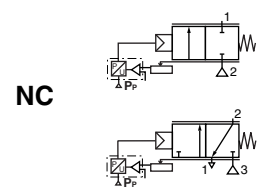




# PROPORTIONAL VALVES WITH POSITIONER<sup>D</sup>

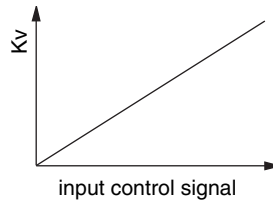
pressure operated  
all standard connection types



2 way  
3 way  
Series  
290/390

## FEATURES

- Precise, quick-acting and robust valve suitable for use in outside industrial environments
- Exceptional long service life
- Variable flow proportional to the control signal
- Real-time control
- Ready-to-use valve
- The positioner can be directly connected to an external sensor (double loop control)
- Power saving function and no air consumption when position is reached
- Manual valve operator
- LED indicators for valve status display



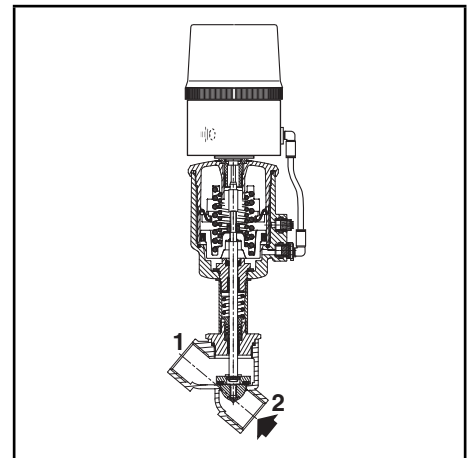
B

## GENERAL

<b>Differential pressure</b>	0 to 16 bar [1 bar = 100 kPa]
<b>Maximum allowable pressure</b>	16 bar
<b>Ambient temperature range</b>	0°C to +50°C
<b>Maximum viscosity</b>	600 cSt (mm <sup>2</sup> /s)
<b>Pilot fluid</b>	Air or inert gas, filtered 50 µm, lubricated or not
<b>Pilot pressure</b>	4 to 8 bar
<b>Pilot fluid temperature</b>	0°C to +50°C
<b>Response time</b>	See page V402-5
<b>Fluids</b>	For type, temperature and materials compatibility, see the catalogue pages for the standard valves V405, V410, V420, V431 and V703

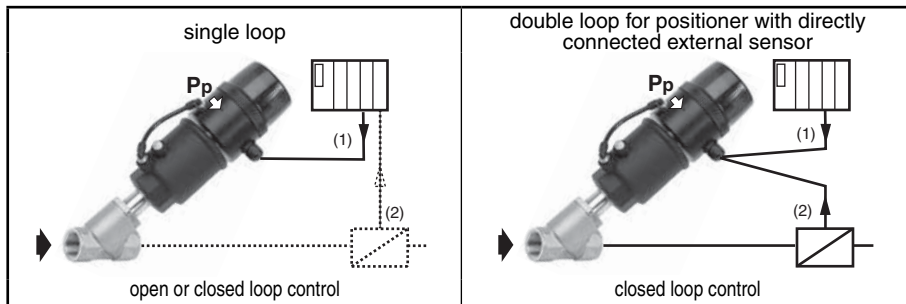
## ELECTRICAL CHARACTERISTICS

<b>Setpoint reached output</b>	ON/OFF, 24 V PNP / max. 500 mA
<b>Analog position feedback signal</b>	0-10 V / 4-20 mA
<b>Analog setpoint</b>	0-10V (R <sub>in</sub> = 200 kΩ); 4-20 mA (R <sub>in</sub> = 250 Ω)
<b>Nominal supply voltage</b>	24 V DC ± 10%, max. ripple 10%
<b>Power</b>	7,6 W (3,6 W, setpoint reached)
<b>Connection</b>	Screw terminals, cable gland (cable Ø 5-10 mm) or connection M12 (CNOMO E03.62.520.N)
<b>Degree of protection</b>	IP66 (EN 60529)
<b>Electromagnetic compatibility</b>	EMC 2004/108/EC
<b>Regulation characteristics</b>	Hysteresis < 2% ; Accuracy < 2% ; Repeatability < 1%



## CONSTRUCTION

<b>Valve construction</b>	See sections D and F
<b>Valve disc (2/2)</b>	Profiled disc, stainless steel and PTFE
<b>Valve disc (3/2)</b>	Standard disc
<b>Positioner body</b>	Aluminium, anodised
<b>Cover</b>	PA 12, transparent



