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VAT Vakuumventile AG
CH-9469 Haag, Schweiz

PRODUCT DATA SHEET
Series 651, DN 100 - 400 mm (I.D. 4" - 16")
Ordering No. 651..-….-….

1 Description

This product is a throttling pendulum valve with isolation functionality. It is intended to use for downstream pressure control applications.

This "Product Data Sheet" is valid for the valve ordering number(s):

DN		Ordering numbers			
		aluminum		aluminum, hard anodized	
mm	inch	ISO-F	JIS	ISO-F	JIS
100	4	on request	on request	on request	on request
160	6	65144-PA x y	65144-JA x y	65144-PH x y	65144-JH x y
200	8	65146-PA x y	65146-JA x y	65146-PH x y	65146-JH x y
250	10	65148-PA x y	65148-JA x y	65148-PH x y	65148-JH x y
320	12	65150-PA x y	65150-JA x y	65150-PH x y	65150-JH x y
350	14	–	65151-JA x y	–	65151-JH x y
400	16	65152-PA x y	65152-JA x y	65152-PH x y	65152-JH x y

x

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 (±15 V DC power supply for sensor)

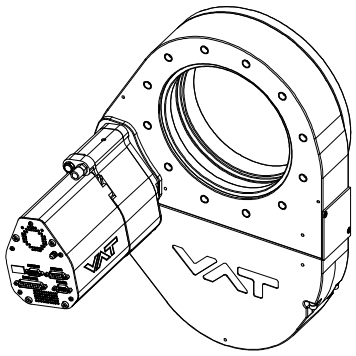
PFO = Power Failure Option (valve closes / opens automatically at power failure)

VC = Valve Cluster (for operating several valves synchronously)

Example: 65144-PAGG
= Aluminum valve with ISO-F DN 160 flanges RS232 interface, for 1 sensor

y

	Interface	Number of sensors
G =	RS232	1
H =	RS232	2
C =	Logic	1
E =	Logic	2
P =	DeviceNet®	1
Q =	DeviceNet®	2
D =	Profibus	1
F =	Profibus	2
J =	RS485	1
K =	RS485	2
Y =	Ethernet	1
Z =	Ethernet	2
L =	CC-Link	1
N =	CC-Link	2
I =	EtherCAT	1
X =	EtherCAT	2
S =	VC slave (without interface)	



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

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2 Technical data

2.1 Valve unit

Pressure range (unheated on delivery) • Aluminum • Aluminum, hardanodized							1 × 10E-8 mbar to 1.2 bar (abs) 1 × 10E-6 mbar to 1.2 bar (abs)
Leak rate valve seat (unheated on delivery) • Aluminum • Aluminum, hardanodized							1 × 10E-9 mbar ls^{-1} 1 × 10E-4 mbar ls^{-1}
Leak rate valve body (unheated on delivery) • Aluminum • Aluminum, hardanodized							1 × 10E-9 mbar ls^{-1} 1 × 10E-5 mbar ls^{-1}
Cycles until first service (unheated and under clean conditions) • Pressure control • Closing / opening							1'000'000 200'000
Admissible operating temperature • Valve body • Ambient							≤ 120°C ≤ 50°C
Mounting position (valve seat on chamber side recommended) • DN100…250 • DN320…400							any horizontal **only**
Process side materials		valve body					EN AW-6082 (3.2315)
		plate					EN AW-6082 (3.2315), 1.4331 (301), PTFE
		sealing ring					EN AW-6082 (3.2315), AISI 305 (1.4303), AISI 420C (1.3541), AISI 631 (1.4568)
		other parts					AISI 316L (1.4404, 1.4435), AISI 440 (1.4122), AISI 301 (1.4310), AISI 316 Ti (1.4571), AISI 304 (1.4301)
Seals		plate, body, bonnet, rotary feedthrough, shaft feedthrough					FKM (e.g. Viton®)
DN (nominal I. D.)	mm inch	**160** **6"**	**200** **8"**	**250** **10"**	**320** **12"**	**350** **14"**	**400** **16"**
Operating time (s): Open to close / Close to open (s)		4 / 4	4 / 4	4 / 4	6 / 6	6 / 6	6 / 6
Pressure control (throttling) (s)		0.8	0.9	0.9	1.1	1.3	1.5
Min. controllable conductance (ls^{-1}) [N_2 molecular flow]		1.6	2	2.5	3.2	3.5	4
Max. Conductance (ls^{-1}) [N_2 molecular flow]		5'000	1'2000	22'000	30'000	43'000	61'000

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DN (nominal I. D.)	mm	**160**	**200**	**250**	**320**	**350**	**400**
	inch	**6"**	**8"**	**10"**	**12"**	**14"**	**16"**
Max. differential pressure on the plate in closed position (mbar)		1’200	1’200	1’200	1’200	1’200	1’200
Max. differential pressure during operation (mbar)		10	5	5	5	5	5
Compressed air min. – max. overpressure	bar	4…7	4…7	4…7	4…7	4…7	4…7
	psi	58…102	58…102	58…102	58…102	58…102	58…102
Weight (approx.)	kg	18	22	29	48	59	68
	lbs	40	49	64	106	130	150

2.2 Control unit

Power supply input		+24 VDC (±10%) @ 0.5 V pk-pk max.
Power consumption		50 W (standard) with optional SPS + 36 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 chapter 1
	service port	RS232
Sensor	number of inputs	Refer to chapter 1
	signal voltage	0…10 V DC with linear pressure
	input resistance	Ri = 100 kΩ
	ADC resolution	0.23 mV
	sampling rate	10 ms
	power supply (output)	+24 VDC / 1’500 mA max. or ±15 VDC / ± 1’000 mA max. (with SPS option)
Pressure control accuracy		5 mV or 0.1% of setpoint, the higher value applies
Protective system		IP 20

2.3 General data

Weight	Refer to chapter: 2.1
Dimensional drawing	Refer to dimensional drawing of specific valve ordering number (available on request)

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