



CONTROL VALVE

PNEUMATIC | ELECTRIC | TEMPERATURE ACTUATED & ACCESSORIES

Pneumatic (Diaphragm/ Cylinder), Electric Motorized and Hydraulic

Pneumatic actuators (Diaphragm / Cylinder) use air pressure on either one or both sides of a diaphragm/ cylinder to provide the force to position the valve. Electric motorized actuators consist of reversible electric motors connected to the valve stem through a gear train that reduces rotational speed and increases torque.

Hydraulic actuators use a pressurized liquid on one or both sides of a piston to provide the force required to position the valve.

Quarter Turn Actuated & Accessories

A quarter-turn type actuator produces torque to provide rotary motion to operate a quarter-turn valve. A pneumatic actuator may be arranged to be spring-closed or spring-opened, with air pressure overcoming the spring to provide movement. A "double acting" actuator use air applied to different inlets to move the valve in the opening or closing direction.

Self Acting Temperature Control

Self-acting temperature control valve require no external power sources and are ideal for regulating the temperature of tanks, process streams and various types of industrial equipment.

Solenoid Valve

Solenoid actuators have a magnetic slug attached to the valve stem. The force to position the valve comes from the magnetic attraction between the slug on the valve stem and the coil of the electromagnet in the valve actuator.

Angle Seat Valve

An angle seat piston valve is a pneumatically-controlled valve with a piston actuator providing linear actuation to lift a seal off its seat. The seat is set at an angle to provide the maximum possible flow when unseated. Angle seat piston valves are particularly suited to applications where high temperatures and large flowrates are required, such as steam or water. When used in reverse some models of angle seat piston valve will eliminate water hammer when operated.

CONTROL VALVE

PNEUMATIC DIAPHRAGM / PNEUMATIC CYLINDER / ELECTRIC MOTORIZED / ELECTRO-HYDRAULIC

CARBON STEEL / ALLOY STEEL / STAINLESS STEEL

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APPLICATION

Suitable for water, steam, oil, gases, abrasive and non-abrasive media
(Refer to corrosion resistance table for valve materials selection).

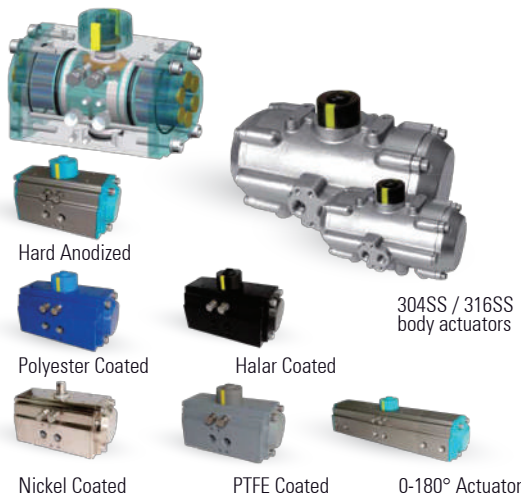
SPECIFICATION

Size Range	1/2" to 24"
Design Standard	ANSI B16.34 and ASME Section VIII
Face to Face	According to ISA S75.03 1984
Body Material	Carbon steel, A216 WCB, St. Steel CF8, CF8M, CF3, CF3M
Pressure Rating	Class 150# (JIS 10K, PN10), Class 300# (JIS 20K, PN16 and PN25), Class 600# (JIS 30K to 40K, PN40)
Bonnet Type	Plain (-17°C to 230°C), Extension (-45°C to -17°C, >230°C), Cryogenic (-196°C to -45°C)
Flow Characteristic	Equal %, Linear, Quick opening
Rangeability	10:1 to 100:1
Leakage Class	Metal seat - Rated ANSI Class IV,V, Soft seat - Rated ANSI Class V,VI
Connection	Screwed, Socket weld, Butt weld, Flanged end, ANSI, DIN and JIS

