

Shuttle Valve

200 Series
Pneumatic
Shuttle Valve



201 Series
Pneumatic
Shuttle Valve



Function Principle

This valve opens and closes through piston motion forced by compressed air. As fluid pressure acts onto valve seat, the piston experiences little resistance and thereby enables the valve to quickly open/close. The latest design improvement results in more efficient fluid dynamics and less pressure loss.

Applications

- Food & Beverage
- Air Separation
- Filling Operation
- Ceramic Molding
- Semi-conductor Cleaning
- Automobile
- Others

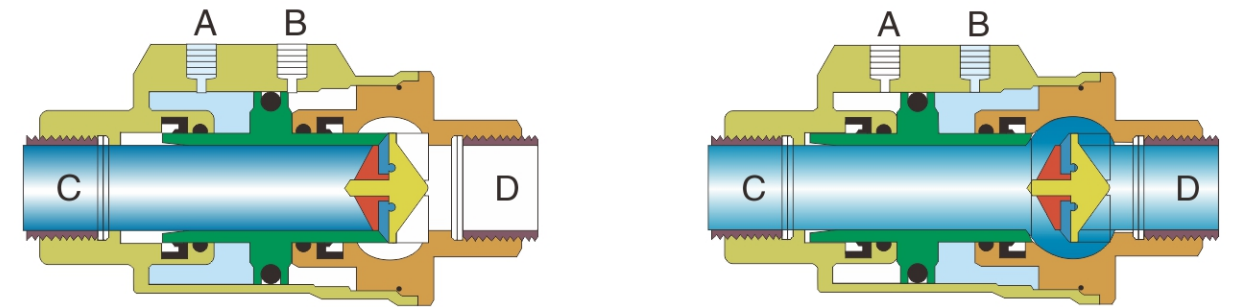
Advantages

- Compact and aesthetic design. Stainless steel body ensures superb durability.
- Easy to use with many possible mounting positions. Valve operates efficiently with minimum pressure loss.
- Excellent sealing, works well with relative vacuum

Technical Specification

- Operating pressure: 0–16bar (0–232psi)
- Control pressure: 3–8bar (43.5–116psi)
- Control medium: Filtered compressed air or neutral gas
- Body material: CF8M/CF8
- Seal material: EPDM/FPM
- Applicable medium: FKM–Suitable for most fluid, except for steam.
EPDM–Suitable for steam and hot water, unsuitable for oils, greases, fuels etc.
- Medium temperature: –20°C — +150°C (FPM),
–20°C — +130°C (EPDM)
- Ambient temperature: –20°C — +80°C
- Control type: Normally closed, Normally open,
Double acting normally closed, Double acting without spring
- Connection type: Threaded connection (BSP, BSPT, NPT)
- Leakage class: DIN EN 12266 Class A

Open/Close



Closing

When hole "A" is supplied with air (hole "B" must be discharging), the piston moves towards and eventually presses onto the seat, thereby closing the valve.

