1 Use of product

This product is a Butterfly control valve for downstream pressure control in vacuum systems.

Use product for clean and dry indoor vacuum applications under the conditions indicated in chapter «Technical data» only! Other applications are only allowed with the written permission of VAT.

1.1 Technical data

Control and actuating unit	
Power input [1] **(α)** [612 . . - . . **A** . - . . . . / 612 . . - . . **G** . - . . . .] [612 . . - . . **C** . - . . . . / 612 . . - . . **H** . - . . . .]	+24 VDC (±10%) @ 0.5 V pk-pk max. [connector: POWER] 38 W max. (operation of valve with max. load) without PFO [4] 38 W plus 10 W for PFO [4]
Sensor power supply [2] **(β)** [612 . . - . . **A** . - . . . . / 612 . . - . . **C** . - . . . .] Input Output	 +24 VDC / 1500 mA max. [connector: POWER] ±15 VDC (±5%) / 1000 mA max. [connector: SENSOR]
Sensor power supply [2] **(β)** [612 . . - . . **G** . - . . . . / 612 . . - . . **H** . - . . . .] Input Output	 + 24 VDC resp. ± 15 VDC [connector: POWER] same as input but: [connector: SENSOR] 2.0 A max. at ± 15 VDC 1.5 A max. at + 24 VDC

Calculation of complete power consumption:

$P_{tot} = \alpha + \beta$

whereas β depends on sensor supply concept and sensor power consumption.

Control and actuating unit (continuation)			
Sensor input Signal input ADC resolution Sampling time		0-10 VDC / Ri>100 kΩ 0.23 mV 10 ms	[connector: SENSOR]
Power input (DeviceNet®)		3 W max. (from DeviceNet®)	[DeviceNet® connector]
LOGIC I/O (configurable)		1 digital input 1 digital output	[connector: LOGIC I/O]
PFO [4] battery pack [612 . . - . . **W** . - . . . . / 612 . . - . . **U** . - . . . .] Charging time Durability		2 minutes max. up to 10 years @ 25°C ambient; refer to «Durability of power fail battery» for details	
Ambient temperature		0 °C to +50 °C max. (<35 °C recommended)	
Pressure control accuracy		5 mV or 0.1% of setpoint, whichever is greater	
Position resolution / position control capability		20000	
Actuating time	closing	0.3 s typ.	
	opening	0.3 s typ.	
Utilizable valve torque		2.5 Nm	

1) Internal overcurrent protection by a PTC device.
2) Refer to chapter «Sensor supply concepts» for details.
3) Refer to chapter «Schematics» for details.
4) PFO = Power Failure Option. Refer to «Behavior in case of power failure» for details.

1.1.1 Valve unit

Valve unit		
Pressure range at 20°C		
- Aluminum	(612 . . - . **A** . . - . . . .)	1 x 10E-8 mbar to 1.2 bar (abs)
- Aluminum hard anodized	(612 . . - . **H** . . - . . . .)	1 x 10E-6 mbar to 1.2 bar (abs)
- Aluminum nickel coated	(612 . . - . **I** . . - . . . .)	1 x 10E-8 mbar to 1.2 bar (abs)
- Stainless steel	(612 . . - . **E** . . - . . . .)	1 x 10E-8 mbar to 1.2 bar (abs)
Leak rate to outside at 20°C		
- Aluminum	(612 . . - . **A** . . - . . . .)	1 x 10E-9 mbar l/s
- Aluminum hard anodized	(612 . . - . **H** . . - . . . .)	1 x 10E-5 mbar l/s
- Aluminum nickel coated	(612 . . - . **I** . . - . . . .)	1 x 10E-9 mbar l/s
- Stainless steel	(612 . . - . **E** . . - . . . .)	1 x 10E-9 mbar l/s
Cycles until first service		2’000’000
Admissible operating temperature		10°C to +150°C
Mounting position		Any. Control unit for ISO-KF version needs support when mounted on horizontal piping and control unit does not hang.
Wetted materials		
- Body, plate	(612 . . - . **A** . . - . . . .)	Aluminum 3.2315 (AA6082)
- Body, plate	(612 . . - . **H** . . - . . . .)	Aluminum 3.2315 (AA6082) hard anodized
- Body, plate	(612 . . - . **I** . . - . . . .)	Aluminum 3.2315 (AA6082) nickel coated
- Body, plate	(612 . . - . **E** . . - . . . .)	Stainless steel 316L (1.4404 or 1.4435)
- Shaft		Stainless steel 316L (1.4404 or 1.4435)
- Plate screws		Stainless steel 316L (A4)
- Shaft seal		FKM (e.g. Viton®). Other materials available. Seal materials are declared on dimensional drawing of specific valve ordering number.
- Slide bearing for shaft		iglidur® X

Valve unit (continuation)					
	DN 63 **2½"** (612**36** - ....)	**DN 80** **3"** (612**38** - ....)	**DN 100** **4"** (612**40** - ....)	**DN 160** **6"** (612**44** - ....)	**DN 200** **8"** (612**46** - ....)
Max. differential pressure on plate	1000 mbar	1000 mbar	800 mbar	300 mbar	150 mbar
Min. controllable conductance (C_{min}) [N_2 molecular flow] Conductance in open position [N_2 molecular flow]	0.45 l/s 360 l/s	0.65 l/s 850 l/s	0.85 l/s 1400 l/s	1.7 l/s 3800 l/s	2.8 l/s 7800 l/s
	DN 250 **10"** (612**48** - ....)				
Max. differential pressure on plate	100mbar				
Min. controllable conductance (C_{min}) (N_2 molecular flow) Conductance in open position [N_2 molecular flow]	5 l/s 15000 l/s				
Dimensions	Refer to dimensional drawing of specific valve ordering number (available on request)				