

J3CS Smart Electric Actuator Function: FAILSAFE MODULATING CONTROL , FAILS SAFE ON POWER FAILURE



Type: E4806BS

Electric actuator direct mounted



Type: E4816BS

Electric actuator fitted via kit

Main J3 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, oil, air and most non-corrosive media, subject to compatibility with wetted parts in contact with media. Not recommended for use on steam. Not UK WRAS approved for use on potable water.

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 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	E4806BS +70°C Direct mounted
	E4816BS +110°C Mounted via kit
	E4826BS +100°C Mounted via ext'n
Valve body	Ductile Iron EN GJS400-15 Epoxy coated
Valve ball	Brass CuZn40Pb2 Chrome plated
Valve seats	PTFE
Valve Pressure rating	16 Bar
Valve temp limits	-10 to +110°C
Size range	1/2" to 8" (10" on application)

Ball valve information:

Full bore 2 piece construction, flanged PN16, 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 flanged PN16. Valve made in Italy.

These ball valves are ideal for general service ON-OFF applications.

Typical KV Values

Size	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	6"
KV	22.3	47.7	83.5	150.4	255	435	672	947	1508	4261

Kv = m³ per hour with a 1 bar pressure drop across the valve
 CV = US gallons per hour with a 1psi pressure drop across the valve
 Cv = Kv / 0.86

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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:

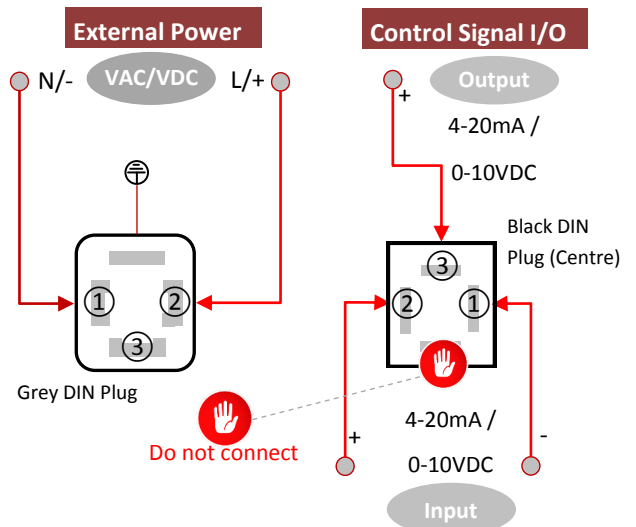
Failsafe Modulating J3CS Actuator

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.

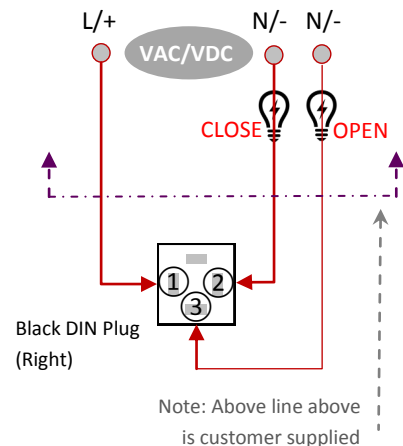
The advantage this gives is that the actuator will fail to either the open or closed position, depending on how the DPS positioner is configured, in the event of an external power failure.

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.

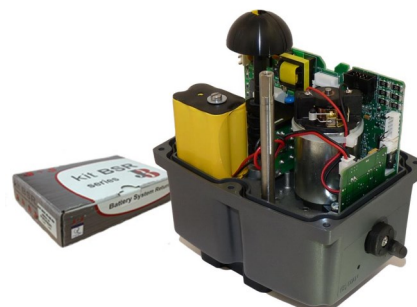
J3CS MODULATING WIRING



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.