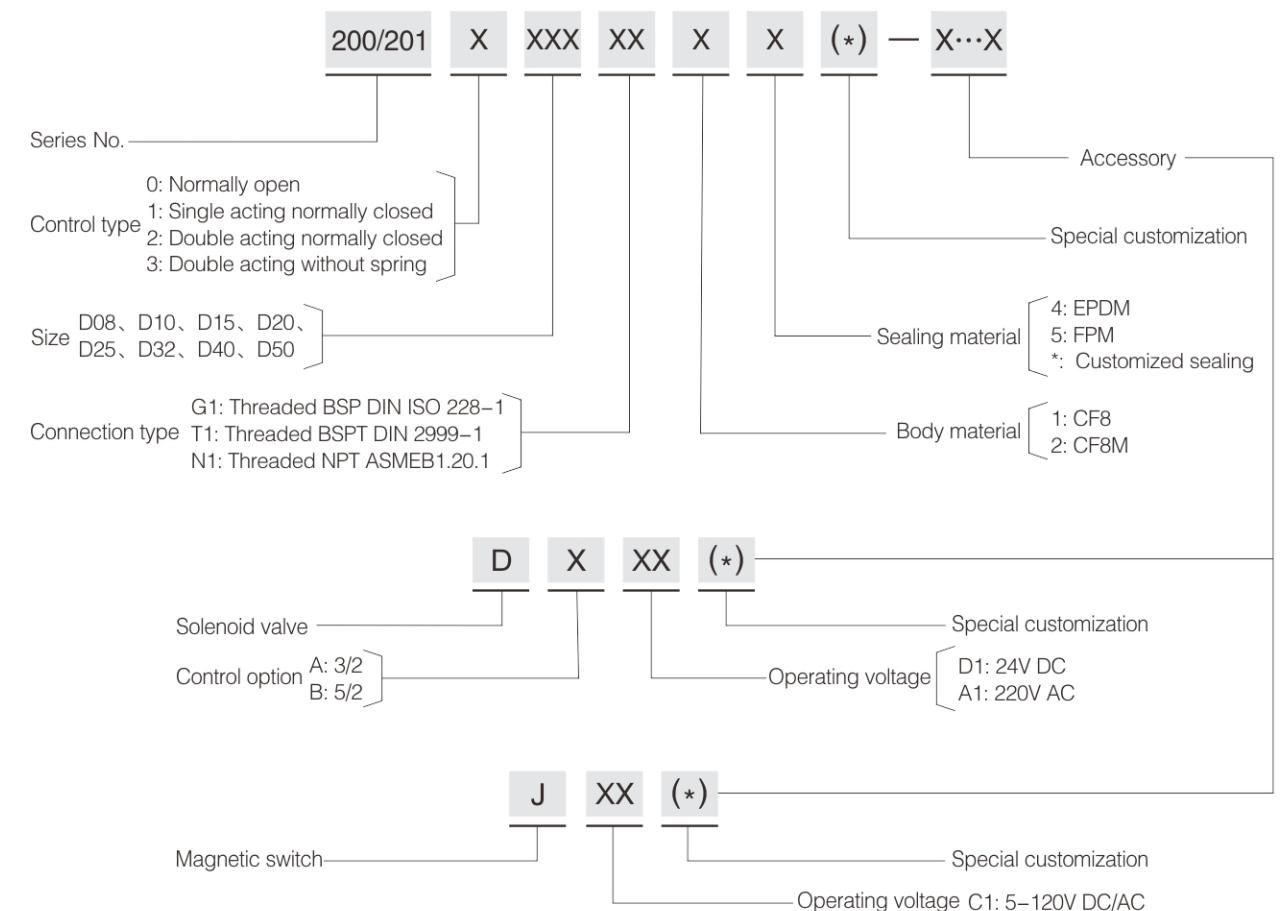
For a single acting N.C. shuttle valve, a spring is installed in "A" chamber, pressing the piston against seat seal and allowing the valve to remain closed in its idle state.

Opening

When hole "B" is supplied with air (hole "A" must be discharging), the piston move towards "C" and away from seat seal, thereby opening the valve.

For a single acting N.O. shuttle valve, a spring is installed in "B" chamber, forcing the piston away from seat seal and allowing the valve to remain open in its idle state.

Order Instruction



Shuttle Valve

200 Series Pressure Data Sheet

Single Acting, Normally Closed-Above Seat

Size	Interface	Orifice mm	Flow value Kv(m ³ /h)	Differential pressure range MPa	Control Pressure Mpa
DN10	G3/8"	10	3.2	0-1.6	0.3-0.5
DN15	G1/2"	15	6.4	0-1.6	0.4-0.5
DN20	G3/4"	20	8.9	0-1.6	0.4-0.5
DN25	G1"	25	13.7	0-1.6	0.3-0.5
DN32	G1 1/4"	32	21.6	0-1.6	0.3-0.5
DN40	G1 1/2"	40	36.5	0-1.6	0.3-0.5
DN50	G2"	50	55.0	0-1.6	0.5-0.6

