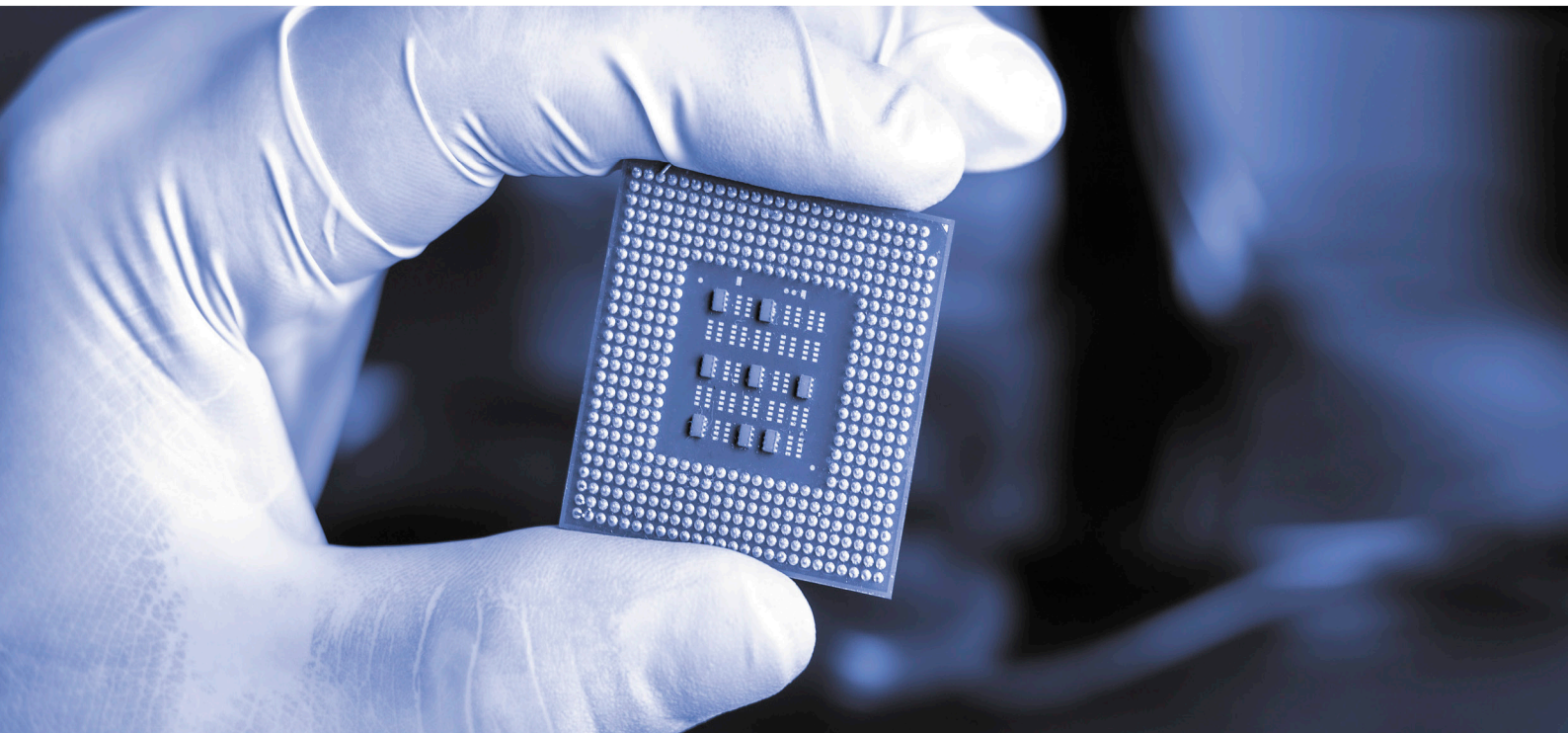
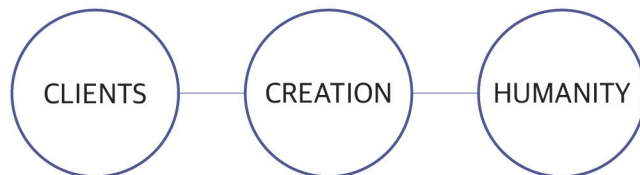


Vacuum Control Valves

NOVASEN



Make it Best or Not !



| Content

1. Product Selection Guide	03
Product List	
2. Setup & Management S/W	04
3. APC Butterfly Valve	05
- Non-Sealing (25N / 40N / 50N)	08
- Non-Sealing (63N / 80N)	09
- Non-Sealing (100N / 160N)	10
- Non-Sealing (200N / 250N / 320N)	11
- Sealing (40S / 50S)	12
- Sealing (100S)	13
- Sealing (F-cup) (40F / 50F)	14

