

J3CS Smart Electric Actuator Function: POWER OPEN - POWER CLOSE , FAILS 'SAFE' ON POWER FAILURE



E6604S

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.

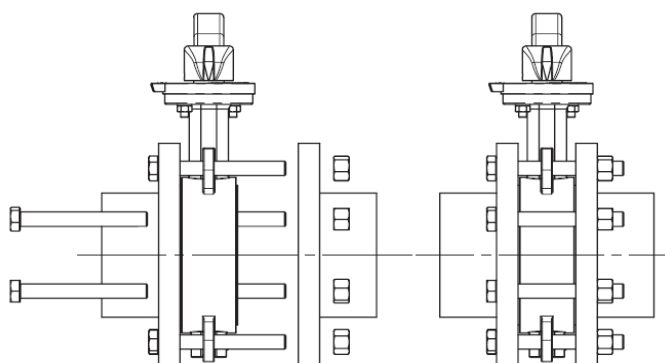
Specifications:	
Actuator housing	UV Protected Polyamide
Supply voltage range	24-240V AC or DC
IP Rating	IP67
Actuator temp limits	-20 to +70°C
Assembly temp limits	E6604S +70°C Direct mounted E6614S +120°C Mounted via kit
Valve body	Ductile Iron, epoxy coated
Valve disc	Stainless steel
Valve liner	PTFE 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.



J3CS FAILSAFE ELECTRIC ACTUATOR

Power open, power close, fails to pre-set position on loss of external power. Typically fails closed, but can be set to fail open. The BSR Failsafe conversion kit is pre-installed by J+J.

How this electric 1/4 turn valve works (on-off):

Electrically operated valves are driven by a motor and gearbox. On receipt of a continuous voltage signal the motor runs and, via a gearbox in the J+J smart electric actuator, rotates the valve stem. The motor stops at the desired position (usually 0° or 90°) by internal cams striking micro-switches. The smart valve actuator remains in this position, with the voltage still applied continuously, until switched and a continuous voltage reversing signal is applied, which runs the motor in the opposite direction, reversing the rotation until separate set of internal cams strike separate set of micro-switches.

Options:

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

Failsafe Modulating J3CS Actuator

Movement of the J3CS actuator is proportional to an input control signal, typically 4-20mA or 0-10V, but by installing our DPS (Digital Positioning System) user friendly plug and play kit, it will fail to the desired pre-set position on loss of external power. There are also options for how the J3CS modulating reacts to loss of the control signal as follows:

Configuration options:

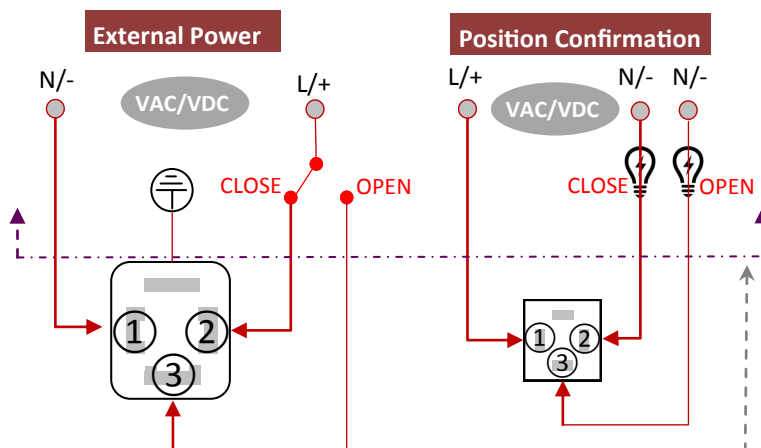
- 1) Closes on loss of control signal, or on loss of power
- 2) Opens on loss of control signal, or on loss of power
- 3) Stays put on loss of control signal



DPS Modulating plug & play kit can be installed with the BSR failsafe kit to create failsafe modulating function.

Electrical Connection - Wiring of DIN Plugs

J3CS FAILSAFE WIRING



Note: Above line above is customer supplied.

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.

