

# ELECTRIC ACTUATOR

## J3C S20



### GENERAL CHARACTERISTICS

- Housing:** Anticorrosive polyamide (lid & body)
- Main external shaft:** Anticorrosive polyamide
- External screws:** stainless steel
- Gears:** Steel and polyamide
- Visual position indicator:** Polyamide
- Dome:** Polycarbonate
- Adjustable internal cams:** Polyamide
- Electric motor:** Single phase 24VDC
- Insulation:** Class B



## DATASHEET

Model	J3C S20
Voltage VDC/VAC 50/60Hz -0/+5%	24 a 240 (Patent Pending)
Voltage VDC/VAC 12 <b>ONLY</b> -0/+5%	Change the power supply PCB
Operation time unload (Sec.)	10 Sec./90°
Maximum torque break	25 Nm / 221 lb/in
Maximum operational torque	20 Nm / 177 lb/in
Duty rating (%)	75 %
Working angle	90° a 270°
Limit switch	4 STDP micro (2 motor stop and 2 confirmations)
Automatic heater	3,5 W
Plugs	EN175301-803
Protection IEC 60529 rating	IP67
Temperature	20°C +70°C / -4°F +158°F
Weight (Kg.)	1,8 Kg



### VALVE CONNECTION

ISO 5211 Plate : F03/F04/F05  
 DIN 3337 Female output drive : \*14 mm

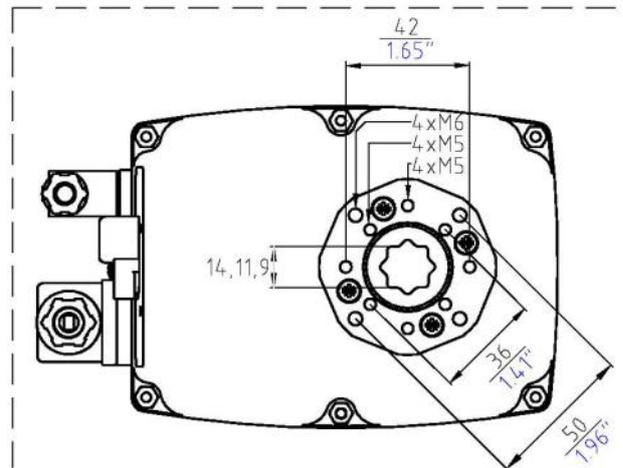
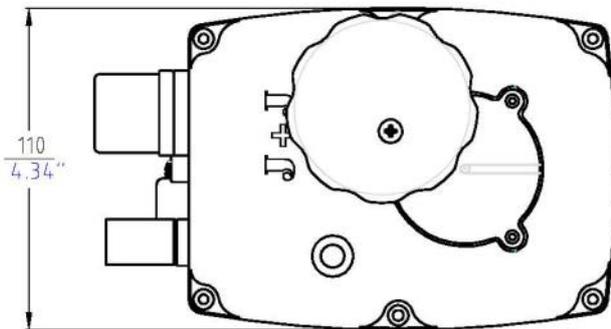
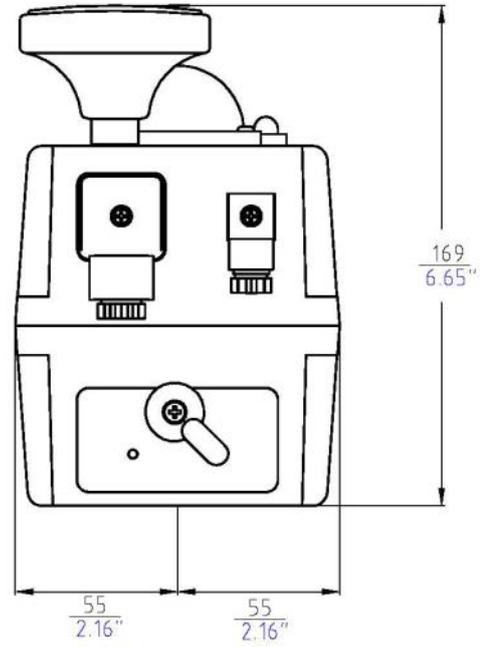
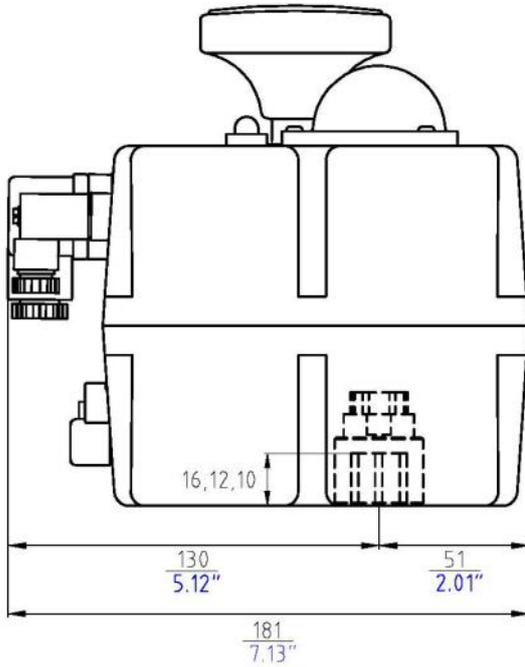
Options:  
 DIN 3337 Female output drive: \*9 or \*11 mm  
 F05 to F07 Conversion Kit with \*17mm output