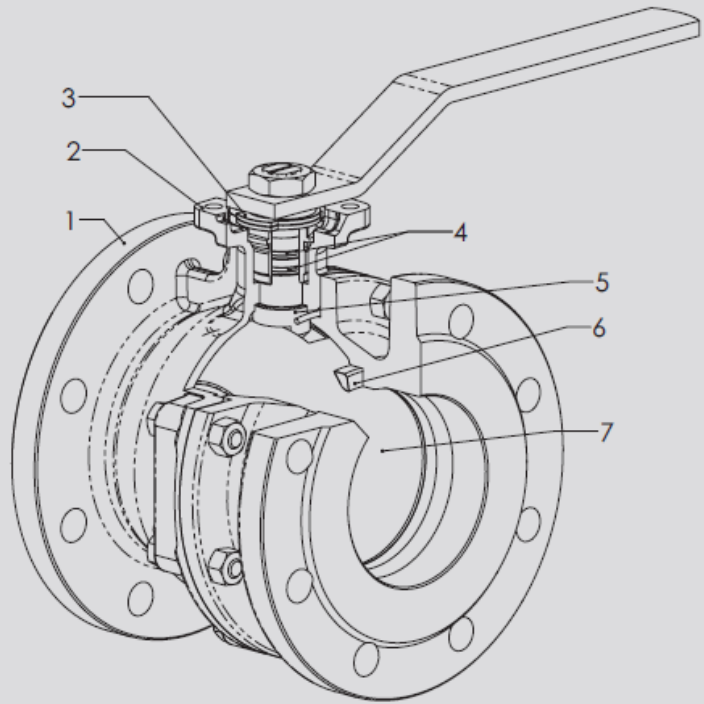


BSR Failsafe plug & play kit can be added to create failsafe modulating function.

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Valve features:

1. Inside and outside epoxy coating, high temperature resistant. Environmentally friendly, water-based paint.
2. Integrated flange, in accordance with ISO 5211.
3. Removing and repositioning of the plate at 90° allows locking of the valve in ON-OFF position.
4. The dynamic seal of the stem is guaranteed by a double O-ring, even in severe working conditions.
5. Blow-out proof stem.
6. Seat of ball in reinforced PTFE, as temperature changes, the torque remains constant.
7. Ball with full and straight bore, in chromed brass or stainless steel.



Application areas:



WATER



CONDITIONING



GAS



HEATING



INDUSTRY



FIRE FIGHTING

Standards:

CE In conformity with directive 97/23/CE PED

Construction and testing norms (correspondences):

Face-to-face: EN558/1 (ISO 5752)

Flanges: EN1092, ANSI B16.5 #150

Design: EN 1983, EN13445, ISO 5211

Marking: EN19

Testing: 100% testing in accordance with EN 12266 cat. A (ISO 5208 cat. A)

DVGW Conformity to EN 13774 norms, DVGW certification for gas

Stocked specifications:



Dimensions of flanges according to PN 16EN1092/2

B2.100 Stocked

Body: EN GJS 400-15
 Ball: Brass CuZn40Pb2
 Stem: Brass CuZn40Pb2
 O-ring: NBR
 Temp: -10 +100°C

B2.110 Optional

Body: EN GJS 400-15
 Ball: AISI 304
 Stem: Brass CuZn40Pb2
 O-ring: NBR
 Temp: -10 +100°C

B2.111 Optional

Body: EN GJS 400-15
 Ball: AISI 304
 Stem: AISI 304
 O-ring: NBR
 Temp: -10 +100°C

