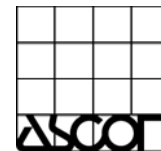


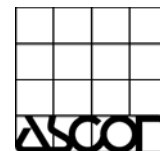
Electric Rotary Actuator

ASCON SERIES SER



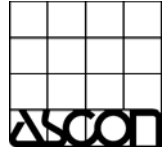
Installation and Operating Instructions

1. General Features
2. Installation
3. Wiring
4. Adjustments
 - 4.1 Adjustment of End Switches
 - 4.2 Adjustment of Auxiliary Switches
5. Control Station
6. Proportional Operation
7. Maintenance and Checks
8. Replacement



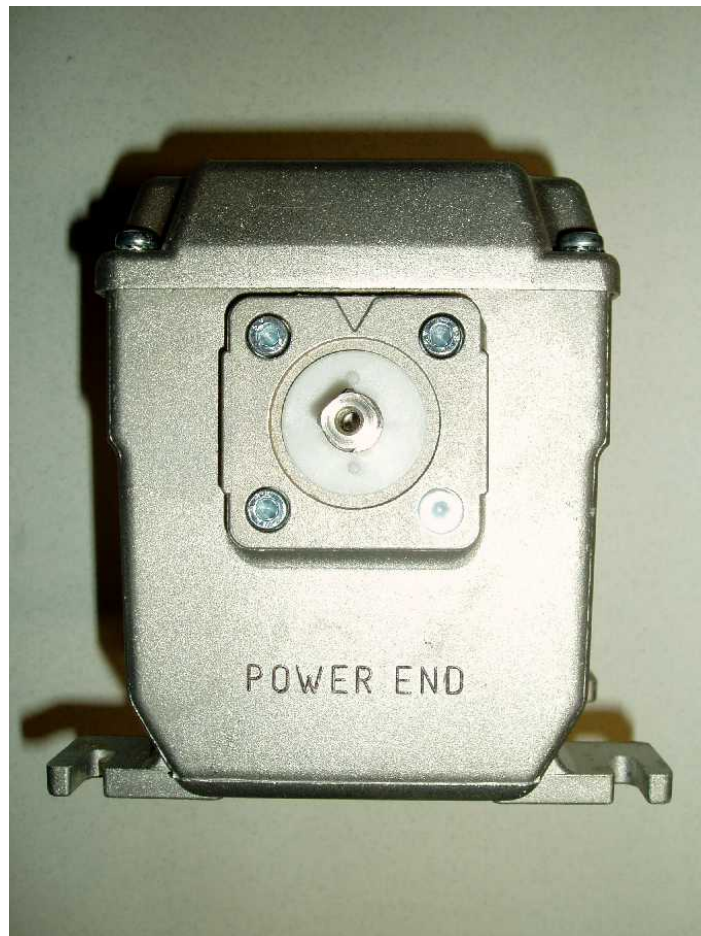
1. GENERAL FEATURES

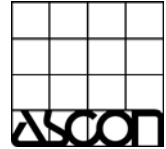
- 1.1 Installation must be performed by properly trained and experienced personnel.
- 1.2 Do not attempt to turn or force the SER gear motor shaft manually or damage to the gear train will occur and warranty will be voided.
- 1.3 Before servicing, make certain power to the SER gear motor had been turned off and disconnected.
- 1.4 Read all instructions in these instructions before operating the actuator.
- 1.5 Each SER actuator is supplied with a ratings name plate. Please verify the ratings before connecting and placing in operation.
- 1.6 Do not alter any internal wiring or warranty will be voided.
- 1.7 Before placing the SER actuator in service, verify that it complies with local codes and equipment requirements.
- 1.8 When installing the SER actuator, keep in mind that it must be easily accessible for wire connection and adjustment of limit switches. Ensure there is sufficient clearance above the actuator to remove the cover.
- 1.9 The SER actuator is IP54 rated and can be installed in any location meeting IP54. Do not use the SER in locations where acid fumes or corrosive atmospheres are present.



2. INSTALLATION

- 2.1 The SER actuator must be positioned so that the square shaft (powered end) is turned towards the device to be put in motion.
- 2.2 If no other adjustment of the rotational angle is requested at the time of order, the default position of the end switches is set for 90 degree rotation.
- 2.3 The square shaft on the Power End side is positioned at the factory as shown in Diagram 1 below.



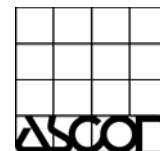


3. WIRING

- 3.1 After mounting the SER actuator but before securing in place, complete all wiring.
- 3.2 The wiring diagrams are listed in these instructions and also inside the top cover of the SER actuator.



- 3.3 **WARNING!** Before carrying out an internal service, make sure power is switched off to prevent personnel and equipment damage.
- 3.4 To remove the SER Actuator top cover, carefully remove the four top screws on the top housing. The screws will remain in the cover to prevent loss.
- 3.5 Two conduit holes on the SER actuator housing are provided for fitting conduit pipe.



- 3.6 The wiring diagrams show the gear motor and end positions closed.
- 3.7 The auxiliary micro-switches are single pole double throw and are voltage free.
- 3.8 The auxiliary micro-switch rating is 5A/264VAC.
- 3.9 Ensure the system power supply and frequency correlate to those indicated on the SER actuator name plate.
- 3.10 **WARNING!** Transformer power supply must be separated from that of the SER actuator.
- 3.11 Low voltage cables (lower than 48V) must be run separately from the high voltage (greater than 48V) wiring. It is always best to use shielded cables.

