

Series 61.2

Main applications

Downstream pressure control valve for SEMI, FPD, PV, SOLAR and industrial processes

Optimal for fast and demanding processes, e. g. CVD



DN 25–50



DN 63–250

Ordering information

Valve with stepper motor and integrated pressure controller

DN		Ordering numbers							
mm	inch	aluminum				stainless steel			
		ISO-KF		ISO-F		ISO-KF		ISO-F	
25	1	61228-KA	x y			61228-KE	x y		
40	1½	61232-KA	x y			61232-KE	x y		
50	2	61234-KA	x y			61234-KE	x y		
63	2½			61236-PA	x y			61236-PE	x y
80	3			61238-PA	x y			61238-PE	x y
100	4			61240-PA	x y			61240-PE	x y
160	6			61244-PA	x y			61244-PE	x y
200	8			61246-PA	x y			61246-PE	x y
250	10			61248-PA	x y			61248-PE	x y

Controller configurations:

- G = basic version
- A = with SPS
- H = with PFO
- C = with SPS and PFO
- T = basic version with VC master
- V = with SPS and VC master
- U = with PFO and VC master
- W = with SPS, PFO and VC master

SPS = Sensor Power Supply
(±15VDC power supply for sensor)

PFO = Power Failure Option
(valve closes/opens automatically at power failure)

VC = Valve Cluster
(for operating several valves synchronously)

Interface

- G = RS232
- H = RS232
- C = Logic
- E = Logic
- P = DeviceNet®
- Q = DeviceNet®
- D = Profibus
- F = Profibus
- J = RS485
- K = RS485
- Y = Ethernet
- Z = Ethernet
- L = CC-Link
- N = CC-Link
- I = EtherCAT
- X = EtherCAT
- S = VC slave (without interface)

Number of sensors

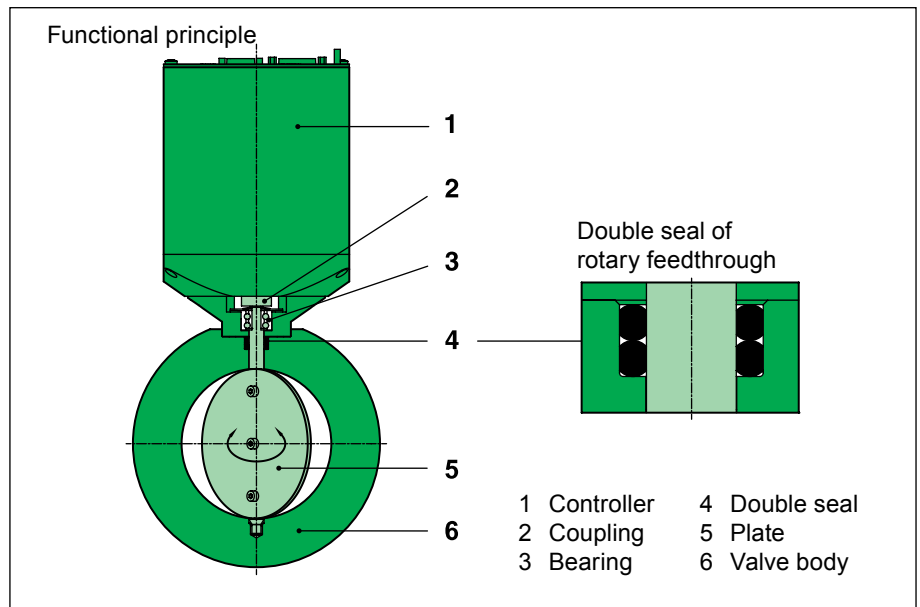
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Example: 61240-PAGG
= Aluminum valve with ISO-F DN 100 flanges, RS232 interface, for 1 sensor

Pressure controller: see pages 146–149

Features

- Body material:
aluminum or stainless steel
- Compact design
- Fast operation
- Integrated pressure controller
- Extremely short control response times
- Automatic service signal (contamination)
- Position indication
- Service port for connecting a computer
or a service box 2
- Excellent resistance to contaminating
processes
- Easy maintenance



B

The plate acts as a throttling element and varies the conductance of the valve opening. The pressure controller calculates the required plate position to achieve the setpoint pressure. See also principle drawing on page 280. Actuation is performed by a stepper motor. An encoder monitors the position. This principle ensures fast and accurate process pressure control even in very contaminating processes.

