



VAT Vakuumentile AG  
CH-9469 Haag, Schweiz

# PRODUCT DATA SHEET

## Series 642, DN 200 (I.D. 8")

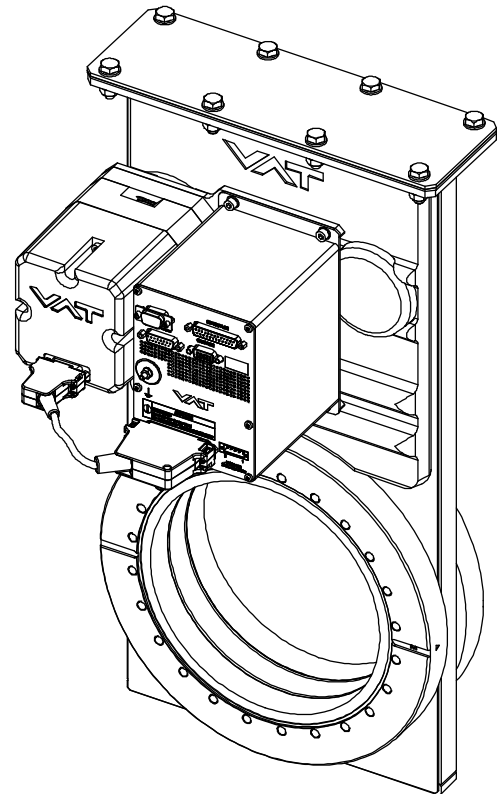
Ordering No. 64246-CECG-0001

## 1 Description

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

Flange		DN 200 (8"), CF-F
Actuator	type	stepper motor for gate movement
	position	A1
Controller	type	integrated (next to actuator)
	interface	RS232
	number of sensor inputs	1
	options	PFO, SPS <sup>1)</sup>
	firmware version	600P.1G.00.08
Feedthrough	actuator	single sealed

1) none = no option, PFO = power failure option, SPS = sensor power supply



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## 2 Technical data

### 2.1 Valve unit

Pressure range at 20°C		1 × 10E-8 mbar to 2 bar (abs)
Leak rate at 20°C	to outside (global)	1 × 10E-9 mbar l/s
	seat	1 × 10E-9 mbar l/s
Max. differential pressure on plate during isolation (in both directions)		2 bar in either direction
Max. differential pressure on plate during opening		30 mbar
Cycles until first service (preventive maintenance)	throttling (open – max. throttle – open)	2'000'000 (unheated and under clean conditions)
	isolation (open – closed – open)	200'000 (unheated and under clean conditions)
Admissible operating temperature		+10°C to +150°C
Mounting position		valve sit
Process side materials	body	304 (1.4301 or 1.4303)
	gate	304 (1.4301 or 1.4303)
	other parts	stainless steel: 301 (1.4310), 304 (1.4301 or 1.4303), 420 (1.4034), 420D (1.4037), 430 (1.4016)
Seals	flange	by customer
	gate	FKM (Viton)
	rotary feedthrough	FKM (Viton)
	bonnet	FKM (Viton) vulcanized
Min. controllable conductance (N <sub>2</sub> molecular flow)		2 l/s
Max. conductance (N <sub>2</sub> molecular flow)		12000 l/s
Actuating time	full open to close (throttling)	5 s typ.
	close (throttling) to full open	5 s typ.
	full open to close (isolated)	6 s typ.
	close (isolated) to full open	6 s typ.

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## 2.2 Control unit

Power supply input		+24 VDC ( $\pm 10\%$ ) @ 0.5 V pk-pk max.
Power consumption		96 W
Ambient	temperature	0 °C to +50 °C max. (<35 °C recommended)
	humidity	0 to 95% RH, non-condensing
Interface	remote	RS232
	service port	RS232
Sensor	number of inputs	1
	input	0-10 VDC / $R_i > 100 \text{ k}\Omega$
	ADC resolution	0.23 mV
	sampling time	10 ms
	power supply (output)	$\pm 15 \text{ VDC } (\pm 5\%) / 1000 \text{ mA max.}$
Pressure control accuracy		5 mV or 0.1% of setpoint, whichever is greater
Firmware		600P.1G.00.08