Single Acting, Normally Closed-Below Seat

Size	Interface	Orifice mm	Flow value Kv(m ³ /h)	Differential pressure range MPa	Control Pressure Mpa
DN10	G3/8"	10	3.2	0-1.6	0.3
DN15	G1/2"	15	6.4	0-1.6	0.4
DN20	G3/4"	20	8.9	0-1.6	0.4
DN25	G1"	25	13.7	0-0.9	0.3
DN32	G1 1/4"	32	21.6	0-1.4	0.3
DN40	G1 1/2"	40	36.5	0-1.2	0.3
DN50	G2"	50	55.0	0-0.8	0.5

201 Series Pressure Data Sheet

Single Acting, Normally Closed-Above Seat

Size	Interface	Orifice mm	Flow value Kv(m ³ /h)	Differential pressure range MPa	Control Pressure Mpa
DN8	G1/4"	10	2.2	0-1.6	0.35-0.5
DN10	G3/8"	10	3.1	0-1.6	0.35-0.5
DN15	G1/2"	15	5.7	0-1.6	0.35-0.5
DN20	G3/4"	20	10.6	0-1.6	0.35-0.5
DN25	G1"	25	17.4	0-1.6	0.35-0.5
DN32	G1 1/4"	32	21.9	0-1.6	0.35-0.5
DN40	G1 1/2"	40	40.5	0-1.6	0.35-0.5
DN50	G2"	50	59.3	0-1.6	0.5-0.6

Single Acting, Normally Closed-Below Seat

Size	Interface	Orifice mm	Flow value Kv(m ³ /h)	Differential pressure range MPa	Control Pressure Mpa
DN8	G1/4"	10	2.2	0-1.6	0.35
DN10	G3/8"	10	3.1	0-1.6	0.35
DN15	G1/2"	15	5.7	0-1.2	0.35
DN20	G3/4"	20	10.6	0-1.6	0.35
DN25	G1"	25	17.4	0-1.6	0.35
DN32	G1 1/4"	32	21.9	0-1.2	0.35
DN40	G1 1/2"	40	40.5	0-0.8	0.35
DN50	G2"	50	59.3	0-0.8	0.5

Double Acting, Normally Closed-Above Seat

Size	Interface	Orifice mm	Flow value Kv(m ³ /h)	Differential pressure range MPa	Control Pressure Mpa
DN10	G3/8"	10	3.2	0-1.6	0.3-0.5
DN15	G1/2"	15	6.4	0-1.6	0.4-0.5
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DN25	G1"	25	13.7	0-1.6	0.3-0.7
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DN40	G1 1/2"	40	36.5	0-1.6	0.3-0.7
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DN15	G1/2"	15	5.7	0-1.6	0.35-0.5
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Double Acting, Normally Closed-Below Seat

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DN20	G3/4"	20	10.6	0-1.6	0.35-0.5
DN25	G1"	25	17.4	0-1.6	0.35-0.5
DN32	G1 1/4"	32	21.9	0-1.6	0.35-0.7
DN40	G1 1/2"	40	40.5	0-1.6	0.35-0.7
DN50	G2"	50	59.3	0-1.6	0.5-0.7

Normally Open-Above Seat

Size	Interface	Orifice mm	Flow value Kv(m ³ /h)	Differential pressure range MPa	Control Pressure Mpa
DN10	G3/8"	10	3.2	0-1.6	0.5
DN15	G1/2"	15	6.4	0-1.6	0.5
DN20	G3/4"	20	8.9	0-1.6	0.5
DN25	G1"	25	13.7	0-1.6	0.5
DN32	G1 1/4"	32	21.6	0-1.6	0.5
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DN50	G2"	50	55.0	0-1.6	0.6

Normally Open-Below Seat

Size	Interface	Orifice mm	Flow value Kv(m ³ /h)	Differential pressure range MPa	Control Pressure Mpa
DN10	G3/8"	10	3.2	0-1.6	0.5
DN15	G1/2"	15	6.4	0-1.6	0.5
DN20	G3/4"	20	8.9	0-1.6	0.5
DN25	G1"	25	13.7	0-1.6	0.7
DN32	G1 1/4"	32	21.6	0-1.6	0.7
DN40	G1 1/2"	40	36.5	0-1.6	0.7
DN50	G2"	50	55.0	0-1.6	0.7

