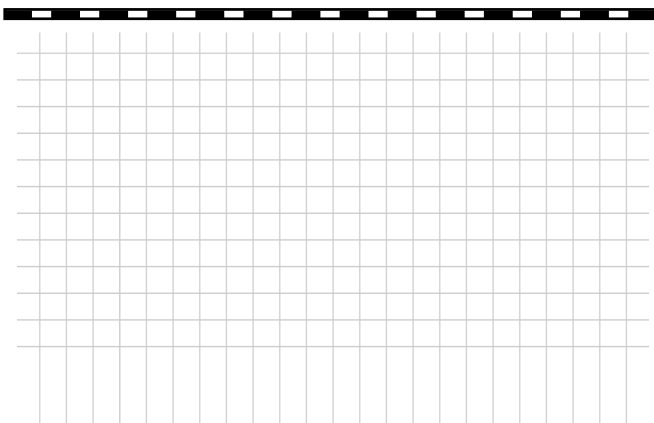


S3-Series Electric Actuator

Installation, Operation & Maintenance Manual

*Corrosion Resistant Fluid and
Air Handling Systems.*

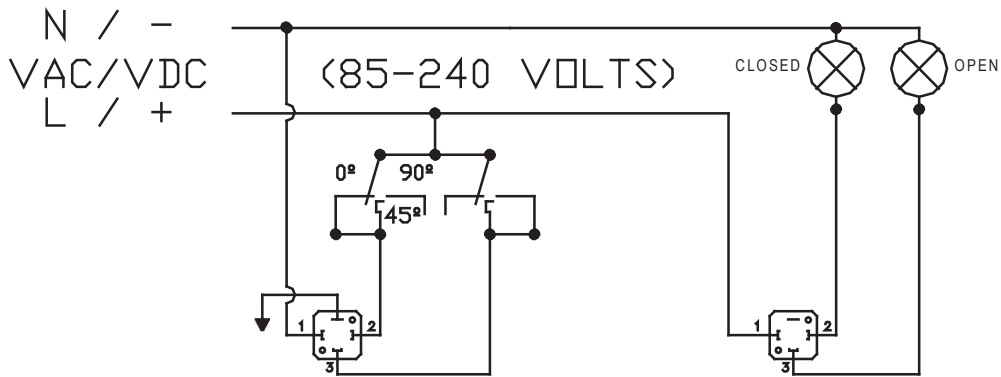
SIMTECH



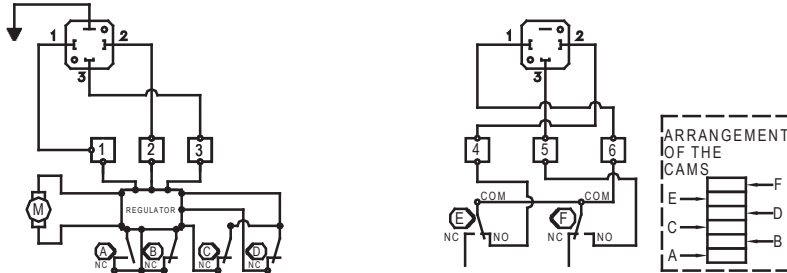
S3 Series - *Electric Actuator*

Wiring Diagram - AC or DC

COMMUNICATION SCHEME BY RELAYS

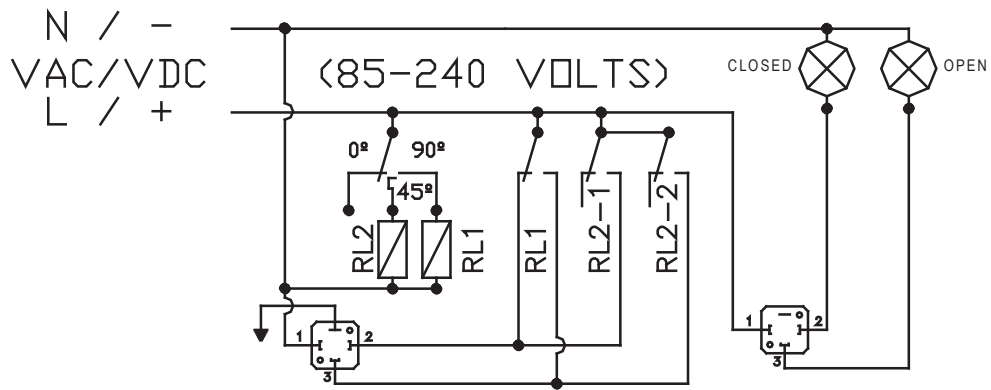


Connection Suggestions

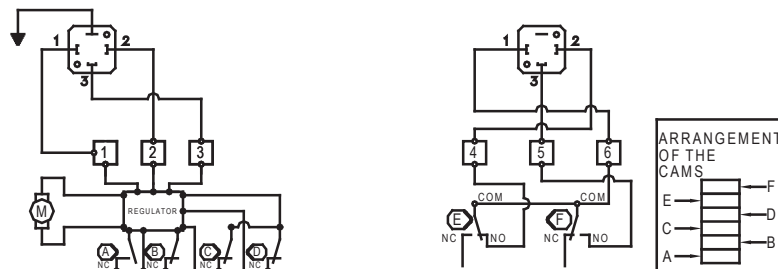


Wiring Diagram - AC or DC

COMMUNICATION MANUAL OUTLINE



Connection Suggestions

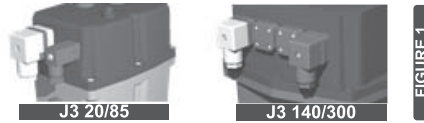


S3 Series - Electric Actuator

READ THESE INSTRUCTIONS BEFORE CONNECTING THE ACTUATOR DAMAGE CAUSED BY NON COMPLIANCE TO THESE INSTRUCTIONS IS NOT COVERED BY OUR WARRANTY.

J3 Electric actuators operate with the use of live electricity. It is recommended that only qualified electrical engineers be allowed to conned or adjust these actuators. Always ensure that the power supply is disconnected prior to removing the top cover by disconnecting the DIN power input plug. It is strongly recommended that each actuator has its own independent fuse system to protect it from the electrical influence of other electrical devices (EG: pumps).

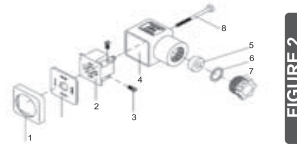
ELECTRICAL CONNECTORS:



Warning: Before connecting ensure that the voltage to be applied to the actuator is within of the range shown on the identification label. J3 electric actuators are multi-voltage capable with automatic sensing of the incoming power supra. The J3H Series accept any voltage, AC or DC, between 85 and 240 volts. The J3-L Series accepts any voltage, AC or DC between 12 and 24 volts. Do NOT connect a voltage in excess of 24V AC or DC to the J3-L Series actuators or irreparable damage will be caused and any warranty invalidated.

The supplied electrical connectors used to conned to the actuator are DIN plugs. Ensure the diameter d cable to be used conforms to the maximum and minimum requirements of the DIN plugs to maintain water tightness.

- 1 Gasket
- 2 Terminal ship
- 3 Cable fining screws
- 4 Housing
- 5 Grommet
- 6 Washer
- 7 Gland - nut
- 8 Fixing screw



Model	SMALL CONNECTOR		BIG CONNECTOR	
	Min diameter	Max diameter	Min diameter	Max diameter
J3-20 to J3-85	5 mm	6mm	8mm	10.5 mm
J3-140 / J3-300	5 mm	6mm	8mm	10.5 mm

Electrical connection:

All models (See Fig. 3)

The power supply is connected to the large grey DIN plug.

Connect as follows:

Pin 1: Neutral (N-), Pin 2: live/ phase = Close (L+)

Pin 1: Neutral (N-), Pin 3 :live/ phase = Open (L+)

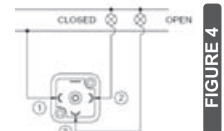
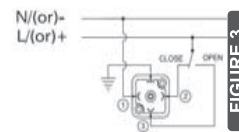
The top flat pin is the ground connection.