Pre-installed Plug & Play Function Conversion Kit:



BSR Failsafe plug & play kit (already installed by J+J in the failsafe version)

How the BSR (Battery 'Spring Return') system works:

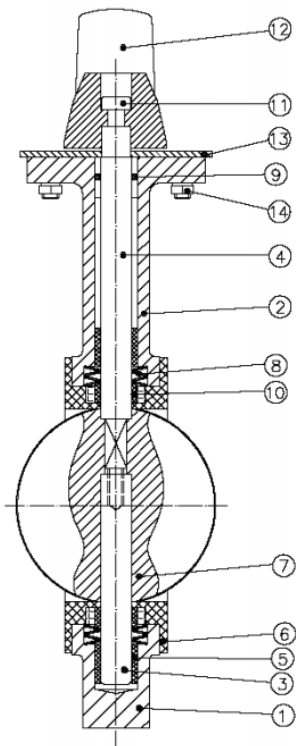
The user friendly BSR failsafe function plug and play conversion kit adds an industrial NiCad rechargeable battery and PCB to the standard power open, power close J3CS actuator. The electric actuator continues to operate power open, power close, and whilst doing so, the battery is constantly trickle charged to keep it fully charged.

When external power is lost, a switch in the BSR PCB draws internal power from the battery to send the J3CS to the desired pre-set 'safe' position, if not already in that position.

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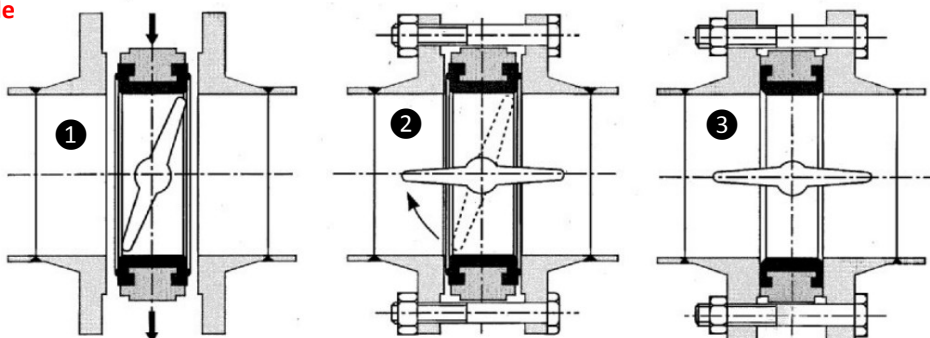
Typical Valve Data 1