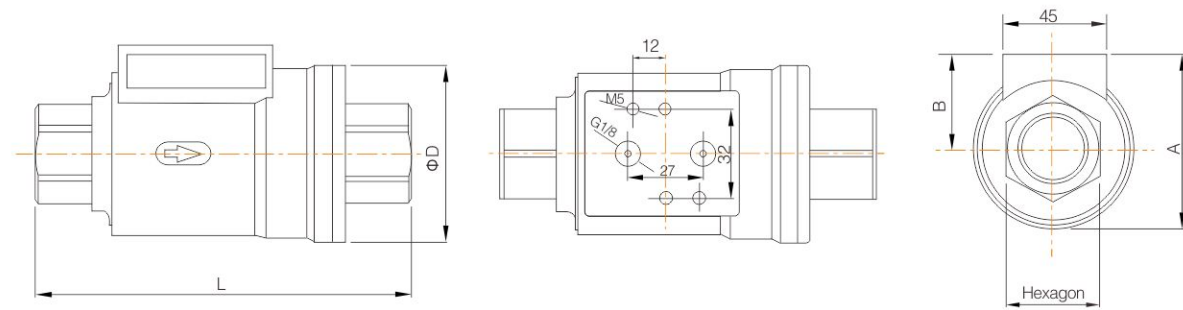
Normally Open-Above Seat

Size	Interface	Orifice mm	Flow value Kv(m ³ /h)	Differential pressure range MPa	Control Pressure Mpa
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DN10	G3/8"	10	3.1	0-1.6	0.5
DN15	G1/2"	15	5.7	0-1.6	0.5
DN20	G3/4"	20	10.6	0-1.6	0.5
DN25	G1"	25	17.4	0-1.6	0.5
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Normally Open-Below Seat

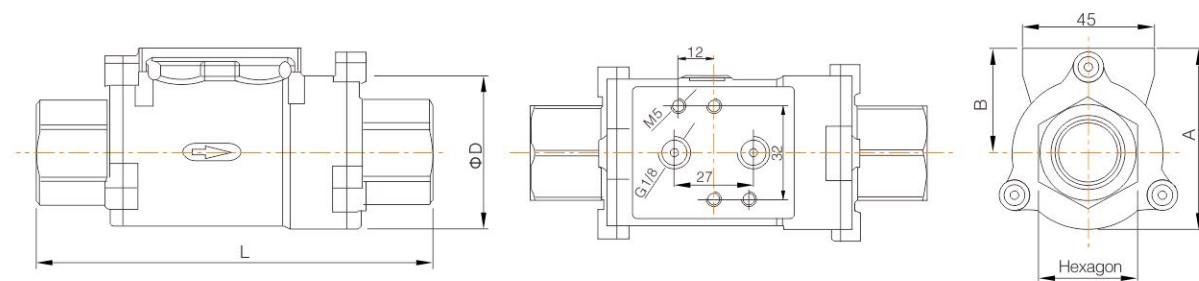
Size	Interface	Orifice mm	Flow value Kv(m ³ /h)	Differential pressure range MPa	Control Pressure Mpa
DN8	G1/4"	10	2.2	0-1.6	0.5
DN10	G3/8"	10	3.1	0-1.6	0.5
DN15	G1/2"	15	5.7	0-1.6	0.7
DN20	G3/4"	20	10.6	0-1.6	0.5
DN25	G1"	25	17.4	0-1.6	0.5
DN32	G1 1/4"	32	21.9	0-1.6	0.7
DN40	G1 1/2"	40	40.5	0-1.6	0.7
DN50	G2"	50	59.3	0-1.6	0.7

Shuttle Valve



Main Dimension (200 Series)

Size	DN10	DN15	DN20	DN25	DN32	DN40	DN50
Thread end	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
A (mm)	56	61	72	78	94	104	116
ØD (mm)	46	52	64	69	86	96	108
Hexagon (mm)	22	26.5	32	41	50	56	70
B (mm)	33	35	40	43	51	56	62
L (mm)	98	112	135	143	165	180	207
Weight (Kg)	0.76	0.94	1.43	1.85	2.98	3.66	5.64



