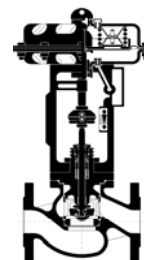


# Technical Data Sheet ECOTROL<sup>®</sup> Control Valve



TD\_6H

## General Data

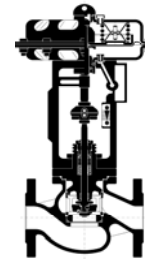
<b>Series</b>	6H
<b>Nominal Size DN / NPS</b>	(15) 25-200 / (1/2") 1"-8"
<b>Nominal Pressure PN / ANSI</b>	63-250 / Class 600-1500
<b>Characteristic Rangeability</b>	equal perc. or linear 40:1
<b>Plug guide</b>	stem guided, option: double guided (retrofit able)
<b>Seat leakage</b>	metal sealing: IEC 50534-4 leakage class IV (0,01% kVs-value); option leakage class V soft sealing (IEC 50534-4 leakage class VI soft sealing on request)
<b>Bellow sealing (option)</b>	seamless, multiple layers, made of 1.4571, option: Hastelloy and other materials
<b>Heating jacket (option)</b>	Connections DN 15 PN 40 (1/2" ANSI 300) flanges
<b>Low temperature design (option)</b>	Down to -196°C

## Materials

	EN	Temperature range	ASTM	Temperature range	
<b>Body materials</b>	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 materials</b>	Same material as body, stuffing box sleeve made of 1.4571 (AISI 316TI)				
<b>Trim material</b>					
Material No.	Parabolic Plug	Perforated plug L1	Seat	Seat sealing	Max. fluid temperature
1	1.4122*	1.4122 nitrided	1.4021*	metallic	same as stem sealing
2	1.4571*	1.4571 nitrided	1.4571*	metallic	same as stem sealing
3	1.4112 hardened	1.4112 hardened	1.4112 hardened	metallic	same as stem sealing

\* Standard

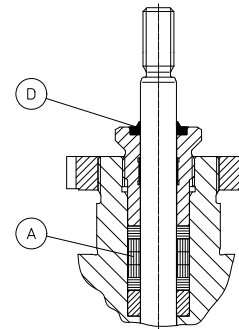
# Technical Data Sheet ECOTROL® Control Valve



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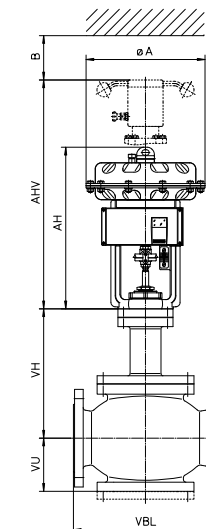
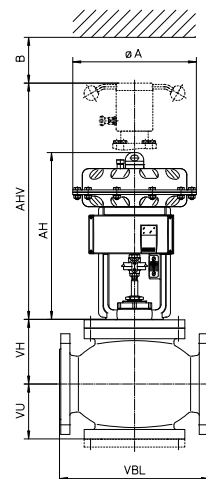
## Temperature range for stem sealings

Sealing type	Packing ring (Item A)	Wiper ring (Item D)	Temp. range	Top flange design	Remarks
adjustable	reinforced Graphite/ Inconel	NBR (FKM)	-29 ~ 400°C	Standard/ cooling fins	Standard operation
adjustable	Pure Graphite	VITON	-29 ~ 530°C	Standard/ cooling fins	High temperature
adjustable	Braided Graphite/PTFE	NBR	-196 ~ 200°C	Extended bonnet	Low temperature
Bellow sealing c/w double safety sealing	PTFE V-Ring bellow (1.4571 or Hastelloy C)	NBR (FKM)	-100 ~ 200°C	Bellow sealing	preloaded c/w stainless steel spring



