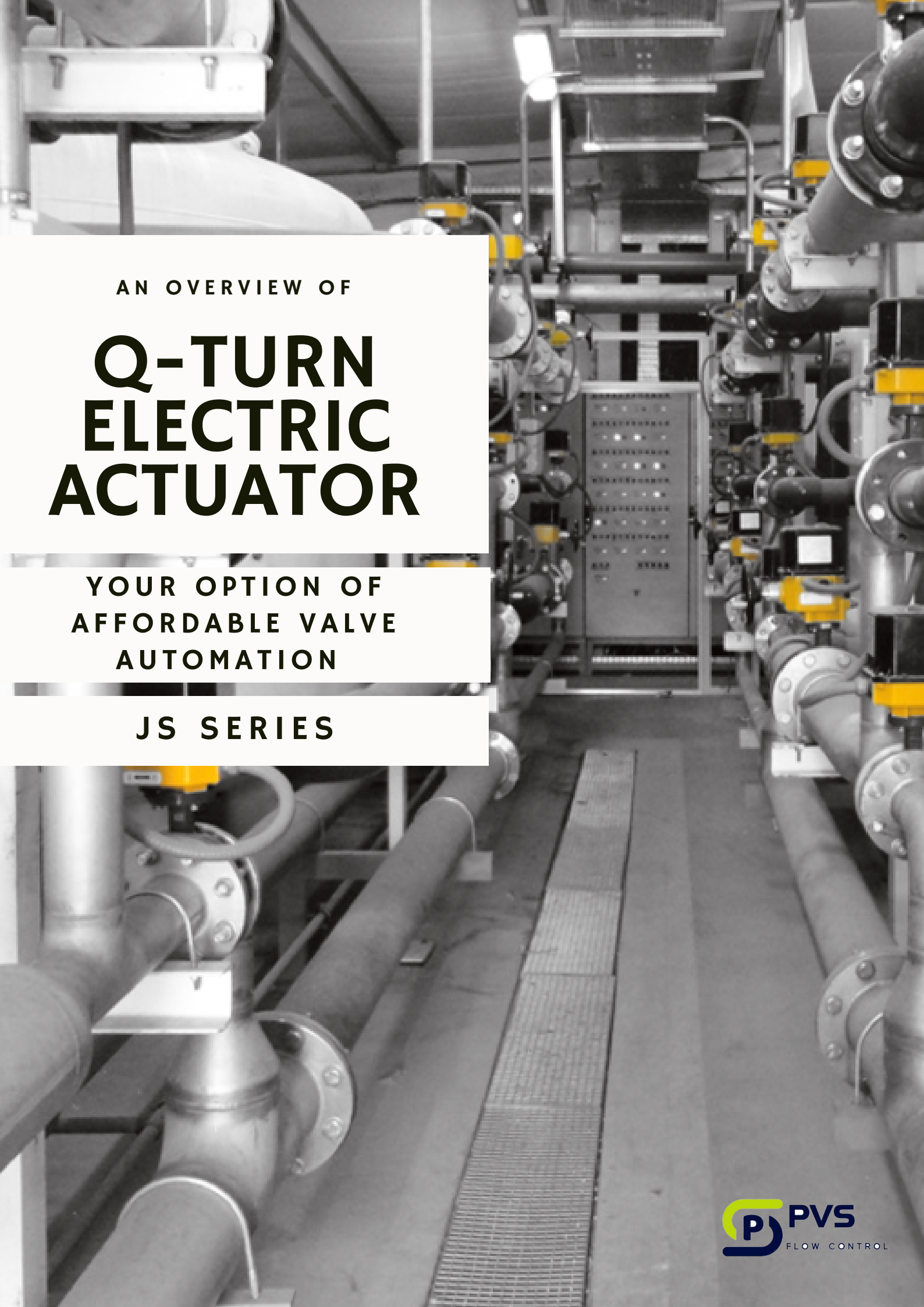


AN OVERVIEW OF

Q-TURN ELECTRIC ACTUATOR

YOUR OPTION OF AFFORDABLE VALVE AUTOMATION

JS SERIES

PVS FLOW CONTROL

Contents

PVS FLOW CONTROL GROUP

Our Mission

Our success is driven by our dedication to solve customer challenges with innovative solutions that save money, simplify flow and ensure excellent service.

Company Profile

Founded in 1982

At PVS FLOW CONTROL, our business is helping customers with their flow control requirements. Our comprehensive product line of valves, actuators and accessories offer the best compatibility, economy and quality performance in the flow control industry.

With decades of continued success and outstanding growth since founding in 1982, PVS FLOW CONTROL has become one of the leading supplier of high performance as well as economical industrial **ball valves, gate/globe/check, butterfly valves and pneumatic and electric actuator manufacturer** in the world, and one of the most reputable valve manufacturers in the eastern hemisphere. With a headquarter in Taiwan, and a branch foundry and a factory in China, plus a wide network of distributors in over 30 countries, we have developed a fully integrated and innovative product line in the world's largest and fastest growing economies. Our products are engineered to meet the needs and expectations of our customers.

Valcommtek for IOT

PVS FLOW CONTROL's separated the automation department into a subsidiary company Valcommtek in 2016, which is composed of a group of researchers and engineers who specialize in industrial control design. We uphold the spirit of maker, inject process automation into the latest industrial Internet of Things concept, and then collect big data for cloud computing.

Our team hopes to bring the originally complicated program control system closer to human operation through a simple and visual interface, while also reducing the company's operating costs. We believe that: Find the best solution to make program-controlled engineering more accessible and more applications.

Quality Assurance at Heart

Certified quality systems nowadays are sometimes mistaken to equate to expensive certificates by many. With quality and industry profession at heart, we highly respects our internal procedures and guidance from industrial experts when it comes to business management and product quality assurance process. We strictly enforce every step of the standard operating procedures, and never neglect a chance to correct and improve ourselves. Through this commitment, we offer our best products and services in a name with a promise.

Certificates

IP65/IP67

According to the standard IEC 60529, International Protection Marking is also called Ingress Protection Rating or IP code. Sometimes called "waterproof level", "dustproof level", etc., it defines the degree of protection that mechanical and electronic equipment can provide against solid foreign objects (including body parts such as fingers, dust, grit, etc.), liquid infiltration, and accidental contact. ability.

Unless otherwise specified, the IP rating of JS Series is IP65, which means that it can be completely dust-proof and can withstand low-pressure water jets sprayed on its shell for at least 3 minutes.

Customers can also specify the IP67 type, and we will replace the seals corresponding to IP67. At this time, the actuator can be completely dust-proof and can be placed in the deepest 1 meter of water for at least 30 minutes.

Electromagnetic Compatibility (EMC)

When interconnected or close to each other, all electrical equipment or devices will affect each other, such as interference between televisions, GSM mobile phones, radios and nearby washing machines or power lines. The purpose of electromagnetic compatibility (EMC) is to allow all these side effects to be reasonably controlled. EMC specifies all existing and future technologies to reduce interference and enhance immunity.

The Electromagnetic Compatibility (EMC) Directive 2014/30/EU ensures that electrical and electronic equipment will not produce or be immune to electromagnetic interference.

Low Voltage Directive (LVD)

The goal of the low voltage directive is to ensure the safety of low voltage equipment in use.

Low voltage equipment is defined as electrical equipment rated between 50 and 1000 Volts AC and 75 to 1500 volts DC. Broadly speaking, low voltage equipment includes consumer products and equipment designed to operate within this voltage range. Including household appliances, hand tools, lighting equipment, wires, cables and pipelines, as well as wiring equipment. This directive contains all the safety rules for this equipment, including protection against mechanical hazards.

CE

Worldwide Testing Services (Taiwan) Co., Ltd.
ACCREDITED TEST HOUSE

CERTIFICATION OF TESTING

Under EU EMC - DIRECTIVE 2014/30/EU -

This certifies that the following designated product

Electric Actuator
Model No. : JS-06H AC200V~AC240V
Multi-listing Model No. : JS-01 AC200V~AC240V, JS-02 AC200V~AC240V, JS-03 AC200V~AC240V, JS-03H AC200V~AC240V, JS-04H AC200V~AC240V, JS-05H AC200V~AC240V, JS-06H AC200V~AC240V

(Product identification)

Has been tested in accordance to essential protection requirements of Council Directive 2014/30/EU and found the test results indeed meet the limitation of the relevant test standard(s) listed below:

EN 55014-1 (2006+A1 :2009+A2:2011),
IEC/EN 61000-3-2 (2014), IEC/EN 61000-3-3 (2013)
EN 55014-2 (1997+A1 :2001+A2:2008)

(Identification of regulations / standards)

This certificate is issued for
DIE ERSTE INDUSTRY CO., LTD.
5F-1, No.936, Sec.4, Wen-Sin Rd., Taichung 406, Taiwan

(Name / Address)

SPECIAL STATEMENT:

1. THIS CERTIFICATION IS A MULTI-LISTING BASED ON THE ORIGINAL REPORT NO. W6R21606-15907-E-11.
2. THE RELEVANT CIRCUITRY, PCB LAYOUT, INNER ELEMENT, FUNCTION, AND APPEARANCE OF THIS CERTIFICATION IS EXACTLY THE SAME AS THE ORIGINAL REPORT NO. W6R21606-15907-E-11. THE DIFFERENCE IS ONLY THE APPLICANT. THEREFORE THE TEST RESULT IS ALSO BASED ON THE ORIGINAL TEST REPORT NO. W6R21606-15907-E-11 WITHOUT RE-TESTING.
3. THE CONFIRMATION IS VALID ONLY IF THE PRODUCT IS MANUFACTURED IN ACCORDANCE WITH THE TEST REPORT NO. W6D22005-20206-E-11.

September 10, 2020
(Date)

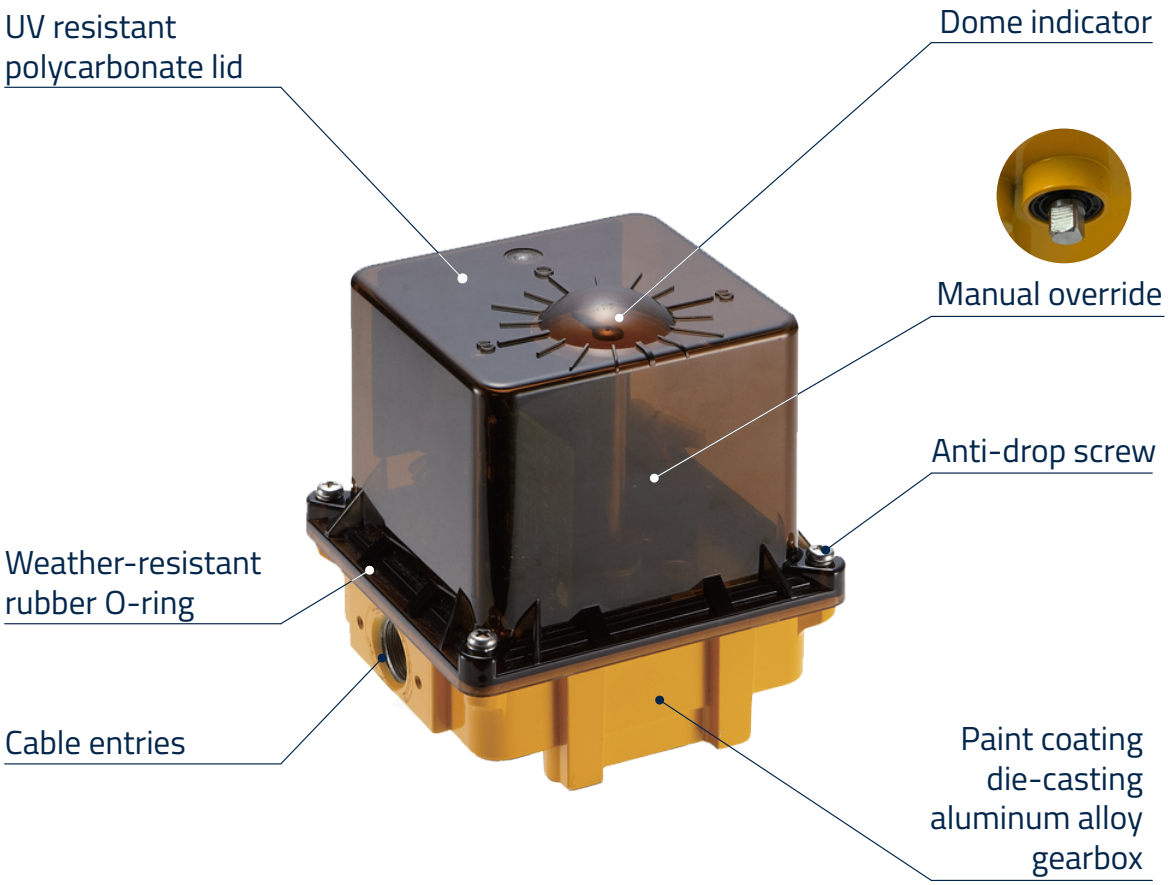
Rex Kao

Rex Kao, Laboratory Director

Worldwide Testing Services (Taiwan) Co., Ltd.
6F, NO. 58, LANE 188, RUEY-KUANG RD., NEIHU, TAIPEI 114, TAIWAN, R.O.C.