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

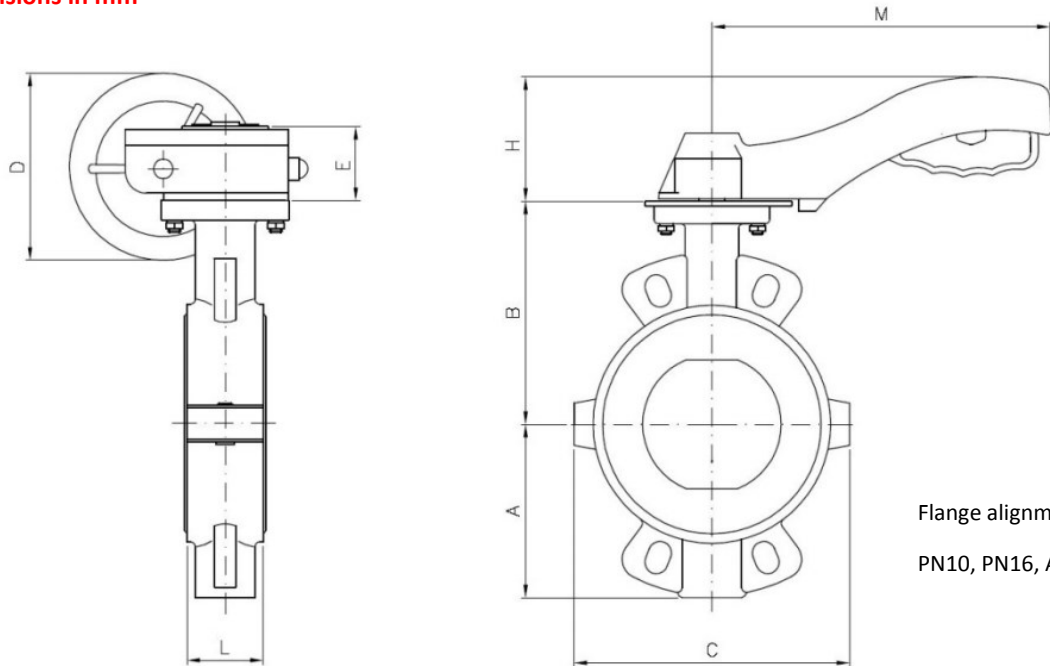


- 1 When inserting the butterfly valve between the flanges, ensure the flanges are wide enough apart so that the valve does not touch the flange's raised faces, and the disc **MUST** be slightly open
- 2 Fit the flange bolts but **BEFORE** tightening, **OPEN THE DISC FULLY**
- 3 Tighten the bolts evenly

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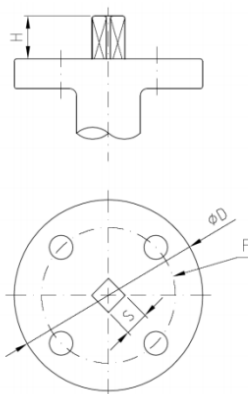
Typical Valve Data 2

Valve Dimensions in mm



Flange alignment:
PN10, PN16, ASA150

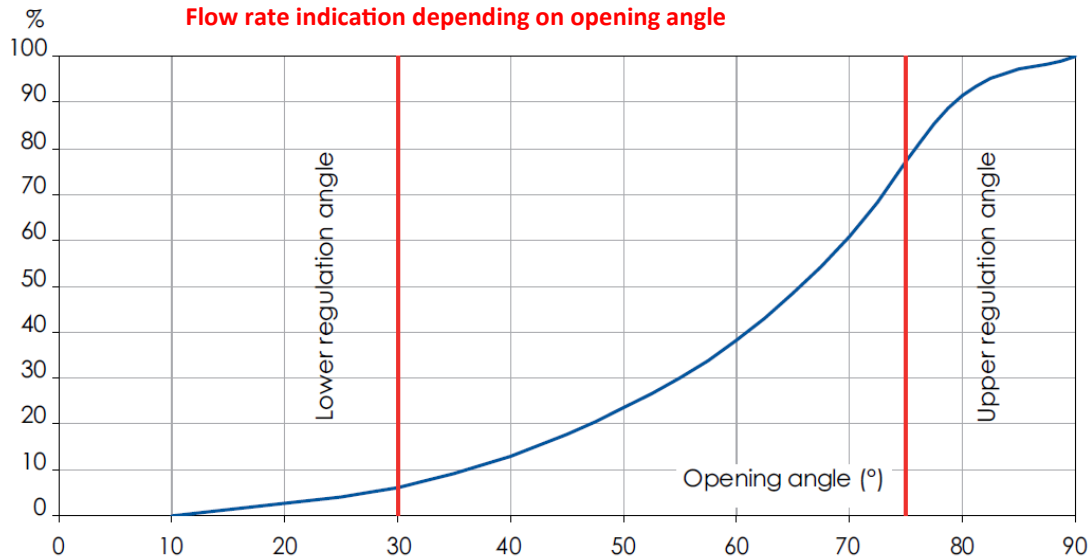
Size	PN	L	A	B	C	D	E	H	M
2" DN50	10	43	80	140	119	-	-	65	172
2 1/2" DN65	10	46	89	150	131	-	-	65	172
3" DN80	10	46	95	158	145	-	-	65	172
4" DN100	10	52	114	176	180	-	-	78	264
5" DN125	10	56	127	190	202	-	-	78	264
6" DN150	10	56	139	210	230	150	72	-	-
8" DN200	10	60	175	236	295	300	85	-	-



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

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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

