

J3CS Smart Electric Actuator Function: MODULATING CONTROL , STAYS PUT ON POWER FAILURE



E6605S

Actuator direct mounted. Max +70C



Manual versions

Main J3/ J3C Smart electric actuator features:

- LED light for continual visual actuator status feedback.
- Fully weatherproof smart industrial actuator.
- Multi-voltage 24-240V capable actuator.
- All external electrical connections, no need to remove cover .
- Selectable manual override facility.
- Thermostatic anti-condensation heater.
- Electronic torque limiter.
- End of travel switches for remote open/ closed indication.
- CE marked.
- EU manufactured by J+J.

Applications:

Water, foodstuffs and many corrosive media, subject to compatibility with wetted parts in contact with media.

Electrical actuators sized on a maximum differential pressure of 10 bar wet service, operated at least once per day. If the intended duty differs from these parameters or is dry (air or gas), call to check JJ actuator sizing as a larger output valve actuator may be required.

Maximum working temperature of a direct mounted assembly is +70C. For higher working temperatures , consider models that have a mounting kit between the valve and actuator which uses air cooling to dissipate the rising heat from the valve away from the actuator. Should the J3CS smart actuator see more than +70C it will malfunction.

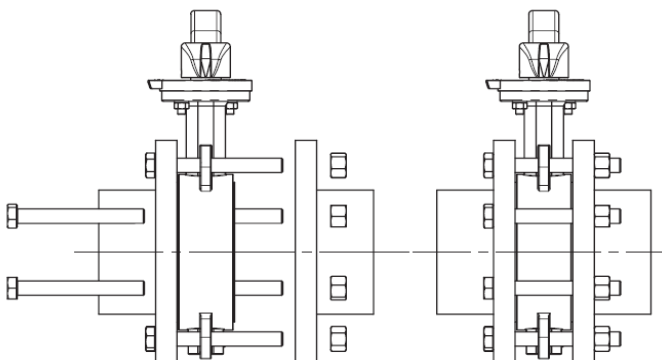
Specifications:	
Actuator housing	UV Protected Polyamide
Supply voltage range	24-240V AC or DC
IP Rating	IP67
Actuator temp limits	-20 to +70°C
Assembly temp limits	E6605S +70°C Direct mounted E6615S +120°C Mounted via kit
Valve body	Ductile Iron, epoxy coated
Valve disc	Stainless steel
Valve liner	PTFE encapsulated EPDM
Valve Pressure rating	10 Bar
Valve temp limits	-25 to +150°C
Size range	2" to 8"

Wafer pattern butterfly valve installation information:

Wafer pattern butterfly valves sandwich between two mating flanges, secured by through bolts that pass all the way from one flange to the other, and a corresponding nut. See diagram to the right.

The correct alignment of wafer pattern valve so that the butterfly valve's resilient liner seals against the raised faces of the flanges is aided by through-bolt lugs cast into the wafer valve's body, although as these lugs are oval in shape to allow alignment with several different flange standards (ANSI, BS, DIN), care must be taken to ensure correct alignment when tightening the through bolts.

*Wafer butterfly valves are not suitable for end of line service.



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J3CS MODULATING ELECTRIC ACTUATOR

The J3CS Modulating is used where the position of the actuator is required to be set by a control input signal. Unlike an on-off electric actuator, a modulating actuator will rarely travel from open to closed in one movement, it may only be required to alter its position by a few degrees. This is achieved by installing our DPS (Digital Positioning System) - installed by J+J when ordered as a modulating electric actuator.

How this electric 1/4 turn valve works (Modulating):

Power permanently connected, movement of the J3CS actuator is then proportional to an input signal, typically 4-20mA or 0-10V. The DPS processor continually compares the physical position of the J3CS output shaft to the input signal, and if a difference exists, controls the motor to eliminate the difference. An output signal is provided as standard. The reaction from the J3CS actuator to a loss of control signal can be set as below, but it will stay put on loss of external power.

Configuration options:

- 1) Closes on loss of control signal
- 2) Opens on loss of control signal
- 3) Stays put on loss of control signal

The DPS in the J3CS uses the latest magnetic position sensing technology which, when combined with digital processing, produces very accurate modulating control. This is a very Smart Red Box.