Technical data

Leak rate ¹⁾ : valve body, valve seat	1 · 10 ⁻⁹ mbar ls ⁻¹
Pressure range ¹⁾	1 · 10 ⁻⁸ mbar to 1.2 bar (abs)
Cycles until first service ²⁾	2 million
Temperature ²⁾	
– Valve body	≤ 150 °C
– Ambient	≤ 50 °C
Material	
– Valve body, plate	EN AW-6082 (3.2315)
– aluminum	AISI 316L (1.4404 or 1.4435)
– stainless steel	AISI 316L (1.4404 or 1.4435)
– Shaft	iglidur®X, AISI 316L (1.4404 or 1.4435)
– Other parts	
Seal: feedthrough	FKM (Viton®)
Feedthrough	rotary feedthrough
Mounting position	any

¹⁾ Unheated on delivery

²⁾ Maximum values: depending on operating conditions and sealing materials

————— Further technical data on next page —————>

Continued Technical data

DN (nominal I. D.)		Conductance (molecular flow)	Minimum controllable conductance (molecular flow)	Max. differential pressure on the plate	Typical closing or opening time	Weight			
						Aluminum valve		Stainless steel valve	
mm	inch	ls ⁻¹	ls ⁻¹	mbar	s	kg	lbs	kg	lbs
25	1	22	0.15	1000	0.3	2	4.4	2.5	5.5
40	1½	80	0.25	1000	0.3	2.1	4.6	2.6	5.7
50	2	150	0.30	1000	0.3	2.4	5.3	3	6.6
63	2½	360	0.45	1000	0.3	2.6	5.7	4.1	9
80	3	850	0.65	1000	0.3	2.8	6.2	4.7	10.4
100	4	1400	0.85	800	0.3	3	6.6	5	11
160	6	3800	1.70	300	0.3	4.2	9.3	7.2	15.9
200	8	7800	2.80	150	0.3	4.7	10.4	10	22
250	10	15000	5	100	0.3	5.7	12.5	12.3	27.1

Technical data for pressure controller: see pages 146–149

Options

Certain options are not available for some nominal diameters or cannot be combined. Moreover, options can affect the general technical data.



Actuator

- Ultra fast actuator (0.1 s)
- Output for control of isolation valve
- Controller with configurable PID parameters (adaptive, upstream, downstream, soft-pump)
- RS232 interface with 2 analog outputs

Valve

- Other sizes, e.g. DN 10, 320
- Other flanges, e.g. JIS, ASA-LP, CF-F
- Customer specified flanges
- Surface treatment, e. g. aluminum, hard anodized or nickel-plated
- Other sealing materials
- Heater with insulation (picture) for valve temperatures up to 150 °C (for temperatures up to 200 °C on request)
- Industrial version up to DN 160 for harsh conditions, e. g. differential pressure up to 1 bar, heavy contamination
- «Combo» body to combine a series 61.2 control valve with an isolation valve: see series 95, pages 144–145

Ordering information for options:

Ordering No. of valve-X (e. g. 61236-PEGG-X, X = valve with heater for 150 °C)

Spare parts

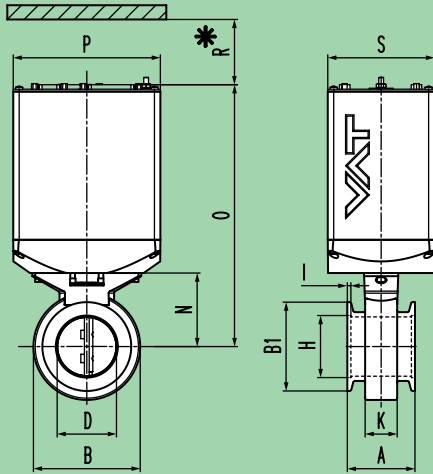
- **Seals**
on request (specify fabrication number of valve)

