

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



**Type: E2105ES**

Electric actuator direct mounted



**Type: E2115ES**

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 (ball valve is not WRAS approved), oil, air and many corrosive media, subject to compatibility with wetted parts in contact with media.

J+J Electric 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	E2105ES +70°C Direct mounted
	E2115ES +130°C Mounted via kit
	E2125ES +100°C Mounted via ext'n
Valve body	CF8M (Cast 316SS)
Valve ball	316SS
Valve seats	RPTFE
Valve Pressure rating	UTI 2" 64 bar at ambient temp
Valve temp limits	-20 to +200°C
Size range	1/4" to 4"

**Ball valve information:**

Full bore 3 piece construction offers in-line maintenance and provides full unrestricted flow and a very low pressure drop across the ball 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, butt weld and socket weld ends are available as an option.

**Typical KV Values**

Size	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"
KV	6.8	6.8	12.8	29.1	47.8	72.6	106.8	213.7	273.3	495.3	871.1

Kv = m<sup>3</sup> 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) - in stalled 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:

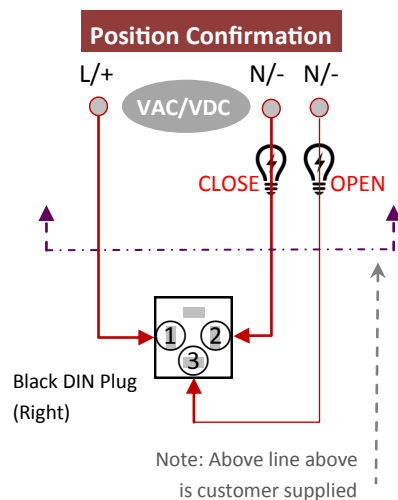
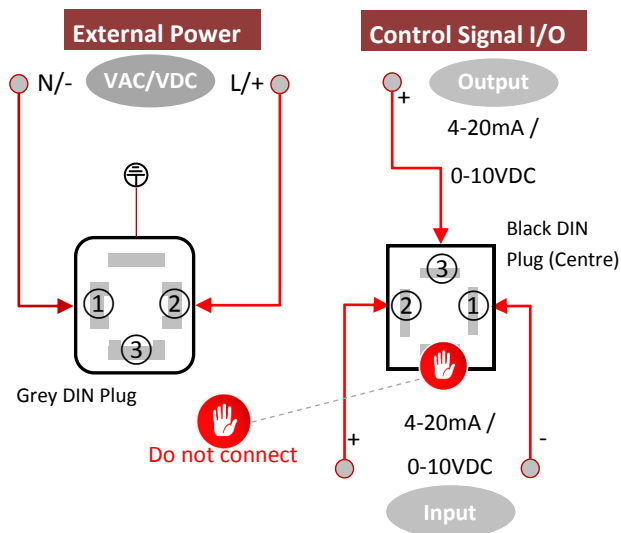
#### Failsafe Modulating J3CS Actuator

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



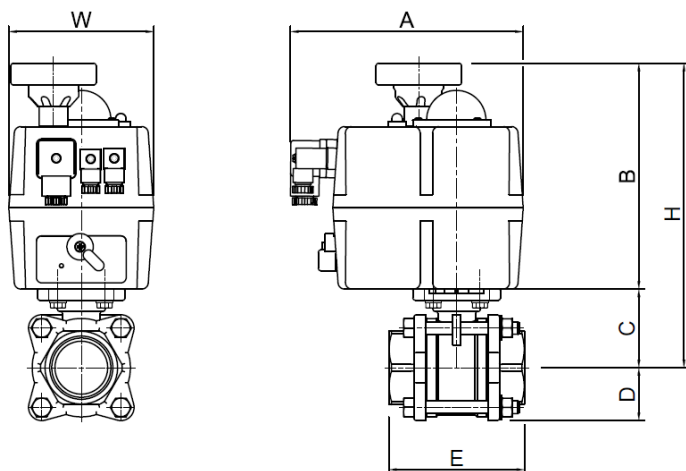
In J+J electric actuators all electrical connections are made externally using the external DIN plugs supplied with the actuator. There is no need to remove the valve actuator's cover to connect electrically. There are no terminals internally to connect to.



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

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

Type: **E2105ES** Actuator direct mounted to valve



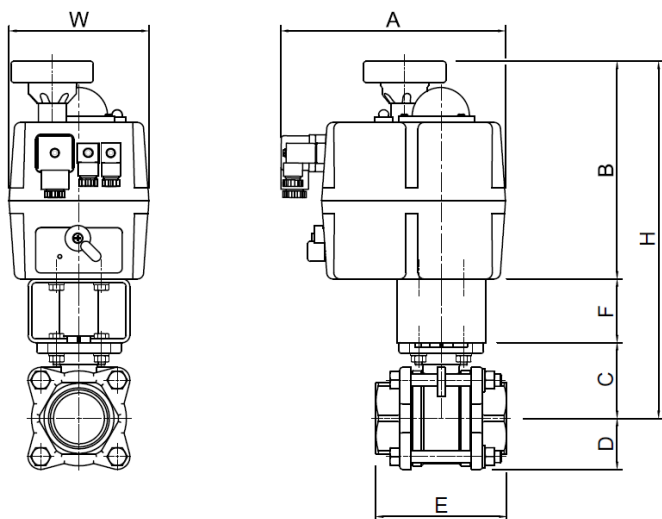
**Typical Dimensions:**

**E2105ES** Dimensions remain unchanged for all versions  
- On-off, failsafe, modulating and failsafe modulating

	Model	A	E	H	W	Kilos
≤1/2"	20	177	66	213	110	2.2
3/4"	20	177	76	219	110	2.3
1"	20	177	86	228	110	2.8
1 1/4"	20	177	103	232	110	3.4
1 1/2"	35	177	119	249	110	5.0
2"	55	177	131	281	110	6.6
2 1/2"	85	177	164	305	110	11.0
3"	85	177	183	314	110	14.3
4"	140*	235	236	154	254	26.7

\*140 = J3C-140

Type: **E2115ES** Actuator fitted to valve via a bracket and drive adapt-



**E2115ES** Dimensions remain unchanged for all versions  
- on-off, failsafe, modulating & failsafe modulating

	Model	A	F	E	H	W	Kilos
≤1/2"	20	177	50	66	263	110	2.4
3/4"	20	177	50	76	269	110	2.5
1"	20	177	50	86	278	110	3.0
1 1/4"	20	177	50	103	282	110	3.6
1 1/2"	35	177	50	119	299	110	5.2
2"	55	177	50	131	331	110	6.8
2 1/2"	85	177	70	164	375	128	12.0
3"	85	177	70	183	384	128	15.3
4"	140*	235	70	236	417	254	27.7

Type: **E2125ES** Actuator fitted to valve via a tubular stem extension

**E2125ES** Dimensions remain unchanged for all versions  
- on-off, failsafe, modulating & failsafe modulating

	Model	A	F	E	H	W	Kilos
≤1/2"	20	177		66		110	
3/4"	20	177		76		110	
1"	20	177		86		110	
1 1/4"	20	177		103		110	
1 1/2"	35	177		119		110	
2"	55	177		131		110	
2 1/2"	85	177		164		128	
3"	85	177		183		128	
4"	140*	235		236		254	