

General explanations	<p>The electromechanical J+J[®] turn actuators for industrial valves with a swing angle of 0-90°/ 0-180° or a freely definable angle, are assembled very compact.</p> <p>Main features: clear structure, maintenance-free, a DC motor drives the main shaft through gears. The gear allows declutching the motor for manual operation via switching. In this case the motor circuit is opened. Because of the permanently fixed manual emergency override, the valve can be turned via hand wheel or T-handle instantly after switching the gear. The end positions are controlled by 2 internal micro switches, the external end position feedback is realized with 2 additional potential free micro switches, which are pressed by cams that are fixed on the main shaft before reaching the end position. There is no mechanical travel stop. The optical position indicator on top of the electric actuator gives information about the current position of the valve. Armatures can be mounted directly or with a suitable adapter at the norm confirming mechanical interface. The electrical connection is made with DIN plugs. The type label and connection diagram make it easy to identify every actuator.</p>
Equipment	<p>- Position indicator: If the actuator is correctly mounted, the optical position indicator gives the actual position of the ball/wafer. At R series it is combined with the T-handle and at the RC series it is separately under a dome.</p> <p>- Manual operation: The armature can be adjusted by turning the manual operation handle/wheel.</p> <p>-end position feedback: At standard adjustment, the potential free end position micro switches give the absolute position feedback (open or closed) of the armature. This can be used for evaluation or controlling as required.</p>
Mounting	<p>J+J[®] actuators have to be installed in an upright position (flange downwards). It should be noted that the accessibility of the manual emergency override and the visibility of the position indicator is given.</p> <p>Depending on the type, the actuator is adjusted according to the type label. If the standard adjustment doesn't fit to the valve, it has to be readjusted (see at adjustment instructions).</p> <p>The actuator has to be protected against environmental influences.</p> <p>To guarantee the protection class attention has to be given to the correct position of the seal and cable gland.</p> <p>On part of the plant construction and/or the operator maintenance cycles and test cycles have to be stipulated according to the employment- and safety requirements. Beyond that one has to go into the particulars of control characteristics with the help of guidance and documentations.</p>
Connection	<p>The connection is made with the supplied plugs. Here the size of the wire has to be in the right size, to guarantee the tightness.</p> <p><u>Cable glands:</u> Main plug = PG 11 (max. cable diameter 10mm) End position plug = PG 7 (max. cable diameter 6mm)</p> <p>In principle, the wiring proposal, the Voltage and the other information do apply. In case of discrepancies or malfunctions necessarily consult us in order to avoid destruction or consequential damages. Complete units consisting of valve and actuator just need to be connected by the plugs. Opening the drive is only necessary for readjustment. Connection, start up or open the drive must be carried out by a qualified person in compliance with the VDE regulations. All J+J[®] actuators must be connected single-phase and interlocked controlled by relay or switch. An external fuse has to be provided.</p> <p>Do not connect consumers parallel to the actuator.</p>
Maintenance	<p>There is no maintenance needed for J+J[®] actuators. A standard test of function in accordance with the safety requirements of the installation, especially when infrequently used actuators is recommended. After commissioning and some duration, the connection of the drive with the armature should be checked. Here, also the smooth running of the armature must be checked. General attention must be paid to the tight fit of the cover and the cable. Unused connectors must be closed off.</p> <p>After long standstills valves can be extremely sluggish, manual operation (possibly without drive) is often necessary before restarting (instructions of the armature supplier's note).</p>
Notice	<p>The valve interface must be designed according to DIN 3337 / ISO5211 and an alignment of drive and valve shaft must be ensured. The valve actuation shaft must be shorter than the accommodation in the drive is deep.</p> <p>The valves should be mounted with threaded pins, a sufficient screw depth has to be ensured.</p> <p>The screws / threaded pins must not be deeper than the thread in the multiflange is, in order to prevent a lifting of the flange plate. The multi flange plate can be turned after loosening the 4 screws, to change the flange from F03/F05 (delivery standard) to F04.</p> <p>The technical requirements must comply with the performance of the actuators.</p> <p>Blocking the drive shaft or the manual controls may result in damage to the actuator.</p>
Set in operation	<p>Check before commissioning the following circumstances:</p> <ul style="list-style-type: none"> - Does the actuator correspond to the required version (torque, protection, voltage, etc.) - Does the wiring conform to the Voltage (see circuit diagram) - Is it possible to operate the armature with the manual override <ul style="list-style-type: none"> > Switch from auto to man, move the manual override slightly to synchronize the gear, then turn the actuator manually like its actuation path. Afterwards switch from man to auto and also move the manual override slightly. In manual mode, the motor is stopped immediately by a switch and starts working after switching back to auto mode.