Main Dimension (201 Series)

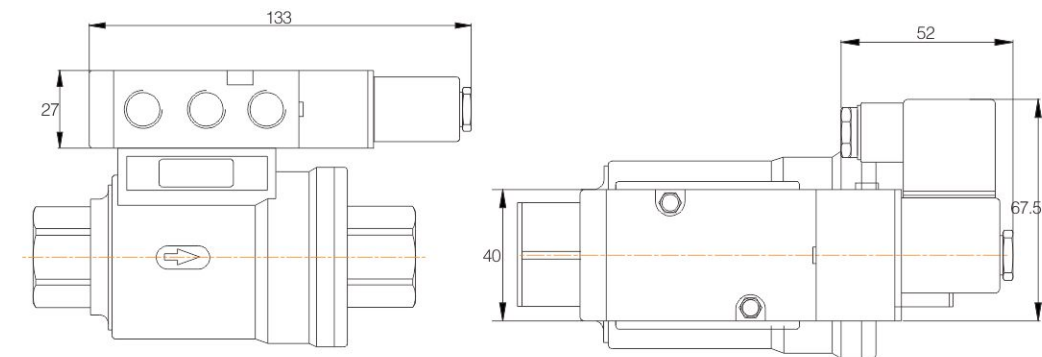
Size	DN8	DN10	DN15	DN20	DN25	DN32	DN40	DN50
Thread end	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
A (mm)	49.5	49.5	53.3	63.5	70	85.5	95	109
ØD (mm)	37	37	42.5	52	60	75	84	97
Hexagon (mm)	22	22	26	32	40	49	53	68
B (mm)	31	31	32	37.5	40	48	53	60
L (mm)	98	98	112	135	143	165	180	207
Weight (Kg)	0.54	0.54	0.67	1.05	1.45	2.32	2.82	4.38

Shuttle Valve
with Solenoid Valve



Solenoid Valve

2/5 way NAMUR solenoid valve is suitable for 200 and 201 series.



Technical Specification

- Connection type: G1/4"
- Air pressure: 3–8bar (43.5–116psi)
- Power: 220V AC 24V DC
- Voltage range: ± 10%
- Power consumption: AC 4.5W DC 3W
- Ambient temperature: 5°C — 55°C
- Max frequency: 3 times/second
- Protection level: IP65
- Leakage class: DIN EN 12266 Class A

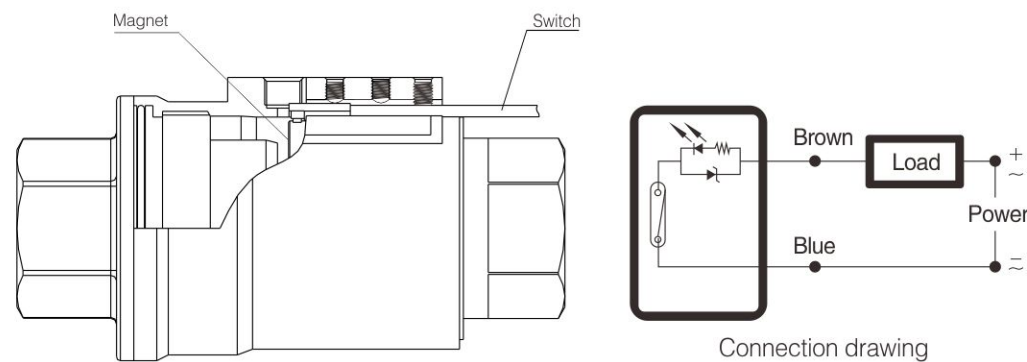
Shuttle Valve

Shuttle Valve with
Magnetic Switch



Magnetic Switch

Magnetic switch mounted on 200 series shuttle valve can indicate the valve operating state and feedback open/close status signal.



