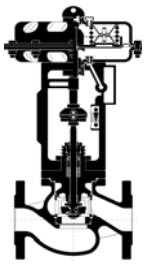

TD_8C

ECOTROL® 8C model code

0. Operating Conditions			7. Body materials (cont.)		15. Seat wear/ tear protection (cont.)	
Medium:		4	1.7357	5	Colsterised
Temp.:	°C	5	1.6620	9	Acc. to spec.
Press. P_1:	bar abs.	6	A216WCB	**16. Seat/ Plug seal** [1]	
Press. P_2:	bar abs.	7	A351CF8M	0	Leakage Class IV metal to metal
P Design	bar g	8	A217WC6	1	Leakage Class V (metal to metal)
T Design	°C	9	Acc. to spec.	2	Leakage Class VI soft sealing PTFE/EPDM
1. Series		**8. Guide** [1]		3	Leakage Class VI soft sealing PTFE/FKM
8C	Single Seat Globe Control Valve ECOTROL® 8C	0	Stem guided (Standard)	4	Leakage Class VI soft sealing PTFE/Trapezium
2. Top Flange		1	Double guided	9	Acc. to spec.
1	Standard	9	Acc. to spec	**17. Cage retainer** [1]	
3	Cooling fins	**9. KVs Value**		0	Standard
4	Bellow Sealing	xxx	Acc. to spec.	1	LN (Low Noise) not controlled
5	Extended Bonnet (Insulating Column)		KVs values acc. to table	2	LN (Low Noise) controlled
7	Standard c/w Balancing	**10. Performance Curve Characteristics**		9	Acc. to spec
8	Cooling fins c/w Balancing	g	=%	**18. Seat retainer** [1]	
9	Special design acc. to spec.	l	Linear	0	Without
3. Plug Design		m	Modified	1	LK1
P1, P3	Parabolic Plug (1-step resp. 3-steps)	**11. Plug Materials** [1]		2	LK2
L1-L2-L3	Perorated Plug (1-2-3 steps)	1	1.4571	5	SLK1
4. Nominal Diameter (DN) - DIN/ ANSI		3	1.4112	6	SLK2
15	DN 15 / ANSI ½“	9	Acc. to spec.	**19. Stem seal** [1]	
20	DN 20 (only acc. to DIN)	**12. Plug wear/ tear protection** [1]		1	PTFE/V-Ring/EPDM quad ring
25	DN 25 / ANSI 1“	0	Standard (w/o)	2	PTFE/V-Ring/VITON quad ring
32	DN 32 (only acc. to DIN)	1	Nitrided	3	Latty 6118/ETF Inconel
40	DN 40 / ANSI 1½“	2	Hardened	4	Graphite 0901
50	DN 50 / ANSI 2“	3	Plug face stellited	5	Graphite/PTFE 6226/6232
65	DN 65 (only acc. to DIN)	4	Completely stellited	9	Special design acc. to spec.
80	DN 80 / ANSI 3“	5	Colsterised	**20. Special Designs**	
100	DN 100 / ANSI 4“	9	Others (acc. to spec.)	0	Standard
5. Pressure Ratings (PN)		**13. Balancing** [1]		1	AD2000
16	PN 16	0	Standard (w/o)	2	NACE
40	PN 40	1	Piston Rings	3	Oxygen version
150	Class 150 acc. to ANSI B16.10	2	EPDM-Quadring	9	Others acc. to spec.
300	Class 300 acc. to ANSI B16.10	3	FKM-Quadring	**21. Material Inspections** (pressure retaining parts)	
6. Connections		5	PTFE spring loaded	0	w/o
0	RF flanges (Standard)	9	Acc. to spec.	1	EN 10204-2.1
1	Flanges c/w groove	**14. Seat Materials** [1]		2	EN 10204-3.1
2	Flanges c/w tongue	1	1.4571	3	EN 10204-3.2
3	Flanges c/w projection/ recess	3	1.4112	9	Others on request
4	Butt weld ends	9	Acc. to spec.	**22. Final Inspections**	
5	Butt weld ends c/w spool pieces	**15. Seat wear/ tear protection** [1]		0	None
7	RTJ	0	Standard (w/o)	1	EN 10204-2.1
9	Acc. to spec.	1	Nitrided	2	EN 10204-2.2
7. Body materials [1]		2	Hardened	3	EN 10204-3.1
2	1.0619	3	Seat Face stellited	4	EN 10204-3.2
3	1.4408	4	Completely stellited	9	Others on request

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

Blue letters: Standard design, at most 3 pieces, available within one week.

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

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