geändert: 20.04.2016	<p align="center">Manual J+J[®]</p> <p align="center">Series R + RC</p> <p align="center">Subject to technical modifications</p>	Dat.:10 2 10 0	Page 1 of 4
erstellt: 20.04.2016		J+J Deutschland GmbH	
Name: MU		Brunnenweg 7 – D 31061 Alfeld Tel.: +49 5181 85590-0 - Fax: +49 5181 85590-29 info@juj-deutschland.de - www.juj-deutschland.de	

malfunctions:

Nothing happens, the actuator doesn't move:

- ⇒ Switch from man to auto or check the circuit type (AC or DC). Is the plug inserted?
- ⇒ Check: Is there a voltage at the plug? Check the external fuse and replace if necessary, check cable routing.

Actuator shows closed, but the armature is opened or the armature does not open/ close correctly:

- ⇒ Actuator is positioned in wrong direction or the end positions do not coincide with the armature. The cams have to be readjusted or the actuator needs to be repositioned on the armature.

The external end position feedback does not react:

- ⇒ Check the wiring, readjust the cams, so that the micro switch is pressed before reaching the end position.

Actuator turns, but the armature does not move:

- ⇒ The interface between the valve and actuator is faulty or defective, consult with the automaters and if necessary check the complete documentation of the actuator for information.

The actuator does not stop correctly at the end position of the armature:

- ⇒ Mark position of the indicator, switch to man, slightly rotate the drive manually from the end position and back to the end position. If you mention a bigger resistance, the armature needs to be checked. Does the armature have end stops that weren't removed? > Remove end stops.

Is there any foreign matter inside of the armature? (Cleaning rags around the wafer, any solid matter in dead rooms of the armature or similar), is the seal defective? > Maintenance armature, consult armature supplier.

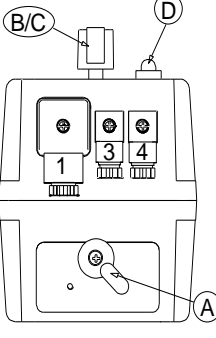
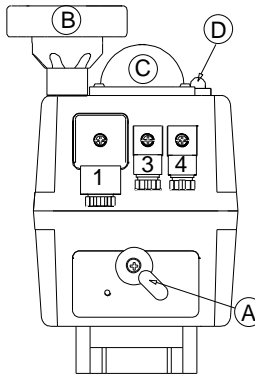
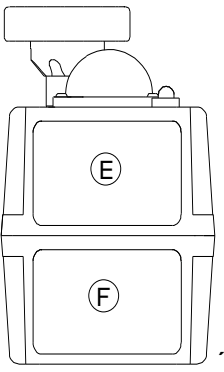
- ⇒ Possibly the actuator has a gearbox failure by increased torque on output. Then first of all you should turn the actuator to both end positions (open and closed) by the manual drive.

Optional extras:

Special equipment such as: heating, torque protection circuit, potentiometers are not available!

Special models such as positioning actuator, battery actuator and optional equipment is only available in the J3 / J3C series!!

Designations:

View on plugs		Designations:	View on type label:
<p>R Series Model 20</p> 	<p>RC Series Model 20-85</p> 	<p>1 Main plug 2 Non-existent 3 Non-existent/ not used 4 Plug for external end position feedback A Switch from automatic to manual (AUTO / MAN) B Manual override C Optical position indicator D Operation light E Circuit diagram F Type label</p>	<p>All Models</p> 

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J+J Deutschland GmbH

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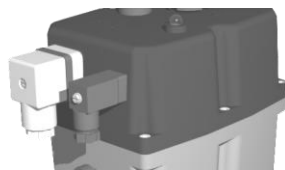
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Connection plugs:

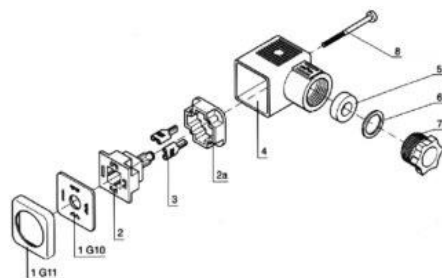
All plugs of the actuator are DIN plugs.

