

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

Note: J3 Actuator
(superseded by J3CS)



Type: E3013GS (GF546 Ball Valve)
Electric actuator fitted via EasyFit-G kit

+GF+

DN15-50 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.

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	E3013GS +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 4"

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.

Typical Kv Values

	1/2"	3/4"	1"	1 1/4"	1 1/2"
Kv	165	350	700	1000	1600
	2"	2 1/2"	3"	4"	
Kv	3100	5000	7000	11000	

Ball valve information:

The GF546 is a true union ball valve particularly suited to industrial applications where high performance and reliability in service are primary considerations.

The result of over 40 years experience in manufacturing and undoubtedly one of the world's most specified ball valves, the GF546 ball valve offers quality, flexibility and reliability. It is particularly suited as an on-off ball valve but can be used in applications where an element of control is desired.

The double O ring sealed stem has a break point designed into it preventing catastrophic failure due to wear or over-torque.

Automation is made quick and easy when using the J+J manufactured 'EasyFit-G' mounting kit.

$Kv = m^3$ 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 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 pug 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

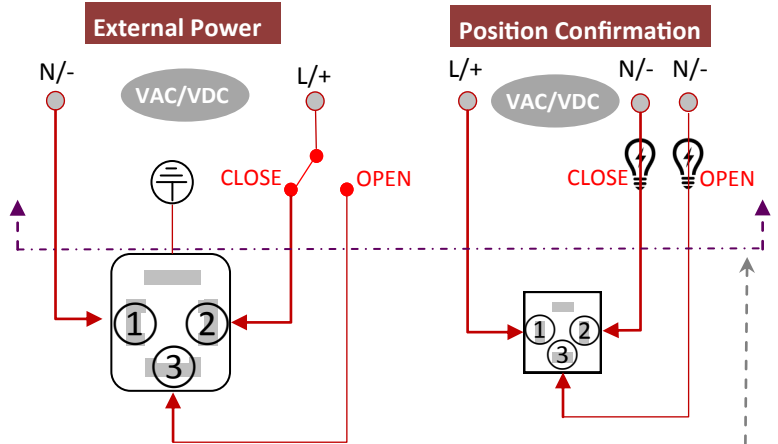
Failsafe modulating by installing the J+J BSR (Battery 'Spring Return') plug and play kit, operates functionally as a modulating electric actuator as described above, but will fail as per the DPS setting on loss of external power, as follows:

Configuration options:

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

Electrical Connection - Wiring of DIN Plugs

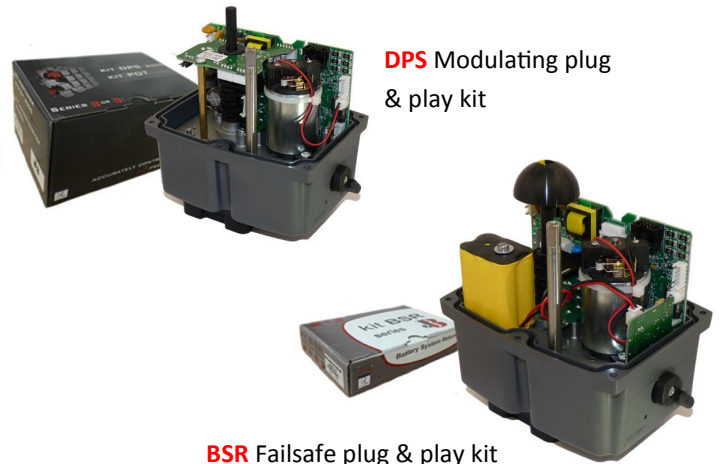
J3CS ON-OFF & FAILSAFE WIRING (Same connection for either)



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

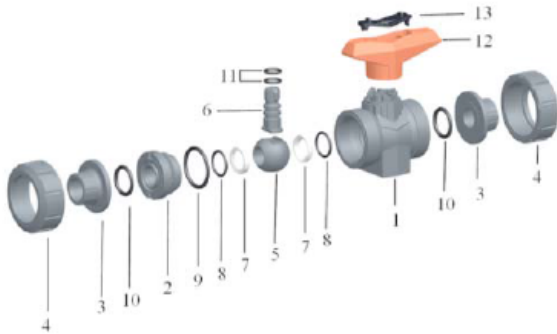


Installing J+J Plug & Play function conversion kits

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.

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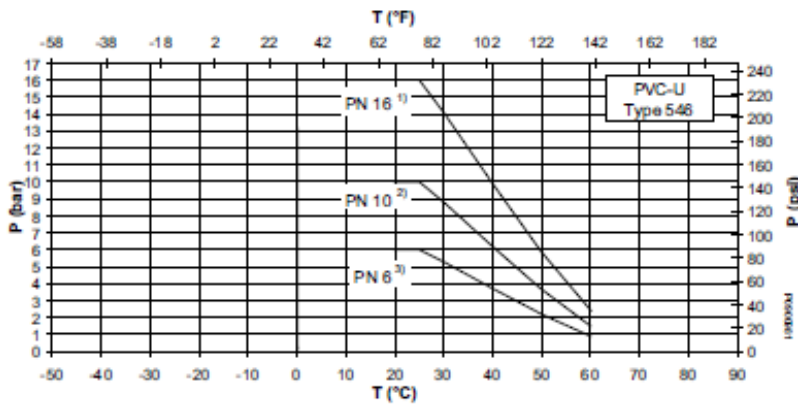
Design