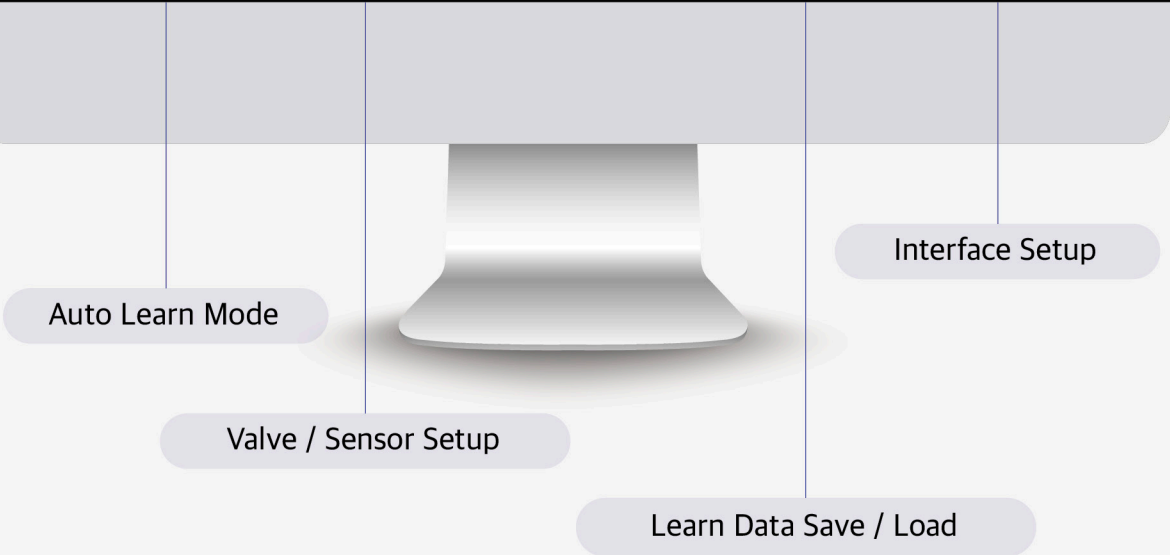
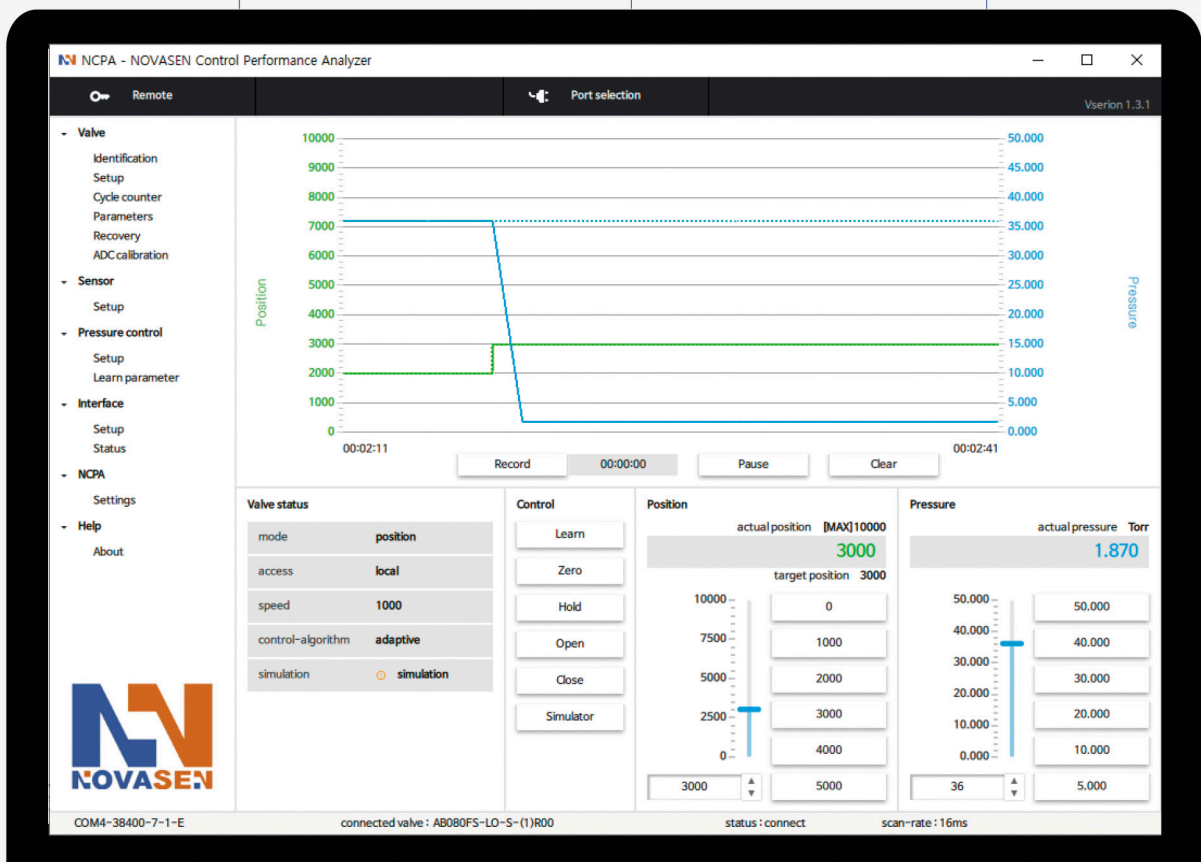
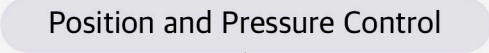
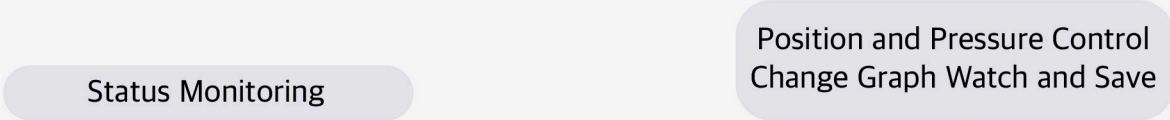
Product Selection Guide

A	B	N	080	F	S	LO	B	1	Quantity of sensors	1 : 1 Sensor 2 : 2 Sensor	
									Power Option*	B : Basic P : with PFO	S : with SPS D : with SPS and PFO
									Communication Interface	R2 : RS-232 LO : Logic PB : Profibus CC : CC-Link	R4 : RS-485 DN : DeviceNet® EN : Ethernet EC : EtherCAT
									Body Material	A : Aluminum S : SUS304 L : SUS316L	
									Method of contract	K : ISO-KF F : ISO-F C : CF-F	
									Flange Size	025 : DN25 050 : DN50 080 : DN80 160 : DN160 250 : DN250	040 : DN40 063 : DN63 100 : DN100 200 : DN200 320 : DN320
									Sealing Type	N : Non-Sealing S : Sealing F : F-cup Sealing	
									Valve Type	B : Butterfly P : Pendulum	
									Valve Model	A : APC	

