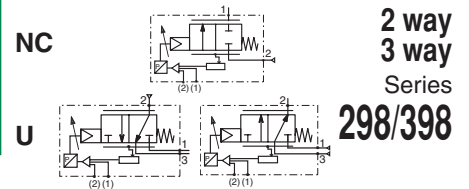




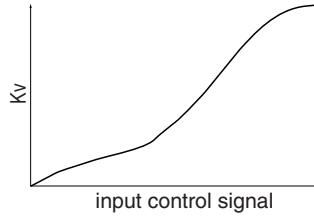
# PROPORTIONAL VALVES WITH POSITIONER<sup>D</sup>

pressure operated  
stainless steel body, PN40, DN 15 to 50



## FEATURES

- Ruggedly built valve, particularly recommended for use with steam, superheated water, corrosive fluids
- Exceptional long service life
- Variable flow exponential to the control signal
- LED indicators for valve status display
- Fast response time
- Vibration resistance according standard EN 60068-2-6
- Fail close function in case of power supply failure
- Easy commissioning, ready-to-use valve
- Power saving function and no air consumption when position is reached
- Manual valve operator
- The valves satisfy Pressure Equipment Directive 2014/64/EU
- The Positioner<sup>D</sup> comply with the essential requirements of EMC Directive 2014/30/EU

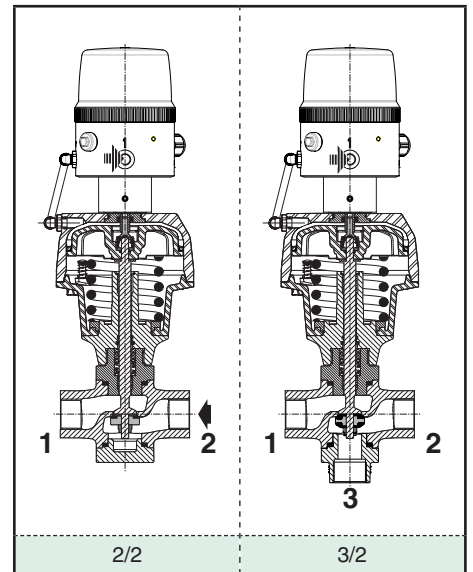


## GENERAL

Differential pressure	40 bar [1 bar =100 kPa]
Maximum allowable pressure	40 bar
Fluid temperature range	-10°C to 233°C (disc seal: PEEK) [diagram I] 0°C to +50°C [diagram II] [see the diagram II following fluids temperature]
Ambient temperature range	
Maximum viscosity	5000 cSt (mm <sup>2</sup> /s)
Pilot fluid	Air or inert gas, filtered 50 µm, unlubricated
Pilot pressure	4 to 8 bar
Pilot fluid temperature	0°C to 20°C

## ELECTRICAL CHARACTERISTICS

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



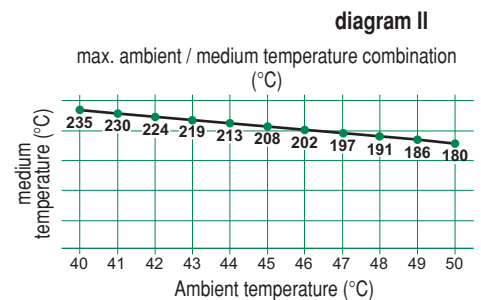
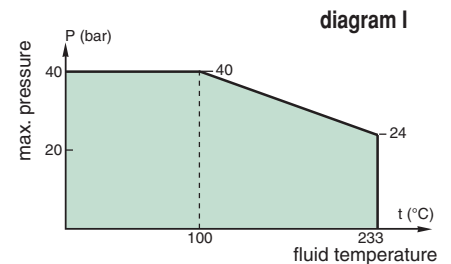
## CONSTRUCTION

MATERIALS IN CONTACT WITH FLUID	
(*) Ensure that the compatibility of the fluids in contact with the materials is verified	
Body and plug	304 stainless steel
Stuffing box housing	304 stainless steel
Stem, disc	431 stainless steel
Stuffing box packing	PTFE chevrons
Disc seals	PEEK
Valve body seal	PEEK

## OTHER MATERIALS

Operator	Aluminium, nickel plated
Screws	Galvanized steel
Positioner body	Aluminium & Anodic oxydation
Positioner cover	Polyamide, PA 12

(\*) Ensure that the compatibility of the fluids in contact with the materials is verified.