Accessories

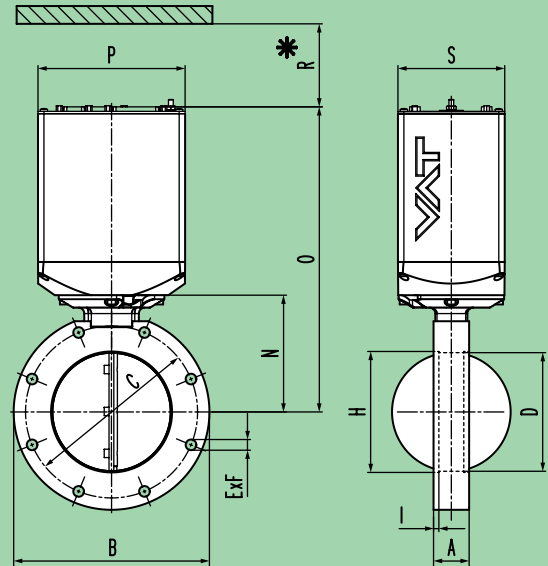
- **Flange connections**
for installation of the valve: see series 31 and 32

Dimensions

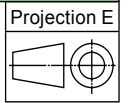
Valve with stepper motor and integrated pressure controller DN 25–50 (1"–2") ISO-KF



Valve with stepper motor and integrated pressure controller DN 63–250 (2½"–10") ISO-F



* Required for dismantling

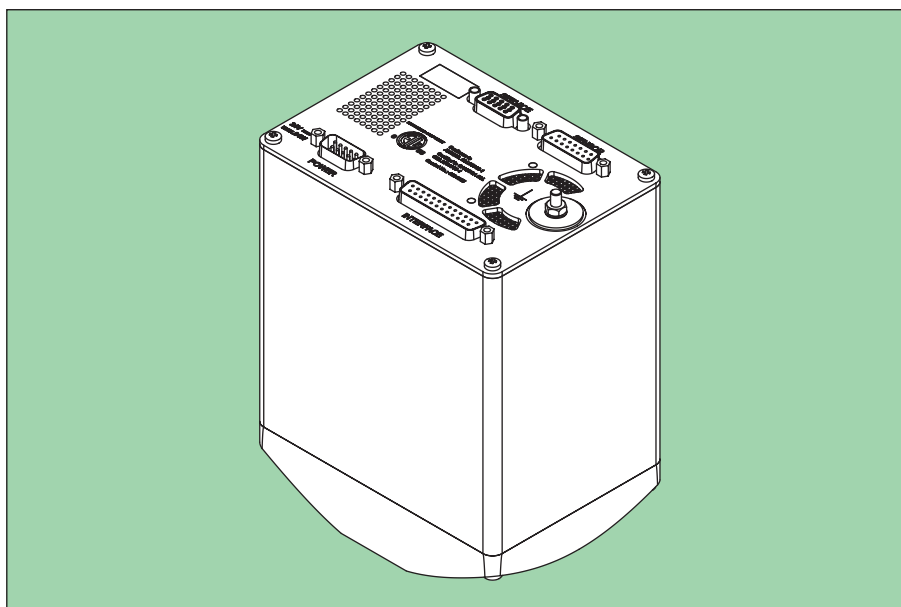


DN	mm inch	25 1	40 1½	50 2	63 2½	80 3	100 4	160 6	200 8	250 10
A	mm inch	50 1.97	57 2.24	57 2.24	30 1.18	30 1.18	30 1.18	30 1.18	30 1.18	30 1.18
B	mm inch	65 2.56	80 3.15	90 3.54	130 5.12	145 5.71	165 6.50	225 8.86	285 11.22	335 13.19
B1	mm inch	39.90 1.57	54.90 2.16	74.90 2.95	–	–	–	–	–	–
C	mm inch	–	–	–	110 4.33	125 4.92	145 5.71	200 7.87	260 10.24	310 12.20
D	mm inch	25 0.98	40 1.57	50 1.97	63 2.48	80 3.15	100 3.94	150 5.91	200 7.87	250 9.84
E x F	mm inch	–	–	–	4 x 9 4 x 0.35	8 x 9 8 x 0.35	8 x 9 8 x 0.35	8 x 11 8 x 0.43	12 x 11 12 x 0.43	12 x 11 12 x 0.43
H	mm inch	26.30 1.04	41.30 1.63	52.30 2.06	70 2.76	83 3.27	102 4.02	153 6.02	213 8.39	261 10.28
I	mm inch	3 0.12	3 0.12	3 0.12	4.50 0.18	4.50 0.18	4.50 0.18	4.50 0.18	4.50 0.18	4.50 0.18
K	mm inch	27 1.06	27 1.06	27 1.06	–	–	–	–	–	–
N	mm inch	49.50 1.95	57 2.24	92 3.62	77.50 3.05	90.50 3.56	98.50 3.88	123.50 4.86	157 6.18	182 7.17
O	mm inch	208.50 8.21	216 8.50	251 9.88	236.50 9.31	249.50 9.82	257.50 10.14	282.50 11.12	316 12.44	341 13.43
P	mm inch	124 4.88	124 4.88	124 4.88	124 4.88	124 4.88	124 4.88	124 4.88	124 4.88	124 4.88
R	mm inch	70 2.76	70 2.76	70 2.76	70 2.76	70 2.76	70 2.76	70 2.76	70 2.76	70 2.76
S	mm inch	90 3.54	90 3.54	90 3.54	90 3.54	90 3.54	90 3.54	90 3.54	90 3.54	90 3.54