Product List



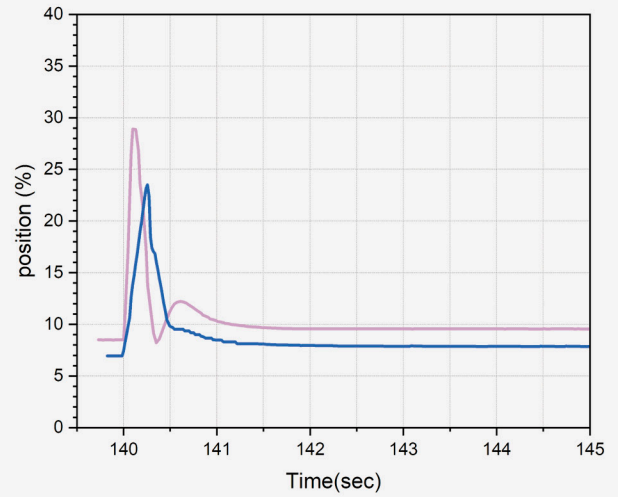
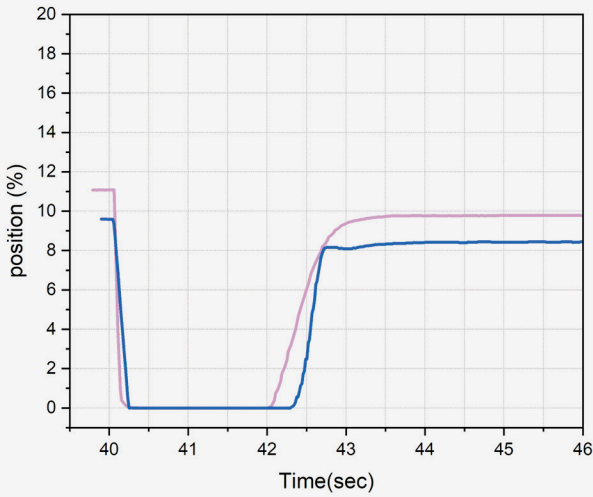
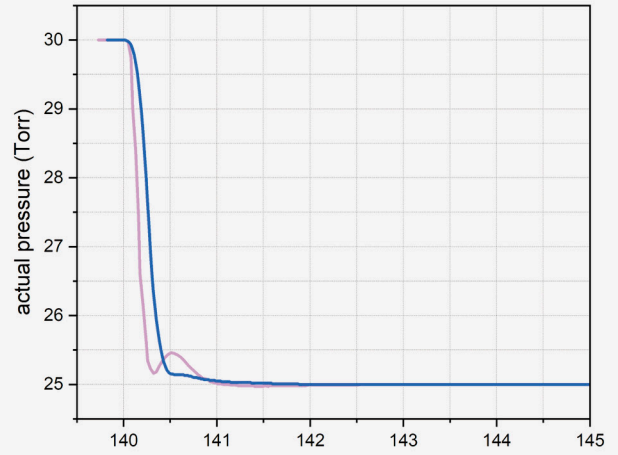
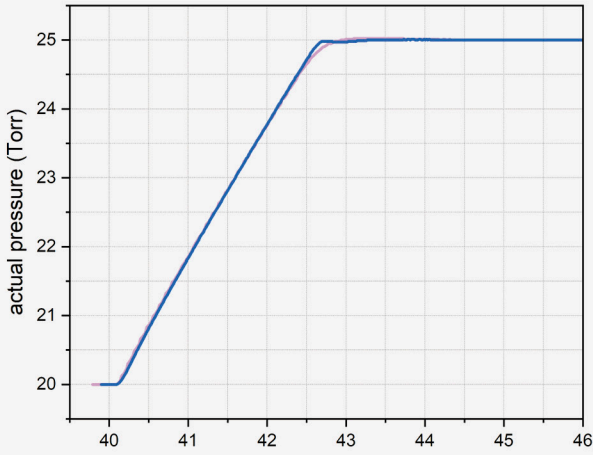
Setup & Management S/W



APC Butterfly Valve

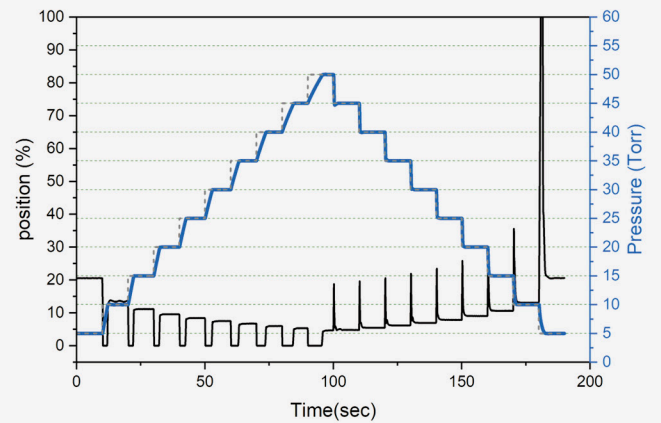
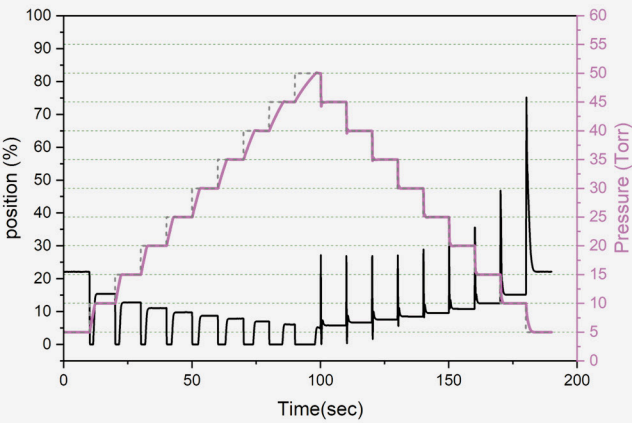
Control Performance