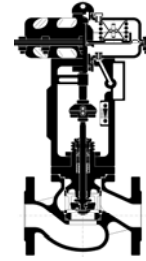
## Weights and dimensions

Dimensions (in mm) for valve c/w flanges acc. to DIN EN 1092-1 or ANSI Class 600/900/1500 RF/RTJ										
Valve Series 6H	DN	15**	25	40	50	80	100	150	200	
	ANSI NPS	½"	1"	1 ½"	2"	3"	4"	6"	8"	
	VBL PN63/100/160		230	260	300	380	430	550	700	
	VBL PN250		260	300	350	450	520	700	800	
	VBL Class 600 RF		216	241	292	356	432	559	660	
	VBL Class 600 RTJ		216	241	295	359	435	562	664	
	VBL Class 900 RF		254	305	368	381	457	610	737	
	VBL Class 900 RTJ		254	305	372	384	460	613	740	
	VBL Class 1500 RF		254	305	368	470	546	705	832	
	VBL Class 1500 RTJ		254	305	372	473	549	711	842	
VH	DEK1		135	160	190	250	275	335	410	
	DEK2		170	240	270	315	355	490	480	
	DEK3		170	240	270	315	355	490	480	
	DEK4	on request								
	DEK5	on request								
	DEK7					250	285	335	410	
	DEK8					315	355	490	480	
	VU	3-Flansch		70	105	115	155	180	230	275
4-Flansch					175	235	265	315	410	
Actuator Type 812/811/MA	ØA	MFI	270							
		MFIII	400							
		UV	530							
	AH	MA.60	596							
		MFI	361							
		MFIII					489		625	
	AHV	UV	1006							
		MA.60	840							
		MFI	508							
	B	MFIII					657		888	
		UV	1323							
			130		150		200			
	Weight* ca. kg	MFI	34	42	72	101	136			
		MFIII	60	68	98	127	210	430	607	
		UV							475	645
MA.60								550	750	



\*) Weight: Valve c/w actuator w/o hand wheel  
\*\*) on request

# Technical Data Sheet ECOTROL® Control Valve

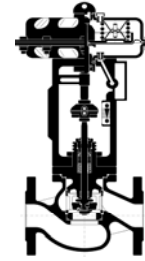


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## Standard kVs/ Cvs and seat diameters of series 6H (not balanced)

DN/NPS	Seat-Ø (mm)	Characteristics	kVs [m³/h]		Cvs [gal/min]	
			Parabolic plug	Perforated plug	Parabolic plug	Perforated plug
25 1"	16	= %	4	-	4,7	-
		linear		-		-
	19	= %	7	4	8,2	4,7
		linear		4		4,7
	24	= %	11	7	12,9	8,2
		linear		10		11,7
40 1 1/2"	24	= %	11	7	12,9	8,2
		linear		10		11,7
	32	= %	18	13	21,1	15,2
		linear		18		21,1
	37	= %	26	16	30,4	18,7
		linear		26		30,4
50 2"	32	= %	18	16	21,1	18,7
		linear		23		26,9
	37	= %	26	21	30,4	24,6
		linear		26		30,4
	48	= %	43	35	50,3	41
		linear		43		50,3
80 3"	48	= %	43	38	50,3	44,5
		linear		55		64,4
	62	= %	68	43	79,6	50,3
		linear		60		70,2
	73	= %	100	55	117	64,4
		linear		80		93,6
100 4"	62	= %	68	43	79,6	50,3
		linear		60		70,2
	73	= %	100	55	117	64,4
		linear		80		93,6
	90	= %	150	68	175,5	79,6
		linear		110		128,7
150 6"	90	= %	150	125	175,5	146,3
		linear		170		198,9
	113	= %	260	150	304,2	175,5
		linear		260		304,2
	143	= %	380	210	444,6	245,7
		linear		380		444,6
200 8"	113	= %	260	150	304,2	175,5
		linear		260		304,2
	143	= %	380	210	444,6	245,7
		linear		380		444,6
	172	= %	650	260	760,5	304,2
		linear		450		526,5

# Technical Data Sheet ECOTROL® Control Valve



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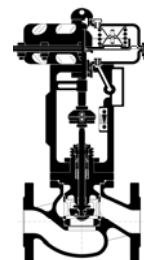
Max. shut off differential pressure (valve closed)  
(Standard packing, leakage class IV, w/o balancing<sup>1)</sup>, flow-to open)