Quality Standards

- ISO 9001:2015
- IEC 60529 IP-67 STD.
- EMC EN 55014-1/EN55014-2
- CISPR22 Class B
- LVD IEC 60730-1/IEC 60730-2-14



Compact Combination of Valve and Electric Actuator

The JS series is a compact quarter-turn electric actuator that can accurately control valves with a torque range of 9 to 1800 Nm (80 to 16000 lbf.in)

JS Series is easy to install, set up and debug. Its efficient and balanced structure ensures that it can be easily installed on small valves, with minimal stress in the pipeline and low work load on the valve shaft. It is energized through an innovative motor, whose rated duty cycle for on/off applications can reach 100%, and automatically adapts to various voltages of DC or AC.

It is an economical actuator to install and operate. With a single cable size suitable for all actuator models, installation costs are kept low, and the power consumption of the motor is very low, ensuring that operating costs are minimized. The standard is equipped with a continuously engaged manual operation device, the handwheel will not rotate during the operation of the motor. Every function and parameter in actuator control, setting and diagnosis can be used locally or remotely.

SPECIFICATIONS

- **POWER SUPPLY**
  - Direct current:
    12 VDC
    24 VDC
  - Alternating current (Single Phase):
    110 VAC
    220 VAC
  - Alternating current (Three Phase):
    220 VAC
    380 VAC
    440 VAC
    460 VAC
- **OUTPUT TORQUE**
  9 to 1800 Nm (80 to 16000 lbf.in)
- **OPERATION TIMES**
  1 to 106 sec
- **DUTIES**
  - ON/OFF Standard
  - ON/OFF 100% Duty Cycle
  - ON/OFF Fast Acting
  - ON/OFF Fail Safe
  - Modulating

OVERVIEW

<table>
<tr><td rowspan="2">Operation Voltage of Various Type</td><td>ON/OFF
Standard (pg.9)</td><td>ON/OFF
100% Duty Cycle (pg.12)</td><td>ON/OFF
Fast Acting (pg.13)</td></tr>
<tr><td>▪ 12 V_{DC}
▪ 24 V_{DC}
▪ 24 V_{AC}/V_{DC}
▪ 110/220 V_{AC} (1PH)
▪ 220/380/440/460 V_{AC} (3PH)</td><td>▪ 110/220 V_{AC} (1PH)</td><td>▪ 12 V_{DC}
▪ 24 V_{DC}
▪ 24 V_{AC}/V_{DC}
▪ 110/220 V_{AC} (1PH)</td></tr>
<tr><td></td><td colspan="2">ON/OFF
Fail-Safe (pg.15)</td><td>Modulating (pg.16)</td></tr>
<tr><td></td><td colspan="2">▪ 12 V_{DC}
▪ 24 V_{AC}/V_{DC}
▪ 110/220 V_{AC} (1PH)</td><td>▪ 110/220 V_{AC} (1PH)</td></tr>
<tr><td>Dust/Water Proof</td><td colspan="3">IP67 according to IEC 60529</td></tr>
<tr><td>Working Condition</td><td colspan="3">Ambient Temperature: -10 °C to 60°C (14 °Fto 140°F)
Humidity: 30% to 95%</td></tr>
<tr><td>Rotation Angle</td><td colspan="3">0°~270°</td></tr>
<tr><td>Enclosure</td><td colspan="3">Base Material: Aluminum alloy
Housing Material: Polycarbonate</td></tr>
<tr><td>Certification/Test</td><td colspan="3">Comply with CE directives of
▪ The Low Voltage Directive, 73/23/EEC, 93/68 EEC
▪ The EMC Directive, 89/336/EEC</td></tr>
<tr><td>Conduit Entrance</td><td colspan="3">1/2" PF</td></tr>
<tr><td>Accessory</td><td colspan="3">▪ Cable gland (IP68) x 1 (Cable Range: Ø10~6mm)
▪ Rubber Protection for manual lever</td></tr>
<tr><td>Optional Items</td><td>▪ Space Heater
▪ Extra Limit Switches</td><td>▪ Build-in LED position indicator</td><td>▪ Potentiometer unit (5k Ohm)
▪ TriPosition (0° to 270°)</td></tr>
</table>

PERFORMANCE
ON-OFF TYPE

ON/OFF Standard, 12 V_{DC}								
Model	Torque[4]		Operation Time[1] (sec/90°)	Duty Cycle[2]	Rated Current	Overload Protection Device (Fuse)	Weight	
	N.m	lbf.in					kg	lbs
JS-01	35	310	10-15	100%	1.5A	1.25A	1.9	4.2
JS-02	50	443	10-16	100%	1.5A	1.25A	1.9	4.2

ON/OFF Standard, 24 V_{DC}								
Model	Torque[4]		Operation Time[1] (sec/90°)	Duty Cycle[2]	Rated Current	Overload Protection Device (Fuse)	Weight	
	N.m	lbf.in					kg	lbs
JS-01	35	310	11-16	100%	0.9A	1.0A	1.9	4.2
JS-02	50	443	12-18	100%	0.8A	1.0A	1.9	4.2
JS-03	140	1238	7-13	100%	2.6A	3.0A	3.9	8.6
JS-03H[3]	160	1416	10-15	100%	2.6A	3.0A	6.9	15.2
JS-04H[3]	275	2434	27-47	100%	2.6A	3.0A	7.6	16.8
JS-06H-T08[3]	800	7080	88-120	100%	2.6A	3.0A	14	30.8

ON/OFF Standard, 24 V_{AC}/V_{DC}								
Model	Torque[4]		Operation Time[1] (sec/90°)	Duty Cycle[2]	Rated Current	Overload Protection Device (Fuse)	Weight	
	N.m	lbf.in					kg	lbs
JS-01	35	310	11-16	100%	0.9A	0.8A	1.9	4.2
JS-02	50	443	12-18	100%	0.8A	0.8A	1.9	4.2
JS-03	140	1238	7-13	100%	2.6A	3.0A	3.9	8.6
JS-03H[3]	160	1416	10-15	100%	2.6A	3.0A	6.9	15.2
JS-04H[3]	275	2434	27-47	100%	2.6A	3.0A	7.6	16.8
JS-06H-T08[3]	800	7080	88-120	100%	2.6A	3.0A	14	30.8

Note:
(1) Operation time depends on the actual load.
(2) Definition of Duty Cycle is in acrodance with IEC60034-S4 duty type.
(3) H: Hand-wheel manual override
(4) Safety factor should be applied in anticipation of including but not limited to above.

PERFORMANCE
ON-OFF TYPE

ON/OFF Standard, 110 V_{AC} (1-Phase)									
Model	Torque[5]		Operation Time[1] (sec/90°)		Duty Cycle[2]	Rated Current	Overload Protection Device	Weight	
	N.m	lbf.in	50 Hz	60Hz				kg	lbs
JS-01	35	310	12	10	25% in 40 sec.	0.7A	TP[4]	1.7	3.7
JS-02	50	443	12	10	25% in 40 sec.	0.9A		1.8	3.9
JS-03	170	1505	10	8	40% in 25 sec.	1.2A		4.4	9.7
JS-03H[3]	200	1770	12	10	40% in 25 sec.	1.2A		7.9	17.4
JS-04H[3]	380	3363	36	30	50% in 60 sec.	1.2A		8.6	19.0
JS-05H[3]	500	4425	36	30	50% in 60 sec.	2.0A		8.8	19.4
JS-06H[3]	600	5310	36	30	30% in 100 sec.	2.4A		9.1	20.1
JS-06H[3]-T08	1100	9735	106	88	30% in 100 sec.	2.0A		14.5	31.9
JS-06H[3]-T09	1500	13275	106	88	30% in 100 sec.	2.0A		14.8	32.6
JS-06H[3]-T10	1800	15930	106	88	30% in 100 sec.	2.8A		15.2	33.5

ON/OFF Standard, 220 V_{AC} (1-Phase)									
Model	Torque[5]		Operation Time[1] (sec/90°)		Duty Cycle[2]	Rated Current	Overload Protection Device	Weight	
	N.m	lbf.in	50 Hz	60Hz				kg	lbs
JS-01	35	310	12	10	20% in 50 sec.	0.4A	TP[4]	1.7	3.7
JS-02	50	443	12	10	20% in 50 sec.	0.50A		1.8	3.9
JS-03	170	1505	10	8	33% in 30 sec.	0.8A		4.4	9.7
JS-03H[3]	200	1770	12	10	33% in 30 sec.	0.8A		7.9	17.4
JS-04H[3]	380	3363	36	30	50% in 60 sec.	0.8A		8.6	19.0
JS-05H[3]	500	4425	36	30	27% in 110 sec.	0.8A		8.8	19.4
JS-06H[3]	600	5310	36	30	38% in 80 sec.	0.8A		9.1	20.1
JS-06H[3]-T08	1100	9735	106	88	38% in 80 sec.	1.0A		14.5	31.9
JS-06H[3]-T09	1500	13275	106	88	38% in 80 sec.	1.0A		14.8	32.6
JS-06H[3]-T10	1800	15930	106	88	38% in 80 sec.	1.1A		15.2	33.5

(1) Operation time depends on the actual load.
(2) Definition of Duty Cycle is in acrodance with IEC60034-S4 duty type, e.g., for an actuator with 25% Duty Cycle in 40 sec, after operating for 10 seconds, JS rests for 30 seconds at 25°C/77°F.
(3) H: Hand-wheel manual override. (4) TP: Thermal overload protector of Motor.
(5) Safety factor should be applied in anticipation of including but not limited to above.