NOVASEN
Competitor

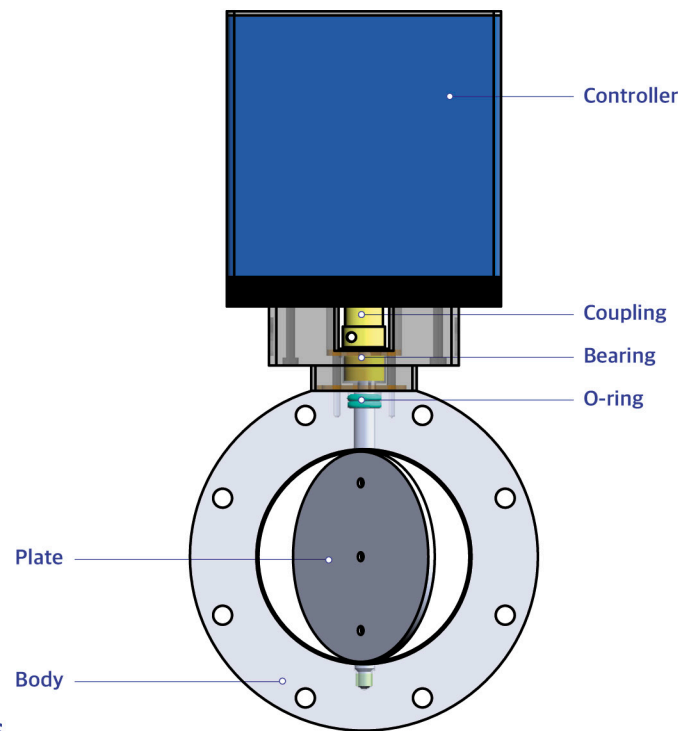


Pressure Up

Pressure Down



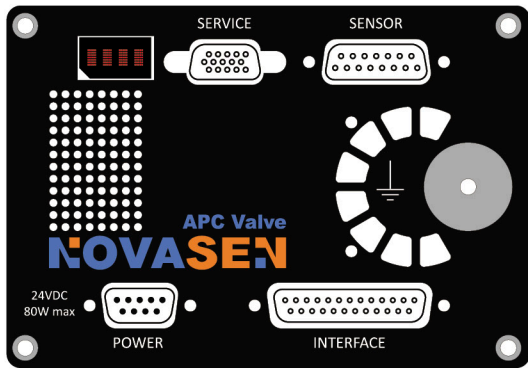
Control Response



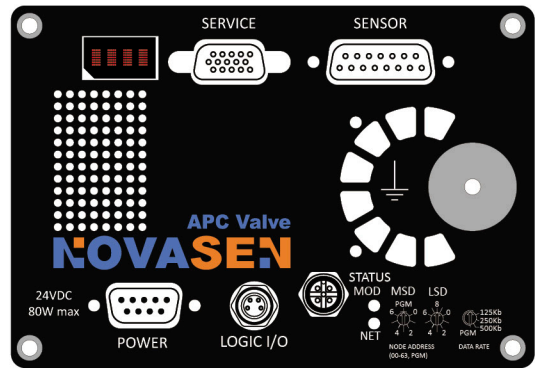
Product Specifications

Pressure range at 20°C	1 × 10E-8 mbar to 1.2 bar (abs)
Leak rate to outside at 20°C	1 × 10E-9 mbar l/s
Cycles until first service	2,000,000 (unheated and under clean conditions)
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 - Shaft - Plate screws	Body, Plate - Stainless steel 304 , Aluminum 6061 Shaft - Stainless steel 316L Plate screws - Stainless steel 304
- Shaft seal	Viton® (standard). Other materials available on request. Seal materials are declared on dimensional drawing of specific valve ordering number.
- Slide bearing for shaft	iglidur® X
Power input ¹⁾	+24 VDC (±10%) @ 0.5V pk-pk max.[connector: POWER]
Power Consumption	80 W max. (operation of valve with max. load) without PFO4)
Sensor power supply ²⁾	+24 VDC / 1500 mA max. [connector: POWER]
- Input - Output	±15 VDC (±5%) / 667 mA max. [connector: SENSOR]
Sensor input	0-10 VDC / Ri>100 kΩ [connector: SENSOR]
- Signal input - ADC resolution - Sampling time	0.16 mV 1 ms
Digital inputs ³⁾	±24 VDC max.
Digital outputs ³⁾	70 VDC or 70 V peak max. 0.5 ADC or 0.5 A peak max. 10 W max.
- Input voltage - Input current - Breaking capacity	
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

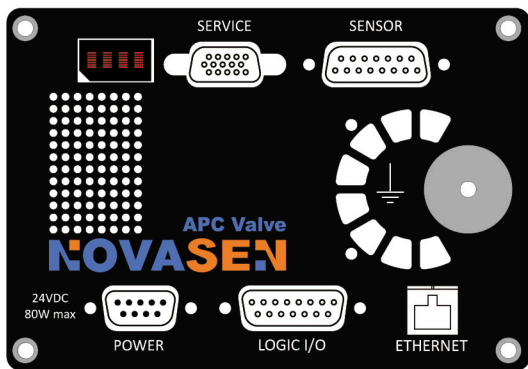
1) Internal overcurrent protection by a PTC device. 2) Refer to chapter «Sensor supply concepts» for details. 3) Refer to chapter «Schematics» for details.