Options:

It is possible to change the J3CS actuator's function by installing user friendly plug and play function conversion kits. This will provide the following alternative function:

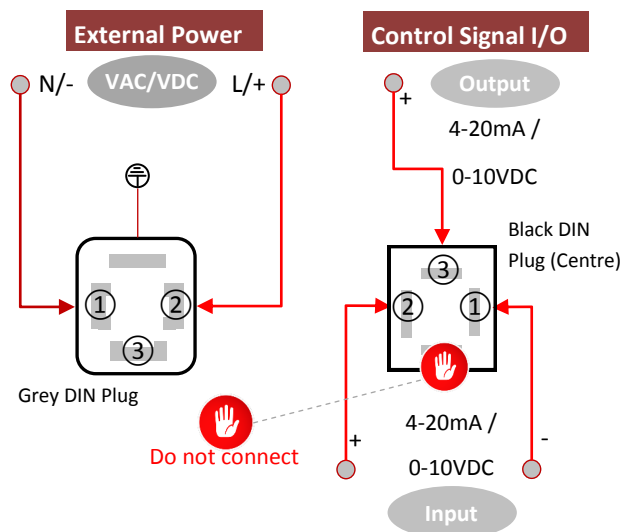
Failsafe Modulating J3CS Actuator

Adding the BSR (Battery 'Spring Return') plug and play function conversion kit to the J3CS modulating actuator, it becomes a J3CS failsafe modulating electric actuator.

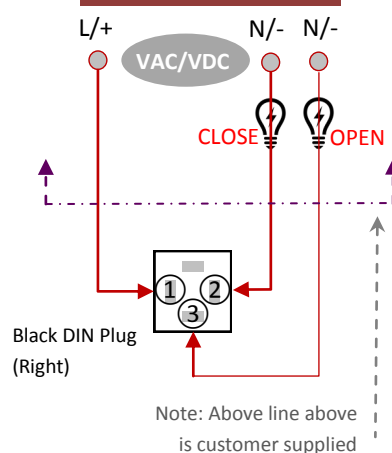
The advantage this gives is that the actuator will fail to either the open or closed position, depending on how the DPS positioner is configured, in the event of an external power failure.

The BSR failsafe system comprises of an industrial rechargeable NiCad battery and a PCB containing a trickle charger and control circuitry. It can either be installed by J+J on original supply, or retro-fitted.

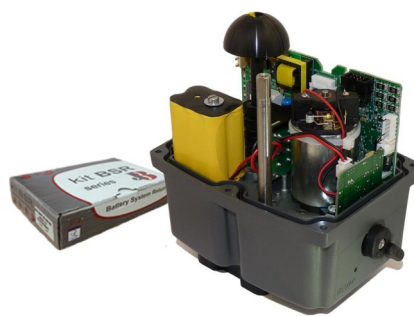
J3CS MODULATING WIRING



Position Confirmation



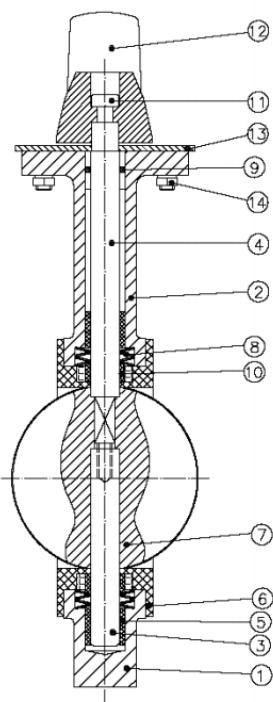
In J+J electric actuators all electrical connections are made externally using the external DIN plugs supplied with the actuator. There is no need to remove the valve actuator's cover to connect electrically. There are no terminals internally to connect to.



BSR Failsafe plug & play kit can be added to create failsafe modulating function.

