

J3CS Smart Electric Actuator Function: POWER OPEN - POWER CLOSE , STAYS PUT ON POWER FAILURE



Type: E2203ES

Electric actuator direct mounted



Type: E2213ES

Electric actuator fitted via kit

Main J3CS 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:

Potable water (but not WRAS approved), oil, air and most non-corrosive media, subject to compatibility with wetted parts in contact with media.

JJ 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 valve actuator sizing as a larger output electrical 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 or TSM stem extension 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	E2203ES +70°C
	E2213ES +130°C
	E2223ES +100°C
Valve body	CF8M (Cast 316SS)
Valve ball	316SS
Valve seats	PTFE
Valve Pressure rating	UTI 2" 64 bar at ambient temp
Valve temp limits	-20 to +200°C
Size range	1/4" to 43"

Ball valve information:

Full bore 2 piece construction, blow-out proof ball and stem, anti-static, providing full unrestricted flow and a very low pressure drop across the valve. Designed for automation with integrally cast ISO5211 actuator mounting platform. Turning the ball through 90° fully opens the valve, turning back through 90° fully closes the valve and isolates the flow. End connections are threaded BSP female. NPT ends available as an option.

Typical KV Values

Size	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"
KV	6.8	6.8	12.8	29.1	47.8	72.6
Size	1 1/2"	2"	2 1/2"	3"		
KV	106.8	213.7	273.3	495.3		

J3CS ON OFF ELECTRIC ACTUATOR

Power open, power close, stays put on loss of external power.

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 plug and play function conversion kits. These will provide the following alternative functions:

Failsafe J3CS Actuator

J3CS fails to pre-set position using our BSR (Battery 'Spring Return' system which creates an alternate power supply should the external power fail.

Modulating J3CS Actuator

Movement of the J3CS actuator is proportional to an input control signal, typically 4-20mA or 0-10V, by installing our DPS (Digital Positioning System) user friendly plug and play kit. There are options for how the J3CS modulating reacts to loss of the control signal, 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

Failsafe Modulating J3CS Actuator

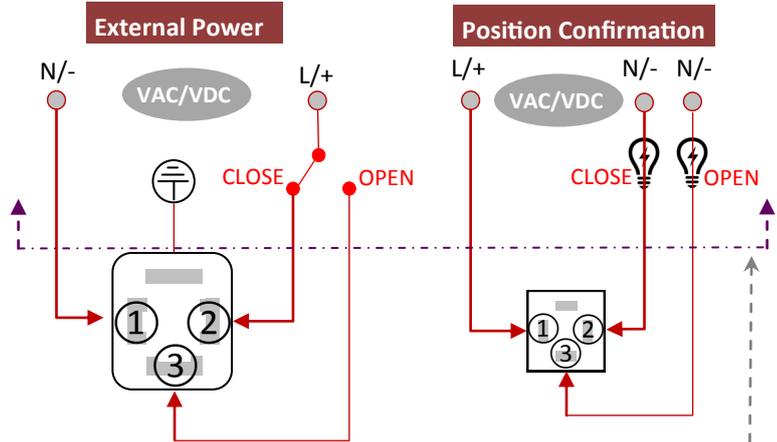
Failsafe modulating by installing the J+J BSR (Battery 'Spring Return') plug and play kit, operates functionally as a modulating electric actuator as described above, but will fail as per the DPS setting on loss of external power, as follows:

Configuration options:

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

Electrical Connection - Wiring of DIN Plugs

J3CS ON-OFF & FAILSAFE WIRING (Same connection for either)



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.