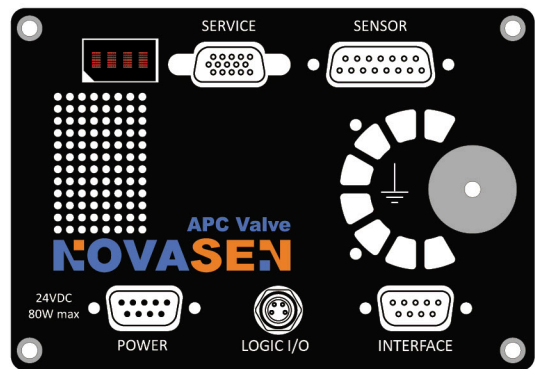
RS232, Logic, RS422, RS485



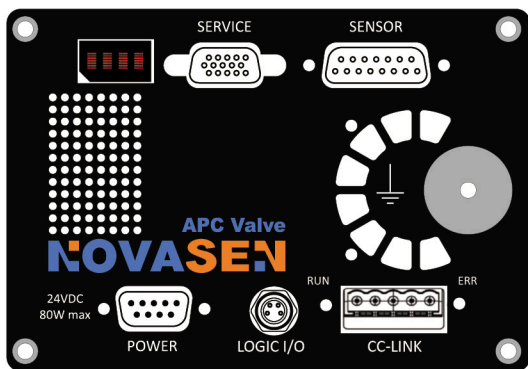
DeviceNet



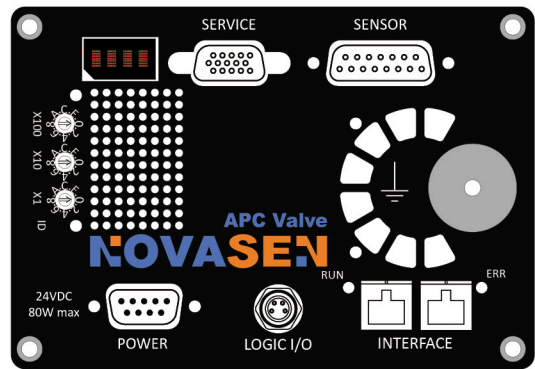
Ethernet



Profibus



CC-Link

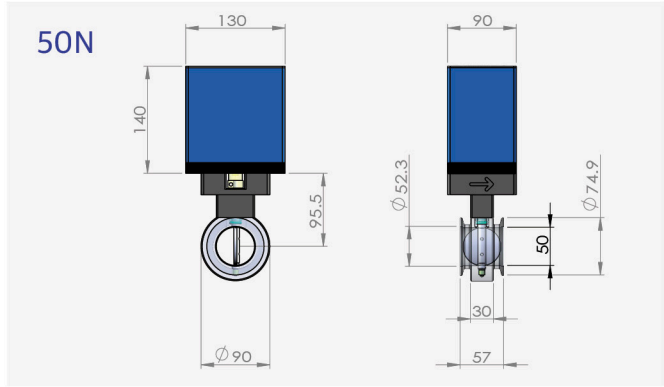
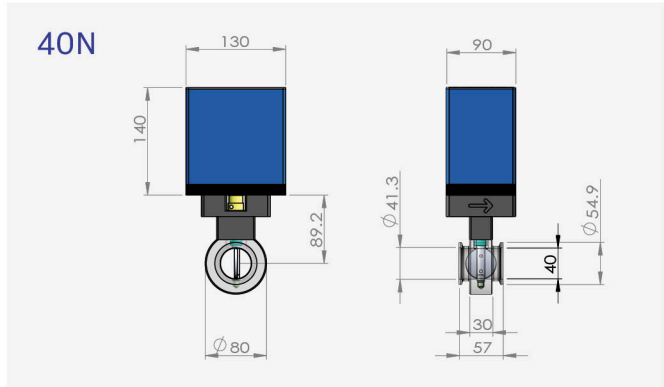
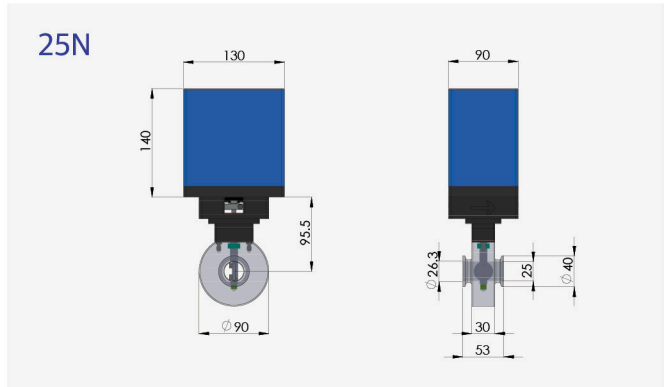


EtherCAT

ELECTRICAL CONNECTIONS

	CONNECTION	TYPE
POWER	Power input	DB-9 male
SENSOR	Sensor input	DB-15 female
	Sensor power supply	
INTERFACE	RS232, Logic, RS422, RS485	DB-25 female
	DeviceNet®	Micro-style male
	Ethernet	RJ-45
BUS Modules	Profibus	DB-9 female
	CC-Link	5-pole terminal screw
	EtherCAT	RJ-45 x 2

BUTTERFLY
Non-Sealing
 25N / 40N / 50N



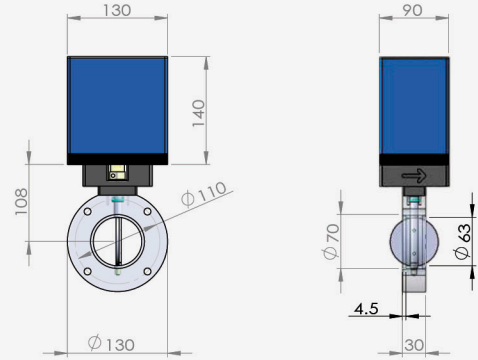
Product Specification

DN (nominal I.D.)		Conductance in open position (molecular flow)	Minimum controllable conductance (molecular flow)	Max. differential pressure	Typical closing / opening time	Weight(approx.)			
						Aluminum		Stainless steel	
mm	inch	ls-1	ls-1	mbar	s	kg	lbs	kg	lbs
25	1	22	0.25	1,000	0.3	2.9	6.5	4.0	8.8
40	1½	80	0.25	1,000	0.3	2.8	6.3	3.9	8.6
50	2	150	0.3	1,000	0.3	2.9	6.4	4.1	9.0