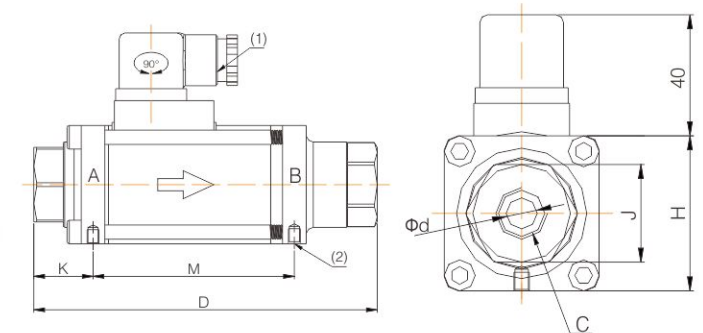
Technical Specification

- Size: DN10–DN50
- Indication: Red LED
- Power: 5–120V DC/AC
- Max.current: 100mA
- Cable: 2PVC cables
- Working temperature: -10°C — $+70^{\circ}\text{C}$
- Protection: IP67
- Leakage class: DIN EN 12266 Class A

Note: Since the magnets must be assembled inside the valve, the limit switches must be requested when ordering the valve.

Solenoid Shuttle Valve

202 Series
Two-way Solenoid
Coaxial Valve



Technical Specification

- Control type: Direct acting
- Connection type: Thread (BSP, NPT, BSPT)
- Operating pressure: A→B: 40bar (580psi), B→A: 12bar (174psi)
- Applicable fluid: Neutral gas or liquid
- Medium viscosity: 500cst (mm^2/s)
- Medium temperature: -20°C to $+130^{\circ}\text{C}$
- Ambient temperature: -30°C — $+60^{\circ}\text{C}$
- Body material: CF8/CF8M
- Seal materials: FPM
- Power: DC, 24V
- Protection: IP65
- Leakage class: DIN EN 12266 Class A

Function Principle

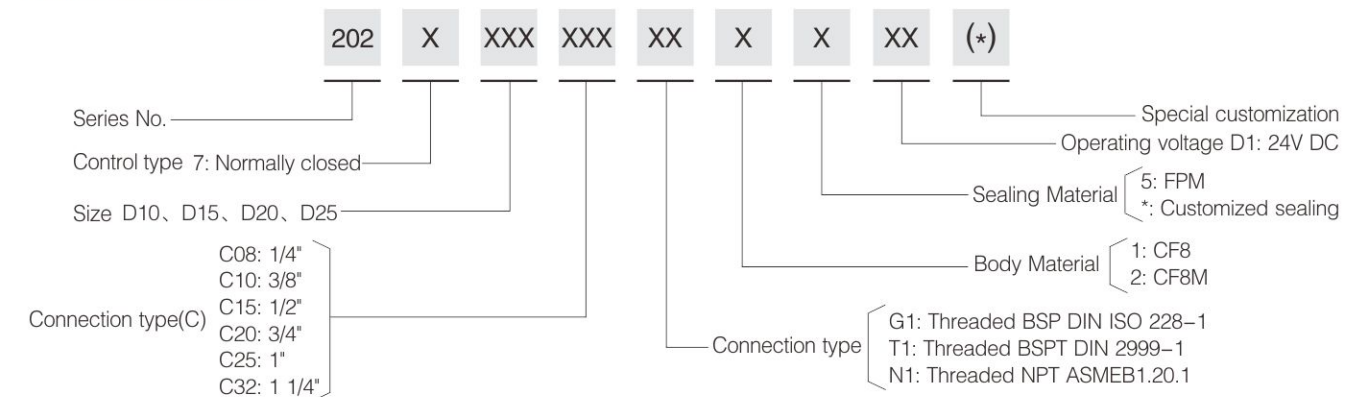
Normally Closed (closed when turned off)
When turned on, electromagnetic force opens the valve; When turned off, spring force closes the valve.