## 2.3 General data

Weight		approx. 34 kg
Dimensional drawing		720507

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### 3 Initial configuration

Communication	command set	IC
Interface	baud rate	9600
	data bit	7
	stop bit	1
	parity	even
Digital input	open position	not inverted
	close position	not inverted
Valve position	after start up	close
	in case of power failure	close

#### 3.1 Pressure control algorithm

command	parameter	code	minimum	maximum	default	index	length
s:02Z000 (Pressure Control Algorithm)							
Command Header	s:02Z00						
Pressure Control Algorithm	Adaptive	0	0	3	0	0	1

#### 3.2 Adaptive downstream

command	parameter	code	minimum	maximum	default	index	length
s:02A000.0 (Sensor Delay Adaptiv Downst							
Command Header	s:02A00						
Sensor Delay Adaptiv Downstream	0.0	none	0	1	0	0	
s:02A010.0 (Ramp Time Adaptiv Downst							
Command Header	s:02A01						
Setpointramp Time Adaptiv Downstream	0.0	none	0	1000000	0	0	
s:02A020 (Ramp Mode Adaptiv Downst							
Command Header	s:02A02						
Setpointramp Mode Adaptiv Downstream	fixed time	0	0	1	0	0	1
s:02A041.0 (Gain Factor Adaptiv Downst							
Command Header	s:02A04						
Gain Factor Adaptiv Downstream	1.0	none	0.0001	7.5	1	0	

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### 3.3 Fixed 1

command	parameter	code	minimum	maximum	default	index	length
<b>s:02B010.0 (Ramp Time Fixed 1)</b>							
Command Header	s:02B01						
Setpointramp Time Fixed 1	0.0	none	0	1000000	0	0	
<b>s:02B020 (Ramp Mode Fixed 1)</b>							
Command Header	s:02B02						
Setpointramp Mode Fixed 1	fixed time	0	0	1	0	0	1
<b>s:02B030 (Control Direction Fixed 1)</b>							
Command Header	s:02B03						
Control Direction Fixed 1	downstream	0	0	1	0	0	1
<b>s:02B040.018 (P-Gain Fixed 1)</b>							
Command Header	s:02B04						
P-Gain Fixed 1	0.018	none	0.001	100	0.018	0	
<b>s:02B050.018 (I-Gain Fixed 1)</b>							
Command Header	s:02B05						
I-Gain Fixed 1	0.018	none	0	100	0.018	0	

### 3.4 Fixed 2

command	parameter	code	minimum	maximum	default	index	length
<b>s:02C010.0 (2 Ramp Time Fixed 2)</b>							
Command Header	s:02C01						
Setpointramp Time Fixed 2	0.0	none	0	1000000	0	0	
<b>s:02C020 (Ramp Mode Fixed 2)</b>							
Command Header	s:02C02						
Setpointramp Mode Fixed 2	fixed time	0	0	1	0	0	1
<b>s:02C030 (Control Direction Fixed 2)</b>							
Command Header	s:02C03						
Control Direction Fixed 2	downstream	0	0	1	1	0	1
<b>s:02C040.018 (P-Gain Fixed 2)</b>							
Command Header	s:02C04						
P-Gain Fixed 2	0.018	none	0.001	100	0.018	0	
<b>s:02C050.018 (I-Gain Fixed 2)</b>							
Command Header	s:02C05						
I-Gain Fixed 2	0.018	none	0	100	0.018	0	

### 3.5 Soft pump

command	parameter	code	minimum	maximum	default	index	length
<b>s:02D010.0 (Ramp Time Soft Pump)</b>							
Command Header	s:02D01						
Setpointramp Time Soft Pump	0.0	none	0	1000000	0	0	
<b>s:02D020 (Ramp Mode Soft Pump)</b>							
Command Header	s:02D02						
Setpointramp Mode Soft Pump	fixed time	0	0	1	0	0	1
<b>s:02D040.018 (P-Gain Soft Pump)</b>							
Command Header	s:02D04						
P-Gain Soft Pump	0.018	none	0.001	100	0.018	0	

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