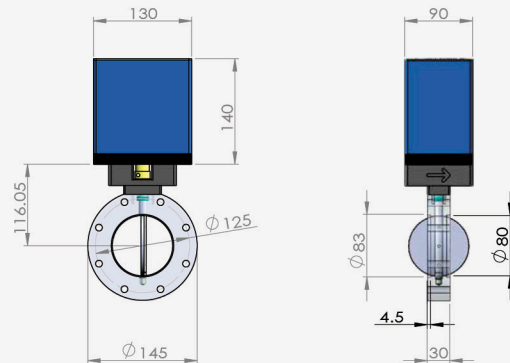
BUTTERFLY
Non-Sealing
 63N / 80N



63N



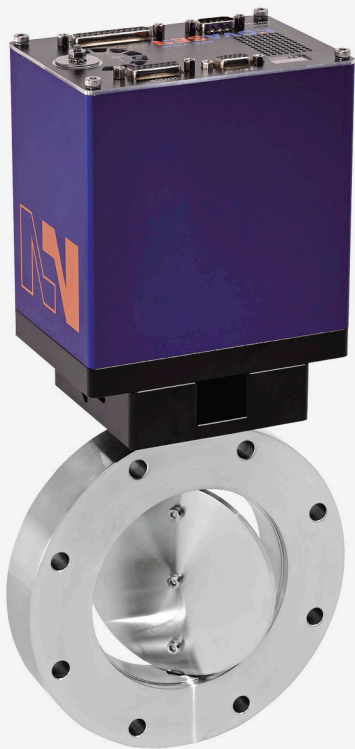
80N



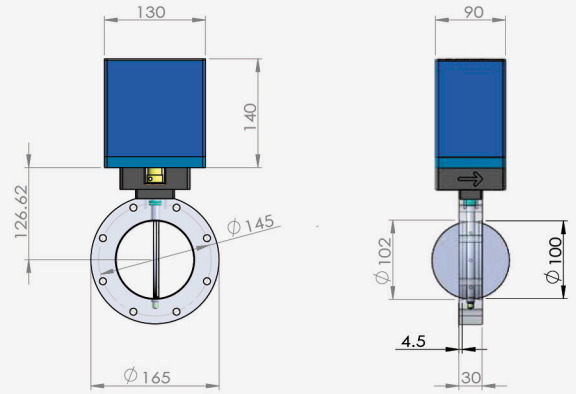
Product Specification

DN (nominal I.D.)		Conductance in open position (molecular flow)	Minimum controllable conductance (molecular flow)	Max. differential pressure	Typical closing / opening time	Weight(approx.)			
						Aluminum		Stainless steel	
mm	inch	ls-1	ls-1	mbar	s	kg	lbs	kg	lbs
63	2½	360	0.45	1,000	0.3	3.3	7.2	5.2	11.5
80	3	850	0.65	1,000	0.3	3.4	7.5	5.5	12.1

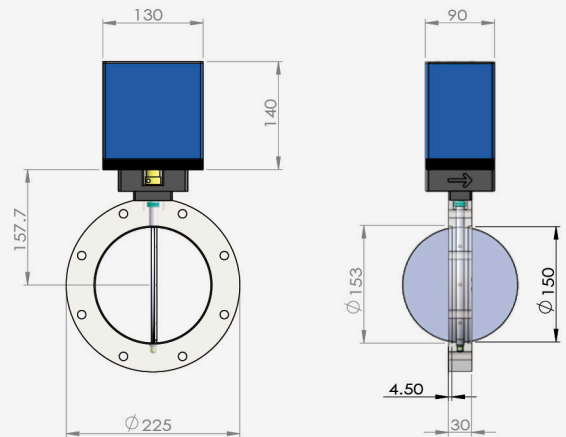
BUTTERFLY
Non-Sealing
 100N / 160N



100N



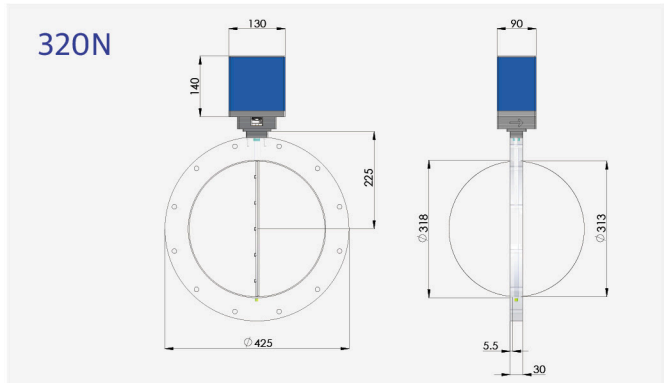
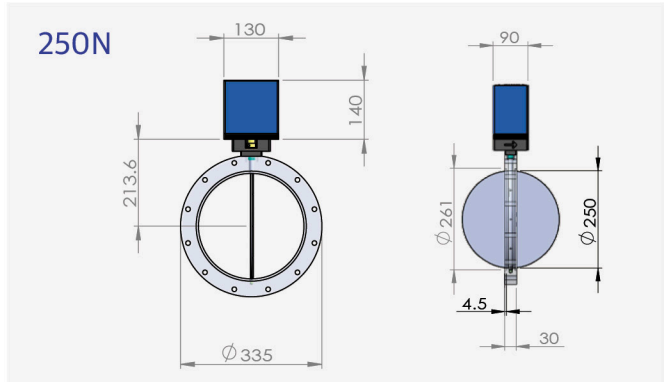
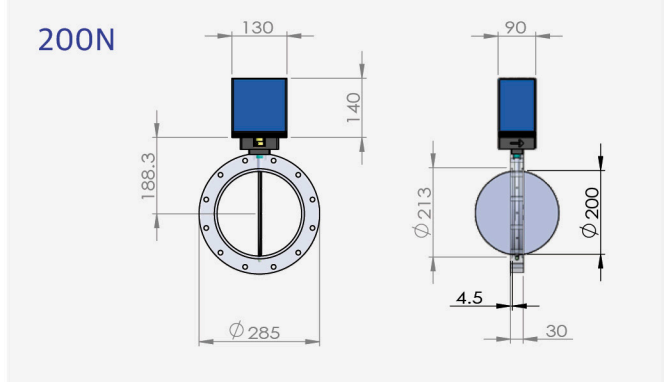
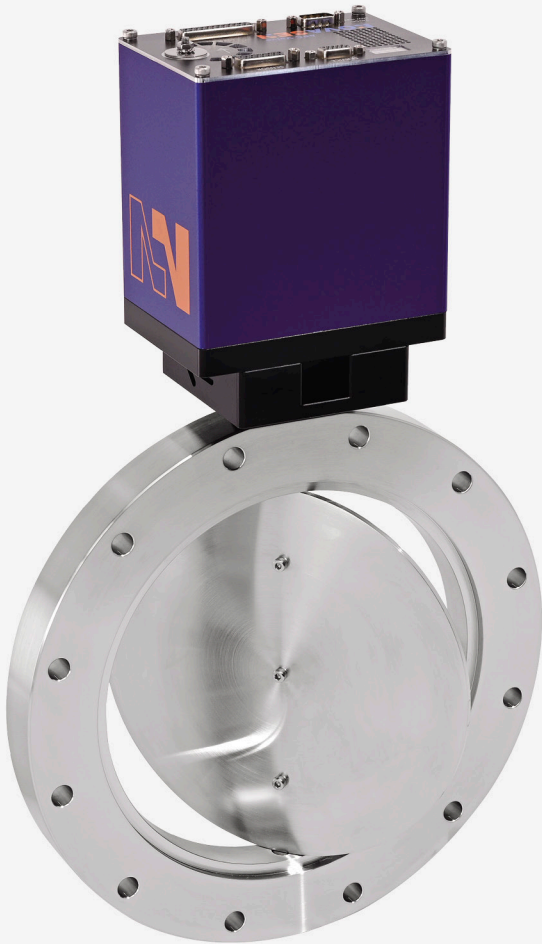
160N