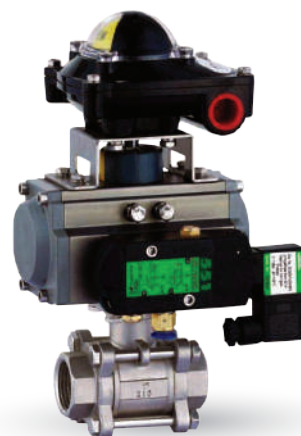
STANDARD BODY SPECIFICATION

Body Style	Straight Way (2 way globe) / Angle type / Bottom flanged 3 way / Top flanged 3 way
Bonnet	Plain (Standard) / Fin & Extensions / Bellows seal / Long extensions (Cryogenic service)
Size Range	1/2" to 24" (DN 15 to DN 600)
Pressure Rating	ANSI 150 Lb to 250 Lb JIS 10K to JIS 180K PN20 to PN420
Operating Pressure Range	Up to 4000 Psi (g) / Up to 280 Kg/cm ² (g)
Operating Temperature Range	-58°F to +1050°F / -50°C to +565°C Option : -320°F to +1562°F / -192°C to + 850°C
End Connection	Socket weld - ANSI B16.11 Butt weld - ANSI B16.25 FF/RF/RTJ flange - ANSI B16.5 Option : JIS flange, DIN flange, NPT/PT screw
Materials	Carbon Steel (WCB, WCC, A105) Chrome-moly Steel (WC6, WC9, C12A, F11, F22, F91) Stainless Steel (CF8, CF8M, CF3, CF3M, F304, F304L, F310, F316L) Duplex Stainless Steel, Monel, Al Bronze, Inconel 625, Hastelloy B/C, other Alloy
Actuator	Pneumatic diaphragm, Pneumatic cylinder, Electric motorized, Electro-hydraulic

*Specification given are subject to changed without further notice.



CONTROL VALVE QUARTER TURN ACTUATOR



RACK & PINION TYPE MATERIAL IN ALUMINUM ALLOY / 304SS / 316SS PNEUMATIC ACTUATOR

Certificated by CE-ATEX/SIL3

Aluminum Alloy body actuators range consist of 17 models with output torque from 9 Nm to 9,337 Nm at 6 bar air supply.

304SS / 316SS body actuators range consist of 8 models with torque from 24 Nm to 1,596 Nm at 6 bar air supply.

Bottom drilling complies with ISO5211/DIN3337 to match the valve. Drilling for assembling accessories are in accordance with VDI/VDE 3845(NAMUR standard) and $\pm 5^\circ$ stroke adjustment.

Aluminum Alloy actuator body & piston are over 30um hard anodized treatment and over 100um epoxy coated on end caps, and external bolts use 304SS. Which meet ASTM B117 certification (salt spread test over 1,000 hours and no corrosion).

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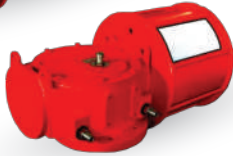
CONTROL VALVE QUARTER TURN ACTUATOR



Pneumatic Actuator
Single Acting Type



Pneumatic Actuator
Double Acting Type



Hydraulic Actuator
Single Acting Type



Scotch & Yoke Actuator



SCOTCH YOKE TYPE PNEUMATIC & HYDRAULIC ACTUATOR

Certificated by CE-ATEX/SIL3

The pneumatic & hydraulic actuators range consist of 10 sizes actuator frame with different sizes piston with output torque from 600 Nm to 226,000 Nm.

Bottom drilling complies with ISO5211/DIN3337 to match the valve. Top drilling are in accordance with VDI/VDE3845 (NAMUR standard) and $\pm 10^\circ$ stroke adjustment.

The ductile iron actuator frame & carbon steel piston, Removable modules design, Anti-corrosive painting, The inner surface of cylinder is coated by PTFE. Pre-loaded spring module, Rollers be used between the yoke arm and pin, Replaceable bearings protect sliding and rotating components.

The hydraulic override & manual override are optional.



IP67 enclosure (standard), IP68 (Tested at 30meters @24hours)
& ExdII BT6 (certificated by ATEX)

Approved by:
LVD - Low Voltage Directive 2006/95/EC
MD - Machinery Directive 2006/42/EC
EMC - Electromagnetic Compatibility Directive 2004/108/EC

QUARTER TURN ELECTRIC ACTUATOR

SIL3 Approval

15 models, The output torque from 50 Nm up to 6,000 Nm.

Bottom drilling complies with ISO5211 / DIN3337. Hard anodized treatment on both inside and outside of the housing coated with epoxy.

Manual override auto declutch mechanism, Self-lock gear mechanism.

Power supply : 1Ph/220VAC or 3Ph/380VAC as standard (Optional in 1ph/110VAC, 3ph/440VAC, 24VDC/VAC)
Control power supply : 24VDC or 220VAC.

