



VAT Vakuumentile AG
CH-9469 Haag, Schweiz

Product data sheet

Angle control valve system Series 620, DN 80-100

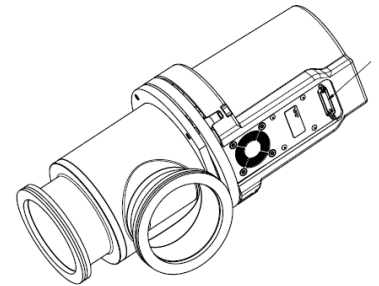
Description

This product is an angle control valve with isolation function. It is intended to use for downstream pressure control applications in vacuum systems.

This product data sheet is valid for the valve ordering number(s):

Valve:

DN		Ordering numbers	
mm	inch	ISO-K aluminum	ISO-K stainless steel
100	4	62038-QE52	62040-QE52



Sample picture only. Specified product may differ in size, flange and options.

Cable:

to connect the valve with the controller

m	inch	Ordering Number	text
1	4	620CV-99LA	1 m cable: Motor - Controller for 62040 - 620EC
		:	:
5	20	620CV-99LE	5 m cable: Motor - Controller for 62040 - 620EC

Controller:

Ordering numbers		
620EC-24	x	y

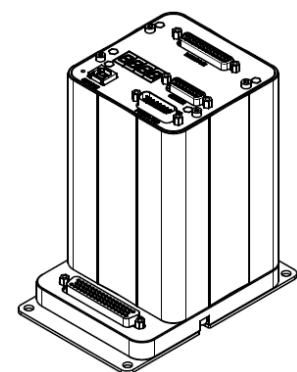
Controller configurations:

G	=	Basic version
A	=	with SPS
H	=	with PFO
C	=	with SPS and PFO

SPS=	Sensor Power Supply (±15VDC power for sensor)
PFO=	Power Failure Option (valve closes / opens automatically at power failure)

Interface	Sensor inputs
H = RS232	2
E = Logic (A/D)	2
Q = DeviceNet®	2
F = Profibus *	2
K = RS485	2
Z = Ethernet *	2
N = CC-Link *	2
X = EtherCAT	2

* Not yet available



Example:

620EC-24GH = Controller for 62040 valve with RS232 and 2 Sensor inputs

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Technical data

1. Valve unit

Pressure range at 20°C	(unheated on delivery)	1 × 10 ⁻⁸ mbar to 1.2 bar (abs)
Leak rate to outside (global) at 20°C	(unheated on delivery)	1 × 10 ⁻⁹ mbar ls ⁻¹
Leak rate seat at 20°C	(unheated on delivery)	1 × 10 ⁻⁹ mbar ls ⁻¹
Max. differential pressure on plate during isolation	In either direction	1.1 bar
Max. differential pressure on plate during opening	In either direction	1 bar
Cycles until first service		(unheated and under clean conditions)
• throttling (open – min. throttle – open)		1 Mio
• isolation (open – close – open)		200'000
Admissible operating temperature		
• Valve body / bellows / plate	standard version	≤ 80°C
• Valve body / bellows / plate	200°C version	≤ 200°C
• Actuator ambient		≤ 50°C
Mounting position		any
Process side materials	body / plate bellows	Stainless steel 316L (1.4404 or 1.4435) 316Ti (1.4571)
Seals	plate seal	FKM (e.g. Viton®)
	bonnet	FKM (e.g. Viton®)
Actuating time	Throttling (pressure / position control) 0% -> 100% 100% -> 0%	2 s typ.
	Close 0% -> isolated 0% -> close signal 100% -> isolated 100% -> close signal	0.6 s typ. 1.1 s typ. 1.4 s typ. 1.9 s typ.
	Open 0% -> 100%	0.8 s typ.

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DN (nominal I. D.)	[mm]	80	100
	[inch]	3"	4"
Full stroke	[mm]	30	30
Min. controllable conductance (N ₂ molecular flow)	[l·s ⁻¹]	0.2	0.2
Max. conductance (N ₂ molecular flow)	[l·s ⁻¹]	tbd	400
Weight (approx.) Stainless steel valve	[kg]	tbd	12.0
	[lbs]	tbd	26.5

