J2 140-BSR Failsafe IP65 Weatherproof Electric Actuator

Features:

> **Power open- power close, fails safe on power failure. Can be used as energise open- fail close, subject to minimum energise open time.**

> **Industrial rechargeable battery back-up system. Resets to original position on power resumption.**

> **Manual override.**

> **External DIN plug connections - no need to remove cover to connect.**

TYPE J2 140-BSR

General:

The J2 140-BSR failsafe electric actuator is supplied complete with a separate battery back-up system, torque limiter, anti-condensation heater, local and remote position confirmation and a manual override with safety cut-out switch when activated.

J2L140BSR = 24V AC/DC J2H140BSR = 110/240 AC

Same wiring connections for AC & DC power supplies and with external DIN plug connections, eliminating the need to remove the actuator's cover to connect, the J2 140-BSR is quick and easy to install. Supply voltage to be specified on order.

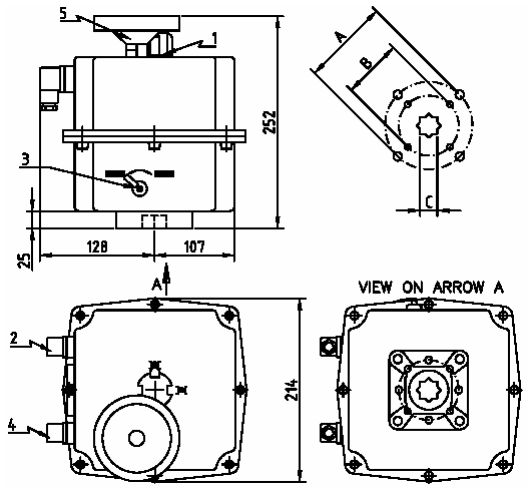
Specifications:

Housing	Polyamide (Nylon 6)
Duty Rating	75%
Drive connection	ISO5211 & DIN 3337
Electrical connection	External via DIN plugs
Torque output	170Nm break, 140Nm run
Temp range	-20˚C to +70˚C
Working time	35 secs ± 10%, no load
Supply voltages AC	24, 110, 240
Supply voltages DC	24
Current AC or DC	1.2A
Minimum recharge time	30 minutes
Weight	9 kg

Installation:

The J2 140-BSR is remarkably simple to install as all electrical connections are made without removing the actuator's cover - the supplied DIN plugs are wired in accordance with the opposite wiring diagram, re-connected to the actuator and the actuator is ready for use.
The J2 140-BSR can be mounted in any orientation but vertical orientation is preferred.
Read supplied installation & operating instructions before use.

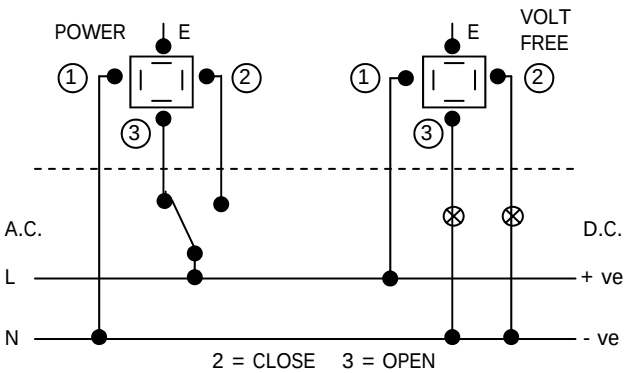
Dimensions:



On/off, stays put on power failure: **Type J2 140-BSR**

1	Local position indicator	A:	F10 ISO5211
2	Power supply DIN plug	B:	F07 ISO5211
3	Manual override selector lever	C:	22mm DIN3337
4	Volt free limit switch DIN plug		
5	Manual override hand wheel		

Wiring Diagram (AC or DC):



Items below dotted line: Customer to supply

J2 BSR (Battery 'Spring Return') Installation & Operating Instructions

The instructions supersede the former Installation, Operation and Maintenance instruction relating to the J+J 'R' Type (R0, R1, R2 etc). The 'type' is clearly marked on the actuators ID label affixed to the end of the actuator. Check the 'type' on this label to ensure you have the correct Installation and Operating Instructions, as they differ between the J2 and 'R' Types.

FUNCTION:

To provide an alternative source of power to drive the actuator to the pre-determined failsafe position in the event of a mains power supply interruption. Please note that the BSR contains NO SPRINGS and is not a 'mechanical spring-return electric actuator - the 'return' to a failsafe position is achieved with stored battery power driving a 24V DC motor. The BSR system is housed in a separate housing fixed to the actuator with a stainless steel plate.