Optional Plug & Play Function Conversion Kits



Installing J+J Plug & Play function conversion kits

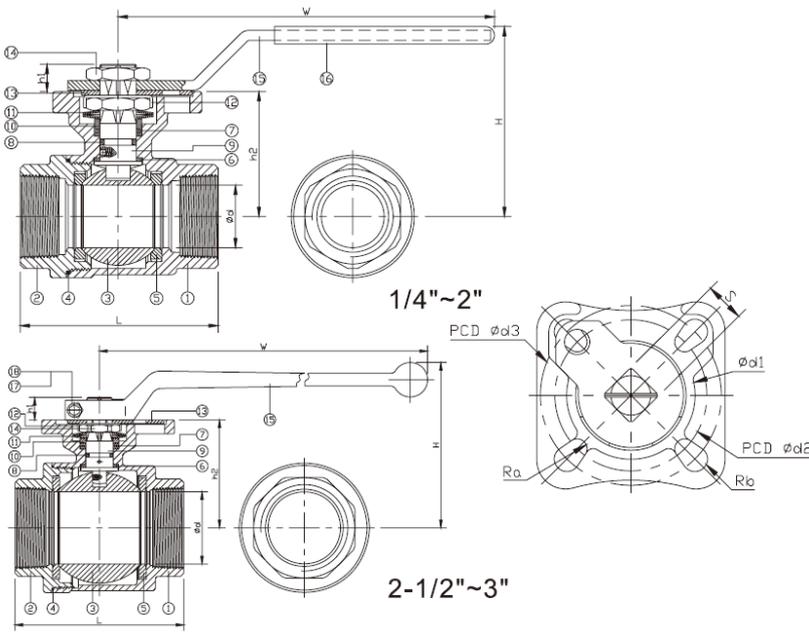
Failsafe and/or modulating function is quick and easy to achieve in the J3CS smart electric actuator by the fitting of the user friendly failsafe and/or modulating plug & play function conversion kits to the standard on-off J3CS smart valve actuator. When actuated valves are ordered with failsafe, modulating or failsafe modulating function, J+J install and test the plug and play function conversion kits. They can however be easily retro-fitted to J3CS smart electric actuators should the on-off function requirement (supplied as standard function), change.

Typical Valve information

FEATURES

- Full bore
- Blow-out proof stem
- Anti-static device
- Working pressure Max 1000psi/ 63 Bar (CWP)
- Temp range: -20 to +2000C (-4 to +392F)
- ISO5211 Direct Mount for actuation

ITEM	PARTS	MATERIAL
1	BODY	ASTM A351-CF8M ASTM A216-WCB
2	CAP	
3	BALL	ASTM A351-CF8M
4	SEAL	PTFE
5	SEAT	PTFE / RTFE
6	THRUST WASHER	PTFE
7	PACKING	
8	O-RING	VITON
9	STEM	ASTM A276-316
10	GLAND RING	AISI 304
11	BELLEVILLE WASHER	AISI 301
12	LOCKING WASHER	AISI 304
13	STOPPER	
14	STEM NUT	
15	HANDLE	PVC
16	HANDLE SLEEVE	
17	BOLT	AISI 304
18	NUT	