Actuator series 812 (multi-spring actuator)			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	Actuator size	Seat-Ø (mm)	bar								
			P instrument air min. [bar]					3,0	4,5	6,0	4,5
25 1"	MFI-20 320 cm <sup>2</sup> 50 in <sup>2</sup>	24	27,0	80,1			80,1	160,0	160,0	80,1	160,0
		19	45,9	130,6			130,6	160,0	160,0	130,6	160,0
		16	67,1	160,0			160,0	160,0	160,0	160,0	160,0
40 1 1/2"	MFI-20 320 cm <sup>2</sup> 50 in <sup>2</sup>	37	9,5	31,8			31,8	76,4	121,1	31,8	76,4
		32	13,6	43,5			43,5	103,2	160,0	43,5	103,2
		24	27,0	80,1			80,1	160,0	160,0	80,1	160,0
50 2"	MFI-30 320 cm <sup>2</sup> 50 in <sup>2</sup>	48	4,7	17,9			17,9	44,5	71,0	17,9	44,5
		37	9,5	31,8			31,8	76,5	121,1	31,8	76,4
		32	13,6	43,5			43,5	103,2	160,0	43,5	103,2
	MFIII-30 720 cm <sup>2</sup> 111 in <sup>2</sup>	48	19,1	46,7	63,3	79,9	51,1	110,8	160,0	51,1	110,8
		37	33,7	80,2	108,1	136,0	87,6	160,0	160,0	87,6	160,0
80 3"	MFI-30 320 cm <sup>2</sup> 50 in <sup>2</sup>	73	1,1	6,8			6,8	18,3	29,8	6,8	18,3
		62	2,1	10,0			10,0	25,9	41,8	10,0	25,9
		48	4,7	17,9			17,9	44,5	71,0	17,9	44,5
	MFIII-30 720 cm <sup>2</sup> 111 in <sup>2</sup>	73	7,3	19,3	26,4	33,6	21,2	47,0	72,8	21,2	47,0
		62	10,7	27,3	37,2	47,1	29,9	65,7	101,5	29,9	65,7
		48	19,1	46,7	63,3	79,9	51,1	110,8	160,0	51,1	110,8
100 4"	MFI-30 320 cm <sup>2</sup> 50 in <sup>2</sup>	90	0,3	4,1			4,1	11,6	19,2	4,1	11,6
		73	1,1	6,8			6,8	18,3	29,8	6,8	18,3
		62	2,1	10,0			10,0	25,9	41,8	10,0	25,9
	MFIII-30 720 cm <sup>2</sup> 111 in <sup>2</sup>	90	4,4	12,2	17,0	21,7	13,5	30,5	47,5	13,5	30,5
		73	7,3	19,3	26,4	33,6	21,2	47,0	72,8	21,2	47,0
		62	10,7	27,3	37,2	47,1	29,9	65,7	101,5	29,9	65,7
150 6"	MFIII-60 720 cm <sup>2</sup> 111 in <sup>2</sup>	143	1,2	4,3	6,2	8,1	4,8	11,6	18,3	4,8	11,6
		113	2,4	7,4	10,4	13,4	8,2	19,0	29,8	8,2	19,0
		90	4,4	12,2	17,0	21,7	13,5	30,5	47,5	13,5	30,5
200 8"	MFIII-60 720 cm <sup>2</sup> 111 in <sup>2</sup>	172	0,6	2,8	4,1	5,4	3,1	7,8	12,4	3,1	7,8
		143	1,2	4,3	6,2	8,1	4,8	11,6	18,3	4,8	11,6
		113	2,4	7,4	10,4	13,4	8,2	19,0	29,8	8,2	19,0