PERFORMANCE
ON-OFF TYPE

ON/OFF 100% Duty Cycle, 110 V_{AC} (1-Phase)									
Model	Torque		Operation Time[1] (sec/90°)		Duty Cycle[2]	Rated Current	Overload Protection Device	Weight	
	N.m	lbf.in	50 Hz	60Hz				kg	lbs
JS-01A	32	283	19	16	100%	0.2A	N/A	1.7	3.7
JS-02A	50	443	43	36	100%	0.2A	N/A	1.8	4.0
JS-03A	100	885	65	54	100%	0.2A	N/A	3.5	7.7

ON/OFF 100% Duty Cycle, 220 V_{AC} (1-Phase)									
Model	Torque		Operation Time[1] (sec/90°)		Duty Cycle[2]	Rated Current	Overload Protection Device	Weight	
	N.m	lbf.in	50 Hz	60Hz				kg	lbs
JS-01A	32	283	19	16	100%	0.10A	N/A	1.7	3.7
JS-02A	50	443	43	36	100%	0.10A	N/A	1.8	4.0
JS-03A	100	885	65	54	100%	0.10A	N/A	3.5	7.7

Note:
(1) Operation time depends on the actual load.
(2) Definition of Duty Cycle is in acrodance with IEC60034-S4 duty type, e.g., for an actuator with 25% Duty Cycle in 40 sec, after operating for 10 seconds, JS rests for 30 seconds at 25°C/77°F.
(3) H: Hand-wheel manual override.
(4) TP: Thermal overload protector of Motor.
(5) Safety factor should be applied in anticipation of including but not limited to above.

PERFORMANCE
ON-OFF TYPE

ON/OFF Fast Acting, 12 V_{DC}								
Model	Torque[3]		Operation Time[1] (sec/90°)	Duty Cycle[2]	Rated Current	Overload Protection Device (Fuse)	Weight	
	N.m	lbf.in					kg	lbs
JS-01FA	10	89	1-2	100%	3.3A	3.0A	1.9	4.2
JS-01FA	25	221	3-6	100%	2.5A	2.0A	1.9	4.2

ON/OFF Fast Acting, 24 V_{DC}								
Model	Torque[3]		Operation Time[1] (sec/90°)	Duty Cycle[2]	Rated Current	Overload Protection Device (Fuse)	Weight	
	N.m	lbf.in					kg	lbs
JS-01FA	10	89	1-2	100%	1.9A	1.5A	1.9	4.2
JS-01FA	25	221	3-8	100%	1.3A	1.5A	1.9	4.2
JS-03FA	30	226	1-3	100%	4A	3.0A	3.9	8.6
JS-03FA	60	531	4-7	100%	1.9A	3.0A	3.9	8.6

ON/OFF Fast Acting, 24 V_{AC}/V_{DC}								
Model	Torque[3]		Operation Time[1] (sec/90°)	Duty Cycle[2]	Rated Current	Overload Protection Device (Fuse)	Weight	
	N.m	lbf.in					kg	lbs
JS-01FA	10	89	1-2	100%	1.9A	1.5A	1.9	4.2
JS-01FA	25	221	3-8	100%	1.3A	1.5A	1.9	4.2
JS-03FA	30	226	1-3	100%	4A	3.0A	3.9	8.6
JS-03FA	60	531	4-7	100%	1.9A	3.0A	3.9	8.6

Note:
(1) Operation time depends on the actual load.
(2) Definition of Duty Cycle is in acrodance with IEC60034-S4 duty type.
(3) Safety factor should be applied in anticipation of including but not limited to above.

PERFORMANCE
ON-OFF TYPE

ON/OFF Fast Acting, 110 V_{AC} (1-Phase)									
Model	Torque[4]		Operation Time[1] (sec/90°)		Duty Cycle[2]	Rated Current	Overload Protection Device	Weight	
	N.m	lbf.in	50 Hz	60Hz				kg	lbs
JS-01FA	9	80	1.2	1	14% in 7 sec.	1.2A	TP[3]	1.9	4.2
JS-01FA	25	221	4	3	25% in 12 sec.	1.2A		1.9	4.2
JS-03FA	35	310	1.2	1	67% in 1.5 sec.	1.2A		3.9	8.6
JS-03FA	100	885	6	5	50% in 10 sec.	1.2A		3.9	8.6

ON/OFF Fast Acting, 220 V_{AC} (1-Phase)									
Model	Torque[4]		Operation Time[1] (sec/90°)		Duty Cycle[2]	Rated Current	Overload Protection Device	Weight	
	N.m	lbf.in	50 Hz	60Hz				kg	lbs
JS-01FA	9	80	1.2	1	17% in 6 sec.	0.7A	TP[3]	1.9	4.2
JS-01FA	25	221	4	3	17% in 18 sec.	0.7A		1.9	4.2
JS-03FA	35	310	1.2	1	67% in 1.5 sec.	0.72A		3.9	8.6
JS-03FA	100	885	6	5	50% in 10 sec.	0.72A		3.9	8.6

Note:
(1) Operation time depends on the actual load.
(2) Definition of Duty Cycle is in acrodance with IEC60034-S4 duty type, e.g., for an actuator with 25% Duty Cycle in 40 sec, after operating for 10 seconds, JS rests for 30 seconds at 25°C/77°F.
(3) TP: Thermal overload protector of Motor.
(4) Safety factor should be applied in anticipation of including but not limited to above.

PERFORMANCE
ON-OFF TYPE

ON/OFF Battery Backup Fail-Safe, 12 V_{DC}									
Model	Torque[3]		Operation Time[1] (sec/90°)		Duty Cycle[2]		Rated Current	Weight	
	N.m	lbf.in	Normal	Power-off	Normal	Power-off		kg	lbs
JS-02-ECR	12	106	13-15	13-21	33% in 1min	8% in 6min	0.8A	1.6	3.5

ON/OFF Battery Backup Fail-Safe, 24 V_{AC}/V_{DC}									
Model	Torque[3]		Operation Time[1] (sec/90°)		Duty Cycle[2]		Rated Current	Weight	
	N.m	lbf.in	Normal	Power-off	Normal	Power-off		kg	lbs
JS-02-ECR	12	106	13-15	13-21	33% in 1min	8% in 6min	0.7A	1.6	3.5

ON/OFF Battery Backup Fail-Safe, 110 V_{AC} (1-Phase)									
Model	Torque[3]		Operation Time[1] (sec/90°)		Duty Cycle[2]		Rated Current	Weight	
	N.m	lbf.in	Normal	Power-off	Normal	Power-off		kg	lbs
JS-02-ECR	12	106	13-15	13-21	33% in 1min	8% in 6min	0.2A	1.6	3.5

ON/OFF Battery Backup Fail-Safe, 220 V_{AC} (1-Phase)									
Model	Torque[3]		Operation Time[1] (sec/90°)		Duty Cycle[2]		Rated Current	Weight	
	N.m	lbf.in	Normal	Power-off	Normal	Power-off		kg	lbs
JS-02-ECR	12	106	13-15	13-21	33% in 1min	8% in 6min	0.1A	1.6	3.5

Note:
(1) Operation time depends on the actual load.
(2) Definition of Duty Cycle is in acrodance with IEC60034-S4 duty type, e.g., for an actuator with 25% Duty Cycle in 40 sec, after operating for 10 seconds, JS rests for 30 seconds at 25°C/77°F.
(3) Safety factor should be applied in anticipation of including but not limited to above.

PERFORMANCE
MODULATING TYPE

Proportional control is the most common communication signal in modern industrial control. Using a signal of 4-20 mA, the MODULATING TYPE electric actuator makes the valve open and close in proportion.

In the design of modulating electric actuators, two motors with different characteristics are used. The AMD model uses a synchronous motor, while the BMD model uses an induction motor. Comparing the characteristics of the above two, AMD has lower power consumption and can save more power; BMD has a more powerful torque value and is faster.

MODULATION, 110 V_{AC} (1-Phase)											
Model	Torque[5]		Operation Time[1] (sec/90°)		Duty Cycle[2]	Rated Current	Overload Protection Device			Weight	
							Motor		PCB		
	N.m	lbf.in	50 Hz	60Hz			Fuse	TP[4]		kg	lbs
JS-01-AMD	25	221	19	16	100%	0.2A	0.5A	TP[4]	0.15A	2.1	4.6
JS-02-AMD	36	319	19	16	48% in 33 sec.	0.3A	0.5A		0.15A	2.1	4.6
JS-02-AMD	50	443	43	36	47% in 76 sec.	0.2A	0.5A		0.15A	2.1	4.6
JS-03-AMD	100	885	42	35	47% in 76 sec.	0.3A	0.5A		0.15A	3.7	8.2
JS-03-BMD	170	1505	10	8	40% in 25 sec.	1.2A	1.5A		0.15A	4.8	10.6
JS-03H[3]-BMD	200	1770	12	10	40% in 25 sec.	1.2A	1.5A		0.15A	8.3	18.3
JS-04H[3]-BMD	300	2655	36	30	50% in 60 sec.	1.2A	1.5A		0.15A	9.0	19.8
JS-05H[3]-BMD	500	4425	36	30	50% in 60 sec.	2.0A	3.0A		0.15A	9.2	20.3
JS-06H[3]-BMD	600	5310	36	30	30% in 100 sec.	2.4A	3.0A		0.15A	9.5	20.9
JS-06H[3]-BMD-T08	1100	9735	106	88	30% in 100 sec.	1.2A	1.5A		0.15A	14.5	31.9
JS-06H[3]-BMD-T09	1500	13275	106	88	30% in 100 sec.	2.0A	3.0A		0.15A	14.8	32.6
JS-06H[3]-BMD-T10	1800	15930	106	88	30% in 100 sec.	2.4A	3.0A		0.15A	15.2	33.5

Note:
(1) Operation time depends on the actual load.
(2) Definition of Duty Cycle is in acrodance with IEC60034-S4 duty type, e.g., for an actuator with 25% Duty Cycle in 40 sec, after operating for 10 seconds, JS rests for 30 seconds at 25°C/77°F.
(3) H: Hand-wheel manual override.
(4) TP: Thermal overload protector of Motor.
(5) Safety factor should be applied in anticipation of including but not limited to above.

PERFORMANCE
MODULATING TYPE

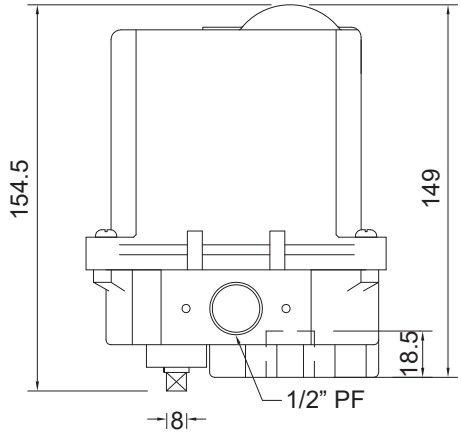
MODULATION, 220 V_{AC} (1-Phase)											
Model	Torque[5]		Operation Time[1] (sec/90°)		Duty Cycle[2]	Rated Current	Overload Protection Device			Weight	
							Motor		PCB		
	N.m	lbf.in	50 Hz	60Hz			Fuse	TP[4]		kg	lbs
JS-01-AMD	25	221	19	16	100%	0.10A	0.25A	TP[4]	0.15A	2.1	4.6
JS-02-AMD	36	319	19	16	76% in 21 sec.	0.15A	0.25A		0.15A	2.1	4.6
JS-02-AMD	50	443	43	36	78% in 46 sec.	0.10A	0.25A		0.15A	2.1	4.6
JS-03-AMD	100	885	42	35	78% in 46 sec.	0.15A	0.25A		0.15A	3.7	8.2
JS-03-BMD	170	1505	10	8	33% in 30 sec.	0.72A	1.0A		0.15A	4.8	10.6
JS-03H[3]-BMD	200	1770	12	10	33% in 30 sec.	0.72A	1.0A		0.15A	8.3	18.3
JS-04H[3]-BMD	300	2655	36	30	50% in 60 sec.	0.72A	1.0A		0.15A	9.0	19.8
JS-05H[3]-BMD	500	4425	36	30	27% in 110 sec.	0.75A	1.5A		0.15A	9.2	20.3
JS-06H[3]-BMD	600	5310	36	30	38% in 80 sec.	0.80A	1.5A		0.15A	9.5	20.9
JS-06H[3]-BMD-T08	1100	9735	106	88	38% in 80 sec.	0.72A	1.0A		0.15A	14.5	31.9
JS-06H[3]-BMD-T09	1500	13275	106	88	38% in 80 sec.	0.75A	1.5A		0.15A	14.8	32.6
JS-06H[3]-BMD-T10	1800	15930	106	88	38% in 80 sec.	0.80A	1.5A		0.15A	15.2	33.5

