

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



Type: **E3316FS**

Electric actuator fitted via EasyFit-F™ kit



Sizes: DN5-50 D20-63 1/2" - 2"

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:

PVC is odourless and tasteless and is used in many applications such as potable water and many food processing. PVC has good chemical resistance and resists most solutions of acids, alkalis and salts, and solvents that can be diluted with water acids. It is not resistant to aromatic and chlorinated carbons.

Actuators sized on a maximum differential pressure of 10 bar wet service, operated at least once per day. If the intended duty is above this differential, or dry (eg: some solvents) call to check actuator sizing as a larger output actuator may be required.



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	E3316FS +60°C
Valve body	uPVC
Valve ball	uPVC
Valve seats	PTFE with EPDM seals
Valve Pressure rating	16 bar at +20C
Valve temp limits	0 to +60°C
Size range	1/2" to 2"

FIP 3 Way ball valve information:

The FIP 'TKD' is a true union 3 way ball valve particularly suited to industrial applications where high performance and reliability in service are primary considerations. 3 way ball valves change the direction of the flow as opposed to 2 way ball valves that isolate the flow. In 3 way valves it is not possible to isolate the flow as (in most standard applications) two ports will always be open. The FIP TKD 3 way ball valve is available with either an L port ball which simply diverts the flow, or a T port ball which can either divert the flow, or mix the flow. See separate data sheet on the flow options available though 3 way ball valves.

The patented 'Seat Stop' system assures longevity of the seals particularly in cases where thermal expansion is expected. It is possible to micro-adjust the seats. Accidental loosening of the ball carrier is impossible and the radial dismounting of the valve body can be done in complete safety.

The new patented Dual Block system allows proper union nut tightening without any risk of unscrewing.

Valve actuation is made quick and easy when using the J+J designed and manufactured 'EasyFit-F' mounting kit.

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J3CS FAILSAFE 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:

With external 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.

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.

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.

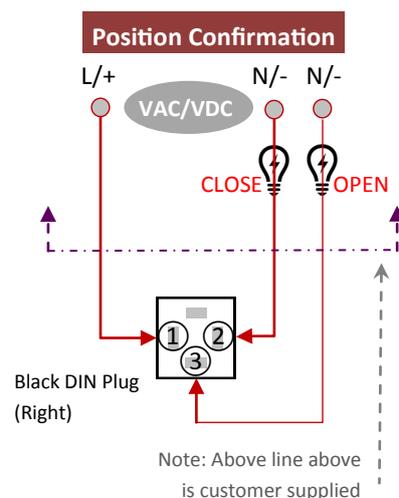
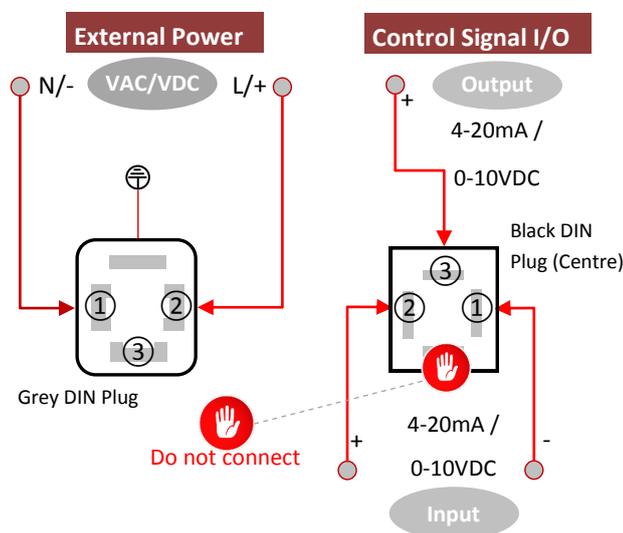
The advantage this gives is that the actuator will fail to either the open or closed position, depending on how the DPS positioner is configured, in the event of an external power failure.

The BSR failsafe system comprises of an industrial rechargeable NiCad battery and a PCB containing a trickle charger and control circuitry.

Whilst generally the J3CS failsafe modulating electric actuators are supplied with the BSR failsafe and DPS modulating kits pre-installed and function tested by J+J, the BSR and DPS kits can be supplied to be installed by the user into an on-off J3CS as they are very user friendly, simple to install and are plug and play. The DPS is self calibrating so no complex set-up procedure is necessary.

This is a very Smart Red Box.

J3CS FAILSAFE 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 pre-installed to create **fail-safe modulating** function.