Actuator series 811 (single-spring actuator, adjustable)			Air to open -spring to close spring				Air to close - spring to open spring				
			standard		reinforced		Min.			Max.	
DN	Actuator size	Seat-Ø (mm)	Min.	Max.	Min.	Max.	P instrument air min. [bar]				
			bar	bar	bar	bar	3,0	4,5	6,0	4,5	6,0
150 6"	UV-60 1440 cm <sup>2</sup> 223 in <sup>2</sup>	143	-	6,9	-	13,5	18,5	32,0	45,6	22,3	35,8
		113	-	11,5	-	22,1	30,2	51,7	73,5	36,2	57,8
		90	-	18,7	-	35,4	48,1	82,1	116,4	57,7	91,7
200 8"	UV-60 1440 cm <sup>2</sup> 223 in <sup>2</sup>	172	-	4,6	-	9,1	12,6	21,9	31,3	15,2	24,5
		143	-	6,9	-	13,5	18,5	32,0	45,6	22,3	35,8
		113	-	11,5	-	22,1	30,2	51,7	73,5	36,2	57,8

<sup>1)</sup> For higher differential pressures, balanced trim is required. Please contact us.

# Technical Data Sheet ECOTROL<sup>®</sup> Control Valve

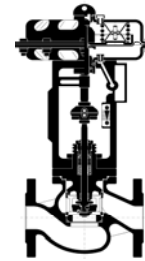


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Actuator series MA60 (multi-spring actuator)			Air to open / spring to close No. of springs				Air to close / spring to open No. of springs				
			2	4	6	8	2	2	2	4	4
DN	Actuator size	Seat-Ø (mm)	bar				p instrument air min. [bar]				
							3,0	4,5	6,0	4,5	6,0
150 6"	MA3.60A	143	4,3	10,6	16,8	23,0	29,3	41,7	54,2	-	-
	2185 cm <sup>2</sup>	113	7,4	17,4	27,4	37,3	47,3	67,3	87,2	-	-
	339 in <sup>2</sup>	90	12,2	28,0	43,7	59,4	75,2	106,6	138,1	-	-
200 8"	MA3.60A	172	2,8	7,1	11,4	15,7	20,0	28,6	37,2	-	-
	2185 cm <sup>2</sup>	143	4,3	10,6	16,8	23,0	29,3	41,7	54,2	-	-
	339 in <sup>2</sup>	113	7,4	17,4	27,4	37,3	47,3	67,3	87,2	-	-

For higher differential pressures, balanced trim is required. Please contact us.