Series 61.2

Features

- Integrated or external pressure controller, depending on valve type
- Automatic learning of system parameters
- Extremely short control response times
- Fast and accurate pressure control
- Valve position control
- Remote control or local operation
- Input for pressure sensor
- Information display



Function

By operating the LEARN function – needs to be done only once at start-up – the system parameters are automatically determined. Due to the adaptive algorithm the controller continuously adapts to the process conditions (species of gas, gas flow) and thus ensures optimum pressure control at any time.

In position control mode the valve plate can be moved to any position. Status and position are displayed by means of 4 digits.

The valve can be controlled by a computer via Logic, RS232, RS485, DeviceNet®, Ethernet, Profibus, CC-Link or EtherCAT interface.

The RS232 interface and the field busses also have digital inputs to close and open the valve. In addition, digital outputs are available for «open» and/or «closed».

Control via Logic interface performs via digital and analog inputs and outputs.

Electrical connections

	Connection	Type
POWER	Power input	DB-9 male or Weidmüller SL 3.50 male
SENSOR	Sensor input Sensor power supply	DB-15 female
INTERFACE	Logic, RS232, RS485	DB-25 female
	Ethernet	RJ 45
	DeviceNet® with Logic I/O	Micro-style M12 male
	Profibus with Logic I/O	DB-9 female
	CC-Link with Logic I/O	5-pole terminal screw
	EtherCAT with Logic I/O	2 × RJ 45
	Logic I/O	Binder M8 female

Accessories

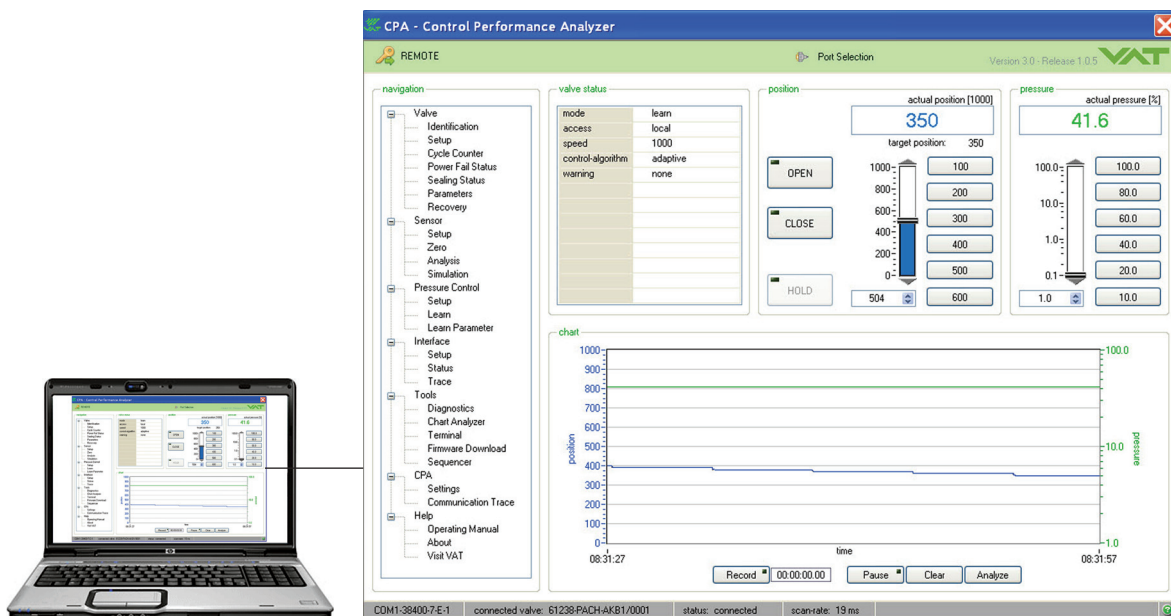
- CPA software (see «Operation»)
- Service box, control panel (see «Operation»)
- Connector kits for the various interfaces
- AC power supply unit (input: 100–240 VAC, output: 24 VDC/4A)
www.vatvalve.com

