

SINGLE SEAT TWO WAY CONTROL VALVES



TYPE 5000 EP / 5000 AMS DN 15/100 With tension opens and closes

Face-to-face ASME / ANSI B16.10

DESCRIPTION

The "UNIWORLD" series type 5000 EP / 5000 AMS are equipped with "straight-through" pattern bodies having ANSI face-to-face dimensions and EN – ANSI – JIS flanges.

Modulating plug is suitable for control of virtually all pipeline media.

Type 5000 EP is with linear actuator.

Type 5000 AMS is with SMART actuator.

Compact construction, assembled with "made in Germany" linear electric actuator fixed to the body by means of two steel columns.

Signals Type 5000 EP : 3 points modulating / 4-20 mA / 0-10 V

Signals Type 5000 AMS : 4-20 mA / 0-10 V

SIZES : from DN 15 to DN 100

BODY CONNECTIONS : flanged EN 1092-1 PN16...PN40
: flanged ANSI B 16.5 – 150 RF – 300RF
: flanged JIS B2220 10K 20K

MATERIALS OF BODY GROUP (1) :

- **Cast iron EN-GJL-250 UNI EN 1561 PN16 ANSI 150 JIS 10**
Internal st. steel AISI316
- **Carbon st. ASTM A216 WCB PN16/40 ANSI 150/300 JIS10/20**
Internal st. steel AISI316
- **St. steel AISI316 CF8M PN16/40 ANSI150/300 JIS10/20**
Internal st. steel AISI316 – bonnet st. steel AISI316

PLUGS:

- **EQP** (DN15-50) **EQV** (DN65-100) = equal percentage class IV°
- **PL** (DN15-50) **LV** (DN65-100) = linear classe IV°
- **PT** (DN15-50) **VPT** (DN65-100) = quick lift class IV°

BONNET (2) :

- Standard for temperatures from -5 to + 200 °C
- Finned for temperatures > 200 °C
- Extended for temperatures < -5 °C
- Bellow sealed for thermal oil or hazardous media
PN16 – 25 - 40 and safety gland arrangement

GLAND ARRANGEMENT (PACKING) (3) :

- PTFE 100% rings for temperatures ≤150 °C
- PTFE 85% + graphite 15% for temperatures ≤ 200 °C
- 100% pure graphite rings for temperatures from 200 to 400 °C with finned bonnet

MAX WORKING CONDITIONS :

- Max inlet pressure and temperature : see leaflet 101/VP
- Valve sizing : see leaflet 100/VP
- Rangeability : see leaflet GRAFICI/I

CV = american unit (flowrate in USGPM with 1 psi of differential pressure)

Kv = metric unit (flowrate in m3/h with 1 bar of differential pressure)

TECHNICAL CHARACTERISTICS OF ELECTRIC ACTUATORS :

	5000 EP	5000 AMS
Std power supply	220 V AC	
Protection degree	IP65 EN 60529	
Control signal	3 points modulating	4-20 mA / 0-10 V
Ambient temp.	-20 / +60 °C	
Cover material	Polycarbonate	
Electric connections	2 x PG13	

5000 EP	PSL201	PSL202	PSL204	PSL210
Power VA	25,9	37 / 40	44 / 47	51 / 53
Velocity mm/s	0,25	0,5	0,5	0,45

5000 AMS	PSL202AMS11	PSL204AMS11	PSL210AMS11
Power VA	30	30	30
Velocity mm/s	0,45 – 0,9	0,45 – 0,9	0,2 – 0,35

ON REQUEST :

	5000 EP	5000 AMS
Seal	PTFE/GR ≤190°C class VI°	
	PTFE ≤150°C class VI°	
Lapping	Seat – plug class V°	
Stellite	degree 6 on seat-plug and bush	
Reduced bores	(see table CV and KV)	
Power supply	24Vdc – 2VAC – 110 V AC	
Potentiometer	1000 Ohm 1 o 2	Included
Positioner	4-20 mA / 0-10 V	Included
Trasmitter	4-20 mA	Included
Protection degree	IP67	
Limit switches	2 x SPDT mechanical – silver contacts	
Wire and Software	Not applicable	Not applicable