Standard accessories : Anti condensation space heater, Auxiliary limit switches, Auxiliary torque switches.

Local control unit is optional. Modbus, Profibus, Canbus, Fail Safe ...etc. is optional

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CONTROL VALVE QUARTER TURN ACTUATOR



IP67 enclosure (standard), IP68 (Tested at 30meters @24hours)

Approved by:
 LVD - Low Voltage Directive 2006/95/EC
 MD - Machinery Directive 2006/42/EC
 EMC - Electromagnetic Compatibility Directive 2004/108/EC

QUARTER TURN ELECTRIC ACTUATOR

SIL3 Approval

14 models, The output torque from 20 Nm up to 6,000 Nm.

Bottom drilling complies with ISO5211/DIN3337. The epoxy coated body, Detachable crank Allen wrench, self lock gear mechanism

Power supply : 1Ph/220VAC or 3Ph/380VAC as standard (Optional in 1ph/110VAC, 3ph/440VAC, 24VDC/VAC)
 Control power supply : 24VDC or 220VAC.

Optional accessories : Anti condensation space heater, Auxiliary torque switches. Local Control Unit Handwheel

Mobus, Profibus, Canbus, Fail Safe ...etc. is optional
 IP67 enclosure (standard)
 IP68 is optional.

CONTROL VALVE QUARTER TURN ACTUATOR ACCESSORIES

Static Seal Design



316SS



3/2 & 5/2 WAY IN-LINE & NAMUR MOUNTED SOLENOID VALVE

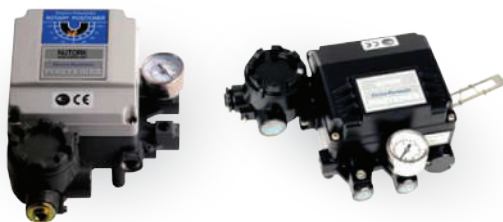
IEC/ATEX/FM/CSA Approved

- Spool valve structure
- Static seal design
- Material in aluminium alloy & 316SS
- Encapsulated coil in NASS coil
- EExdIICT6 coil enclosure in aluminium alloy & 316SS
- EExdIICT6 approved by ATEX

ROTARY & LINEAR TYPE E/P POSITIONER

NEPSI Approved

- The optional output signal:
 Mechanical switch & 4-20m ADC feedback
- The optional accessories:
 Air filter regulator or dome type indicator (only in IP66, rotary type)
- Enclosure in IP66, EExdIIBT6 & EExdIICT6 (approved by NEPSI)



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CONTROL VALVE

QUARTER TURN ACTUATOR ACCESSORIES



IP67 Enclosure (Standard)
IP68 (50M@72hrs tested by SGS)



IP67



316SS / ExdIIBT6
(ATEX Approved)

IP68 (30M@24hrs tested by TUV
ExdIIBT6 (ATEX Approved)

ExdIIBT6
(ATEX Approved)

POSITION MONITORING SWITCHBOX

ATEX Approved

- Sensor type:
 - Mechanical type (2,3 or 4 x SPDT, DPDT)
 - Proximity type (Autonics, P+K, Truck...)
- The optional output signal:
 - 4-20mA ADC or 0-5K/10K ohm potentiometer
- Housing material in aluminium alloy or 316SS
- Enclosure in IP67, ExdIIBT6 & ExdIIBT6 ATEX approved)
- IP68 enclosure tested in 30M/24hrs by TUV & 50M/72hrs by SGS

MANUAL OVERRIDE (DECLUTCHABLE WORMGEAR OPERATOR)



Max output torque 70,000Nm

- Cast iron / Aluminium alloy body
 - The output torque: 300 / 700 / 1200 / 3100Nm
- Ductile iron body
 - The output torque: 8500 / 12000 / 18000 / 25000 / 32000 / 70000Nm
- The actuators & valve connection complies with ISO5211 standard

AIR FILTER REGULATOR

NEPSI Approved

- 5um filtration & high flow capacity
- Panel mounting is optional
- 1/4" vented spring case is optional
- Housing material in aluminium alloy & 316SS
- Conn. size: 1/4" ~ 1"



316SS

316SS

SPEED CONTROLLER

Features

The speed controller is installed on actuators such as cylinders and air motors and controlsto adjust the flow through the actuator.