### OPTIONS

- J3C S20/S85 DPS 2015 digital positioner: 4-20mA, 0-20mA, 0-10V or 1-10V.
- J3C S20/S85 BSR 2015 emergency fail safe kit system by battery
- Digital potentiometer: 1K, 5K or 10K.
- 3 position actuator: 0°-45°-90° or 0°-90°-180°

**J3C S20 SIZES**

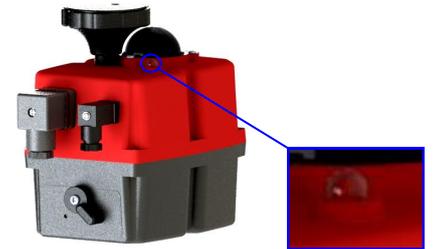


## J3C SERIES - MODEL S20, S35 , S55 & S85

“S” model - Novelties to be pointed out:

### 1-VISUAL CONTROL OF OPERATION:

Through the VISUAL CONTROL OF OPERATION one could see a different color LED light, fixed or blinking, from which, one could know what is the operation the actuator is making or which is the incidence the actuator is facing.



VISUAL CONTROL OF OPERATION

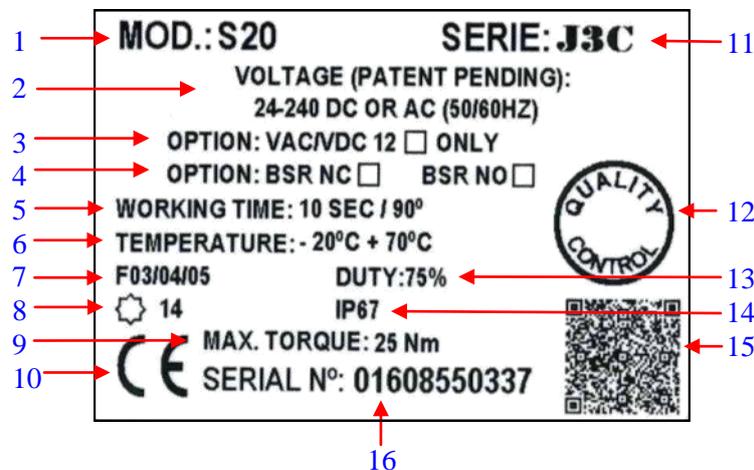
### 2- 24 - 240 V MULTIVOLTAGE PCB, (Patent pending).