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Valve Data



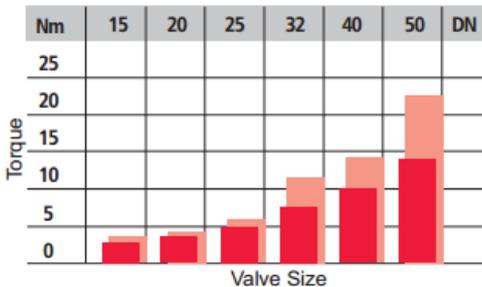
1/2" to 2"

TKD DualBlock® 3-way Ball Valve

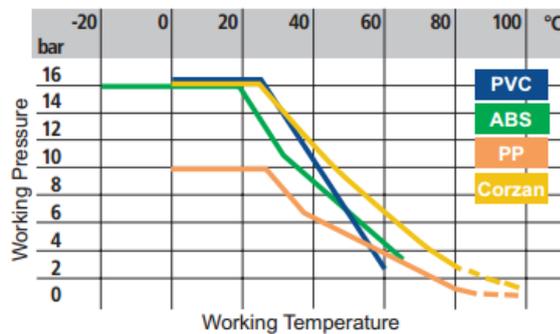
The **TKD DualBlock®** 3 way ball valve, is a fully unionised valve used for diverting or mixing.

- Size range from 3/8" / d16mm up to 2" / d63mm
- Pressure rating: Maximum working pressure: 16 bar at 20°C
- Patented **DualBlock®** system: The locking device ensures the union nuts are retained in position, even under the most arduous conditions: ie. vibration or thermal expansion
- Easy removal of the valve body from the pipe system, allowing replacement of the valve seals and seats without any additional equipment
- 'T' port or 'L' Port configurations available
- Patented **Seat Stop®** design ball seat carrier, with micro adjustment of the ball seats and 'take up' of axial pipe loads, all done without needing to drain the system

Technical Data



Torque at working pressure. 10 Bar (Red) and 16 Bar (Pink).



Pressure/temperature rating for water and harmless fluids to which the material is RESISTANT. In other cases a reduction of the PN is required. (25 years with safety factor).

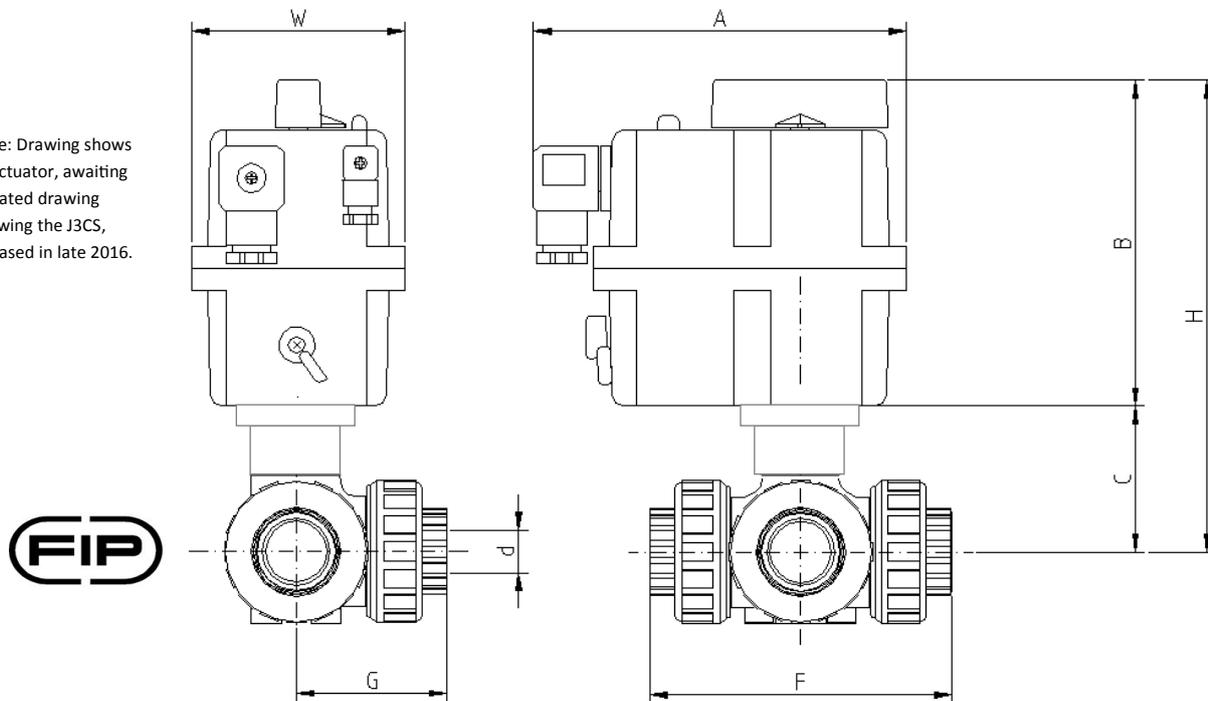
	DN	10	15	20	25	32	40	50
k_{v100} l/m	A	37	55	135	205	390	475	900
	B	25	35	95	140	270	330	620
	C	40	65	145	245	460	600	1200
	D	78	195	380	760	1050	1700	3200
	E	48	73	150	265	475	620	1220

Flow coefficient k_{v100}

k_{v100} is the number of litres per minute of water at a temperature of 20°C that will flow through a valve with a one bar pressure differential at a specified rate. The k_{v100} values shown in the table are calculated with the valve fully open.