Full bore plugs	DN15	DN 20	DN25	DN32	DN40	DN50	DN65	DN80	DN100							
	Ø 1/2"	Ø 3/4"	Ø 1"	Ø 1.1/4"	Ø 1.1/2"	Ø 2"	Ø 2.1/2"	Ø 3"	Ø 4"							
EQP	CV	3.4	6.6	10.8	17	23.8	50	70.2	87.9	118.5						
	KV	2.9	5.7	9.3	14.7	20.5	43	60.5	75.2	102.1						
PL	CV	3.4	6.6	11.2	17.6	23.9	51.2	72.7	89.3	123.8						
	KV	2.9	5.7	9.6	15.2	20.6	44	62.7	77.0	106.7						
PT	CV	3.4	6.6	12.1	19	24	52.7	107.3	129.3	175.4						
	KV	2.9	5.7	10.4	16.4	20.7	45.3	92.5	111.5	151.2						
Reduced bore*	•	•	1/2"	1/4"	3/4"	1"	1"	1.1/4"	1.1/4"	1.1/2"	1.1/2"	2"	2"	2.1/2"	2.1/2"	32
• DN 15-20	MFP 1/8"	MFP 3/16"	MFP 1/4"	MFP 3/8"	MFS1SG 1/4"	MFS2SG 1/4"	MFS1SG 3/8"	MFS2SG 3/8"								
CV	0.26	0.71	1.28	2.62	0.65	1.21	1.22	2.25								
KV	0.22	0.61	1.10	2.26	0.56	1.04	1.05	1.94								

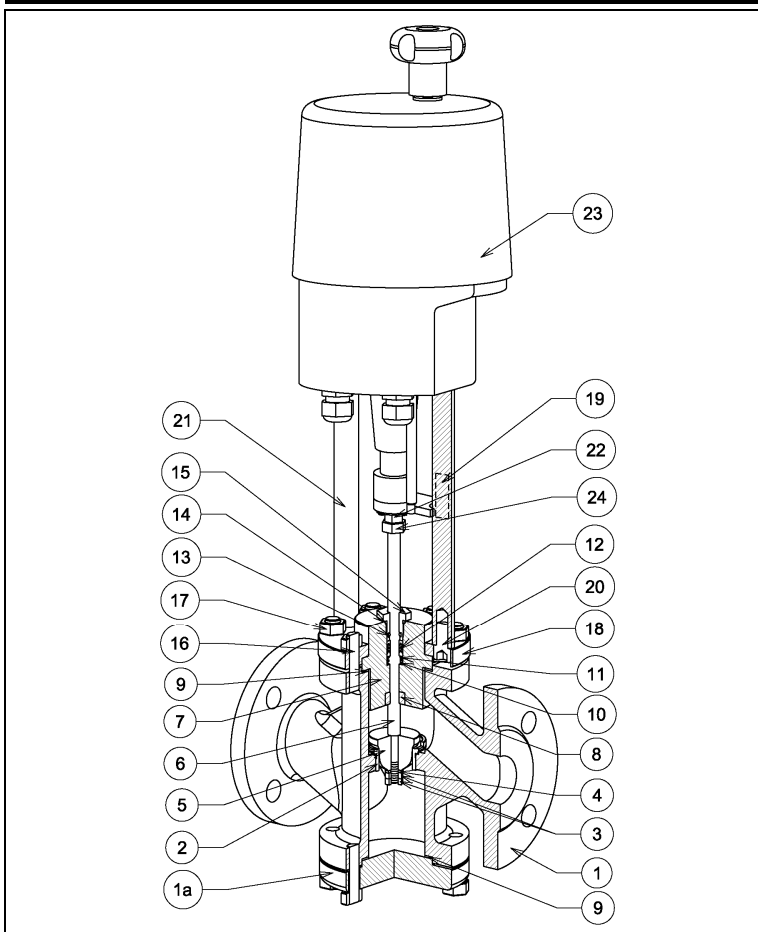
MFP = Linear..MFS = Equal percentage * CV and KV values are referred to the selected diameter and plug type (EQP/EQV-PL/LV only)

Maximum permissible pressure drops in Kg/cm² (fluid opens) with alive motor Speed in second for total stroke in mm