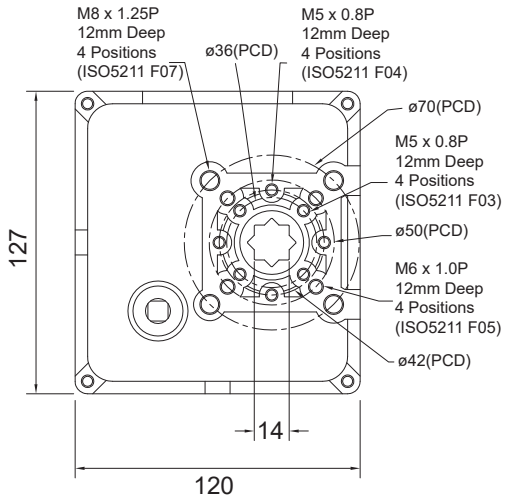
Note:
(1) Operation time depends on the actual load.
(2) Definition of Duty Cycle is in acrodance with IEC60034-S4 duty type, e.g., for an actuator with 25% Duty Cycle in 40 sec, after operating for 10 seconds, JS rests for 30 seconds at 25°C/77°F.
(3) H: Hand-wheel manual override.
(4) TP: Thermal overload protector of Motor.
(5) Safety factor should be applied in anticipation of including but not limited to above.

DIMENSIONS

JS-01, JS-02 **Valve Mounting Flange (ISO 5211): F03, F04, F05, F07**

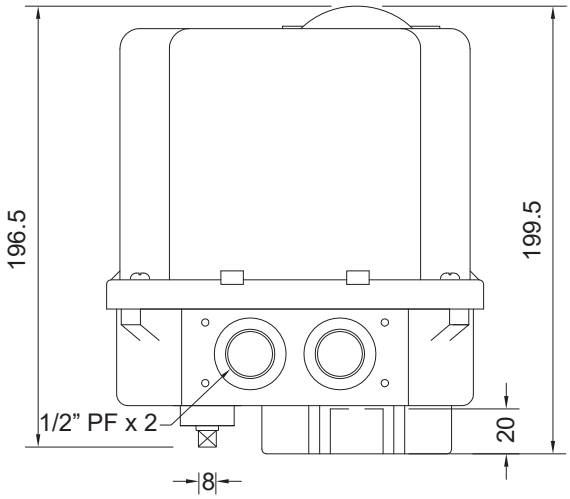
Unit: mm

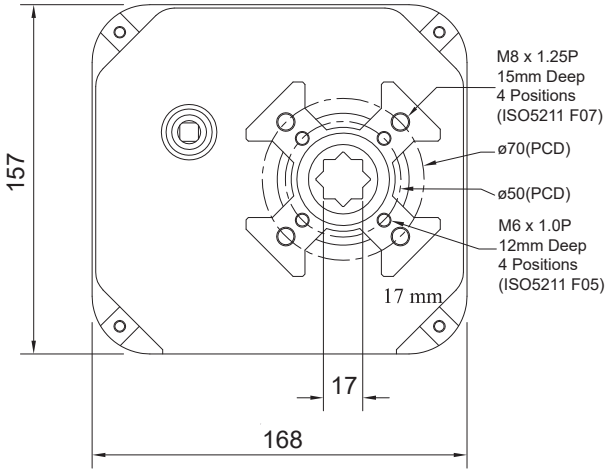




JS-03 **Valve Mounting Flange (ISO 5211): F05, F07**

Unit: mm

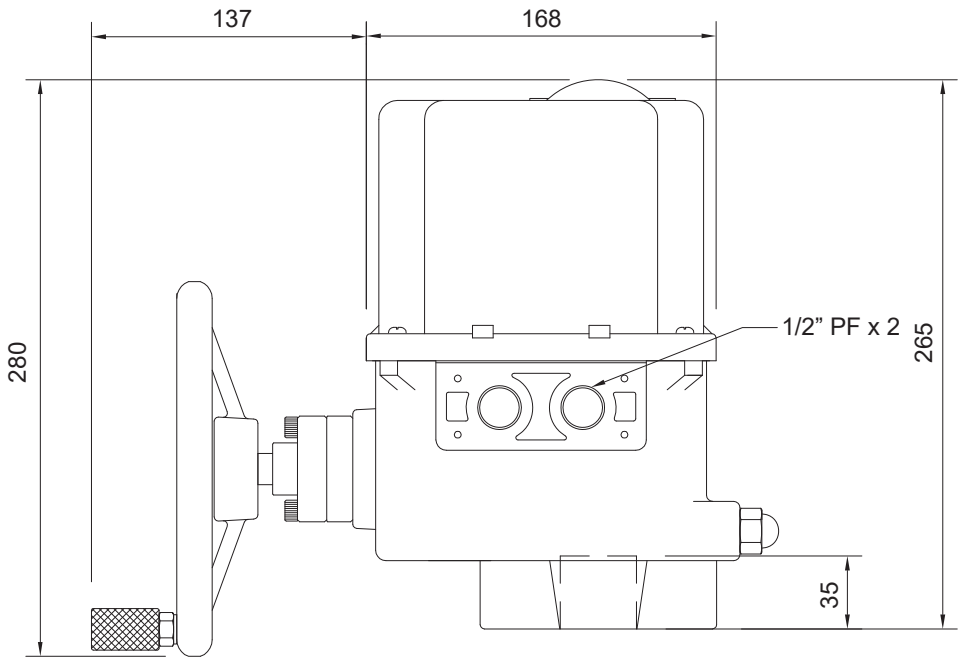


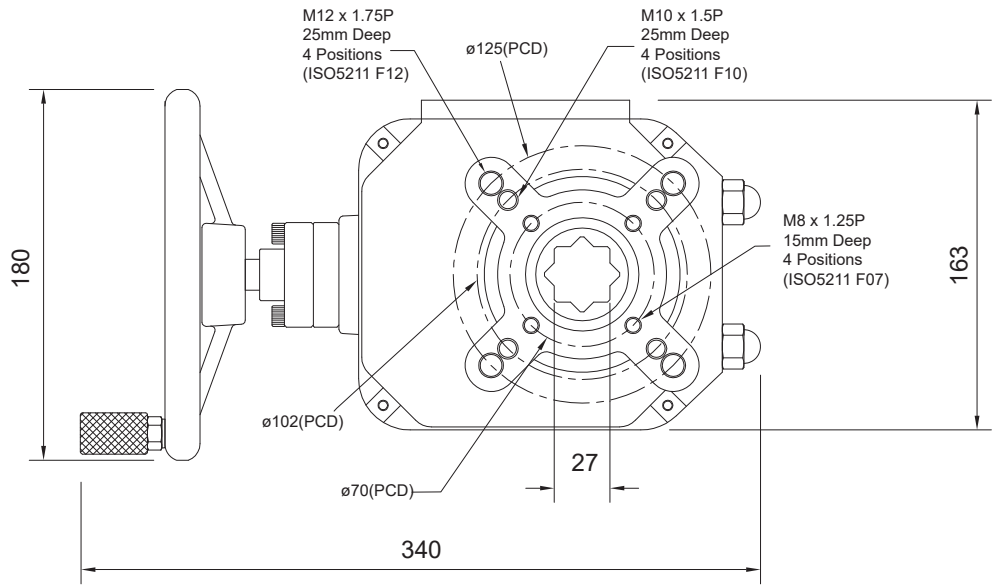


DIMENSIONS

JS-03H, JS-04H, JS-05H, JS-06H **Valve Mounting Flange (ISO 5211): F07, F10, F12**