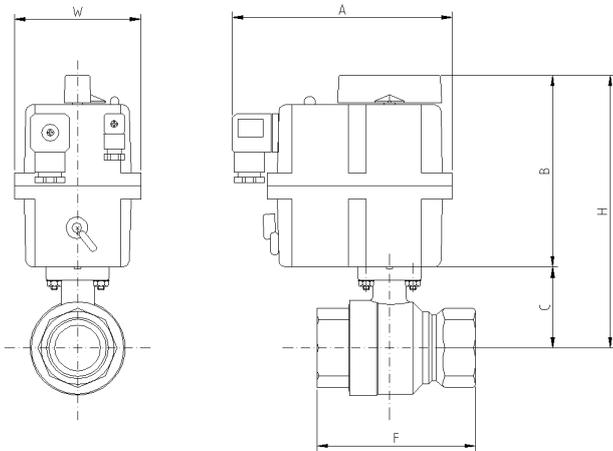


DN	d	L	H	W	S	h1	h2	d1	d2	d3	Ra	Rb	Torque (N-m)
8	11.6	58	62	113.5	9	8	36.4	31	36	42	2.75	2.75	5.5
10	12.7	58	62	113.5	9	8	36.4	31	36	42	2.75	2.75	5.5
15	15	58	62	113.5	9	8	36.4	31	36	42	2.75	2.75	5.5
20	20	65.6	65	113.5	9	9	39.2	31	36	42	2.75	2.75	7.5
25	25	78.7	76	140	11	11	48.7	35.5	42	50	2.75	3.5	11
32	32	90	81.5	140	11	11	54.2	35.5	42	50	2.75	3.5	15
40	38	105	103	172	14	11.5	65.7	56	50	70	3.5	4.5	20
50	50	124	111.5	172	14	11.5	75.5	56	50	70	3.5	4.5	40
65	63	146.2	141	325	17	20.5	91.5	76	70	102	4.5	5.5	60
80	76	163.7	150	325	17	20.5	100.75	76	70	102	4.5	5.5	85

unit:mm

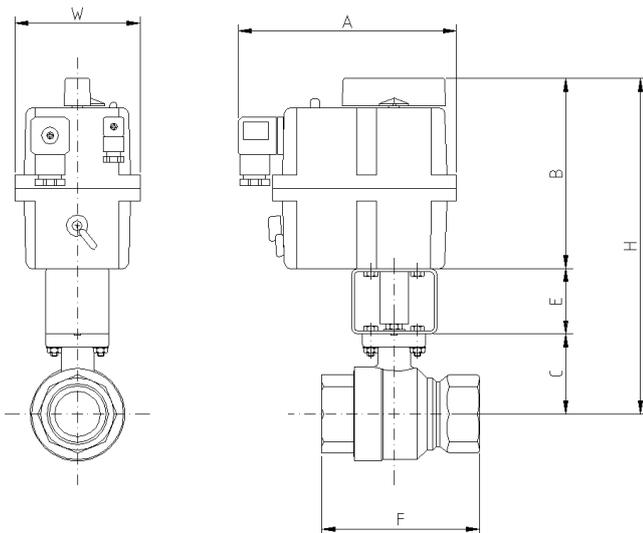
Type: **E2203ES** Actuator direct mounted to valve

Typical Dimensions:



E2203E S Dimensions remain unchanged for all versions						
- On-off, failsafe, modulating and failsafe modulating						
	Model	A	F	H	W	Kilos
≤1/2"	20	177	65	188	110	2.1
3/4"	20	177	75	196	110	2.2
1"	20	177	88	206	110	2.6
1 1/4"	20	177	102	210	110	3.0
1 1/2"	35	177	110	249	110	4.4
2"	35	177	125	257	110	5.4
2 1/2"	55	177	161	305	110	9.4
3"	85	177	178	314	110	12.4

Type: **E2213ES** Actuator fitted to valve via a bracket and drive adapt-



E2213E S Dimensions remain unchanged for all versions							
- on-off, failsafe, modulating & failsafe modulating							
	Model	A	E	F	H	W	Kilos
≤1/2"	20	177	50	65	238	110	2.3
3/4"	20	177	50	75	246	110	2.4
1"	20	177	50	88	256	110	2.8
1 1/4"	20	177	50	102	260	110	3.2
1 1/2"	35	177	50	110	299	110	4.6
2"	35	177	50	125	307	110	5.6
2 1/2"	55	177	50	161	355	110	9.6
3"	85	177	50	178	364	110	12.6

Type: **E2223ES** Actuator fitted to valve via a tubular stem extension

Awaiting details

E2225E S Dimensions remain unchanged for all versions							
- on-off, failsafe, modulating & failsafe modulating							
	Model	A	E	F	H	W	Kilos
≤1/2"	20	177		65		110	
3/4"	20	177		75		110	
1"	20	177		88		110	
1 1/4"	20	177		102		110	
1 1/2"	35	177		110		110	
2"	35	177		125		110	
2 1/2"	55	177		161		110	
3"	85	177		178		110	