1. Body	8. Backing seal
2. Union Bush	9. Body seal
3. Connection part	10. Union seal
4. Union nut	11. 2x Stem seals
5. Ball	12. Standard handle
6. Stem	13. Handle clip
7. Ball seal	

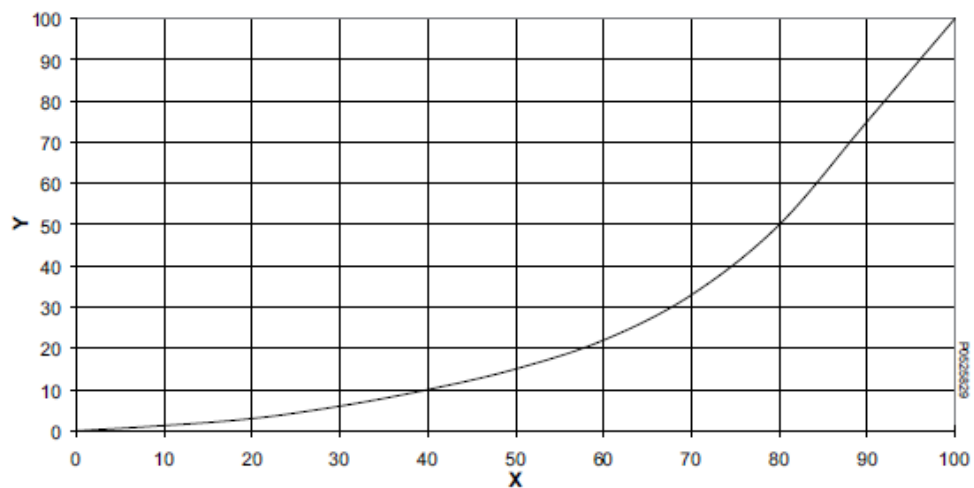
P / T-Diagrams

PVC-U



P: Permissible pressure in bar, psi, T: Temperature in °C, °F
 1) The central part of ball valve is designed for the nominal pressure PN 16
 2) Depending on the valve end, the nominal pressure is reduced to PN 10
 3) Depending on the valve end, the nominal pressure is reduced to PN 6

Flow-characteristics

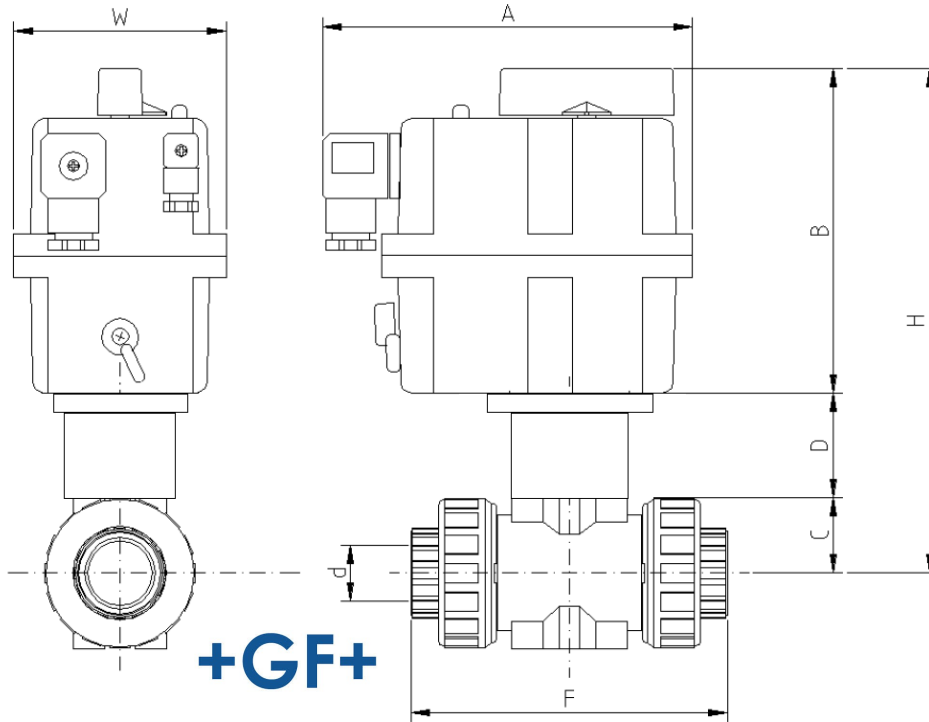


X: Open angle (%), Y: Flow factor kv, cv (%)

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Typical Dimensions:

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



Type: **E3013GS** Actuator fitted to valve via the 'EasyFit-G' mounting kit manufactured by

E3013GS Dimensions remain unchanged for all versions						
- on-off, failsafe, modulating & failsafe modulating						
	Model	A	F	H*	W	Kilos
≤1/2"	20	177	124	203	110	
3/4"	20	177	144	207	110	
1"	20	177	154	212	110	
1 1/4"	20	177	174	220	110	
1 1/2"	20	177	194	227	110	
2"	20	177	224	240	110	
2 1/2"	55	177	284		110	
3"	55	177	300		110	
4"	55	177	340		110	

* Estimated as information unavailable from +GF+