DN		15	20	25	32	40	50	65	80	100	
stroke mm		11			19			28			
EP	PSL201	Kg/cm ²	50	31,3	17,6	11,3	8	4,6	n.a.	n.a.	n.a.
		Vel. sec	44	44	44	76	76	76			
	PSL202	Kg/cm ²	n.a.	62,7	35,2	22,6	15,7	9,1	5,2	3,6	2
		Vel. sec	n.a.	22	22	38	38	38	56	56	56
	PSL204	Kg/cm ²	n.a.	n.a.	70,3	45,2	31,5	18,2	10,3	7,1	4
		Vel. sec	n.a.	n.a.	22	38	38	38	56	56	56
	PSL210	Kg/cm ²	n.a.	n.a.	n.a.	n.a.	78,7	45,5	25,8	17,8	10,1
		Vel. sec	n.a.	n.a.	n.a.	n.a.	38	57	84	84	84
AMS	PSL202	Kg/cm ²	115	72	40	26	18	9,5	5,9	4,1	2,3
		Vel. sec	25 .. 12,5	25 .. 12,5	25 .. 12,5	42 .. 21	42 .. 21	42 .. 21	62 .. 31	62 .. 31	62 .. 31
	PSL204	Kg/cm ²	n.a.	n.a.	n.a.	50	35	18,6	11,6	10,8	4,5
		Vel. sec	n.a.	n.a.	n.a.	42 .. 21	42 .. 21	42 .. 21	62 .. 31	62 .. 31	62 .. 31
	PSL210	Kg/cm ²	n.a.	n.a.	n.a.	n.a.	78	45,5	25,8	17,8	10,1
		Vel. sec	n.a.	n.a.	n.a.	n.a.	95 .. 54	95 .. 54	140 .. 80	140 .. 80	140 .. 80

- The values given are referred to the force of the actuator and they can be used within the limit of the body rating.
- Electric actuators suitable for operating force up-to 25 kN are available on request.

COMPONENTS LIST and MATERIALS



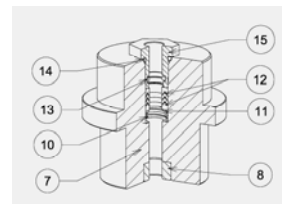
COMPONENTS LIST

- Body
- Lower flange
- Seat
- Plug locknuts
- Spring washer
- Plug
- Stem
- Bonnet
- Guide bush
- Body gasket
- Packing spring
- Packing washer
- Packing rings
- Internal "O" ring
- External "O" ring
- Packing adjusting nut
- Stud-bolts
- Body locknuts
- Upper bonnet flange
- Travel indicator plate
- N° 2 Column fixing screws
- Actuator columns
- Flange + locking screws
- Electric actuator
- Stem nut

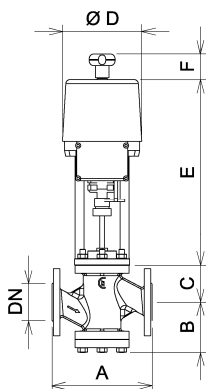
MATERIALS

- See note (1) 1° pag.
- Steel C40
- St. steel AISI 316
- St. steel AISI 304
- St. steel AISI 316
- St. steel AISI 316
- See note (1) (2) 1° pag.
- St. steel AISI 304
- Europil WS 3640 or PTFE
- St. steel AISI 302
- St. steel AISI 304
- See note (3) 1° pag.
- Viton FPM 70
- Viton FPM 70
- St. steel AISI 303
- Galvanized steel
- Galv. steel DIN 934
- C40 nickel plated steel
- Polycarbonate
- Galv. steel DIN 912 screws
- St. steel AISI 430
- St. steel A2
- See technical data at page 1
- Galv. steel DIN 936

BONNET DETAIL



DIMENSIONS in mm.



BODY GROUP

DN	Ø	A(1)	A(2)	B	C - Bonnet		
					Std	Finned	Bellows
15	1/2"	184	196	67	49	181	181
20	3/4"	184	196	67	58	190	190
25	1"	184	196	90	68	200	200
32	1.1/4"	200	212	92	70	202	202
40	1.1/2"	222	234	108	82	214	214
50	2"	254	266	108	86	218	218
65	2.1/2"	276	292	148	111	309	309
80	3"	298	317	148	135	333	333
100	4"	352	368	176	160	363	363

ACTUATOR

PSL201-202-204-210		
Ø D	E	F
176	410	50
176	410	50
176	410	50
176	410	50
176	410	50
176	410	50
176	417	50
176	417	50
176	419	50

A(1) cast iron = PN16 - ANSI150 - JIS10K A(2) steel = PN16 - PN40 - ANSI150 - ANSI300 - JIS10K - JIS20K

SINGLE SEAT TWO WAY CONTROL VALVES



TYPE 5000 EP / 5000 AMS

DN 125/200 With tension opens and closes

Face-to-face ASME / ANSI B16.10

DESCRIPTION

The "UNIWORLD" series type 5000 EP / 5000 AMS are equipped with "straight-through" pattern bodies having ANSI face-to-face dimensions and EN - ANSI - JIS flanges.

Modulating plug is suitable for control of virtually all pipeline media.

Type 5000 EP is with linear actuator.

Type 5000 AMS is with SMART actuator.

Compact construction, assembled with "made in Germany" linear electric actuator fixed to the body by means of two steel columns.