**OPTIONS**

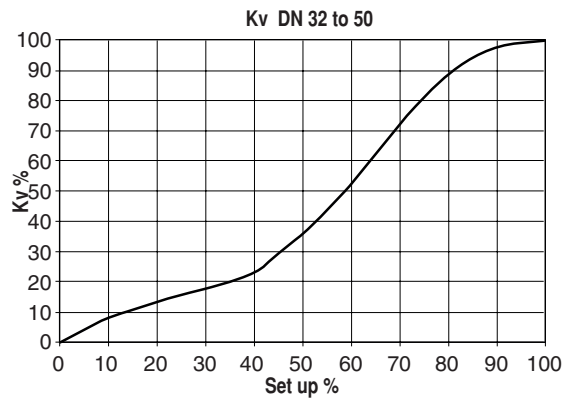
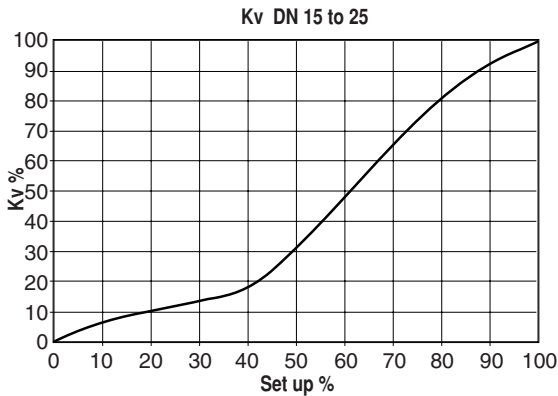
For use in explosive atmospheres to ATEX Directive 2014/34/EU (with a Sentronic on request)
Valve seat leakage class VI as defined by FCI-2 ANSI B16.104 or Class A or B following EN 12266-1, contact us
Double loop control on request
Female M12 connector: straight - 5 pins, with screw terminals, catalogue number: <b>88100256</b>
Female M12 connector: Supply cable 5 m, 5 x 0,25 mm <sup>2</sup> , catalogue number: <b>88130212</b>
Female M12 connector: Supply cable 10 m, 6 x 0,5 mm <sup>2</sup> , catalogue number: <b>88100730</b>
APC software for modification of control parameters available for download
USB interface for Software 2 m cable, catalogue number: <b>N50930300100000</b>
RS-232 converter, 2 m cable with 9 pin Sub-D connector for PC link, catalogue number <b>88100732</b>

**VALVE SPECIFICATIONS**

pipe size	DN	orifice size	operator diameter	flow coefficient (Kv) of proportional valve										pilot pressure (bar)			max. differential pressure <sup>(1)</sup> (bar)
				2 way		3 way <sup>(2)</sup>						min.		max. <sup>(1)</sup>			
						mixer			distributor			2 way <sup>(2)</sup>			3 way		
				2 → 1		3 → 2	1 → 2	2 → 3	2 → 1	2 way <sup>(2)</sup>	3 way						
(m <sup>3</sup> /h)	(l/min)	(m <sup>3</sup> /h)	(l/min)	(m <sup>3</sup> /h)	(l/min)	(m <sup>3</sup> /h)	(l/min)	(m <sup>3</sup> /h)	(l/min)	(m <sup>3</sup> /h)	(l/min)						
1/2	15	15	80	3,5	58,3	3,3	54	4,4	73	3,5	59	4,6	78	4	4	8	40
3/4	20	20	100	6,3	105	8,0	133	7,4	123	8,1	136	7,7	129				
1	25	25	100	10,7	178,3	11,4	190	11,6	194	12,1	203	11,9	199				
1 1/4	32	32	150	15	250	18,9	316	16,6	278	17,9	299	16,6	278				
1 1/2	40	40	150	24	400	27	450	27	450	27	450	27	450				
2	50	50	200	40	666,6	51	850	51	850	51	850	51	850				

<sup>(1)</sup> Admissible differential pressure (for temperature of up to 100°C).