METHOD:

The incoming mains power supply voltage passes through an electronic relay, transformer and rectifier (if applicable), and an industrial strength trickle charger before being fed to the actuator's DC motor. Under normal uninterrupted power conditions, the electronic relay holds opening the circuit to the motor and the actuator is driven open and closed under mains power. Simultaneously, the trickle charger is activated maintaining a full charge in the battery pack.

Note An initial 24 hour initial charge period is required to ensure the batteries are fully charged before the unit is put into service - this is to prolong the life of the batteries.

In the event of mains power interruption, the electronic relay immediately drops out opening the circuit from the batteries to the motor, and the stored battery power is used to drive the actuator to the pre-determined failsafe position, if it is not already in that position.

The feature rich J2 contains an electronic torque limiter to protect the actuator's gearbox from damage should the valve jam - this is operational during normal power open/ power close operation, but is disabled once the mains power fails, to provide the maximum amount of torque from the actuator to set the valve in the pre-determined failsafe position.

The J2-BSR can be configured to either fail closed (normally closed), or fail open (normally open).

INSTALLATION:

Any J+J electric actuator can be fitted in any orientation, however the 'normal' position with the drive vertical is preferred. Electrical connection is made via external DIN plugs supplied with the actuator, and an external wiring diagram is affixed to the side of the actuator's cover. We recommend that only qualified electricians should make the electrical connections as a matter of Health & Safety. Please note that should irreparable damage be caused to the actuator due to incorrect wiring, the warranty will be invalidated.

The failsafe position can be changed externally by removing the DIN plug covered by a label marked (PLUG NO/NC ONLY), disconnecting the change-over plate inside the DIN plug, refitting the change-over plate to suit the required failsafe position, and refitting the DIN plug.

** Note 1** This DIN plug is not a power feed and must not be connected to any external cables - it is simply a change-over plate. All J2-BSR actuators are supplied to failsafe closed (normally closed) unless otherwise stated on your order.

** Note 2** All electrical connections to J+J electric actuators are made externally and there is no need to remove the cover to connect - indeed unauthorised removing of the actuator's cover will invalidate any warranty. This applies partly as removing the cover may dislodge the shaft cover seals which, if not correctly reinstalled will negate the actuator's IP65 weatherproof rating.

OPERATION:

A) Standard Operation:
3 Wire system, mains power open, mains power closed, fails to safe position on mains power failure.

The J2-BSR is 'automatic' in that the BSR System senses the loss of mains power and activates the drawing of battery power without any human intervention. The energy drawn from the batteries to drive the actuator to its failsafe position (if not in that position at the moment of mains power interruption), will subsequently be replaced by the trickle charging process once mains power is resumed.
On resumption of mains power, and subject to the control signal being sent to the actuator remaining the same, the J2-BSR will reset the actuator to comply with the signal on mains power resumption.

B) Energised open, fails close (solenoid type operation)
2 Wire system, mains power open (or close), battery close (or open).

The J2-BSR can be can be configured as a solenoid by using only 2 wires to connect the neutral and open contacts. Mains power will subsequently power (energise) the actuator open, and when this signal is switched off, the batteries will close the actuator (in normally closed applications). Conditional that the 'energise' time is longer than the minimum battery recharge time (figures available on request) to replace the battery energy used during the fail cycle, then use of this 2 wire system is acceptable.

Note
The J2-BSR has an automatic anti-condensation heater that is energised whenever mains power is applied to the actuator. This heating is not operational during mains power interruption.

MANUAL OVERRIDE:
The manual override is provided for EMERGENCY hand operation only.
The BSR System operates by monitoring the position of the actuator's internal closed (in normally closed mode) limit switch and if, at the moment of mains power interruption, this switch is not made, the actuator will immediately call for battery power to drive the actuator until this switch is made.
In manual mode, the output drive is disconnected from the motor drive, and therefore as soon as this switch is broken during manual operation, the batteries will discharge energy to try and set this switch in the made position, but as the drive is disconnected, this will not happen. Consequently the batteries will discharge continuously and will eventually be fully discharged.
Therefore, should it be anticipated that the actuator will remain in manual mode for more than a few minutes, the interconnecting cable between the actuator and the separate battery pack should be disconnected to prevent draining the battery. However, this connection **MUST** be remade when the actuator is returned to auto mode otherwise the failsafe system can not operate.