Signals Type 5000 EP : 3 points modulating / 4-20 mA / 0-10 V

Signals Type 5000 AMS : 4-20 mA / 0-10 V

SIZES : from DN 125 to DN 200

BODY CONNECTIONS :
 : flanged EN 1092-1 PN16...PN40
 : flanged ANSI B 16.5 - 150 RF - 300RF
 : flanged JIS B2220 10K 20K

MATERIALS OF BODY GROUP (1) :

- **Cast iron EN-GJL-250 UNI EN 1561 PN16 ANSI 150 JIS 10**
Internal st. steel AISI316
- **Carbon st. ASTM A216 WCB PN16/40 ANSI 150/300 JIS10/20**
Internal st. steel AISI316
- **St. steel AISI316 CF8M PN16/40 ANSI150/300 JIS10/20**
Internal st. steel AISI316 - bonnet st. steel AISI316

PLUGS:

- **EQV** = equal percentage class IV°
- **LV** = linear classe IV°
- **VPT** = quick lift class IV°

BONNET (2) :

- Standard for temperatures from -5 to + 200 °C
- Finned for temperatures > 200 °C
- Extended for temperatures < -5 °C
- Bellow sealed for thermal oil or hazardous media
PN16 - 25 - 40 and safety gland arrangement

GLAND ARRANGEMENT (PACKING) (3) :

- PTFE 100% rings for temperatures ≤150 °C
- PTFE 85% + graphite 15% for temperatures ≤ 200 °C
- 100% pure graphite rings for temperatures from 200 to 400 °C with finned bonnet

MAX WORKING CONDITIONS :

- Max inlet pressure and temperature : see leaflet 101/VP
- Valve sizing : see leaflet 100/VP
- Rangeability : see leaflet GRAFICI/I

CV = american unit (flowrate in USGPM with 1 psi of differential pressure)

Kv = metric unit (flowrate in m3/h with 1 bar of differential pressure)

TECHNICAL CHARACTERISTICS OF ELECTRIC ACTUATORS :

	5000 EP	5000 AMS
Std power supply	220 V AC	
Protection degree	IP65 EN 60529	
Control signal	3 points modulating	4-20 mA / 0-10 V
Ambient temp.	-20 / +60 °C	
Cover material	Polycarbonate	
Electric connections	2 x PG13	

5000 EP	PSL214
Power VA	51 / 53
Velocity mm/s	0,45

5000 AMS	PSL214AMS12
Power VA	93
Velocity mm/s	0,65 - 1,3

ON REQUEST :

	5000 EP	5000 AMS
Seal	PTFE/GR ≤190°C class VI°	
	PTFE ≤150°C class VI°	
Lapping	Seat - plug class V°	
Stellite	degree 6 on seat-plug and bush	
Reduced bores	(see table CV and KV)	
Power supply	24Vdc - 2VAC - 110 V AC	
Potentiometer	1000 Ohm 1 o 2	Included
Positioner	4-20 mA / 0-10 V	Included
Trasmitter	4-20 mA	Included
Protection degree	IP67	
Limit switches	2 x SPDT mechanical - silver contacts	
Wire and Software	Not applicable	Required

Full bore plugs	DN125		DN150		DN200	
	Ø 5"		Ø 6"		Ø 8"	
EQV	CV	234.5	326.1	538		
	KV	202.1	281.1	463.7		
LV	CV	319.1	391.3	624.5		
	KV	275	337.3	538.3		
VPT	CV	355.3	429.8	658.6		
	KV	306.3	370.5	567.7		
Reduced bore*	3"	4"	4"	5"	5"	6"