Unit: mm

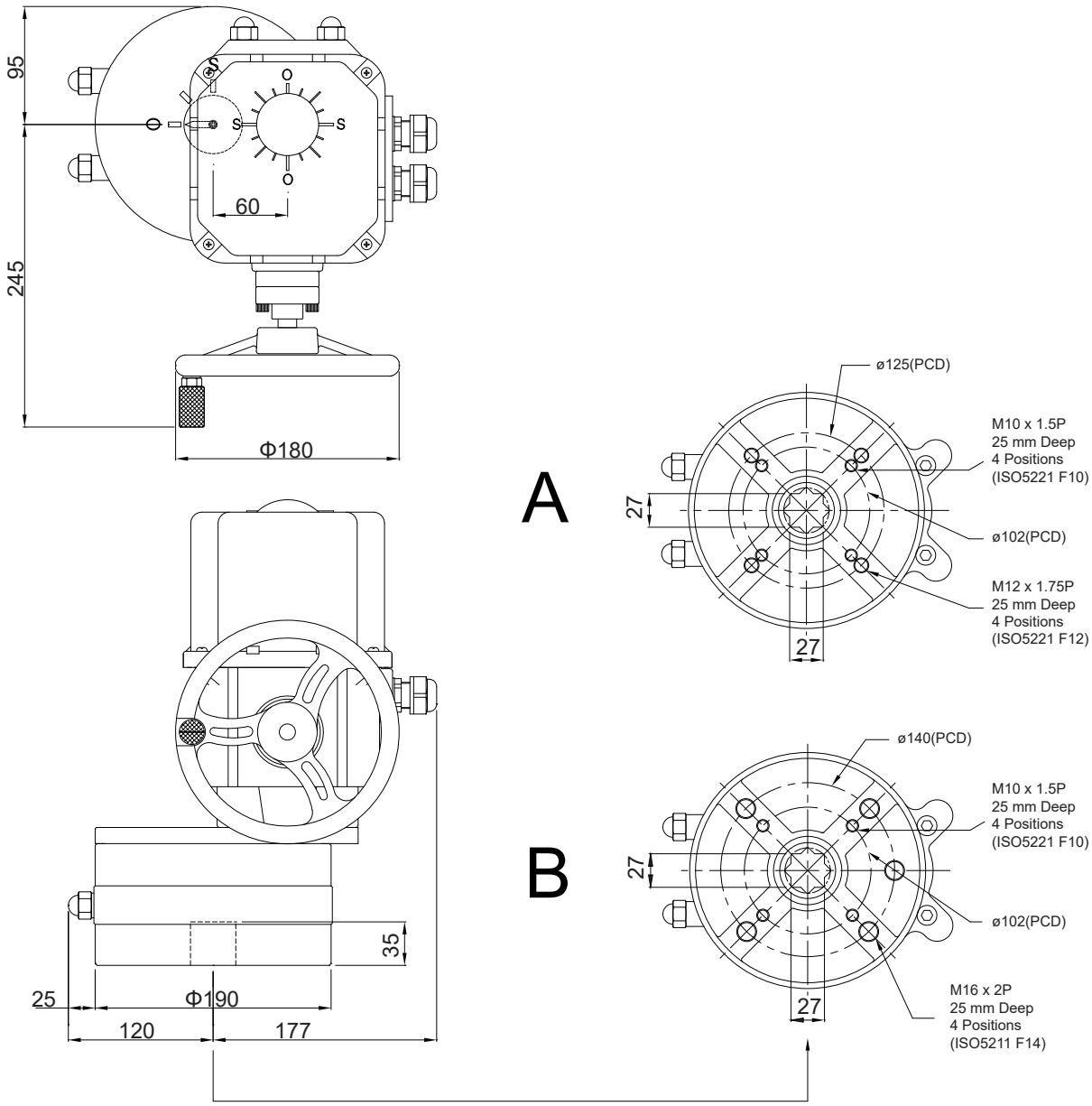




DIMENSIONS

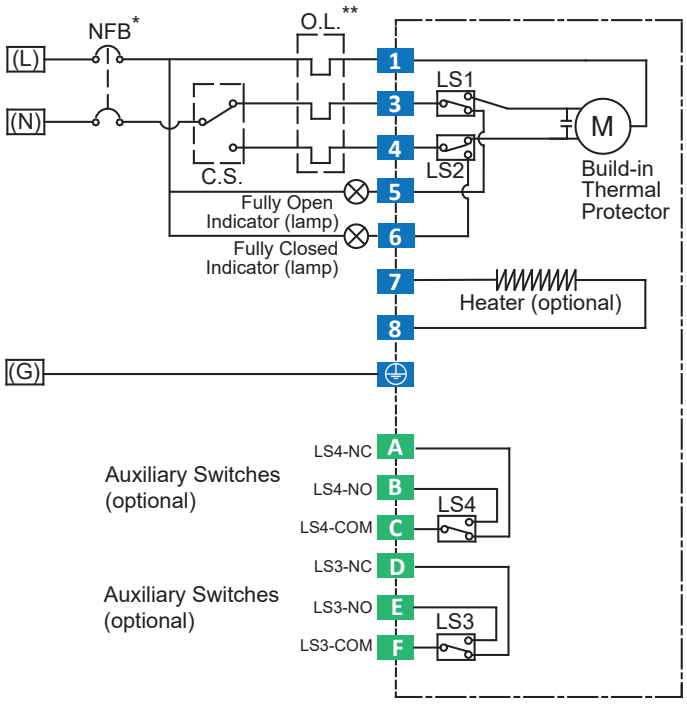
JS-06H-T08~T10 **Valve Mounting Flange (ISO 5211): F10/F12, F10/F14**

Unit: mm



WIRING DIAGRAM
ON/OFF TYPE

110/220 V_{AC} (1-Phase)

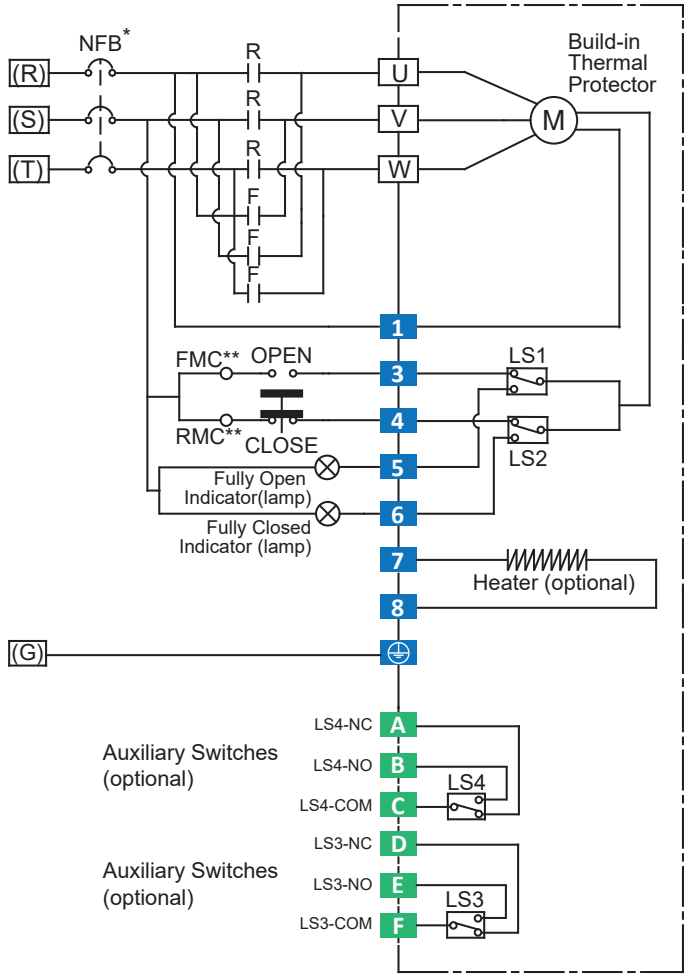


1 shall connect to Power Supply (L)
3 when connected to (N) = “OPEN”
4 when connected to (N) = “CLOSE”
5 Open Indicator Lamp
6 Closed Indicator Lamp
7 Heater Connection
8 Heater Connection

C.S. = Circuit Switch
NFB* = No Fuse Breaker
O.L.** = Overload Protection

Note: Use the voltage/current
less than AC220V/0.1A for **A** to **F**

220/380/440/460 V_{AC} (3-Phase)



1 shall connect to Power Supply (R)
3 when connected to FMC = “OPEN”
4 when connected to RMC = “CLOSE”
5 Open Indicator Lamp
6 Closed Indicator Lamp
7 Heater Connection
8 Heater Connection

NFB*=No Fuse Breaker
RMC**= Magnetic Contactor of R
FMC**= Magnetic Contactor of F

Note: Use the voltage/current
less than AC220V/0.1A for **A** to **F**

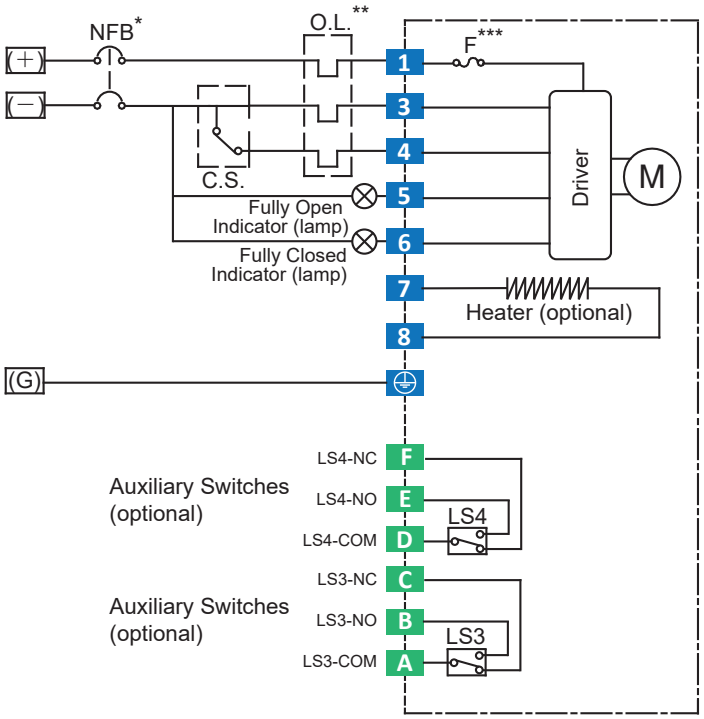
WIRING DIAGRAM
ON/OFF TYPE

12 V_{DC}, 24V_{DC}

1 shall connect to Power Supply (+)
3 shall connect to Power Supply (−)
4 when connected to 3 = “OPEN”
4 when disconnected to 3 = “CLOSE”
5 Open Indicator Lamp
6 Closed Indicator Lamp
7 Heater Connection
8 Heater Connection

C.S. = Circuit Switch
NFB*=No Fuse Breaker
O.L.**= Overload Protection
F***=Fuse

Note: Use the voltage/current
less than AC220V/0.1A for A to F

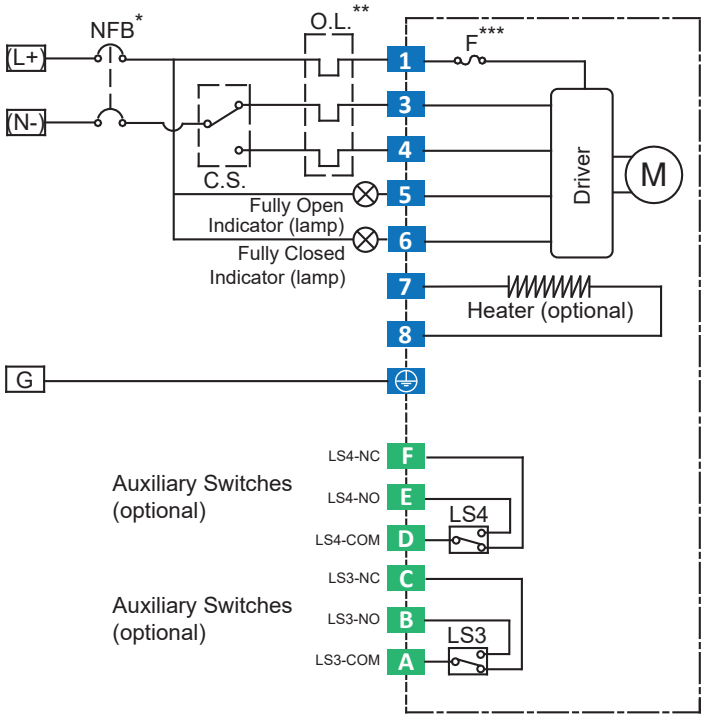


24 $V_{AC/DC}$

1 shall connect to Power Supply (L) or (+)
3 when connected to (N) or (−) = “OPEN”
4 when connected to (N) or (−) = “CLOSE”
5 Open Indicator Lamp
6 Closed Indicator Lamp
7 Heater Connection
8 Heater Connection

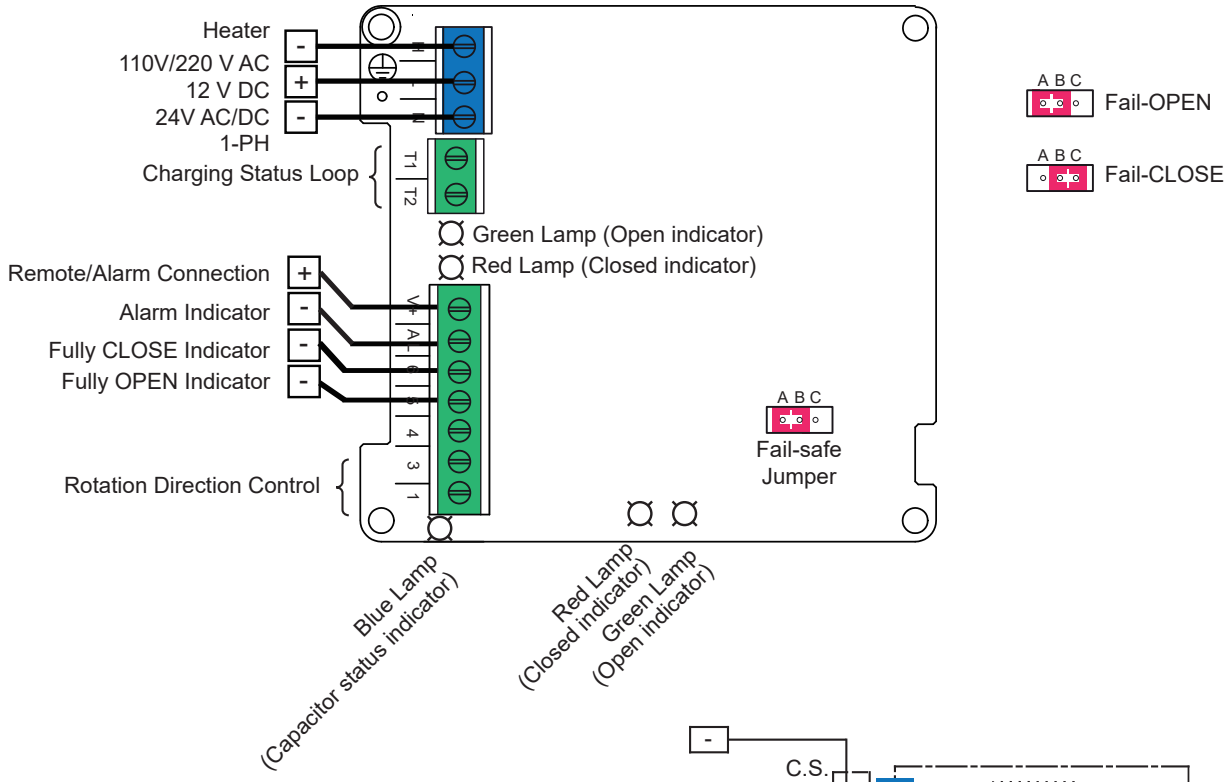
C.S. = Circuit Switch
NFB*=No Fuse Breaker
O.L.**= Overload Protection
F***=Fuse