# Technical Data Sheet ECOTROL® Control Valve



TD\_6H

## ECOTROL® 6H type code

0. Operating Conditions		7. Body materials (cont.)		16. Seat/ plug seal <sup>1)</sup>	
Fluid:		6	A216WCB	0	Leakage class IV (metal to metal)
Temp.:	°C	7	A351CF8M	1	Leakage class V (metal, super finished)
Press. P <sub>1</sub> :	bar abs	8	A217WC6	2*	Soft sealed (PTFE/EPDM)
Press. P <sub>2</sub> :	bar abs	9	other (in acc. with order)	3*	Soft sealed (PTFE/FKM)
<b>1. Series</b>		<b>8. Guiding <sup>1)</sup></b>		4*	
6H		0 Stem guided (standard)		9 other (in acc. with order)	
<b>2. Bonnet</b>		1 Bottom guided		<b>17. Cage Retainer <sup>1)</sup></b>	
1	Standard	9 other (in acc. with order)		0 Standard	
2	Double stuffing box	<b>9. kVs</b>		1 LN (Low Noise), not controlled	
3	Cooling fins	xxx	in acc. with order	2 LN controlled	
4	Bellows	<b>10. Characteristics</b>		9 other (in acc. with order)	
5	Extension (insulating column)	l	Linear	<b>18. Low noise cage <sup>1)</sup></b>	
7	Standard balanced	g	=%	1 LK1	
8	Cooling fins balanced	m	modified	2 LK2	
9	Special design in acc. with order	s	On/ Off	3 LK3	
<b>3. Plug design</b>		<b>11. Plug materials <sup>1)</sup></b>		4 LK4	
P1-P3-P5	Parabolic plug (1-3-5 step)	1	1.4571	5 SLK1	
L1-L2-L3	Perforated plug (1-2-3 step)	3	1.4112	6 SLK2	
S	On/ Off plug	4	1.4122	9 other (in acc. with order)	
<b>4. Nominal diameter (DN) – DIN/ ANSI</b>		9 other (in acc. with order)		<b>19. Stem sealing <sup>1)</sup></b>	
25	DN 25 / ANSI 1"	<b>12. Plug wear/ tear protection <sup>1)</sup></b>		1 -	
40	DN 40 / ANSI 1 1/2"	0	Standard (w/o)	2 -	
50	DN 50 / ANSI 2"	1	nitrided	3 Latty 6118/ETF Inconel	
80	DN 80 / ANSI 3"	2	hardened	4 Graphite 0901	
100	DN 100 / ANSI 4"	3	Plug face stellite	5 Graphite/PTFE 6226/6232	
150	DN 150 / ANSI 6"	4	Completely stellite	9 other (in acc. with order)	
200	DN 200 / ANSI 8"	5	Colsterised	<b>20. special design</b>	
<b>5. Nominal pressure (PN)</b>		9 other (in acc. with order)		0 Standard	
63	PN 63	<b>13. Balancing <sup>1)</sup></b>		1 AD2000	
100	PN 100	1	Piston rings	2 NACE	
160	PN 160	2	EPDM- quad ring	3 Oxygen design	
250	PN 250	3	FKM- quad ring	9 other (in acc. with order)	
600	Class 600 acc. to ANSI B16.10	5	PTFE spring loaded	<b>21. Material inspection (pressure retaining parts)</b>	
900	Class 900 acc. to ANSI B16.10	9	other (in acc. with order)	0 w/o	
1500	Class 1500 acc. to ANSI B16.10	<b>14. Seat materials</b>		1 EN 10204-2.1	
<b>6. Connections</b>		1	1.4571	2 EN 10204-3.1	
0	Flanges c/w sealing strip RF SF	3	1.4112	3 EN 10204-3.2	
1	Flanges c/w groove	4	1.4122	9 other (in acc. with order))	
2	Flanges c/w tongue	9	other (in acc. with order)	<b>22. Final inspection</b>	
3	Flanges c/w projection/ recess	<b>15. Seat wear/ tear protection <sup>1)</sup></b>		0 w/o	
4	Butt weld ends	0	standard (w/o)	1 EN 10204-2.1	
5	Butt weld ends c/w spool pieces	1	nitrided	2 EN 10204-2.2	
7	RTJ	2	hardened	3 EN 10204-3.1	
9	other (in acc. with order)	3	Seat face stellite	4 EN 10204-3.2	
<b>7. Body materials <sup>1)</sup></b>		4	Completely stellite	9 other (in acc. with order)	
2	1.0619	5	Colsterised		
3	1.4581	9	other (in acc. with order)		
4	1.7357				
5	1.6620				

<sup>1)</sup> in accordance with customer's specification, or selected by manufacturer in accordance with customer's specification (fluid, pressure, etc.)

### Example:

**6H - 1 - P1 - 150 - 40 - 0 - 2**      *Position 1-7 / basic data*

Series 6H – c/w standard bonnet – c/w parabolic plug - DN150 – PN40 – flanges acc. to EN1092 B1 – body 1.0619

**0 - 260 - g - 1 - 0 - 0 - 1 - 0 - 0 - 0 - 0 - 1**      *Position 8-19 / trim*

Single stem guiding – kVs 260 – equal percentage – plug made of 1.4571 – w/o wear/tear protection – w/o balancing – seat made of 1.4571 – w/o wear/ tear protection – leakage class IV – cage retainer standard – w/o low noise cage – stem sealing PTFE-V-Ring/EPDM quad ring

**0 - 1 - 1**      *position 20-22 / Design/ inspections*

Standard design – Material inspection acc. to EN 10204 3.1 - Final inspection acc. to EN 10204 3.1



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