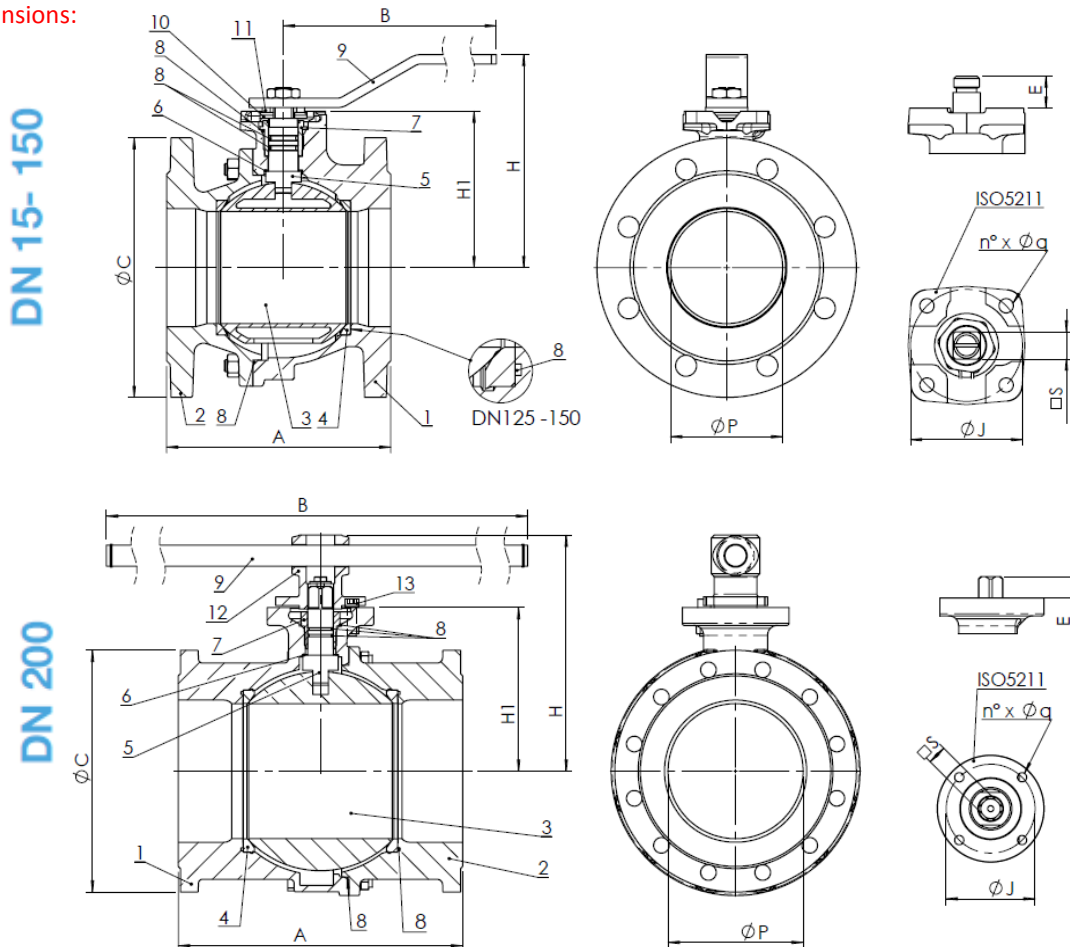
B2.121 Optional

Body: EN GJS 400-15
 Ball: AISI 316
 Stem: AISI 304
 O-ring: NBR
 Temp: -10 +100°C



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Valve Dimensions:



DN		15	20	25	32	40	50	65	80	100	125	150	200
P		15	20	25	32	40	50	63	76	95	120	145	190
A (B2.1)	EN 558/1 - 14 (ex DIN 3202 F4)	115	120	125	130	140	150	170	180	190	200	210	-
A (B2.0)	EN 558/1 - 14 (ex DIN 3202 F5)	-	-	-	-	-	-	-	-	-	-	-	400
A (F2.1)	EN 558/1 - 29 (ex NF 29-323)	-	-	-	-	136	142	154	160	172	186	200	-
H		84	84	96	101	125	135	143	165	180	225	243	320
H1		50,5	52	59	64	78,5	87	95	118	132,5	165	182,5	230
B		160	160	170	170	230	230	230	280	360	450	560	1000
C	EN1092/2 PN 16	95	105	115	140	150	165	185	200	220	250	285	340
C1		-	-	-	-	-	-	-	-	-	-	-	-
V		-	-	-	-	-	-	-	-	-	-	-	-
T		-	-	-	-	-	-	-	-	-	-	-	-
ISO 5211		F04	F04	F04	F04	F05	F05	F05	F07	F07	F10	F10	F12
J		42	42	42	42	50	50	50	70	70	102	102	125
n° x Ø q		4 x 6	4 x 6	4 x 6	4 x 6	4 x 7	4 x 7	4 x 7	4 x 9	4 x 9	4 x 11	4 x 11	4 x 13
E		11,5	11,5	14,5	14,5	17,5	17,5	17,5	20	20	24,5	24,5	27
S		□ 9	□ 9	□ 11	□ 11	□ 14	□ 14	□ 14	□ 17	□ 17	□ 22	□ 22	□ 27

Operating torque (Nm)