The actuator's movement is then controlled by switching the live/ phase between pins 2 & 3. The switch is NOT supplied and must be provided by the user/ Installer.

All J3 actuators are provided with 2 volt free switches:

Models J3-20 to J3-85

The volt free connection is made to the small DIN plug placed in the right. (See Fig. 4) Ensure that the rubber grommet (part no 5) is installed to prevent water ingress.



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Model J3-140 and J3-300

The volt free connection is made to the large DIN plug marked E.L.S. (See Fig. 4) Ensure that the rubber grommet (part no 5) is installed to prevent water ingress.

Pin 1 = Common (Input L+)

Pin 2 = Closed position confirmation (Output L+)

Pin 3 = Open position confirmation (Output L+)

The above wiring covers a 3 wire AC or DC system. When operating with a DC power supply, a 2 wire system can be used. Ask your distributor for this wiring diagram.

Warning: Ensure that the square rubber seal is in place when fixing each DIN plug to the actuator. Failure to do so could allow water ingress and damage caused by this installation error will void any warranty. The DIN plugs are fixed to their respective bases on the actuator housing with a screw. Do not overtighten the screw when assembling.

Anti-condensation protection:

The J3 actuator has an integral thermostatically controlled anti-condensation heater that is automatically activated while main power is applied. The heater does not require a separate supply.

2. - LOCAL VISUAL POSITION INDICATOR

All J3 actuators are supplied with a local visual position indicator comprising of a black base with a yellow insert that shows both the position and direction of rotation. (See Fig. 5)



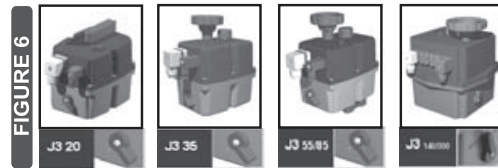
The open and closed positions have the following logos moulded into the top cover



Opening = counter clockwise
Closing = clockwise

S3 Series - *Electric Actuator*

3. - EMERGENCY MANUAL OVERRIDE:



All J3 actuators are supplied with a declutchable manual override to allow operation should power not be available.

The J3 actuator has 2 operating modes, automatic and manual, the required mode is selected using a lever on the lower half of the actuator housing. The 2 positions are marked:

AUTO = Automatic operation
MAN = Manual operation

Warning: Do not remove the selector lever securing screw as this will allow its internal mechanism to become loose and will cause irreparable damage to the actuators gearbox. Removing this screw will void the warranty.

When “MAN” function is selected:

- 1 - The electronic system cuts the power to the motor after a few seconds.
- 2 - The motor to output shaft drive is disconnected.
- 3 - The desired position can be achieved by using the manual override lever or hand wheel.
- 4 - There are two ways to re-activate the motor after being isolated while in “MAN” position:

- a. - With the actuator in “MAN” function, using the hand wheel/ hand lever, turn the actuator to one of the end positions (open or close). If the end position switch is activated the motor runs. Now switch the manual override from “MAN” to “AUTO” and the actuator is ready to operate automatically again.
- b. - Switch from “MAN” mode to “AUTO”. Deactivate the supply voltage for a few seconds which resets the actuator and it is then ready to operate automatically again.

4. - MOUNTING TO COMPONENT BEING ACTUATED (Eg: 1/4 turn valve)

It is vital that the mounting kit used to connect the electric actuator to the component being actuated (eg: valve) is correctly manufactured and assembled. The mounting bracket’s holes must be drilled to ensure that the center line of the actuators drive is perfectly in line with the component’s drive center line, and that the drive coupling/ adaptor rotates around this center line. The mounting holes of the actuator conform to ISO 5211, and the female output drive conforms to DIN 3337.

We strongly recommend that valves/ components to be actuated that have ISO 5211 compliant top works are used wherever possible as this greatly assists in ensuring the proper mounting the actuator to the valve.

The male square end of the drive coupling MUST NOT be longer than the maximum depth of the actuator female output drive when the assembly is bolted together.

Failure to comply with these instructions will cause uneven wear and dramatically reduce the working life of the valve and actuator.