Operation

Remote control via computer

Control via computer by using the CPA software developed by VAT offers comfortable functions such as

- Setup
- Operation
- Monitoring
- Diagnostics
- Graphical illustration of the pressure behavior
- Programming and recording of sequences
- Several possibilities for data analysis and process optimization



The software –Control Performance Analyzer (CPA)– may be downloaded for free from our website: [www.vatvalve.com/Customer Service/Information and downloads/Control Performance Analyzer](http://www.vatvalve.com/Customer_Service/Information_and_downloads/Control_Performance_Analyzer).

For connecting the computer to the valve, a special cable designed by VAT is required. The diagram for the cable is available on our website: [www.vatvalve.com/Customer Service/Information and downloads/Cable description](http://www.vatvalve.com/Customer_Service/Information_and_downloads/Cable_description). The cable and the software «Control Performance Analyzer (CPA)» can also be ordered from VAT.

Local operation by means of a service box or control panel



Standard service box 2 with cable

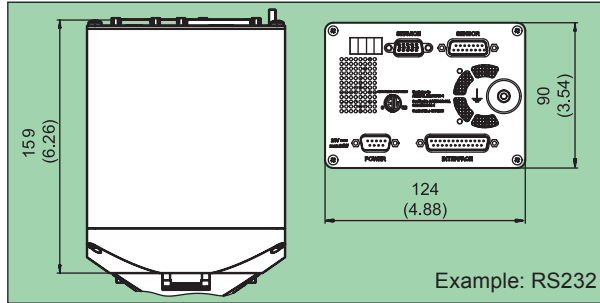


Control panel with cable for integration into a 19" rack

Options

- **Sensor Power Supply (SPS)**
±15VDC power supply for the sensor/sensors
- **Power Failure Option (PFO)**
Valve closes/opens automatically at power failure
- **Valve Cluster (VC)**
For operating several valves synchronously by means of a master valve and one or more slave valves.

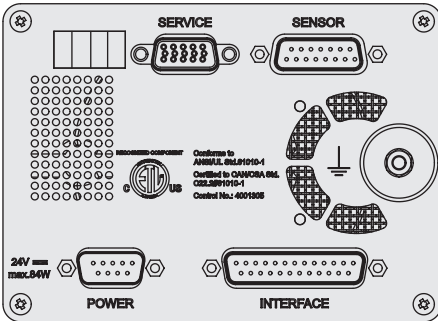
Integrated controller: Series 61.2



Available interfaces:

- Logic
- RS232
- RS485
- DeviceNet®
- Ethernet
- Profibus
- CC-Link
- EtherCAT

Example: RS232



Power consumption	max. +24 VDC (±10 %) @ 0.5 V pk-pk
- Controller + motor	max. 38 W
- Power failure option (PFO)	max. 10 W
- Sensor power supply (SPS)	max. 36 W
Sensor supply	24 VDC or ±15 VDC
Sensor input	0–10 VDC linear with pressure
- Signal voltage	Ri = 100 kΩ
- Input resistance	0.23 mV
- Resolution	10 ms
- Sampling rate	
Control accuracy	5 mV or 0.1% of setpoint ¹⁾
Position resolution	≥20 000 (depending on valve type)
Protective system	IP 30

¹⁾ The higher value applies