Typical Dimensions:

Note: Drawing shows J3 actuator, awaiting updated drawing showing the J3CS, released in late 2016.



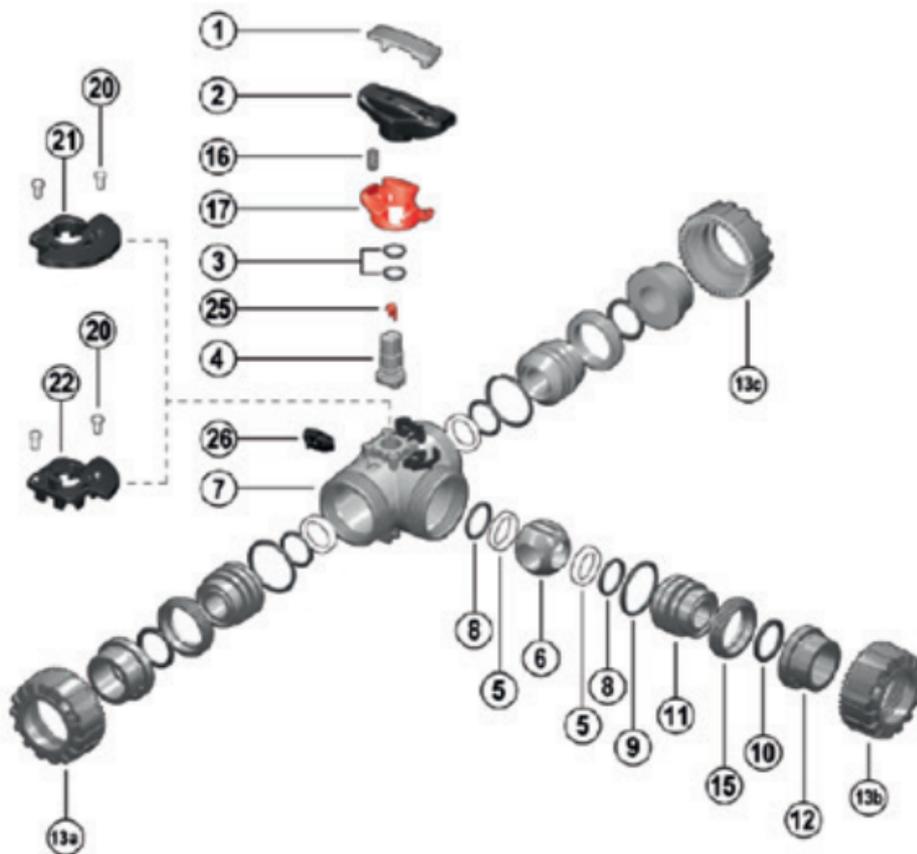
Type: **E3315FS** Actuator fitted to valve via the 'EasyFit-F' mounting kit manufactured by J+J

Type: **E3315FS** Dimensions remain unchanged for all versions (on-off, failsafe & modulating)

Imperial Valve size	J3/J3C Model	A	B	C	F	G	H	W	Kilos	Metric pipe OD mm/ bore 'd'
1/2"	20	177	149	58	118	N/A	207	110	2.1	20 / 15
3/4"	20	177	149	69	145	N/A	218	110	2.3	25 / 20
1"	20	177	149	74	160	N/A	223	110	2.6	32 / 25
1 1/4"	20	177	149	91	189	N/A	240	110	3.3	40 / 32
1 1/2"	20	177	149	97	219	N/A	246	110	3.7	50 / 40
2"	20	177	149	114	267	N/A	263	110	4.9	63 / 50

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Exploded view & parts list: Valves 1/2" to 2"



Position	Components	Material
1	Handle insert tool	PVC-U
2	Handle	HIPVC
3*	Stem O-ring	EPDM/FPM
4	Stem	Valve material
5*	Ball seat	PTFE
6	Ball	Valve material
7	Body	Valve material
8*	Ball seat O-ring	EPDM/FPM
9*	Carrier O-ring	EPDM/FPM
10*	Socket seal O-ring	EPDM/FPM
11	Ball seat carrier	Valve material
12*	End connector	Valve material
13*	Union nut	Valve material
15	Ball seat carrier stop ring	Valve material
16**	Spring (SHKD)	Stainless steel
17**	Safety handle block (SHKD)	PP-GR
20**	Drive fastener for LTKD	POM
21**	LTKD – 180°	POM
22**	LTKD – 90°	POM
25	Position indicator	POM

*Spare Parts **Accessories

Valve material = uPVC