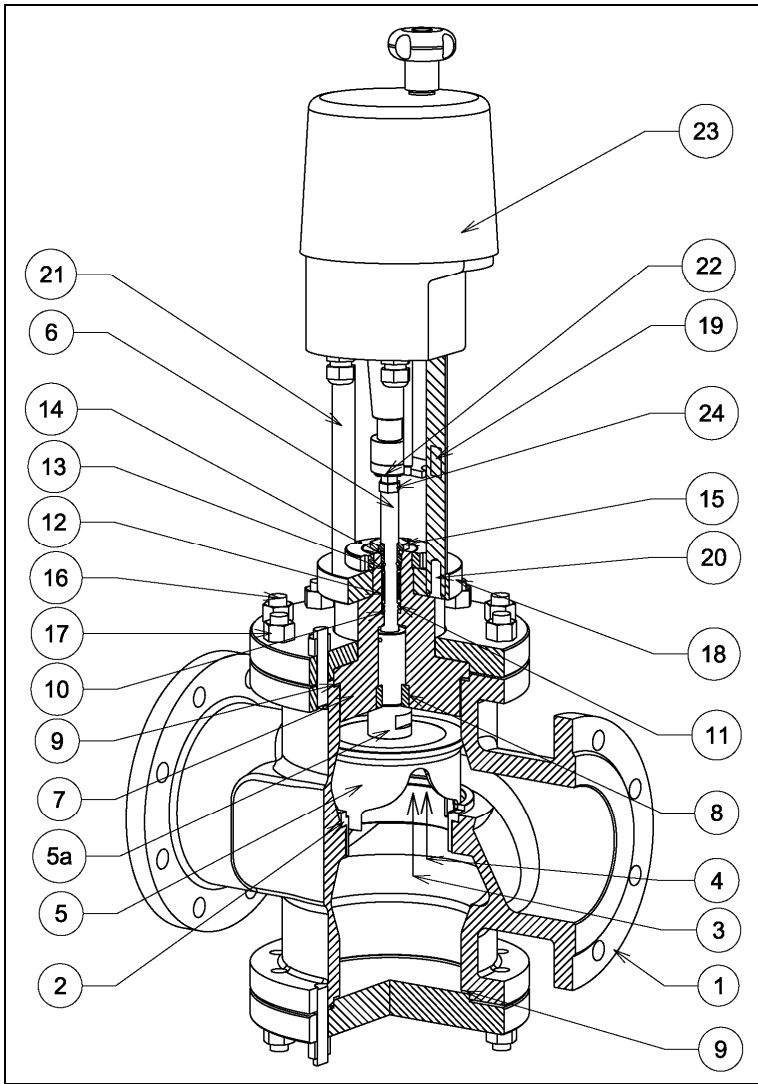
* CV and KV values are referred to the selected diameter and plug type

Maximum permissible pressure drops in Kg/cm² (fluid opens) with alive motor
Speed in second for total stroke in mm

DN		125	150	200
stroke mm		50	50	50
EP	PSL214	Kg/cm ² 7,9	5,5	3,1
		Vel. sec 84	84	84
AMS	PSL214	Kg/cm ² 7,9	5,5	3,1
		Vel. sec 39	39	39

- The values given are referred to the force of the actuator and they can be used within the limit of the body rating.
- Electric actuators suitable for operating force up-to 25 kN are available on request.

COMPONENTS LIST and MATERIALS



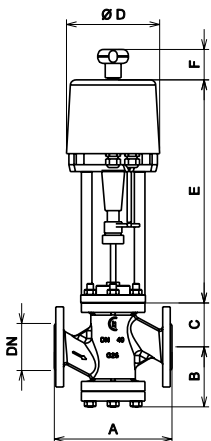
COMPONENTS LIST

- Body
- 1a. Lower flange
2. Seat
3. Plug locknuts
4. Spring washer
5. Plug
- 5a. Stem joint
6. Stem
7. Bonnet
8. Guide bush
9. Body gasket
10. Packing spring
11. Packing washer
12. Packing rings
13. Internal "O" ring
14. External "O" ring
15. Packing adjusting nut
16. Stud-bolts
17. Body locknuts
18. Upper bonnet flange
19. Travel indicator plate
20. N° 2 Column fixing screws
21. Actuator columns
22. Flange + locking screws
23. Electric actuator
24. Stem nut

MATERIALS

- See note (1) 1° pag.
- 1a. Steel C40
2. St. steel AISI 316
3. St. steel AISI 304
4. St. steel AISI 304
5. St. steel AISI 316
- 5a. St. steel AISI 316
6. St. steel AISI 316
7. See note (1) (2) 1° pag.
8. St. steel AISI 304
9. Europil WS 3640 o PTFE
10. St. steel AISI 302
11. St. steel AISI 304
12. See note (3) 1° pag.
13. Viton FPM 70
14. Viton FPM 70
15. St. steel AISI 303
16. Galvanized steel
17. Galv. steel DIN 934
18. C40 nickel plated steel
19. Polycarbonate
20. Galv. steel DIN 912
21. St. steel AISI 430
22. St. steel A2
23. See technical data at page 1
24. Galv. steel DIN 936

DIMENSIONS in mm.



BODY GROUP

DN	Ø	A(1)	A(2)	B	C - Bonnet		
					Std	Finned	Bellows
125	5	403	425	223	252	435	435
150	6"	450	472	229	258	442	442
200	8"	543	568	254	283	465	465

A(1) cast iron = PN16 - ANSI150 - JIS10K A(2) steel = PN16 - PN40 - ANSI150 - ANSI300 - JIS10K - JIS20K

ACTUATOR

PSL214		
Ø D	E	F
176	490	55
176	490	55
176	490	55