-All S20 to S85 actuators have been set-up to work from **24-240 VDC/VAC (Patent pending)**.

-In case one would like to work at **12 VAC/VDC ONLY**, the actuator should be opened and the already installed Power Supply PCB should be replaced by the one which is inside the “12 VAC/VDC power supply KIT”.

Inside the KIT box there is an instruction manual, which explains, step by step, how to install the new PCB. **In case one would like to change the set-up voltage (default 24-240VDC/VAC (Patent pending)), put a mark “X”, on the desired voltage box of the ID actuator label.**

### 3-ID ACTUATOR LABEL



1-Actuator Model.

2-Voltage to be connected, provided that none of the two options below were marked with an “X” (points 3 or 4).

3-If we put an “X” inside this option box, one should know that the actuator will work at **12 VDC/VAC** .

In case any of options 3 or 4 had an “X”, the default voltage in point 2 would be automatically cancelled.

4-In case “**BSR NC**” option had a “X” mark, it will mean that the actuator has a pre-installed system, which in case of a power supply failure, the actuator will go the close position automatically.

If the option with an “X” mark is “**BSR NO**”, it will mean that the actuator has a pre-installed system which, in case of a power supply failure, will drive the actuator to the open position, by using an internal battery system.

5-Time the actuator needs to run the indicated degrees.

6- Actuator ready to bear between  $-20^{\circ}\text{C}$  y  $+70^{\circ}\text{C}$ .

7-Plate to fix the valve to the actuator, following ISO 5211.

8-Female output drive size, following DIN3337.



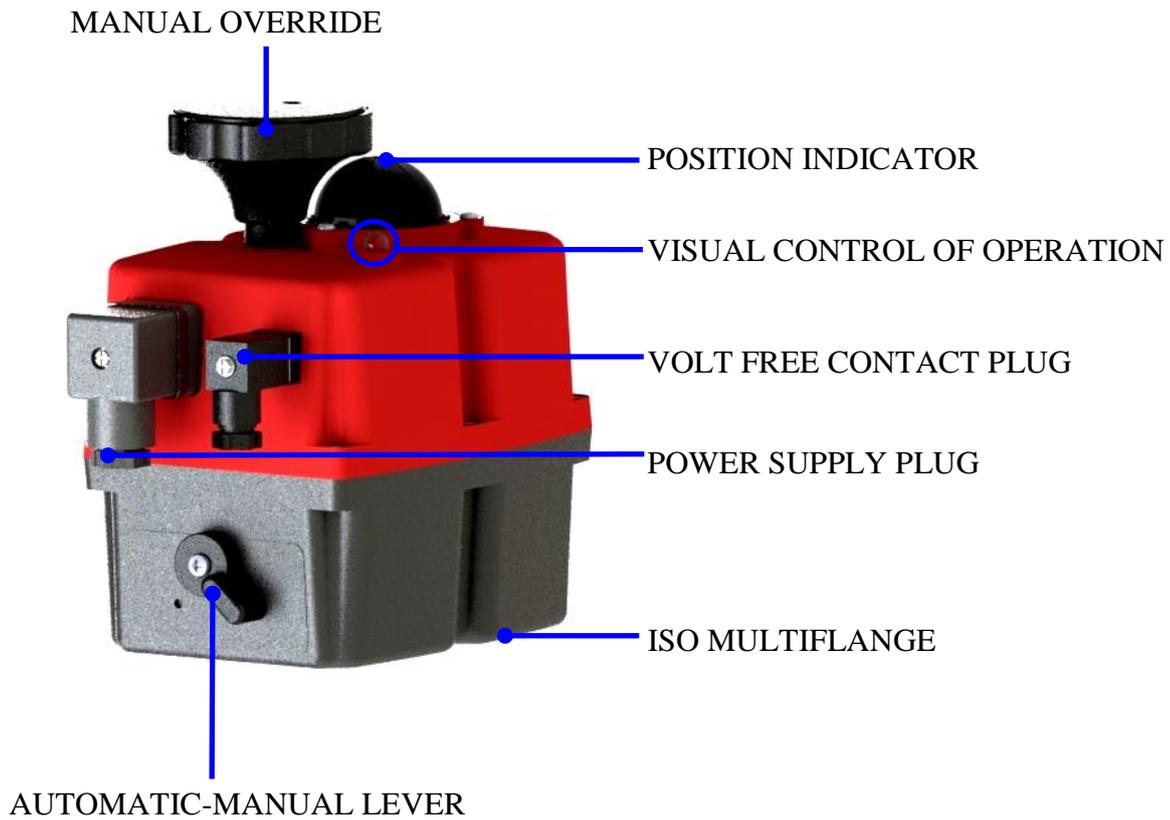
- 9-Maximum torque break.
- 10-Actuator with the CE certificate.
- 11-Actuator Series.
- 12-Marked with a tic, means that the actuator has passed our factory quality control steps.
- 13-Duty: 75%. Example: S20 Model - Maneuver time = 10sec. Time between maneuvers = 3.3 sec.
- 14-IP67 Certificate.
- 15-QR Code.
- 16-Actuator serial number.