Be sure that the diameter of the cables is correct and the seal is also correctly mounted. Otherwise the protection class (IP 65/IP67) can't be guaranteed and possibly water can get into the actuator. The plugs are fixed with screws at the actuator. Pay attention that the screws don't get overturned!!



20/35/55/85

- 1 Seal
- 2 Terminal block
- 3 Cable clamp
- 4 Housing
- 5 Sealing ring
- 6 Washer
- 7 Cable gland
- 8 Fixation screw



	Small plug		Big plug	
	Industrial Standard		DIN-43650 ISO 440 & C193	
Model	Min. diameter	Max. diameter	Min. diameter	Max. diameter
20 to 85	5 mm	5 mm	8 mm	10,5 mm

Technical data:

Model	Max. current	Runtime for 90°/ Without load	Breakaway torque
20	24VAC : 880mA 24VDC : 580mA 48VAC : 450mA 48VDC : 310mA 110VAC : 240mA 110VDC : 160mA 230V AC : 350mA	24VAC : 9 sec 24VDC : 9 sec 48VAC : 8 sec 48VDC : 9 sec 110VAC : 8 sec 110VDC : 9 sec 230V AC : 9 sec	25 Nm
35	24VAC : 1170mA 24VDC : 830mA 48VAC : 580mA 48VDC : 420mA 110VAC : 310mA 110VDC : 230mA 230V AC : 450mA	24VAC : 9 sec 24VDC : 9 sec 48VAC : 8 sec 48VDC : 9 sec 110VAC : 8 sec 110VDC : 9 sec 230V AC : 9 sec	35 Nm
55	24VAC : 1270mA 24VDC : 1250mA 48VAC : 660mA 48VDC : 480mA 110VAC : 350mA 110VDC : 290mA 230V AC : 480mA	24VAC : 14 sec 24VDC : 15 sec 48VAC : 11 sec 48VDC : 13 sec 110VAC : 10 sec 110VDC : 11 sec 230V AC : 15 sec	60 Nm
85	24VAC : 1270mA 24VDC : 1250mA 48VAC : 660mA 48VDC : 480mA 110VAC : 350mA 110VDC : 290mA 230V AC : 480mA	24VAC : 32 sec 24VDC : 36 sec 48VAC : 24 sec 48VDC : 30 sec 110VAC : 20 sec 110VDC : 26 sec 230V AC : 35 sec	90 Nm

Shared data:

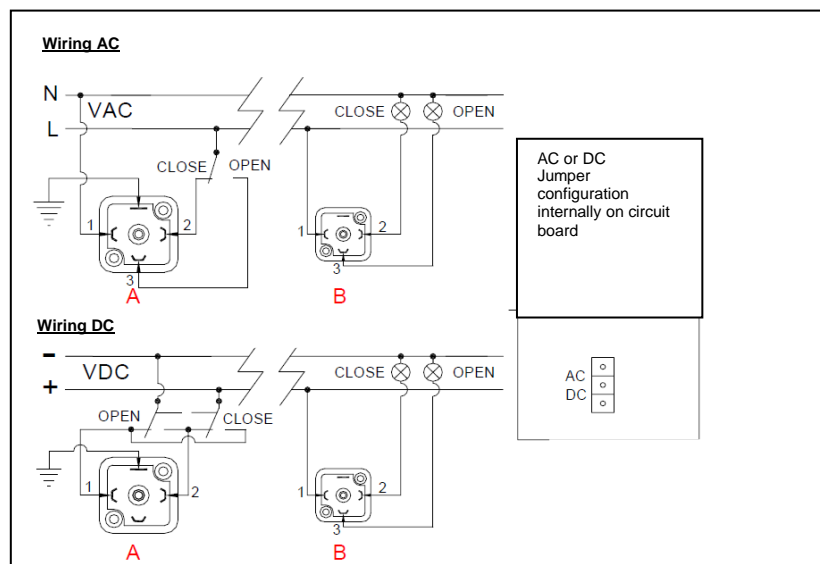
Duty cycle	Temperature range	Protection class IEC60529	Position feedback
75%	-20 / +70°C	R series IP65 RC series IP67	250VAC 3A