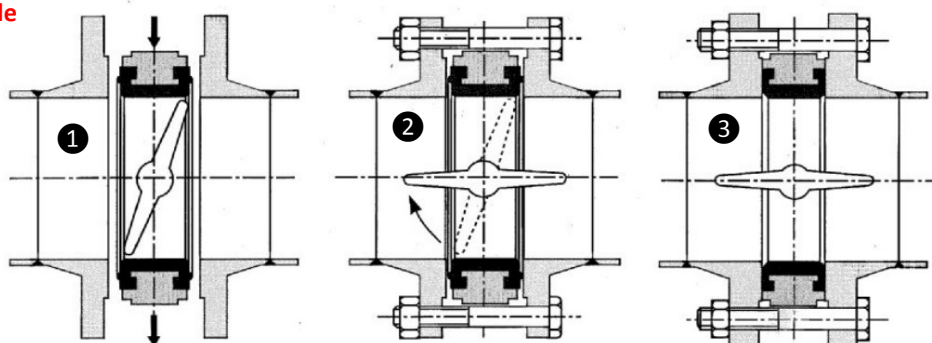
Typical Valve Data 1

Typical Dimensions & Materials of Construction



Part	Description	Material
1	Split body lower part	Ductile Iron GGG40
2	Split body upper part	Ductile Iron GGG40
3	Lower stem	SS316
4	Upper stem	SS316
5	Bush	RPTFE
6	Seat	PTFE on EPDM
7	Disc	SS316 Polished
8	Spring washer	Steel
9	O Ring	Viton
10	Retainer	Nylon
11	Screw	Plated steel
12	Lever	Aluminium
13	Notchplate	Plated steel
14	Bolt	Plated steel

Installation guide

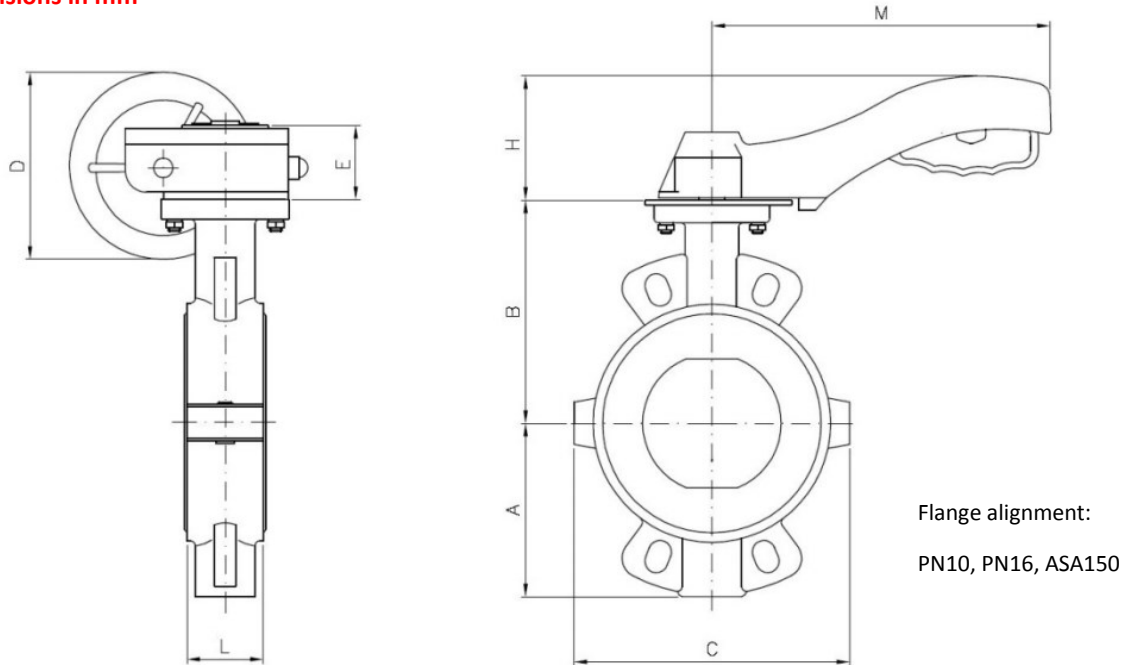


- 1 When inserting the butterfly valve between the flanges, ensure the flanges are wide enough apart so that the valve does not touch the flange's raised faces, and the disc **MUST** be slightly open
- 2 Fit the flange bolts but **BEFORE** tightening, **OPEN THE DISC FULLY**
- 3 Tighten the bolts evenly