Note: Use the voltage/current
less than AC220V/0.1A for A to F



WIRING DIAGRAM ON/OFF TYPE

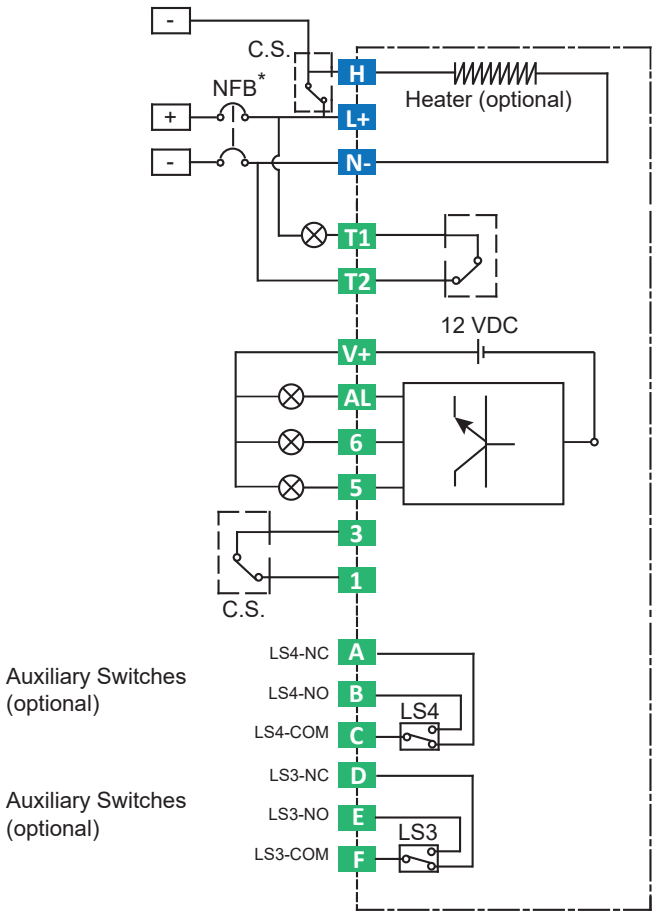
"BATTERY BUACKUP FAIL-SAFE", 110/220 V_{AC}, 12 V_{DC} and 24 $V_{AC/DC}$



(L+) Power Supply +
(N-) Power Supply -
(H) Heater Connection
(T1) (T2) Charging Status Loop:
When the battery is charing => short
When the battery stops charging => open
(V+) Internal DC Supply
(AL) Alarm Connection
(6) Fully OPEN Indicator
(5) Fully CLOSE Indicator
(3)(1) Switch of Clockwise/Counterclockwise

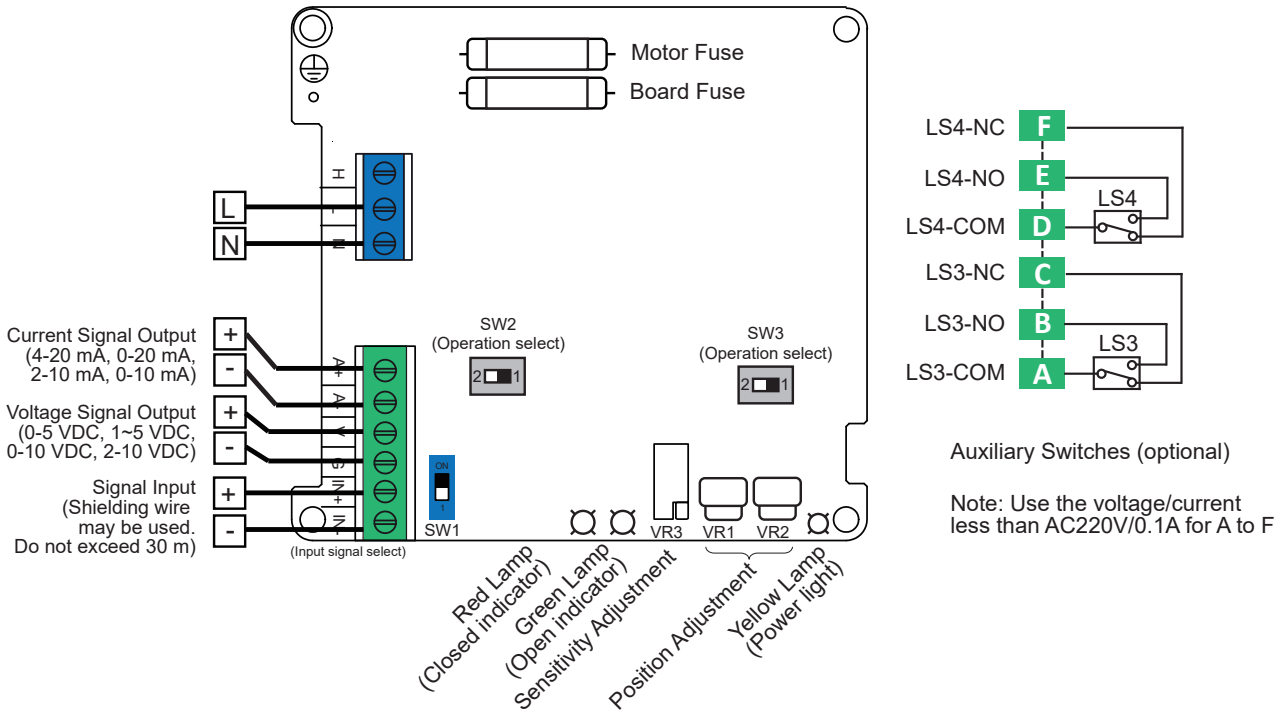
C.S. = Circuit Switch
NFB*=No Fuse Breaker

Note: Use the voltage/current
less than AC220V/0.1A for A to F

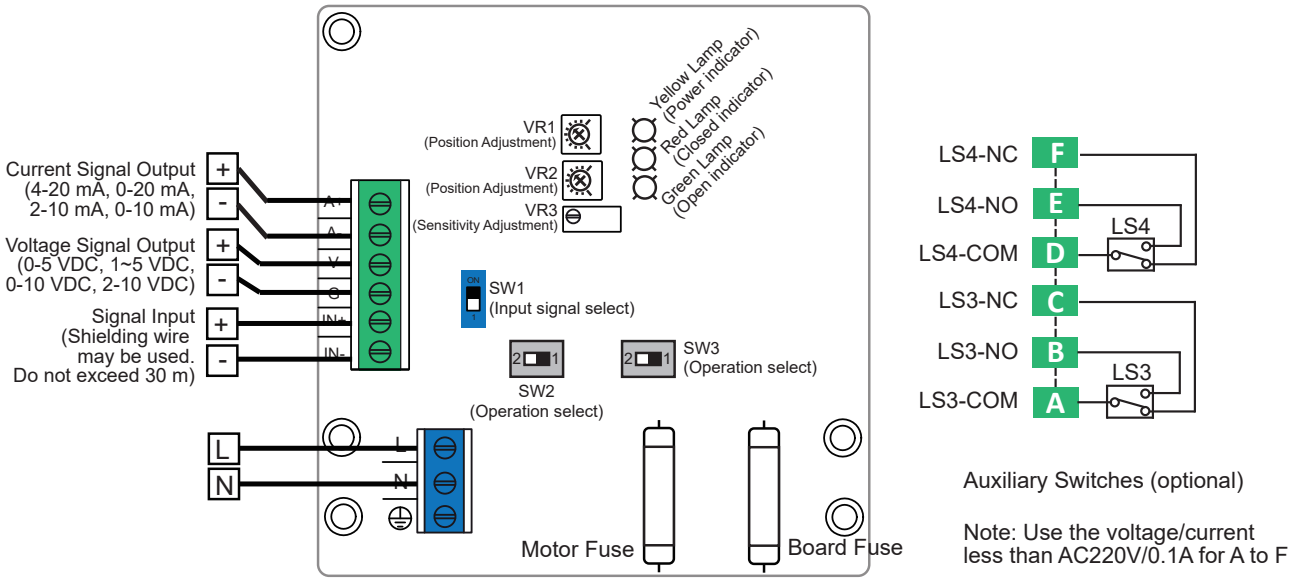


WIRING DIAGRAM
MODULATING TYPE

AMD Board, 24/110/220 V_{AC} (1-Phase)



BMD Board, 110/220 V_{AC} (1-Phase)



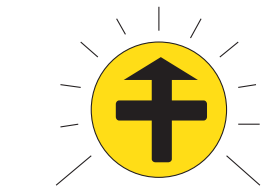
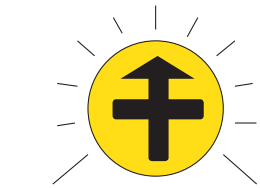
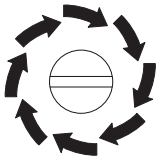
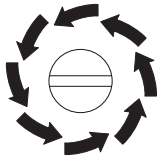
QUICK START
MODULATING TYPE

Switch Setting

Actuation		Setup of Switches		
Input Signal	OperationMode	SW1	SW2	SW3
Voltage 2~10V, 0~10V, 1~5V, 0~5V	MODE A(1) (Hi to OPEN) 			
Voltage 2~10V, 0~10V, 1~5V, 0~5V	MODE B(2) (Lo to OPEN) 			
Current 4~20 mA	MODE A(1) (Hi to OPEN) 			
Current 4~20 mA	MODE B(2) (Lo to OPEN) 			

NOTE: (1) MODE A: The valve is going to OPEN when input signal is HIGH (10V, 5V or 20mA) and vise versa.
(2) MODE B: The valve is going to OPEN when input signal is LOW (2V, 0V, 1V or 4mA) and vise versa.

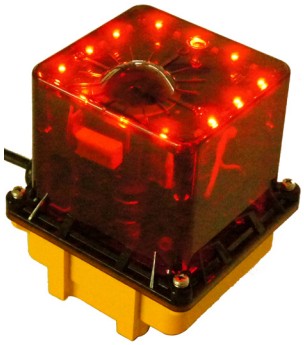
Adjustment of VR

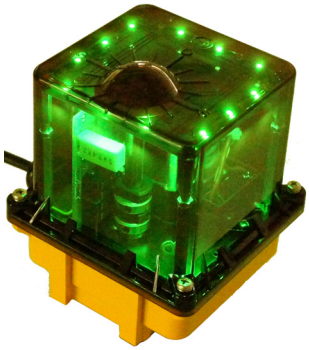
VR1: CLOSE angle adjuster	VR2: OPEN angle adjuster	VR3: Sensitivity adjuster	
 20% -5%	 90% 105%	 Increase Sensitivity	 Decrease Sensitivity

OPTIONS
Super LED Position Indicator

Ever wish for super vision to see valve position from far? We are happy to introduce the innovative JS Series Option with the build-in optical position indicator. Integral in durable and trasparent orrosion resistant engineering plastic housing, this actuator just bot better and now offers the optical LED positon indicator options.