#### **4-BSR 2015 J3C S20/S85 KIT**

For actuators model S20, S35, S55 & S85, there is a new BSR 2015 KIT, which drives the actuator to the OPEN (BSR NO) or to the CLOSE position (BSR NC) in case of a power supply failure, by using an internal battery system. Always depending on the previous set-up configuration.

#### **5-DPS 2015 J3C S20/S85 KIT**

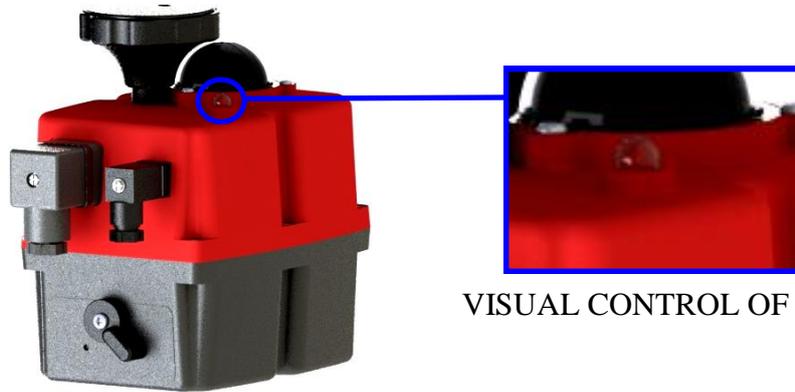
For actuators model S20, S35, S55 & S85, there is a new DPS 2015 KIT, which allow us to put the actuator in any position throughout its working angle, by using a 4-20mA or a 0-10V signal. In case one would like to use a 0-20mA or a 1-10V signal, ask the distributor.

**ACTUATOR PART LIST****MODELS: S20, S35, S55 & S85**

## ACTUATOR OPERATIONAL STATUS

### MODELS: S20, S35, S55 & S85

The LED Light provides visual communication between the actuator and the user.  
The current operational status is shown by different LED colors.



VISUAL CONTROL OF OPERATION

ACTUATOR OPERATIONAL STATUS	LED COLORS
Actuator without power being supplied	LED OFF
Actuator with power being supplied	OPEN = GREEN LED CLOSE = RED LED
Actuator , moving from .....to ....., (flashing led)	FROM OPEN TO CLOSE = RED / ORANGE FROM CLOSE TO OPEN = GREEN / ORANGE
Actuator with torque limiter function on, moving from .... to .....,(flashing led)	FROM OPEN TO CLOSE = RED / OFF FROM CLOSE TO OPEN = GREEN / OFF
Actuator in MANUAL mode	ORANGE / OFF (SYMMETRIC SEQUENCE)
Actuator without power, working with the BSR system. Max. 3 minutes	BSR NC = RED / OFF BSR NO = GREEN / OFF
Battery protection. Danger, the battery needs recharging. BSR blocked	ORANGE / OFF (ASYMMETRIC SEQUENCE)
Actuator with DPS 2015	STOP = BLUE OPENING = BLUE / GREEN CLOSING = BLUE / RED