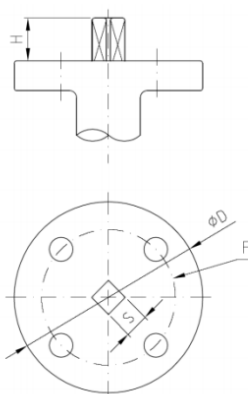
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Typical Valve Data 2

Valve Dimensions in mm

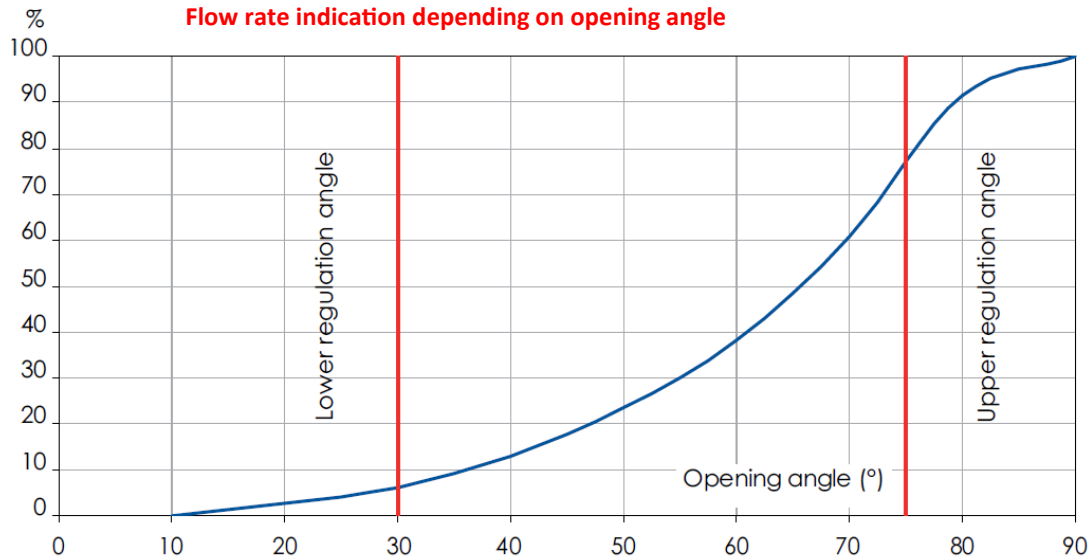


Size	PN	L	A	B	C	D	E	H	M
2" DN50	10	43	80	140	119	-	-	65	172
2 1/2" DN65	10	46	89	150	131	-	-	65	172
3" DN80	10	46	95	158	145	-	-	65	172
4" DN100	10	52	114	176	180	-	-	78	264
5" DN125	10	56	127	190	202	-	-	78	264
6" DN150	10	56	139	210	230	150	72	-	-
8" DN200	10	60	175	236	295	300	85	-	-



Size	F ISO5211	S	D	H
2" DN50	F05	11	70	26
2 1/2" DN65	F05	11	70	26
3" DN80	F05	11	70	26
4" DN100	F07	14	90	29
5" DN125	F07	14	90	29
6" DN150	F07	14	90	32
8" DN200	F10	17	125	38

Typical Valve Data 3



Flow Chart depending on opening angle (Kv in m³/hr at 1 bar pressure drop)

DN	Disc Position (degrees)								
	90°	80°	70°	60°	50°	40°	30°	20°	10°
50	125	99	73	53	37	23	14	6	1
65	244	193	141	93	58	37	21	10	1
80	399	315	231	133	83	53	30	13	2
100	727	606	429	237	148	94	54	23	3
125	1190	991	670	370	232	147	85	37	4
150	1600	1334	887	490	306	195	112	48	5
200	2868	2458	1610	935	588	364	208	88	10

Pressure x Temperature Chart