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2. Controller

Power supply input	connector	D-Sub, DA-15, male
	supply voltage	+24 VDC ($\pm 10\%$) @ 0.5 V pk-pk max.
Power consumption	(control / drive)	60 W (max.) with optional SPS + 40 W with optional PFO + 10 W 3 W max. (from DeviceNet [®] to DeviceNet [®] Interface board of valve)
Ambient	temperature	0 °C to +50 °C max. (<35 °C recommended)
	humidity	0 to 95% RH, non-condensing
Interface	remote	Refer to interface
	service port	USB-B (USB 2.0)
Sensor	connector	D-Sub, DA-15, female
	number of inputs	2
	signal voltage	0 ... 10V DC with linear pressure
	input voltage range	-10 ... +10 V
	input resistance	100 k Ω
	ADC resolution	0.1 mV
	sampling rate	2 ms
	power supply (output)	+24 VDC / 1.5 A max. or ± 15 VDC / 1.2 A max. (with SPS option)
Actuator		Stepper motor, servo control
Pressure control accuracy		5 mV or 0.1% of setpoint, the higher value applies
Ingress Protection		IP 40
Weight (approx.)	[kg]	1.1
	[lbs]	2.5

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Interface controller

Power Connector

Connector		D-Sub, DA-15, male
Digital inputs	input 1	interlock open (adjustable with CPA 4.0)
	input 2	interlock close (adjustable with CPA 4.0)
	voltage control contact control	12 ... 24V / 4 ... 8 mA 24V / 8 mA
Digital outputs	output 1	valve closed (adjustable with CPA 4.0)
	output 2	valve opened (adjustable with CPA 4.0)
	load	max. 70 V / 0.1 A

EtherCAT

Connector		2 x RJ45, 8-pin (socket), IN and OUT
Communication	protocol	Protocol specialized for EtherCAT
	node address	Explicit device identification or station alias, set by switches
	physical layer	100BASE-Tx (IEEE 802.3)
Cable		shielded Ethernet CAT5e or higher

DeviceNet

Connector		microstyle, 5-pin, male
Communication	protocol	DeviceNet, group 2 slave only
	data rate	125, 250, 500 kbaud by switch or network programmable
	MAC ID	address 00 - 63 by switch or network programmable
	profile	"Process Control Device" profile (ODVA)
	device type	Process Control Device
Supply voltage	transceiver at microstyle connector	24 Vnom, 11 ... 25V; max. 0.5 W

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RS232

Connector		D-Sub, DB-25, female
Communication settings	baud rate data bits stop bits parity bit	1200,2400,4800,9600,19200,38400,57600,115200 0 7 or 8 1 or 2 even, odd, none
Digital inputs	number of inputs	2
	voltage control contact control	5 ... 24V / 2 ... 10 mA 3.3V / 2 mA
Digital outputs	number of outputs	2
	load	max. 70 V / 0.1 A
Analog outputs	number of outputs	2
	voltage range load	0 ... 10V max. 1 mA

RS485

Connector		D-Sub, DB-25, female
Communication settings	baud rate data bits stop bits parity bit topology network adress range	1200,2400,4800,9600,19200,38400,57600,115200 0 7 or 8 1 or 2 even, odd, none half duplex, full duplex point to point, multiple devices 0 ... 255
Digital inputs	number of inputs	2
	voltage control contact control	5 ... 24V / 2 ... 10 mA 3.3V / 2 mA
Digital outputs	number of outputs	2
	load	max. 70 V / 0.1 A
Analog outputs	number of outputs	2
	voltage range load	0 ... 10V max. 1 mA

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Logic

Connector		D-Sub, DB-25, female
Digital inputs	number of inputs	8
	voltage control	5 ... 24V / 2 ... 10 mA
	contact control	3.3V / 2 mA
Digital outputs	number of outputs	4
	load	max. 70 V / 0.1 A
Analog input	number of inputs	1
	voltage range	0 ... 10V
	input resistance	100 kOhm
Analog outputs	number of outputs	2
	voltage range	0 ... 10V
	load	max. 1 mA

Profibus

Connector		D-Sub, DE-9, female
Communication	protocol	Profibus DP-V1, DP-V0
	data rate	9.6, 19.2, 45.45, 93.75, 187.5, 500 kbps, 1.5, 3, 6, 12 Mbps The baud rate is detected automatically or may be configured
	node address	SW configurable (0 – 125)

CC-Link

Connector		D-Sub, DE-9, female
Communication	protocol	CC-Link V2
	data rate	156, 625, 500 kbps, 2.5, 5, 10 Mbps SW configurable
	station number	SW configurable (1– 64)

3. General data

Weight	refer to chapter: 1 / 2
Dimensional drawing	Refer to dimensional drawing of specific valve ordering number (available on request)

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