J3C-S20



J3C-S35



J3C-S55



J3C-S85

## TABLE OF CONSUMPTIONS

J3C S20 Consumption	Unload		Max. Operational Torque 20Nm		Max. Torque Break 25Nm	
	A	W	A	W	A	W
Voltage						
24 VDC	0,40	10,30	0,80	19,30	0,80	20,30
48 VDC	0,20	10,20	0,40	18,00	0,40	18,50
110 VDC	0,10	7,50	0,10	13,30	0,10	14,30
24 VAC	0,60	14,20	1,10	25,80	1,20	27,60
48 VAC	0,40	18,40	0,70	31,30	0,70	32,20
110 VAC	0,20	16,50	0,30	27,60	0,30	27,60
240 VAC	0,10	22,20	0,20	37,50	0,20	39,60

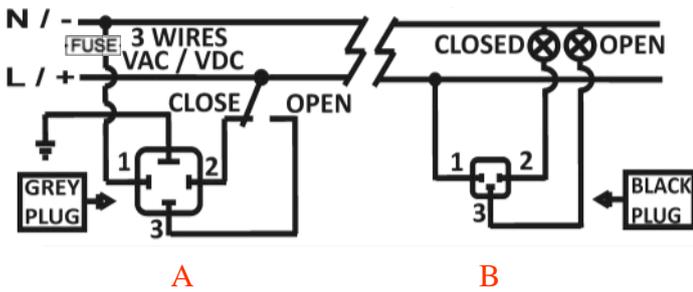
J3C S35 Consumption	Unload		Max. Operational Torque 35Nm		Max. Torque Break 38Nm	
	A	W	A	W	A	W
Voltage						
24 VDC	0,40	10,20	1,20	27,60	1,20	28,20
48 VDC	0,20	9,30	0,50	24,40	0,50	25,40
110 VDC	0,10	7,30	0,20	18,20	0,20	18,60
24 VAC	0,60	14,10	1,50	36,40	1,60	38,10
48 VAC	0,40	17,20	0,90	41,90	0,90	43,80
110 VAC	0,10	15,20	0,30	37,30	0,30	38,00
240 VAC	0,10	22,70	0,20	45,90	0,20	45,90

J3C S55 Consumption	Unload		Max. Operational Torque 55Nm		Max. Torque Break 60Nm	
	A	W	A	W	A	W
Voltage						
24 VDC	0,33	08,00	1,21	29,00	1,25	30,00
48 VDC	0,18	08,40	0,56	27,00	0,59	28,30
110 VDC	0,06	06,10	0,17	18,20	0,18	19,60
24 VAC	0,47	11,20	1,69	40,70	1,73	41,60
48 VAC	0,29	14,20	0,97	46,50	1,01	48,30
110 VAC	0,12	13,60	0,36	39,20	0,37	40,70
240 VAC	0,09	21,10	0,20	47,50	0,20	48,00

J3C S85 Consumption	Unload		Max. Operational Torque -85Nm		Max. Torque Break -90Nm	
	A	W	A	W	A	W
Voltage						
24 VDC	0,33	7,90	0,88	21,20	0,90	21,20
48 VDC	0,17	8,10	0,44	21,20	0,48	23,20
110 VDC	0,05	5,80	0,13	14,80	0,15	16,50
24 VAC	0,45	10,80	1,16	27,70	1,17	28,00
48 VAC	0,28	13,30	0,28	33,10	0,71	34,10
110 VAC	0,11	12,30	0,26	29,00	0,27	29,50
240 VAC	0,08	18,50	0,16	38,00	0,16	38,00