S3 Series - *Electric Actuator*

5. - EXTERNAL LED STATUS LIGHT

The LED status light provides visual communication between the actuator and the user. The current operational status of the actuator is shown by either solidly lit, or different flashing sequences of the LED light:

Time: 200 mSec x each digit & the configuration.
Configuration: digit 1 = LED on, digit 0 = LED Off.

The configuration is a repetitive sequence of 4 columns of 4 digits.

ACTUATOR OPERATIONAL STATUS	TIME	CONFIGURATION			
Actuator without power being supplied	100%	0000	0000	0000	0000
Actuator with power being supplied	100%	1111	1111	1111	1111
Actuator with torque limiter activated	200 mSec.	1010	1010	1010	1010
Actuator in MANUAL mode	200 mSec.	1111	0111	1000	0000
Actuator in MANUAL but with an internal cam operating an internal micro-switch	200 mSec.	1110	1111	1111	1110
Actuator without power and working with the BSR system. Max. 3 minutes	200 mSec.	1000	0000	0000	0000
Battery protection. DANGER - the battery needs recharging. BSR disaabled	200 mSec.	1010	1000	0000	0000

6. - SUPPLY FAILURE AND THE BSR OPTION

In the on/off version, upon failure the actuator will stop in the position at the moment of the failure. On resumption of power, it will revert to the situation electrical command immediately prior to the interruption, or a new command if the command was changed during the power interruption.

If the actuator is fitted with the BSR (Battery 'Spring return') plug in fail-safe system upon electrical failure the actuator will go to the predetermined position: NO normally open or NC normally closed.

7. - NAMEPLATE/ ID LABEL & EXTERNAL WIRING DIAGRAMS

We provide a lot of information about the actuator on the ID label affixed to the actuator. Ensure compatibility of working conditions (supply voltage, ambient conditions) with the provided information BEFORE connecting the actuator. Removing this label instantly invalidates any warranty.

Wiring diagrams are affixed externally. With the motor open and closed positions factory set at 0-90° (or as per your order), in most cases there is no need to remove the cover to connect the actuator. Should you have reason to adjust the cams, we recommend contacting the Factory BEFORE removing the actuators cover to confirm the procedure, as damage resulting from Incorrectly reassembled actuators will not be covered under warranty.

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Notes

S3 Series - Electric Actuator

Simtech Industrial Products, Inc.

47-A Runway Road, Levittown, PA 19057
Phone: 215-547-0444 Fax: 215-547-9129
E-mail: info@SimtechUSA.com
Web site: www.SimtechUSA.com

WARRANTY

Simtech Industrial Products, Inc. products are warranted to be free from defects in materials and workmanship for one (1) year from date of shipment. No claim shall be permitted under this warranty unless Buyer gives Simtech Industrial Products, Inc. written notice of all respects in which Buyer claims the product to be defective. Notice must be received within ten (10) days from the date which the Buyer discovers, or should have discovered the defect. Buyer shall give Simtech Industrial Products, Inc. a reasonable opportunity to inspect the product after notice has been given. This warranty shall not apply to any products or components, which have been subjected to abnormal use, negligence or accident.

Seller's sole obligation under this warranty shall be limited solely on the repair or replacement, as elected by Simtech Industrial Products, Inc., of defective or nonconforming material. To the maximum extent permitted by law, Buyer irrevocably waives all claims for money damages relating to the condition, use and performance of the goods purchased. In no event shall Simtech Industrial Products, Inc. liability exceed the purchase price of the product sold by Simtech Industrial Products, Inc.

In no event, whether because of a breach of warranty or representation or any other cause, whether based upon contract, tort, warranty or otherwise, arising out of the performance or nonperformance by seller of its obligations under this agreement or with respect to the products sold pursuant here to; shall seller be liable for lost earnings, income or profits or indirect, incidental, liquidated or consequential damages.

The implied warranties of merchantability and fitness for a particular purpose except as set forth in this warranty, express or implied, are hereby disclaimed and excluded. Nothing shall be construed as an additional warranty unless specifically designated as such in writing and signed by Simtech Industrial Products, Inc.

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