Main Dimension

Size	C	Φd	D	K	M	J	H	KV (m^3/h)	Voltage parameter		Opening and closing time (Pressure 4bar)	
									Nominal voltage	Nominal current	Open(ms)	Close(ms)
DN10	G 1/4"	10	145	25	85	32	50	1.8	DC 24V	DC 1.2A	45	70
	G 3/8"											
	G 1/2"											
DN15	G 3/4"	15	173	31	103	41	70	5.1	DC 24V	DC 1.6A	60	130
	G 1/2"											
DN20	G 3/4"	20	193	35	111	46	80	7.2	DC 24V	DC 2.0A	105	150
	G 1"											
DN25	G 1"	25	212	36	121	50	90	10.7	DC 24V	DC 2.2A	150	190
	G 1 1/4"											

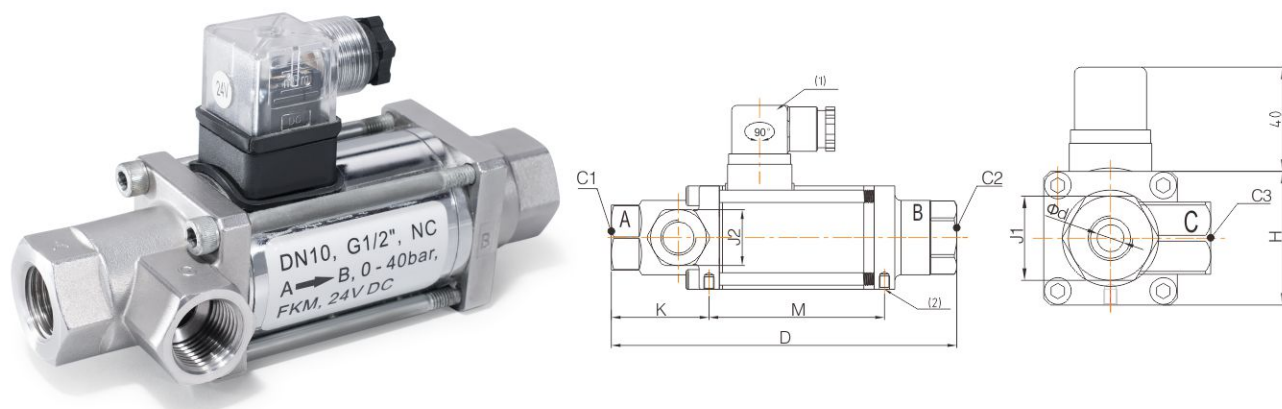
Note: (1) Connector rectifier for DC (2) 2 mounting holes M5

Order Instruction



Solenoid Shuttle Valve

203 Series
Three-way Solenoid
Coaxial Valve



Technical Specification

- Control type: Direct acting
- Connection type: Thread (BSP,NPT,BSPT)
- Operating pressure: 7bar (102psi)
- Control medium: Gas
- Medium temperature: -20°C — $+130^{\circ}\text{C}$
- Ambient temperature: -30°C — $+60^{\circ}\text{C}$
- Body material: CF8
- Seal material: FPM
- Control type: NC
- Control power: 24V DC
- Protection: IP65
- Leakage class: DIN EN 12266 Class A

Function Principle

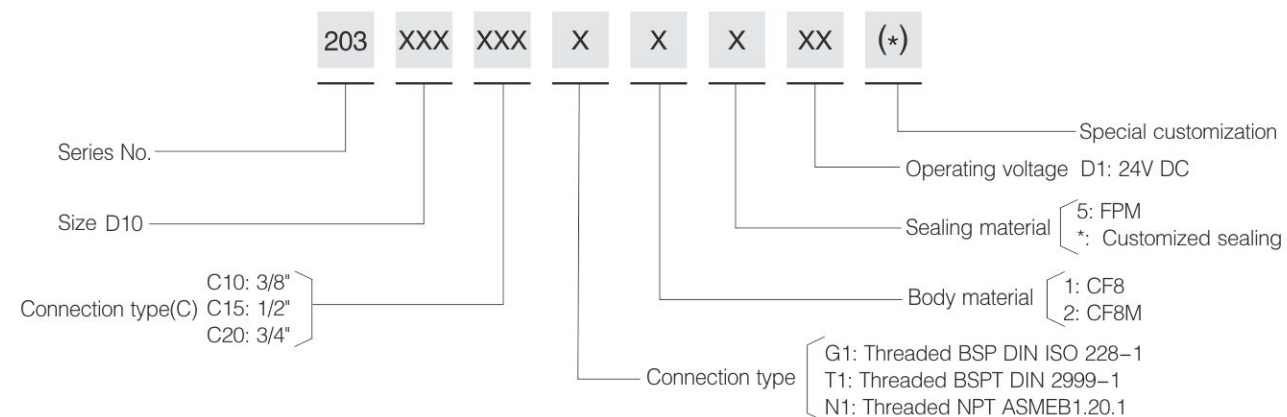
Power off: A&B port are NC, A&C port are NO.
Power on: A&B port are NO, A&C part are NC.