Tranditional CAM position indicator on actguator is mechanical in nature and visible when standing within a short distance next to the actuator, With JS-series "Illuminating" electric actuator, the distance constraint is lifted, and valve position can be seenvisually 360° from any standapoint where the actuator can be seen. With built-in individual LED indicator(s) on each of the four sides, valve position is indicated by illuminating red and green lights. Red light indicates CLOSED positon while Green light indicated OPEN position of a valve. Better yet, degree of illumination is based on user preference and can be customized on request.

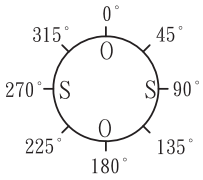


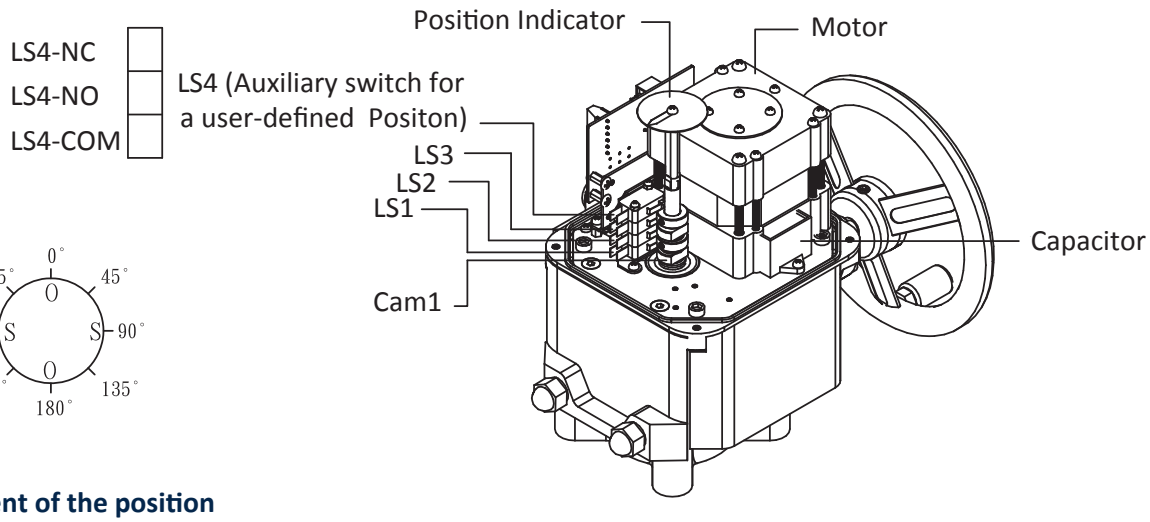


OPTIONS
TRI-POSITIONING TYPE for 110/220 V_{AC}

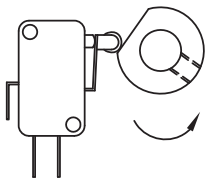
Same actuator, more possibilities

This versatile, high performance actuator offers automated solutions to mixing and divering with various available flow patterns and end configurations. Driven by 3 limit swiches from AC power, the end pisition is controlled through mechanical autation by the three rotating spindle cam to touch the shrapnel of limit switch. Both Clock wise and counter-clockwise operation are possible, simply adjust the cam to change the sotp angles according to your demand

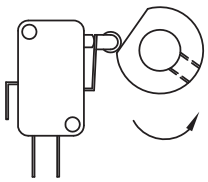




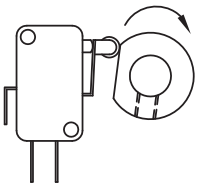
• Adjustment of the position



LS1 (with Golden Color Cam1): Adjustment of CCW to 0°



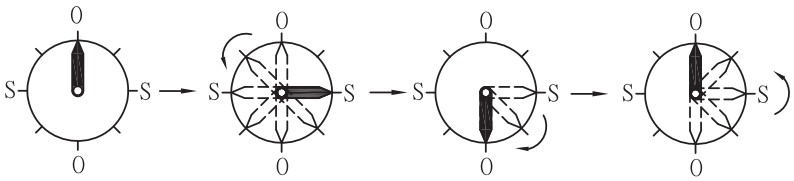
LS2 (with Golden Color Cam2): Adjustment of counterclockwise (CCW) to 90°



LS3 (with Black Color Cam3): Adjustment of clockwise (CW) to 180°

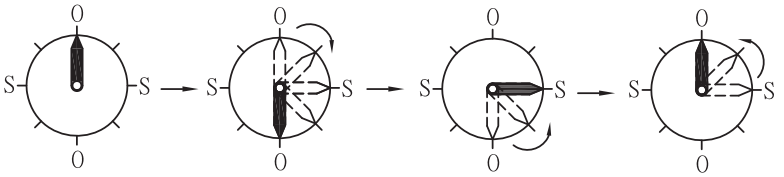
• Operation

0°→ 90°→ 180°→ 0°



Zero Reference Position 0° | 0° CCW to 90° | 90° CW to 180° | 180° CCW to 0°

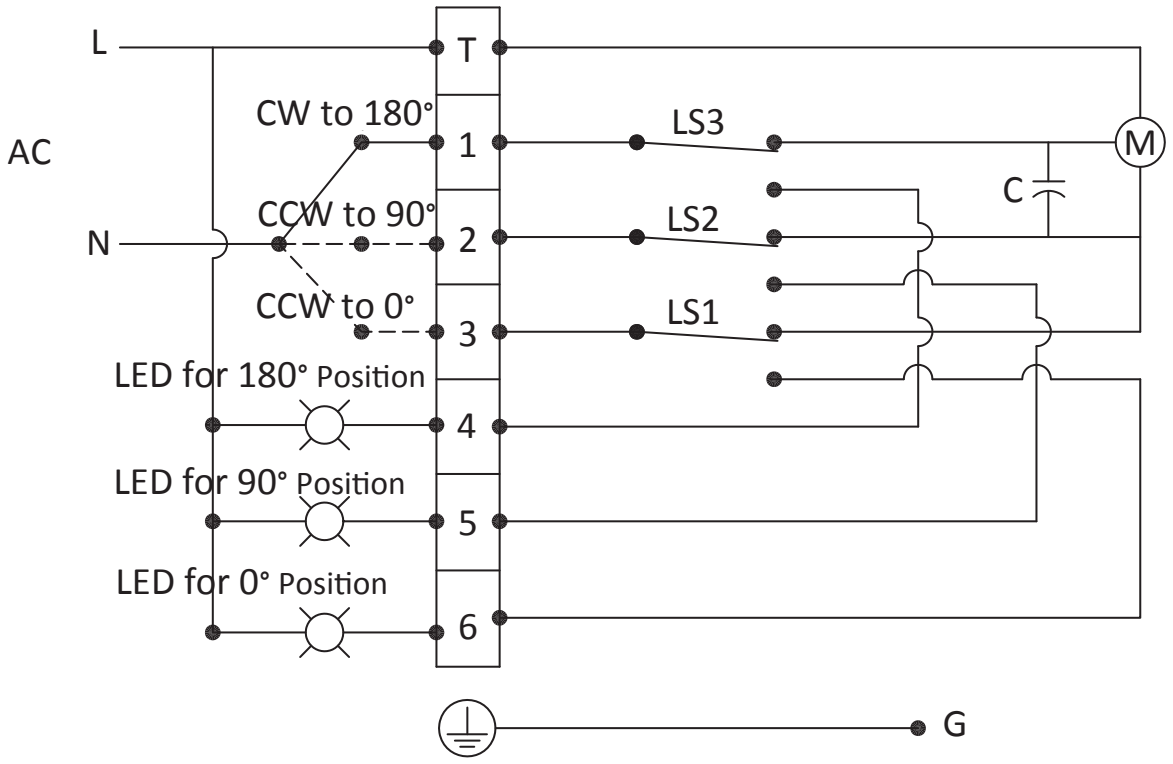
0°→ 180°→ 90°→ 0°



Zero Reference Position 0° | 0° CW to 180° | 180° CCW to 90° | 90° CCW to 0°

OPTIONS
TRI-POSITIONING TYPE for 110/220 V_{AC}

- **Wiring Diagram**



OPTIONS
The Wireless Smart Valve and AppView™

The Smart Valve, Comprehensively Integrates Sensors, Actuator, Valve and Wireless Technology, Helps Simplify Setup and Operation.

No need for special protocol, it is compatible with conventional wireless network, Valve control at your fingertips. Anytime, anywhere.

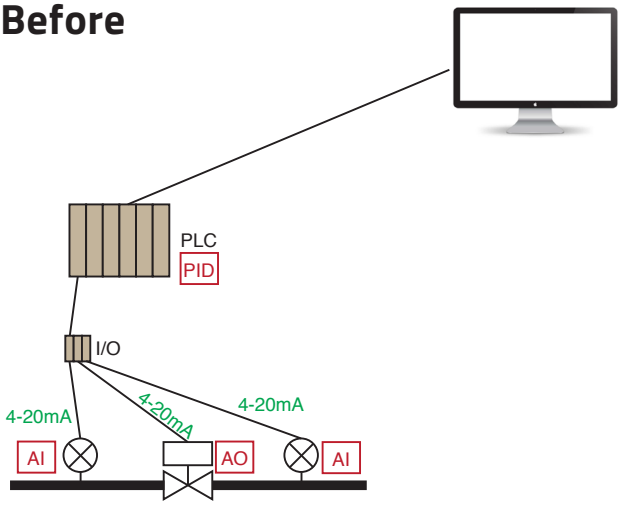
The AppView™ provides a dashboard for monitoring, actuating and executive control thru piping flow between the valve and operator. Through the two-way communication, the AppView™ makes your mobile device not only a current status monitor but also a command maker. And, it's simple.

AppView™ provides:

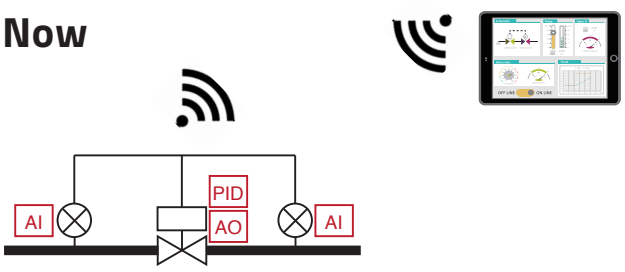
- Current status of AI such as Temperature, Pressure, Pressure Difference and Flow
- Command for AO or DO
- Control Algorithm such as PID
- Graphical display of valve and sensor status
- PST (Partial Stroke) – scheduled automatic test or manual

Our latest product, the SMART VALVE, integrates sensor, actuator and valve technology together, transmitting data to your iphone, tablet or other mobile devices via wireless protocol. The result? Instant monitoring and control of pipeline flow, setting of pre-alert data, as well as complete control of valve open/closure, anytime anywhere.