MUFFLER / SILENCER

Features

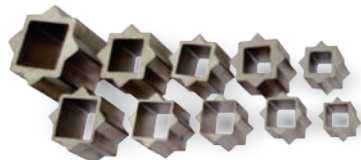
Mufflers are designed to attenuate the exhaust noise caused by control of pneumatic lines. In general, mufflers are mounted on the exhaust ports of solenoid valve, directional control valves and so on, to reduce exhaust noise when direction is changed. This contributes to overall noise reduction in plants.



STAR REDUCING ADAPTOR (STEEL ALLOY WITH ENP)

Features

Reductions for assembling the actuators on top of the valve.



PNEUMATIC FITTINGS (PU / BRASS / STAINLESS STEEL)

Features

Pneumatic fittings are parts used to connect sections of pipe, tube, and hose in pneumatic (pressurized gas) systems. Compared to hydraulic fittings, pneumatic fittings are typically characterized by tighter seals and lower pressure requirements.

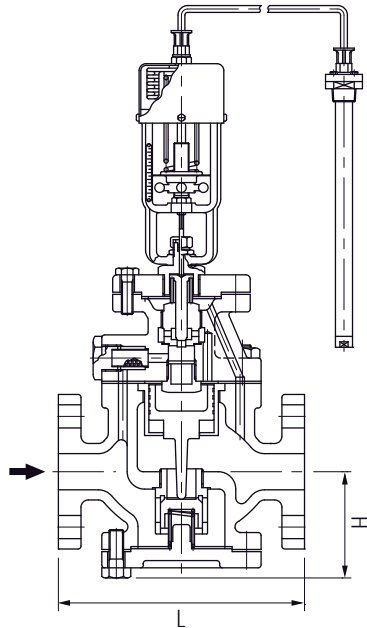


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CONTROL VALVE

SELF ACTING TEMPERATURE CONTROL

DUCTILE IRON / CAST IRON



APPLICATION

Suitable for water, steam, oil, gases and others non-abrasive media (Refer to corrosion resistance table for valve materials selection).

SPECIFICATION

Size Range	1/2" to 12"
Valve Range	2-way and 3-way
Design Construction	Single seated, Single seated pressure balance and double seated designed
Connection	Threaded end, Flanged end to DIN PN16, PN25, PN40

PRODUCT FEATURE

Working Pressure (kgf/cm ²)	Max 10
Temperature Range (°C)	40 ~ 120
Working Temperature (°C)	220
Valve Type	Pilot Acting
Connection	JIS 10K Flanged
Capillary Tube Length	2M, 3M, 5M
Materials	Body : Ductile Iron, Cast Iron Trim : Stainless Steel Sensor : Copper Tube

DIMENSIONS

Unit : mm

Part / Size (DN)	15	20	25	32	40	50	65	80	100
L	165	165	170	200	200	220	250	290	320
H1	75	75	75	85	85	92	110	130	150

ADJUSTING RANGE

Unit : °C

Adjusting (°C)	40 ~ 60	50 ~ 70	60 ~ 80	70 ~ 90	80 ~ 100
Max (°C)	70	80	90	100	110

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SOLENOID VALVE



MINIATURE & HIGH PRESSURE SOLENOID VALVE



2/2 WAY MINIATURE - DIRECT ACTING AND HIGH PRESSURE SOLENOID VALVE

Normally Closed or Normally Open Type
Connection Thread 1/8" - 1/2"
Body Material Brass, Stainless Steel, Plastic
Working Pressure 0 - 170 Bar

GENERAL SOLENOID VALVE



2/2 WAY ZERO DIFFERENTIAL PRESSURE - DIRECT ACTING SOLENOID VALVE

WITH WIRE TYPE / DIN TYPE

Normally Closed Type or Normally Open Type
Connection Thread 1/8" - 2"
Flanged 1" - 8"
Body Material Brass, Cast Iron, Stainless Steel
Working Pressure 0 - 10 Bar

HIGH TEMPERATURE STEAM SOLENOID VALVE



2/2 WAY - PISTON SOLENOID VALVE FOR HOT WATER , STEAM

Normally Closed or Normally Open Type
Connection Thread 1/4" - 2"
Flanged 1" - 8"
Body Material Brass, Stainless Steel
Working Pressure 0.1 - 16 Bar
Working Temperature 0°C - 180°C