Nm	15	15	18	18	18	20	40	70	100	180	250	600
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N.B.: In order to choose the right actuator, we recommend multiplying the operating torque figure by a safety coefficient, K=1.5

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Valve Data:

Maximum pressure

Fluids *	Mounting	
	BETWEEN FLANGES	END OF LINE
Hazardous gases	16 bar DN15-200 10 bar DN250	10 bar DN15-100 NO DN125-250
Hazardous liquids	16 bar DN15-200 10 bar DN250	10 bar
All remaining fluids	16 bar DN15-200 10 bar DN250	10 bar

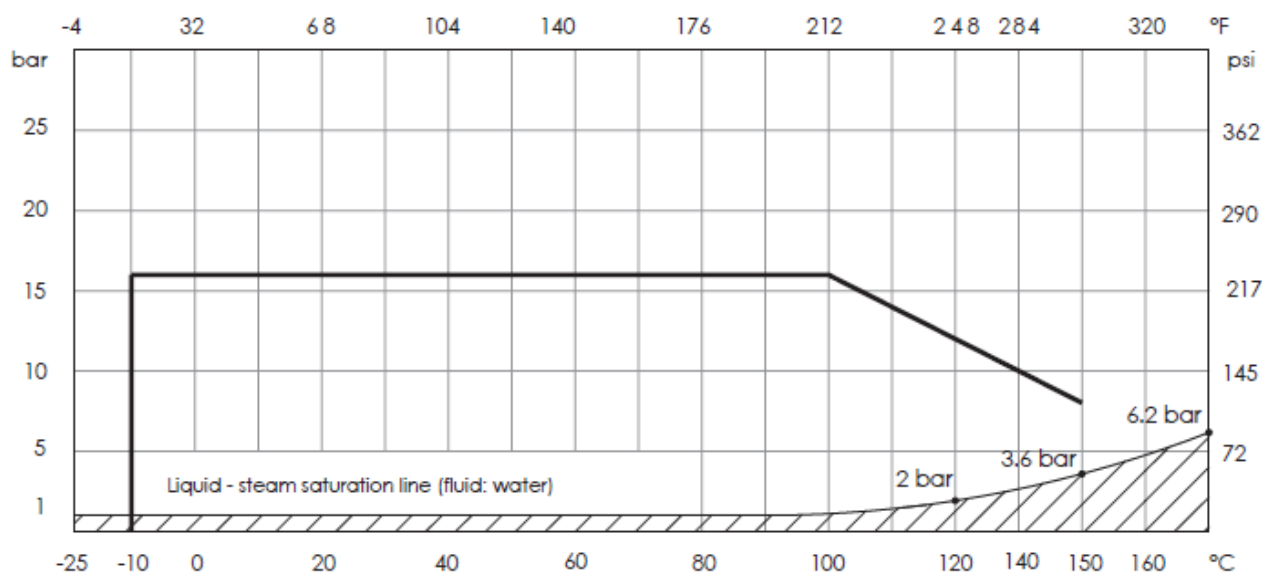
Temperature

Temperature	min °C	Max°C	
		continuous	peak
NBR	-10	100	110
FKM (Viton®)	-10	150	170

***Stoked** minimum working pressure decreases while temperature increases, please refer to "pressure/temperature" chart

*: Hazardous gas, liquids (explosive, inflammable, toxic) in accordance with 97/23/CE PED and 67/548/EEC

Pressure/temperature chart



RANGE NOT SUITABLE FOR STEAM. DO NOT use when temperature and pressure are below the liquid-steam saturation line (hatched area)

Weight (kg)