Before



Now



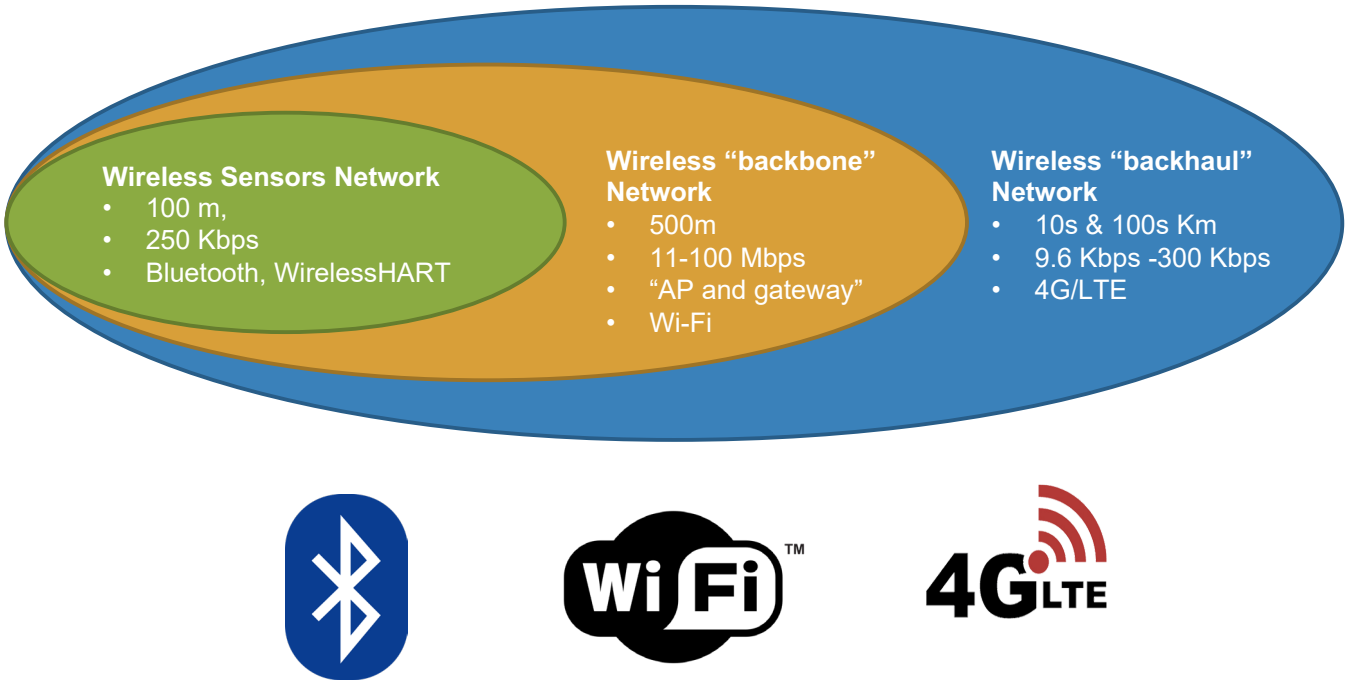
Eliminating the need for closed-loop control of PLC and I/O

Whether with a pressure, temperature or flow transmitter; through integration of the transmitter and actuator, user can gain:
(1) Directly control, or
(2) Indicrect contorl.

(1) Direct Control (open loop): also known as manual control. Based on signal from transmitter, user can specify the valve opening degree. For example, as downstream pressure continues to decrease, dianostic determines high possibility of pipeline leakage, user can instantly remotely close the valve completely, to avoid further complications that might result in severe accident.
(2) Indirect Control (closed loop): we use algorithm for micro-processor to directly calculate PID, and send the signal from transmitter to the actuator to adjust valve opening degree, to achieve constant pressure, temperature or flow rate parameter in a closed loop. For example, user can set the desired flow rate, and the SMART VALVE will think by itself and maneuver valve opening degree to achieve the setpoint.

Various wireless protocols to satisfy different distance requirements

For short distance less than 100m, we use Bluetooth and WirelessHART (under development) to implement communication for short distance.
For mid distance less than 500m, WIFI + repeater is the most economical and efficient choice.
For long distance communication in few kilometers or multiples of kiloemeters, user can install a SIM card on the mobile device, and enjoy complete control using 4G/LTE.



Remote Alerts, Stem leakage detection and Partial Stroke

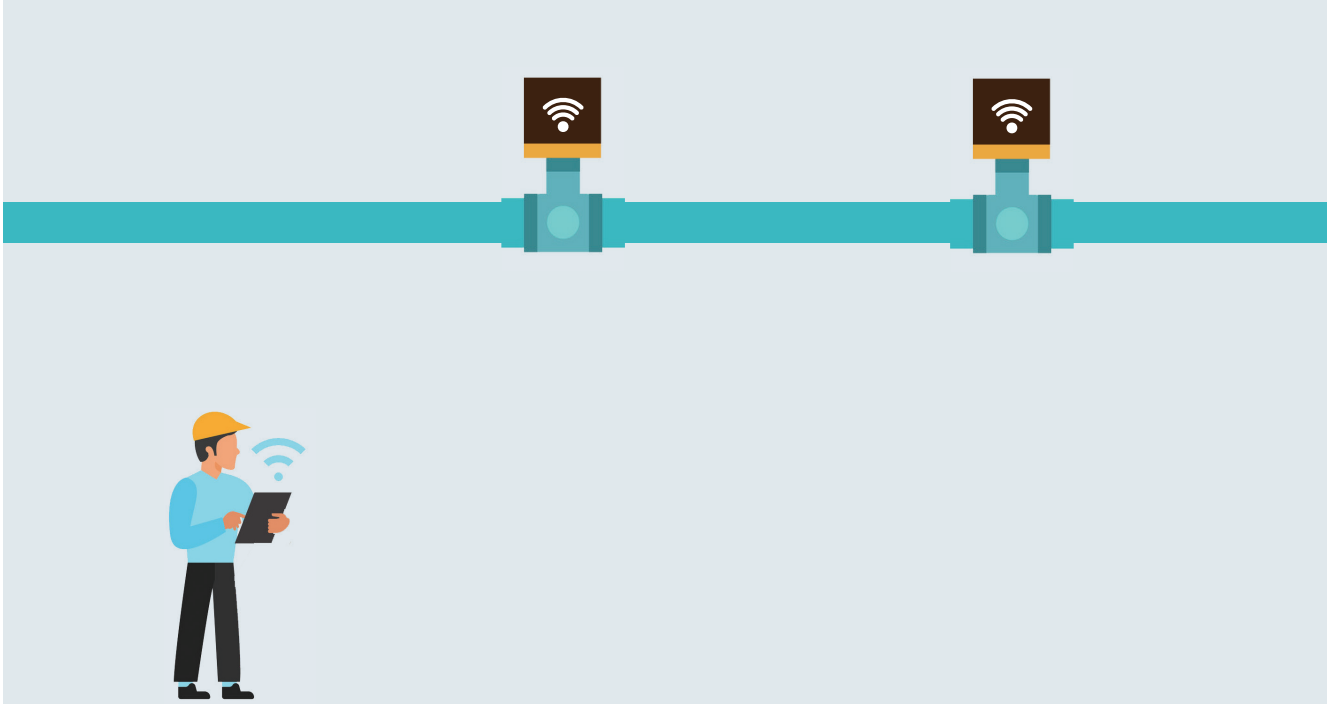
In addition to providing feedback signal to actuator for control purpose, the data from transmitter can further help user to set pre-alert or early detection point. As mentioned in earlier example where downstream pressure is observed to have been decreasing, we can further set the parameter such that: when pressure decreases to 75% of the original, SMART VALVE can send pre-alert to user's mobile or tablet.

We could further position a gas detector on the extenssion bonnet of the stem, allowing stem leakage detection to be part of the alert indication.

In real-life applictions, when seat and stem get stuck it often brings much trouble to the actuator. We just need to set the frequency and angle opening on the mobild device, for instance to perform a 5% partial stroke, and much trouble of not being able to open/close the valve can be avoided. It's that easy.

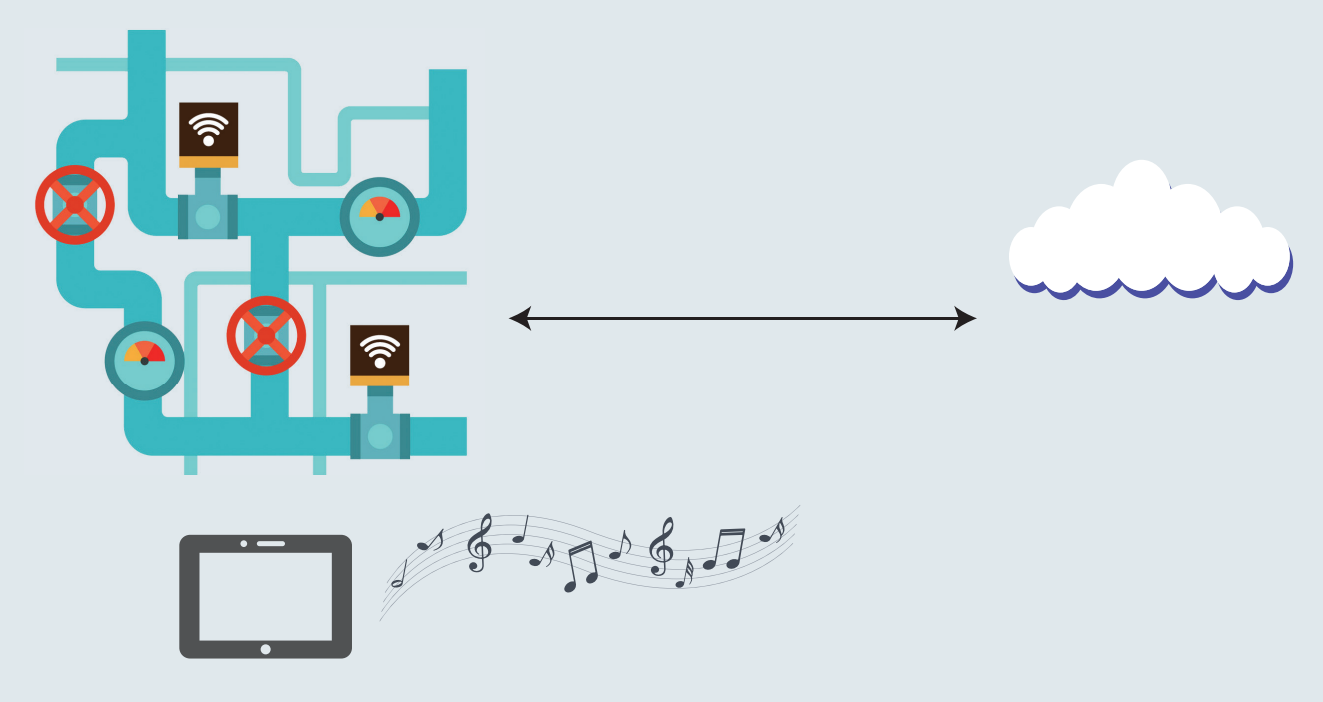
Wireless Local Control for 1-to-1 field device application

In real-life applications, pipeline workers often encounter difficulty approaching the site or danger of on-site maintenance. They need a method of control between the remote control from control room and local control. Our wireless solution simply solves the case. With mobile device such as a smart phone or a tablet, simple pairing function from Bluetooth uses P2P network to establish one-to-one (1:1) communications between relevant devices. Information such as valve on/off command, or valve status, even data from surrounding sensors, can all be integrated into one valve actuator, which through AppView™ software, enabling user to control real-time information of the valve.



1-to-multiple field devices application

This is achievable by the algorithm control of traditional and complicated PLC system. Except now, we shall do the same with a simple tablet and WiFi system. With your tablet being the commander, our solution utilizes multiple sensor devices and a valve actuator, actualizing AO, AI, PID pipeline controls together in symphony. And through the Cloud technology, you may also choose to place relevant data on the Clouds, for use of Big Data calculations and Cloud computing.



Optimized Solution, every time.

Since 1982, PVS FLOW CONTROL has focused on providing quality valve solutions to our customers, safely, on time and on budget. Whether mechanical valves, instru-mentation, automation package, or precision OEM parts, you can count on us to deliver as promised. It's that simple.

A name with a promise.

PVS FLOW CONTROL

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