(1) Setpoint  
(2) Value measured by the process sensor

## SPECIFICATIONS (NC valves, fluid entry under the disc)

analog setpoint	suffix for proportional valve and positioner <sup>(3)</sup> delivered assembled							
	fail position maintained <sup>(4)</sup>				fail close <sup>(5)</sup>			
	2 way		3 way		2 way		3 way	
	cable gland	M12	cable gland	M12	cable gland	M12	cable gland	M12
<b>Positioner<sup>D</sup>, single loop</b>								
0 - 10 V DC	PDB64	PDB68	B64	B68	PDB66	PDB70	B66	B70
4 - 20 mA	PDB65	PDB69	B65	B69	PDB67	PDB71	B67	B71
<b>Positioner<sup>D</sup>, double loop</b>								
0 - 10 V DC	-	-	-	-	PDB72	PDB74	B72	B74
4 - 20 mA	-	-	-	-	PDB73	PDB75	B73	B75

(3) Place the indicated suffix after the catalogue number of the valve selected.

(5) Fail close: valve returns to closed position on loss of power.

(4) Fail position of the valve disc maintained on loss of power.

00196GB-2008/R01  
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### VALVE SPECIFICATIONS

pipe size (DN)	orifice size	pilot pressure (bar)		operator diameter	flow coefficient (Kv), programmable opening of proportional valve								
					2 way, threaded				2 way, flanges		3 way, threaded		
		min.			max.	compact valve (E290) (bronze) (V405)		bronze, stainless steel or all AISI 316L (E290) (V410) clamp / butt welding (S290) (V420)		bronze (T290) (V431)		bronze (E390) (V703)	
		(mm)	2 way		3 way	(mm)	(m³/h)	(l/min)	(m³/h)	(l/min)	(m³/h)	(l/min)	(m³/h)
<b>NC - Normally closed, entry under the disc</b>													
1/2 (15)	15	4	-	8	50	4,6	77	4,6	77	-	-	-	-
		-	3	8	63	-	-	-	-	-	-	6	100
3/4 (20)	20	4	-	8	50/63	7,1	118	7,1	118	-	-	-	-
		-	5	8	90	-	-	-	-	-	-	9,6	160
1 (25)	25	4	5	8	63/90	15	250	15	250	11	183	16,2	270
		4	5	8	63/90	-	-	21	350	14	233	24	400
1 1/4 (32)	32	4	-	8	125	-	-	22	367	15	250	-	-
		4	5	8	63/90	-	-	29	483	21	350	42,9	715
1 1/2 (40)	40	4	5	8	125	-	-	44	733	32	533	42,9	715
		4	5	8	63/90	-	-	40	667	26,5	442	52,8	880
2 (50)	50	4	5	8	125	-	-	66	1100	44	733	52,8	880
		4	5	8	125	-	-	66	1100	44	733	52,8	880
2 1/2 (65)	65	4	-	8	90	-	-	68	1133	-	-	-	-
		4	-	8	125	-	-	74	1233	-	-	-	-

### OPTIONS AND ACCESSORIES

- Standard 2/2 NC valve, fluid entry under the disc, with profiled disc only, use suffix PD, example: E290A016PD
- Female M12 connector:
 

straight	right-angle
catalogue number: <b>88100256</b>	<b>88100725</b>
5 x 0,25 mm <sup>2</sup> , catalogue number: <b>88100726</b>	<b>88100727</b>
6 x 0,5 mm <sup>2</sup> , catalogue number: <b>88100728</b>	<b>88100729</b>
6 x 0,5 mm <sup>2</sup> , catalogue number: <b>88100730</b>	<b>88100731</b>
- 5 pins, with screw terminals,
- Supply cable 2 m,
- Supply cable 5 m,
- Supply cable 10 m,
- APC software for modification of control parameters (software required for double loop control) available for download at: [www.asconumatics.eu](http://www.asconumatics.eu)
- RS-232 converter, 2 m cable with 9 pin Sub-D connector for PC link, catalogue number **88100732**
- Oxygen service (except DN 65), pressure limited to 15 bar, temperature limited to + 60°C, suffix **N**
- Vacuum applications up to 1,33 10<sup>-3</sup> mbar, suffix **VM**
- Other pipe connections are available on request

### INSTALLATION

- Pilot port G 1/8 according to ISO 228/1
- Compatible with ASTM 1, 2 and 3 oils
- Installation/maintenance instructions are included with each valve
- LED indicators for operating status display and diagnostic functions (Unit can be rotated through 360° around the centreline of the valve operator)

status	hold position
	valve OPEN
	valve CLOSED
	valve moves to open
	valve moves to close
	positioner in initialisation mode
	positioner in manual mode
diagnostics	setpoint > 20,5 mA / 10,25 V
	setpoint < 3,5 mA
	positioner not initialised
	component error