SPECIAL-PURPOSE SOLENOID VALVE



2/2 WAY CORROSION RESISTANT SOLENOID VALVE

PTFE / CPVC / UPVC PISTON TYPE

Normally Closed or Normally Open Type
Connection Thread 3/8" - 2" and Flange DN15 - DN200
Body Material PTFE / CPVC / UPVC
Working Pressure 0.1 - 6 Bar
Working Temperature -5°C - 130°C

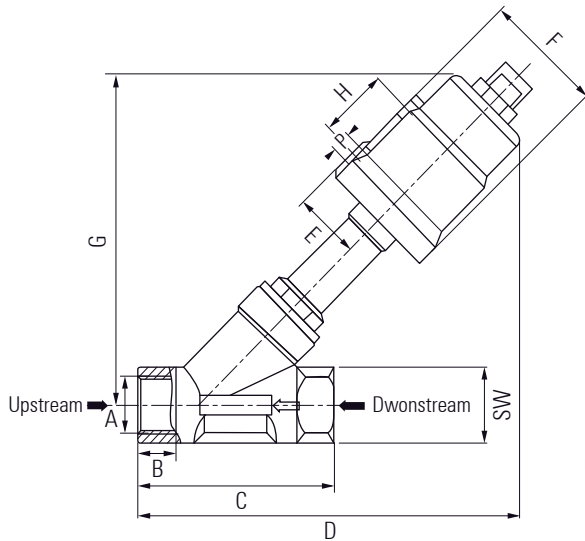
EXPLOSION-PROOF FLAMEPROOF SOLENOID VALVE



2/2 WAY EXPLOSION-PROOF FLAMEPROOF SOLENOID VALVE

Normally Closed or Normally Open Type
Connection Thread 3/8" - 2" and Flange DN15 - DN200
Body Material Brass, Cast Iron, Stainless Steel
Working Pressure 0 - 16 Bar
Working Temperature -5°C - 130°C

ANGLE SEAT VALVE SINGLE / DOUBLE ACTING PA / ALUMINIUM / STAINLESS STEEL



APPLICATION

Suitable for water, steam, oil, gases and non-abrasive media
 (Refer to corrosion resistance table for valve materials selection).

SPECIFICATION

End Connection	Female thread
Pressure Rating	Up to 25 Bar
Working Temperature	Up to 200°C

PRODUCT FEATURE

Model Specification	Normally Closed	P010NC	P015NC	P020NC	P025NC	P032NC	P040NC	P050NC	P065NC	P080NC
	Normally Open	P010NO	P015NO	P020NO	P025NO	P032NO	P040NO	P050NO	P065NO	P080NO
Material of Body	Gun Metal / SS304 / SS316 / SS316L									
Material of Actuator	PA / Aluminium / Stainless Steel									
Operating Method	Plunger Pilot									
Ambient and Fluid	Air, Water, Oil, Steam (50CTS Bellow)									
Port Size		3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"
Seat Seal	PTFE / FPM									
Stem Seal	PTFE / FPM									
Piston Seal	PTFE / FPM / NBR									
Temperature of Medium	PTFE	-10 ~ 200°C								
	FPM	-10 ~ 150°C								
Installing	Downstream / Upstream									

DIMENSIONS

Unit : mm

Size			A	B	C	D	E	F	G	H	P	SW
Port	DN	Actuator										
3/8"	10	40	G3/8	12	65	144	28	53	105	38	G1/8	25
		50	G3/8	12	65	144	35	56	105	38	G1/8	25
1/2"	15	40	G1/2	14	76	157	28	53	113	38	G1/8	28
		50	G1/2	14	76	182	35	56	142	38	G1/8	28
3/4"	20	50	G3/4	16	92	189	35	56	152	38	G1/8	32
		63	G3/4	16	92	189	43	70	152	44	G1/8	32
1"	25	50	G1	21	103	207	35	56	155	38	G1/8	39
		63	G1	21	103	217	43	70	176	44	G1/8	39
1-1/4"	32	63	G1-1/4	19	112	222	43	70	177	44	G1/8	49
1-1/2"	40	63	G1-1/2	21	129	225	43	70	182	44	G1/8	56
2"	50	63	G2	27	143	249	43	70	196	44	G1/8	68
		90	G2	27	143	268	56	94	206	67	G1/4	68
2-1/2"	65	90	G2-1/2	28	186	290	56	94	215	67	G1/4	84
3"	80	125	G3	34	218	335	73	135	295	67	G1/4	101

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