<sup>(2)</sup> Valve without profiled disc.

**FLOW CHARACTERISTICS FOR 2 WAY VALVES**


### HOW TO ORDER

[Configurator - CAD Files](#)

#### 15-DIGIT PRODUCT CODE

**T 298 B P 3 7 D V 0GE 00**

#### Connection

- E** = ISO 228/1 & ISO 7/1 (combination thread, G\*)
- 8** = NPTF (ANSI B1.20.3)
- T** = Flanges
- W** = Socket Welded

#### Product series

- 298** (2 way)
- 398** (3 way)

#### Revision letter

- B** = New Stuffing Box and Disc Materials

#### Function

- P** = 2/2 Normally Closed with Proportional Disc
- 2** = 3/2 Universal

#### Diameter (mm)

- 3** = 15 mm
- 4** = 20 mm
- 5** = 25 mm
- 6** = 32 mm
- 7** = 40 mm
- 8** = 50 mm

#### Operator Dia. - Piloting Connection Dia.

<b>7</b> = Ø80 mm - G 1/8	DN 15
<b>8</b> = Ø80 mm - NPT 1/8 <sup>(1)</sup>	DN 15
<b>D</b> = Ø100 mm - G 1/8	DN 20 - DN 25
<b>E</b> = Ø100 mm - NPT 1/8 <sup>(1)</sup>	DN 20 - DN 25
<b>K</b> = Ø150 mm - G 1/4	DN 32 - DN 40
<b>L</b> = Ø150 mm - NPT 1/4 <sup>(1)</sup>	DN 32 - DN 40
<b>M</b> = Ø200 mm - G 1/4	DN 50
<b>N</b> = Ø200 mm - NPT 1/4 <sup>(1)</sup>	DN 50

#### Options

- 0CG** = Digital positioner Fail position maintained, single loop 0-10 V Cable gland
- 4CG** = Digital positioner Fail position maintained, single loop 4-20 mA Cable gland
- 0M1** = Digital positioner Fail position maintained, single loop 0-10 V M12
- 4M1** = Digital positioner Fail position maintained, single loop 4-20 mA M12
- 0GE** = Digital positioner Fail position closing, single loop 0-10 V Cable gland
- 4GE** = Digital positioner Fail position closing, single loop 4-20 mA Cable gland
- 0ME** = Digital positioner Fail position closing, single loop 0-10 V M12
- 4ME** = Digital positioner Fail position closing, single loop 4-20 mA M12

#### Disc Seal Material

- V** = PEEK

#### Port Type

##### Threaded ports

- 0** = 2 way
- U** = 3 way (ISO 228/1 & ISO 7/1)
- 8** = 3 way NPT <sup>(1)</sup>

##### Flanges

- D** = 2 way/3 way - Flanges DIN EN 1092-1 (ISO 7005) Standard
- P** = 2 way/3 way - Flanges ANSI Class 300
- E** = 3 way - Flanges DIN EN 1092-1 + Third way port threaded Gaz + Rp
- S** = 3 way - Flanges ANSI Class 300 + Third way port threaded NPT



##### Socket Welded

- A** = 2 way/3 way

<sup>(1)</sup> Connection = NPTF (ANSI B1.20.3) / Flanges ANSI Class 300

#### SPARE PARTS KITS CODE

PEEK disc version (\*)

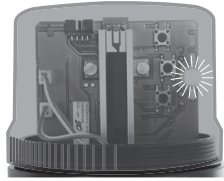
2 way		3 way			
	DN 15 NC	M29853148000100		DN 15 U	M39853148000300
	DN 20 NC	M29853148000400		DN 20 U	M39853148000600
	DN 25 NC	M29853148000700		DN 25 U	M39853148000900
	DN 32 NC	M29853148001000		DN 32 U	M39853148001200
	DN 40 NC	M29853148001300		DN 40 U	M39853148001500
	DN 50 NC	M29853148001600		DN 50 U	M39853148001800

(\*) Ensure that the compatibility of the fluids in contact with the materials is verified.