Electrical connection:

**Positioner<sup>D</sup>, single loop**  
screw terminals



1	+ 24 V DC, supply	1
2	GND supply	3
3	+ setpoint (0-10 V or 4-20 mA)	2
4	GND setpoint	3
6	disc position feedback	4
7	+ 24V ON/OFF output	5

**Positioner<sup>D</sup>, double loop**  
screw terminals



1	+ 24 V DC, supply	1
2	GND supply	3
3	+ setpoint (0-10 V or 4-20 mA)	2
4	GND setpoint	3
5	external sensor input	4
7	+ 24V ON/OFF output	5

### SPARE PARTS KITS

	spare parts kit no.	
	cable gland (cable Ø 5-10 mm)	Positioner <sup>D</sup> only connection M12
<b>Fail position maintained, single loop</b>		
0-10 V	60568108	60569108
4-20 mA	60568308	60569308
<b>Fail close, single loop</b>		
0-10 V	60568118	60569118
4-20 mA	60568318	60569318
<b>Fail close, double loop</b>		
0-10 V	60568418	60569418
4-20 mA	60568518	60569518
<b>Mounting kit</b>		
all	C140423	C140423

pipe size (DN)	spare parts kit no.			
	compact valve (bronze) (E290)	bronze, stainless steel or all AISI 316L (E290) clamp / butt welding (S290)	bronze (T290)	bronze (E390)
<b>Valve disc seals</b>				
1/2 (15)	C131201	C131204 <sup>(1)</sup>	-	C140021 <sup>(1)</sup>
3/4 (20)	C131202	C131205 <sup>(1)</sup>	-	C140022 <sup>(1)</sup>
1 (25)	C131203	C131206 <sup>(1)</sup>	C140017 <sup>(1)</sup>	C140023 <sup>(1)</sup>
1 1/4 (32)	-	C131207 <sup>(1)</sup>	C140018 <sup>(1)</sup>	C140024 <sup>(1)</sup>
1 1/2 (40)	-	C131208 <sup>(1)</sup>	C140019 <sup>(1)</sup>	C140025 <sup>(1)</sup>
2 (50)	-	C131209 <sup>(1)</sup>	C140020 <sup>(1)</sup>	C140026 <sup>(1)</sup>
2 1/2 (65)	-	C131622 <sup>(1)</sup>	-	-

<sup>(1)</sup> Standard suffix VM is also applicable to kits (see V435).  
- Not available.

### ORDERING EXAMPLES:

E	290 A 016	PDB64
E	390 A 016	B64
E	290 A 059	PDB68
E	290 A 102	PDB71

pipe thread ————  
basic number ———— suffix

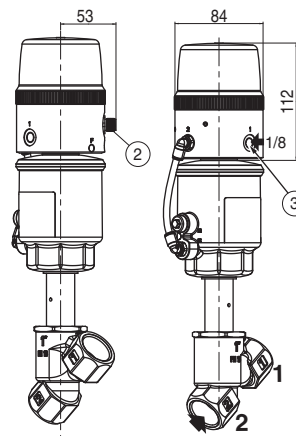
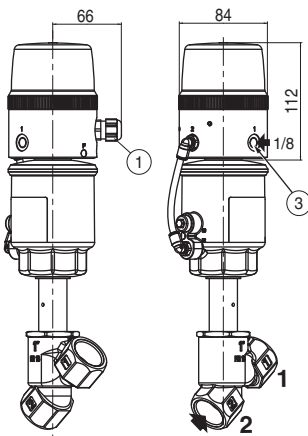
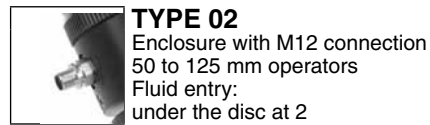
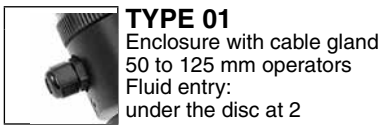
### ORDERING EXAMPLES KITS:

C131201	
C140206	
C140205	VM

basic number ———— suffix

# B

### DIMENSIONS (mm), WEIGHT (kg)



- ① M16 x 1,5 mm cable gland (cable Ø 5-10 mm)
- ② M12 connection
- ③ G 1/8 pilot connection

Weight of positioner without valve: 0,3 kg