Main Dimension

Size	Φd	C1	C2	C3	D	K	M	J1	J2	H	Nominal voltage	Nominal current
DN10	10	G 3/8"	G 3/8"	G 3/8"	166	46.5	84.5	32	27	50	24V DC	DC 1.2A
		G 1/2"	G 1/2"	G 1/2"								
		G 3/4"	G 3/4"	G 1/2"								

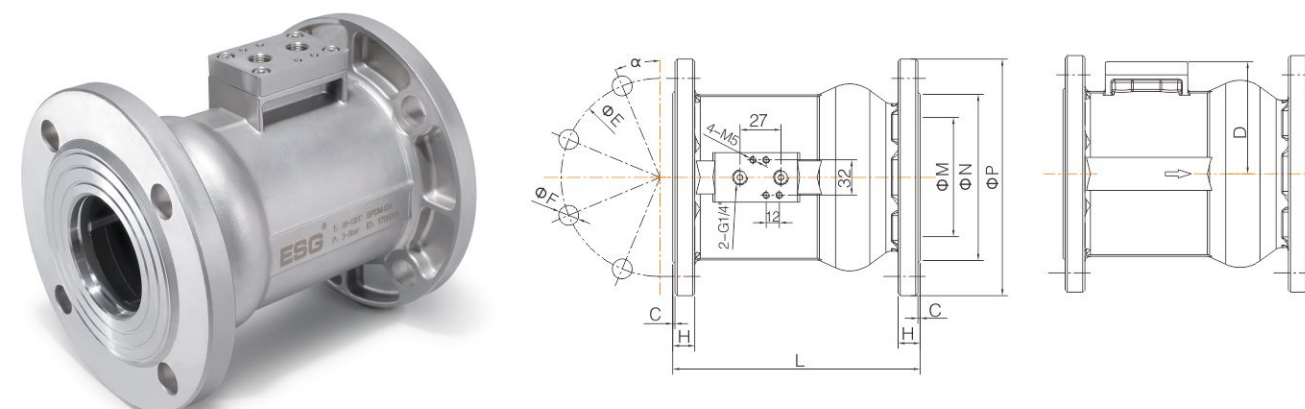
Note: (1) Connector rectifier for DC (2) 2 mounting holes M5

Order Instruction



Shuttle Valve

204 Series
Flanged
Shuttle Valve



Technical Specification

- Operating pressure: Above seat 0–16bar (0–232psi)
Below seat 0–12bar (0–174psi)
- Control pressure: 3–5bar (43.5–72.5psi)
- Control fluid: Filtered compressed air or neutral gas
- Body material: CF8
- Seal material: EPDM/(FKM can be customized)
- Applicable medium: EPDM–Suitable for steam and hot water, unsuitable for oils, greases, fuels, etc.
FKM–Suitable for most fluid, except for steam.
- Fluid temperature: -20°C — $+130^{\circ}\text{C}$ (EPDM)
- Ambient temperature: -20°C — $+80^{\circ}\text{C}$
- Control type: Double acting
- Connection type: Flange (JB/T82.1–1994; DIN2543–2000)
- Leakage class: DIN EN 12266 Class A

Main Dimension

Size	D	L	ΦE	ΦF	H	C	ΦM	ΦN	ΦP	α	Flow value Kv(m ³ /h)	Weight (kg)
DN65	85	192	145	4- ϕ 18	20	2	66	120	180	45°	139.3	10.0
DN80	92	212	160	8- ϕ 18	22	2	75	135	195	22.5°	202.6	13.32
DN100	102	227	180	8- ϕ 18	22	2	94	155	215	22.5°	288	16.30

Order Instruction