## INSTALLATION

- 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
diagnostics	positioner in manual mode
	setpoint > 20,5 mA / 10,25 V
	setpoint < 3,5 mA
	positioner not initialised
	component error



Electrical connection:

**Positioner<sup>2</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

## DIMENSIONS (mm), WEIGHT (kg)

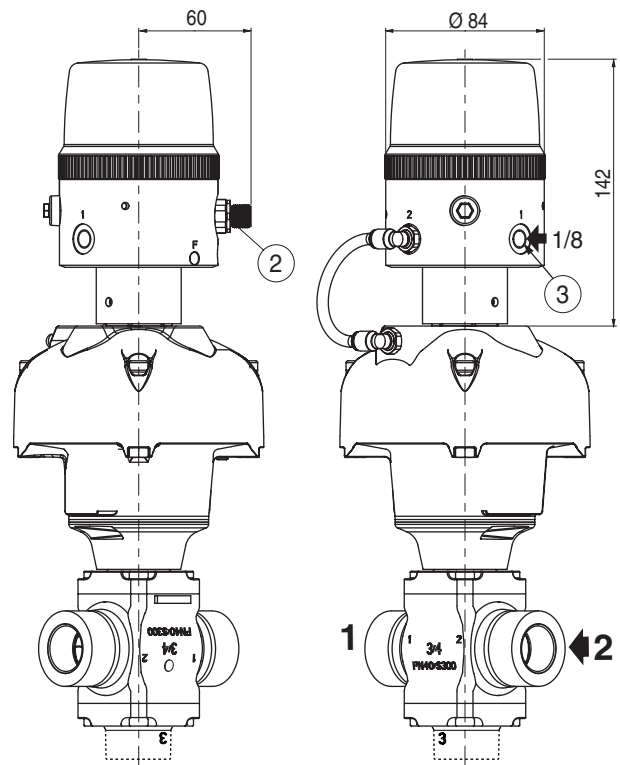
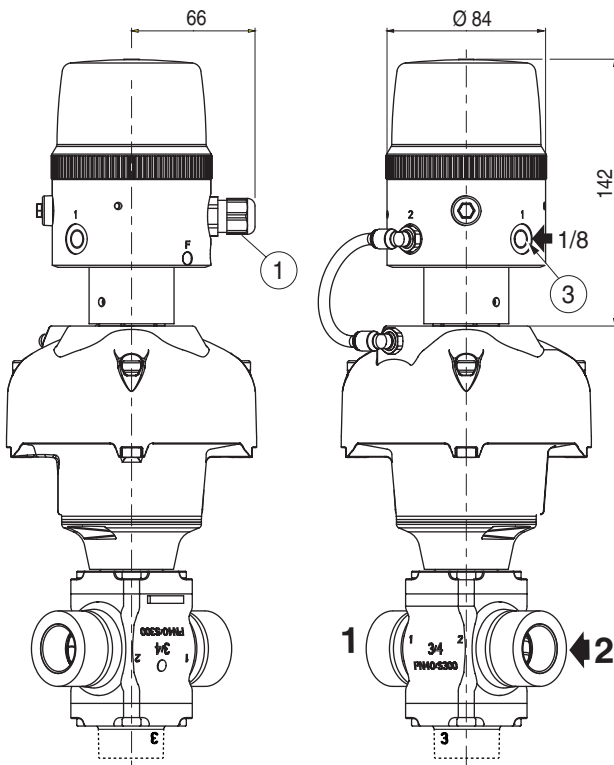


**TYPE 01**  
Enclosure with cable gland  
80 to 200 mm operators



**TYPE 02**  
Enclosure with M12 connection  
80 to 200 mm operators

[Configurator - CAD Files](#)



① Presse-étoupe M16 x 1,5 mm (câble Ø 5-10 mm)

② Connexion M12

③ Raccordement pilote G 1/8

Masse du positionneur (sans la vanne) : 0,3 kg

## 30 - Proportional Valves

A.P.O. - ELMOS v.o.s., Pražská 90, 509 01 Nová Paka, Tel.: +420 493 504 261, E-mail: apo@apoelmos.cz, Internet: [www.apoelmos.cz](http://www.apoelmos.cz)