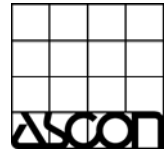
4 ADJUSTMENTS

4.1 END SWITCHES

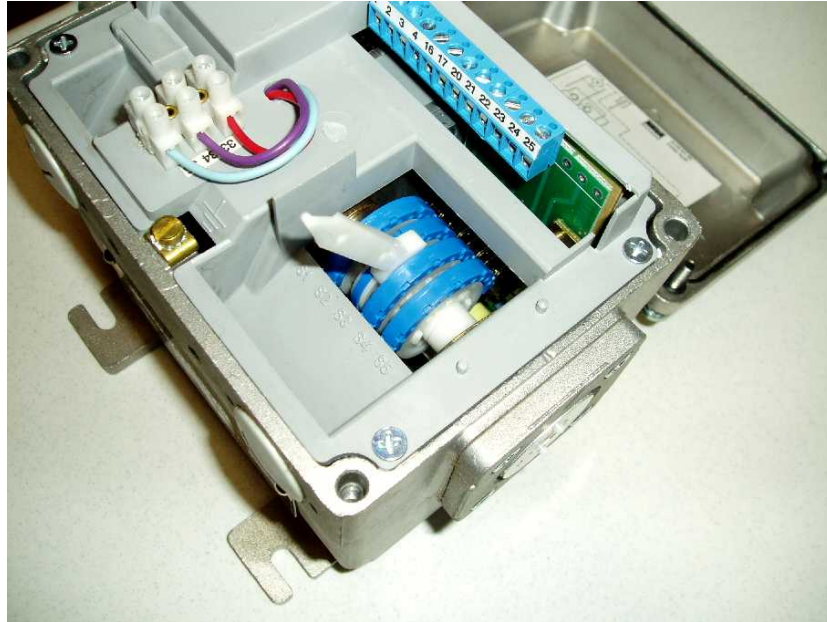
- 4.1.1 As already discussed in Section 2, Paragraph 2.2, the SER actuator is supplied by the factory for use in the 90 degree travel mode. If rotation angles higher or lower than 90 degrees are desired, it is possible to adjust the input signal.

4.2 AUXILLARY MICRO SWITCHES

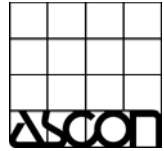
- 4.2.1 On request, the SER actuator can be supplied with 2 or 3 auxiliary micro-switches which can be adjusted in any position to the rotation.



4.2.2 For cam adjustment, the proper tool (key) is supplied with the SER actuator and is installed inside the top cover. Be sure to use ONLY this key or damage to the gear motor may occur.



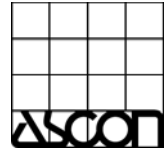
- 4.2.3 Use the supplied adjustment tool by inserting and adjusting the blue cams (S3 or S4) to the desired position.
- 4.2.4 If the blue cam is reversed in position, first use the lever on the curved side to move the blue cam to a more accessible position.
- 4.2.5 The cam adjustment is possible in both directions with the entire rotation angle of the cam shaft.
- 4.2.6 **WARNING!** Remove and store the adjustment tool before placing the SER actuator in service.
- 4.2.7 Test the SER actuator switch positions by cycling open and closed.
- 4.2.8 Once all adjustments are complete, reinstall the cover by refastening the four screws in the top cover. Do not over tighten.
- 4.2.9 Reinstall the control levers and test for proper operation.



CONTROL SYSTEM

- 4.3 Connect phase L1 to terminal 1.
- 4.4 If so equipped, position the switch AUTO/MAN to the manual position (Hand).
- 4.5 Switch On the power to the SER actuator.
- 4.6 By using the UP button (▲), the shaft will rotate counter clockwise and the motor opens (cam switch 2 adjusts to the end position- OPEN).
- 4.7 By using the DOWN button (▼), the shaft will rotate clockwise and the motor closes (cam switch 1 adjusts to the end position- CLOSED).
- 4.8 Positioning the UP/DOWN switch to the middle position stops movement of the shaft.





6 PROPORTIONAL OPERATION

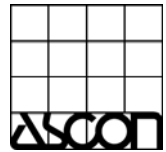
- 6.1 All adjustments are performed at the factory before SER actuator shipment and it is recommended to avoid any field adjustments to the cams and potentiometer.
- 6.2 **WARNING!** The potentiometer adjustment is installed for factory calibration and it is recommended it not be changed.

7.1 MAINTENANCE AND CHECKS

- 7.1.1 The SER actuator does not require any regular maintenance.
- 7.1.2 The SER actuator does not require any lubrication since the gear motor is permanently oiled. **DO NOT ADD OIL.**
- 7.1.3 It is not advisable to perform field repairs. Please return to the manufacturer or your local sales agent.
- 7.1.4 Do not disassemble any internal part of the gear motor or warranty will be voided. If gear motor problems arise, the SER actuator must be returned for factory service or replacement.
- 7.1.5 Any field replacement must be carried out by trained technicians.

7.2 CHECKS

- 7.2.1 After proper installation and adjustment of the control levers, check that the switch and circuit wiring are correct and to code.
- 7.2.2 Check that the SER actuator properly controls the connected device.
- 7.2.3 Check that the SER actuator runs in accordance with the provided control signal.
- 7.2.4 Check that the SER actuator, levers, and control device are mechanically connected in the correct way.



7.2.5 Check that the movement of the SER actuator linkage occurs without jamming or blocking.

8 REPLACEMENT

In case of replacement of the SER actuator, proceed as follows:

- 8.1 Switch off all power.
- 8.2 Remove the SER actuator cover.
- 8.3 Disconnect all power and control wiring.
- 8.4 Remove the linkage.
- 8.5 Install the new SER actuator following the instruction provided earlier in these instructions.