DN	15	20	25	32	40	50	65	80	100	125	150	200
B2.100	2,6	3,3	4,2	5,8	7,5	9	10,5	15,5	18,5	28	38,5	93

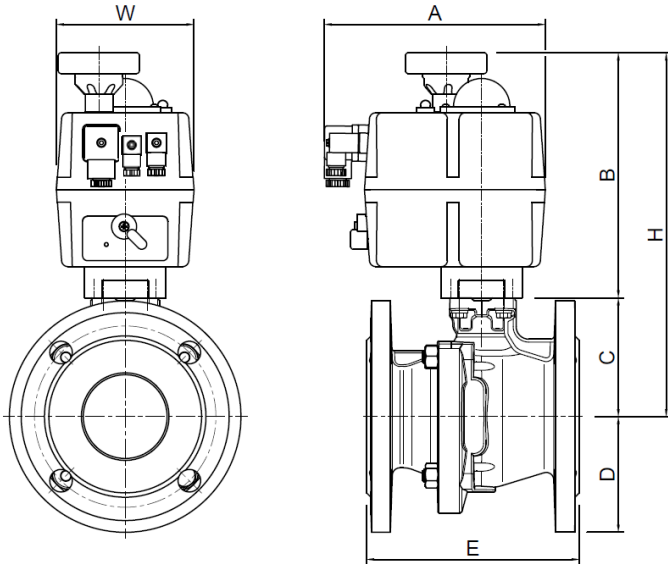
Kv - DN chart

DN	15	20	25	32	40	50	65	80	100	125	150	200	
Kv	mc/h	22,3	47,7	83,5	150,4	265	435	672	947	1508	2633	4261	6967

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Typical Dimensions:

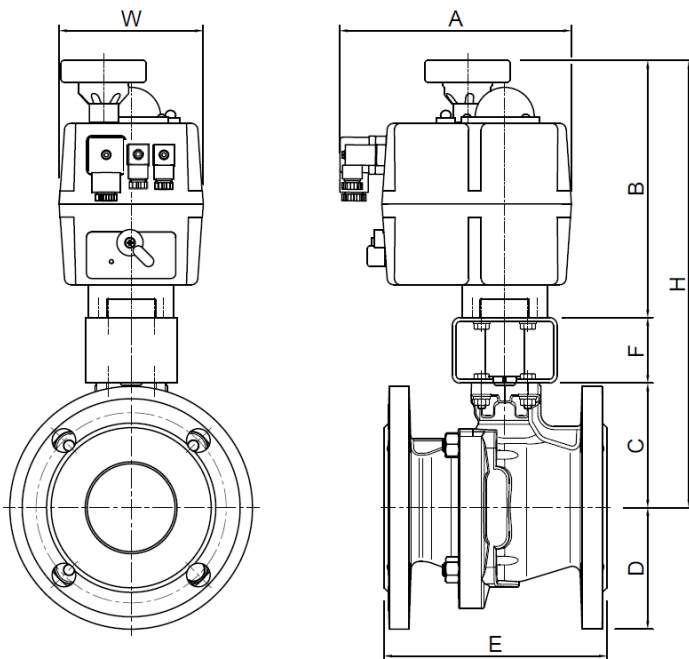
Type: **E4805BS** Actuator direct mounted to valve



E4805BS Dimensions remain unchanged for all versions
- On-off, failsafe, modulating and failsafe modulating

	Model	A	E	H	W	Kilos
1/2"	20	177	115	222	110	4.5
3/4"	20	177	120	223	110	5.2
1"	20	177	125	230	110	6.2
1 1/4"	35	177	130	235	128	7.7
1 1/2"	55	177	140	274.5	128	10.5
2"	55	177	150	283	128	12.0
2 1/2"	85	177	170	291	128	13.5
3"	85	177	180	314	128	18.5
4"	*140	235	190	387	214	23.9
5"	*300	235	200	420	214	33.2
6"	*300	235	210	438	214	43.7
8"	Call		400			

Type: **E4815BS** Actuator fitted to valve via a bracket and drive adapter



E4815BS Dimensions remain unchanged for all versions
- on-off, failsafe, modulating & failsafe modulating

	Model	A	F	E	H	W	Kilos
1/2"	20	177	50	115	272	110	4.7
3/4"	20	177	50	120	273	110	5.4
1"	20	177	50	125	280	110	6.4
1 1/4"	35	177	50	130	285	128	7.9
1 1/2"	55	177	50	140	324.5	128	10.7
2"	55	177	50	150	333	128	12.2
2 1/2"	85	177	70	170	361	128	13.9
3"	85	177	70	180	384	128	18.9
4"	*140	235	70	190	457	214	24.3
5"	*300	235	70	200	490	214	33.6
6"	*300	235	70	210	508	214	44.1
8"	Call			400			