Weights:

Model R "20"	Model RC "20" + "35"	Model RC "55"	Model RC "85"
1,7Kg	1,9 Kg	2,4 Kg	3 Kg

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Wiring diagram:



Setup instructions for end position feedback:

Safety instructions: All work inside of the actuator may only be done by qualified personnel and with a switched off voltage source. Touching live components may lead to an electrical shock and a damage of the electronics!

Purpose: The actuators are adjusted. Depending on the application, free play or a lack of alignment of armature connections or adapters, it may be necessary to readjust the actuator in his turn way or the end position feedback for the electric control. Under certain circumstances, after a longer period of use under strong vibrations readjustment can be required.

Note: While assembling all screws/seals need to be brought in its original position. Refer to the notes of the armature manufacturer and instructions from system manufacturers.

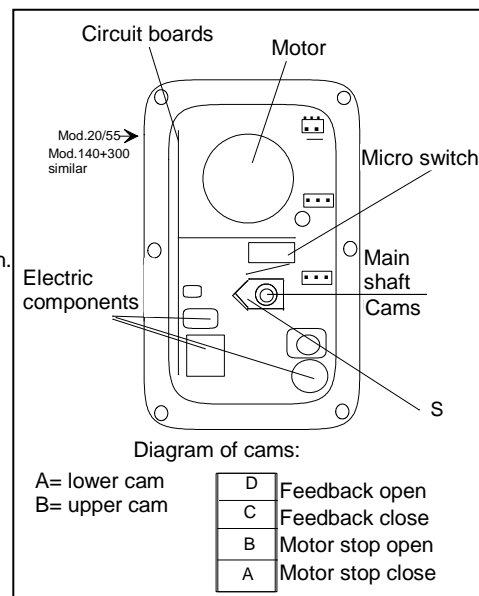
- Preparatory actions:**
1. Loose the screws and pull of the plugs (note the seals).
 2. Loose the screws of the handle and pull it off (Only model 55, 140, 300).
 3. Gently press the position indicator/ T-handle to the top with a flat blade screwdriver.
 4. Loose and remove housing screws.
 5. Pull off the housing to the top and do not turn it. (Do not open it with the help of a screwdriver). This could damage the sealing.
- Lay the housing beside (cables can stay connected to circuit board, but have a close look at the cable routing for the reassembling)
6. Put the manual override/ T-handle back on the shaft.

Procedure: Switch the actuator from auto to man and turn to the position that needs to be adjusted.

Motor stop: Now you can stick a 2mm allen key or a little screwdriver into the gap S of the cam. Turn the cam to the point, where you hear the click of the micro switch. Always turn the cam from the direction, where the main shaft will rotate towards the switch.

End position feedback: The adjustment of the end position feedback is done Like the adjustment of the motor stops. A helpful tool could be a continuity tester which you fix on pin 1 and pin 2 (closed) or pin 1 and pin 3 (opened). The feedback should be adjusted that the signal comes a bit before the motor stops. Of course you can also adjust them to any point inside the turn angle, to signal other positions.

Attention: Do not use other parts inside of the actuator while adjusting as a support for the adjustment tool.



Assembly: After the adjustment, put the housing carefully back on the actuator. Make sure to lead the cables like before, past the shafts and the motor, so it won't come to a malfunction due to a jam with the cables. Now the cover has to lay close on the bottom part. If it's not the case, there might be a cable between motor and cover or between bottom part and cover. If the cover lies close to the bottom part, you can tighten the screws crosswise. Next, place the position indicator, put the handwheel / t-handle on the actuator and fix them. After the electrical connections are made and the actuator has been switched under gentle turning the handwheel / T handle from auto to man, you can check the electrical function. If the function is faulty, the procedure must be repeated carefully.

For questions please contact the **J+J** service department.

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