Product Specification

DN (nominal I.D.)		Conductance in open position (molecular flow)	Minimum controllable conductance (molecular flow)	Max. differential pressure	Typical closing / opening time	Weight(approx.)			
						Aluminum		Stainless steel	
mm	inch	ls-1	ls-1	mbar	s	kg	lbs	kg	lbs
100	4	1,400	0.85	800	0.3	3.6	7.9	6.1	13.4
160	6	3,800	1.7	300	0.3	4.3	9.5	8.3	18.3

BUTTERFLY
Non-Sealing
 200N / 250N / 320N



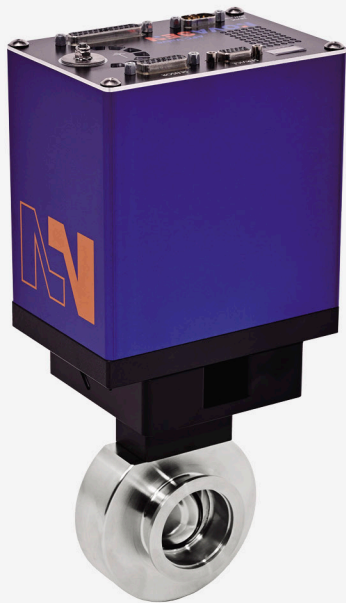
Product Specification

DN (nominal I.D.)		Conductance in open position (molecular flow)	Minimum controllable conductance (molecular flow)	Max. differential pressure	Typical closing / opening time	Weight(approx.)			
						Aluminum		Stainless steel	
mm	inch	ls-1	ls-1	mbar	s	kg	lbs	kg	lbs
200	8	7,800	2.8	150	0.3	5.2	11.5	10.9	24.0
250	10	15,000	5.0	100	0.3	5.9	13.0	13.0	28.7
320	12	27,000	6	75	1	7.7	17.0	18.0	39.6

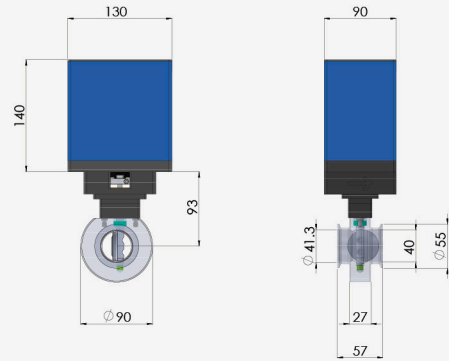
BUTTERFLY

Sealing

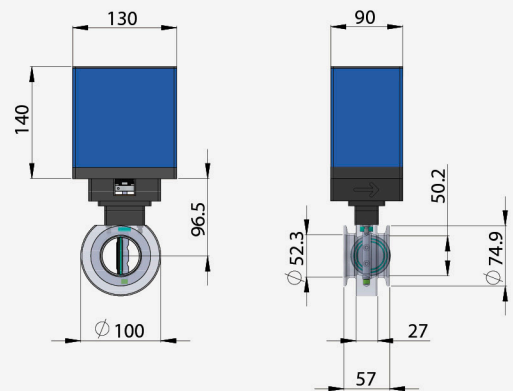
40S / 50S



40S



50S



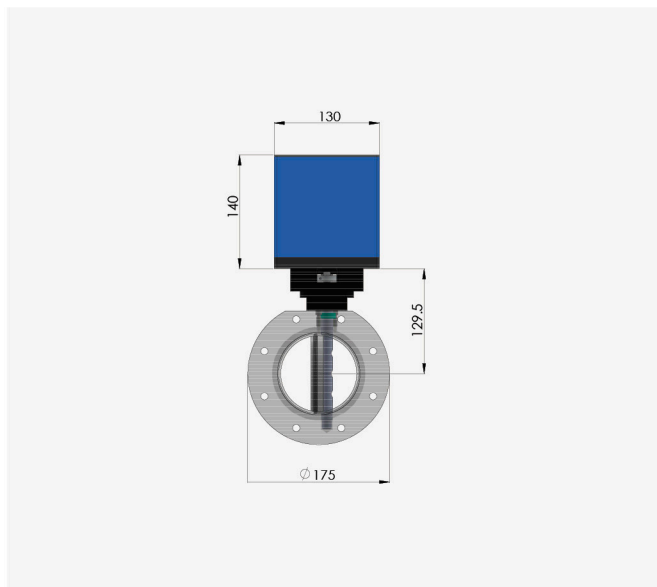
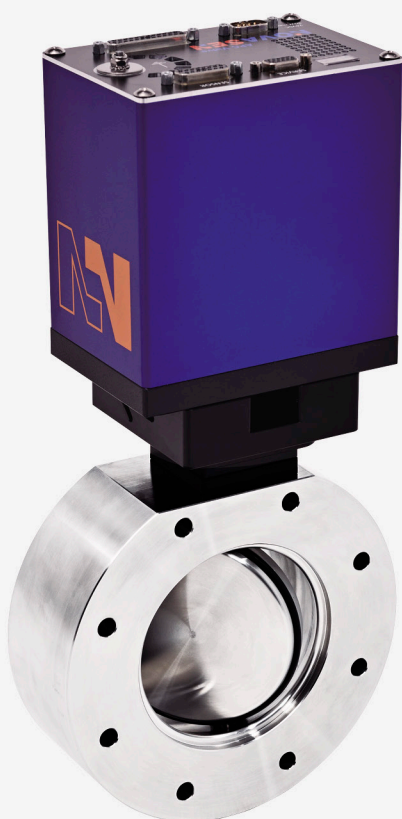
Product Specification

DN (nominal I.D.)		Conductance in open position (molecular flow)	Minimum controllable conductance (molecular flow)	Max. differential pressure	Typical closing / opening time	Weight(approx.)			
mm	inch					Aluminum		Stainless steel	
mm	inch	ls-1	ls-1	mbar	s	kg	lbs	kg	lbs
40	1½	60	0.05	1,000	0.6	2.8	6.2	3.6	7.8
50	2	120	0.1	1,000	0.6	2.9	6.3	3.8	8.4

BUTTERFLY

Sealing

100S



Product Specification

DN (nominal I.D.)		Conductance in open position (molecular flow)	Minimum controllable conductance (molecular flow)	Max. differential pressure	Typical closing / opening time	Weight(approx.)			
						Aluminum		Stainless steel	
mm	inch	ls-1	ls-1	mbar	s	kg	lbs	kg	lbs
100	4	600	0.25	1,000	0.6	4.9	10.9	9.9	21.7

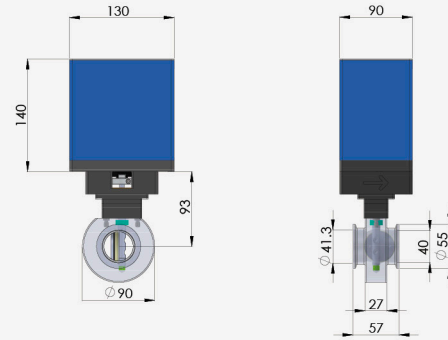
BUTTERFLY

Sealing (F-cup)

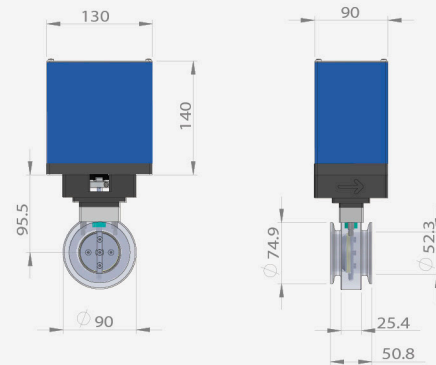
40F / 50F



40F



50F



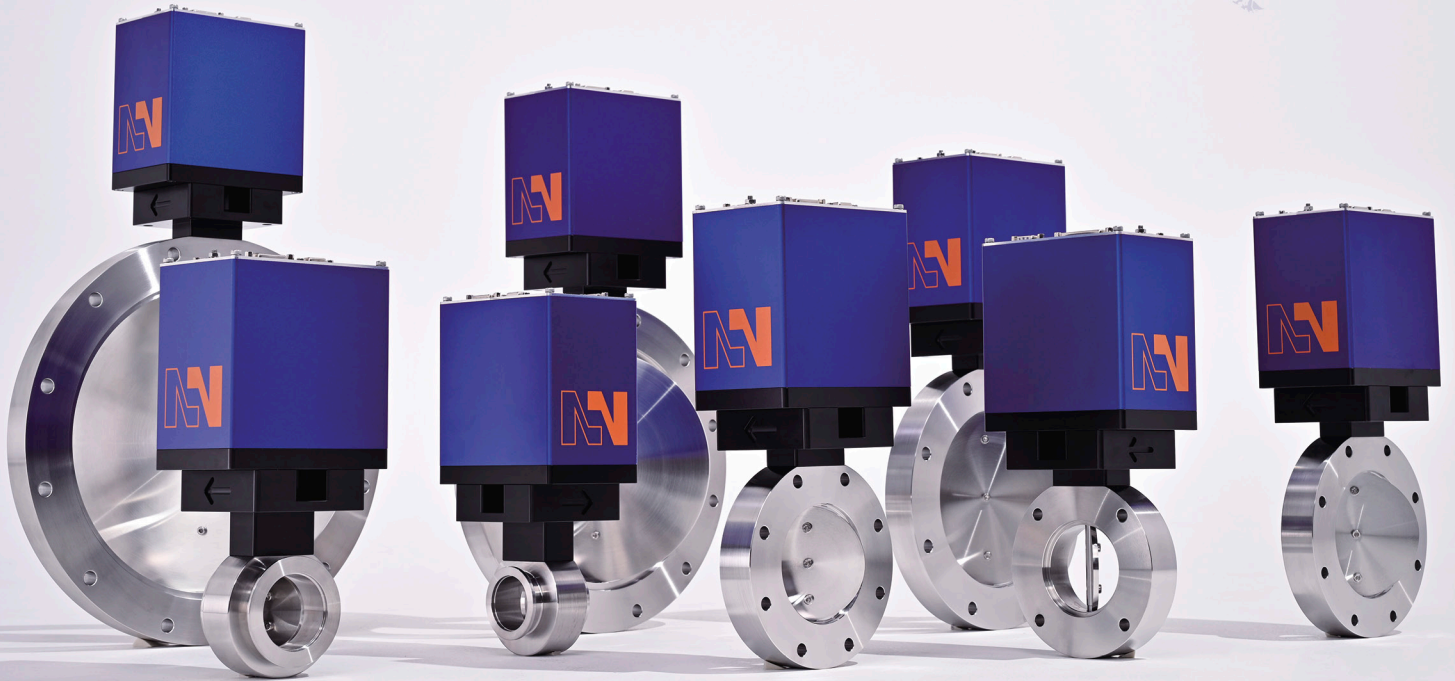
Product Specification

DN (nominal I.D.)		Conductance in open position (molecular flow)	Minimum controllable conductance (molecular flow)	Max. differential pressure	Typical closing / opening time	Weight(approx.)			
						Aluminum		Stainless steel	
mm	inch	ls-1	ls-1	mbar	s	kg	lbs	kg	lbs
40	1½	31	0.25	1,000	0.6	2.8	6.2	3.6	7.9
50	2	150	0.7	1,000	0.6	2.9	6.4	3.9	8.5

NOVASEN

Vacuum Control Systems

NOVASEN provides reliable products and services.





NOVASEN

Head office | 25, Bansong-ro 525beon-gil,
Haeundae-gu, Busan, Republic of Korea

Branch | 508, 79, Bijeon 2-ro, Pyeongtaek-si,
Gyeonggi-do, Republic of Korea

T. +82-1600-4917 | E. vc-sales@novasen.net