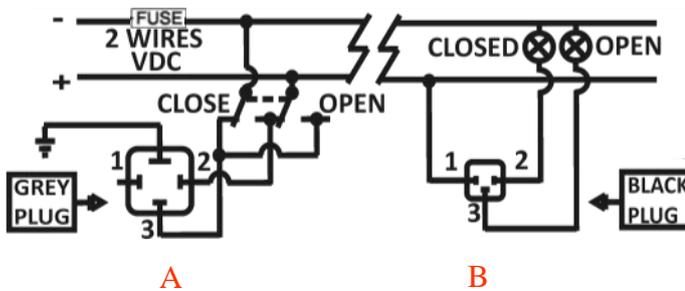
## EXTERNAL CONNECTING DIAGRAM

### 3 WIRES ON - OFF



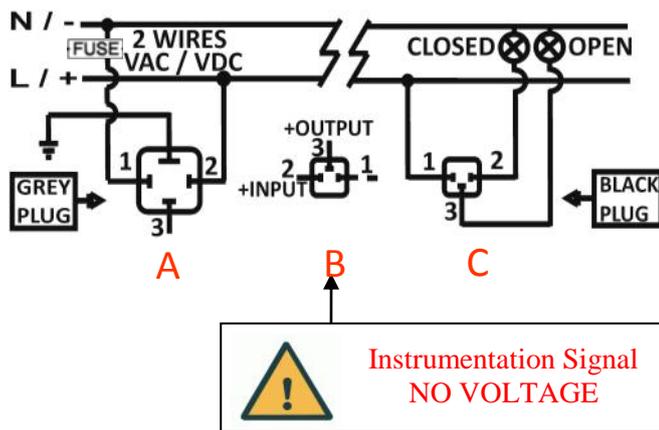
- A = Power supply plug
- A: VAC 3 WIRES (Grey plug)
  - PIN 1 = Neutral + PIN 2 = Phase = Close
  - PIN 1 = Neutral + PIN 3 = Phase = Open
- A: VDC 3 WIRES (Grey plug)
  - PIN 1 = (-) Negative + PIN 2 = (+) Positive = Close
  - PIN 1 = (-) Negative + PIN 3 = (+) Positive = Open
- B = Volt free contact, plug
  - PIN 1 / PIN 2 = Close
  - PIN 1 / PIN 3 = Open

### 2 WIRES ON - OFF



- A = Power supply plug
- A: VDC 2 WIRES (Grey plug)
  - PIN 2 = (+) Positive + PIN 3 = (-) Negative = Close
  - PIN 2 = (-) Negative + PIN 3 = (+) Positive = Open
- B = Volt free contact plug
  - PIN 1 / PIN 2 = Close
  - PIN 1 / PIN 3 = Open

### POSITIONER



- A = Power supply plug
- A: VAC 2 WIRES (Grey plug)
  - PIN 1 = Neutral + PIN 2 = Phase = Power supply plug
- A: VDC 2 WIRES (Grey plug)
  - PIN 1=(-) Negative + PIN 2=(+) Positive = Power supply plug
- B = Instrumentation Signal
- B: Input signal : 4/20mA or 0/10V
  - PIN 1 = (-) Negative + PIN 2 = (+) Positive = Input signal
  - PIN 1 = (-) Negative + PIN 3 = (+) Positive = Output signal
- C = Volt free contact plug
  - PIN 1 / PIN 2 = Closed
  - PIN 1 / PIN 3 = Open

**12 VAC/VDC POWER SUPPLY PCB MOUNTING KIT**

**MODELS: S20, S35, S55 & S85**



**12 VDC/ VAC  
POWER SUPPLY  
PCB**



**J3C-S20**



**J3C-S35**



**J3C-S55**



**J3C-S85**

-Only if 12 VAC/VDC wants to be used, we will:

1-Put the lever in MANUAL mode (see “MANUAL” picture”)



**MANUAL**

2- Turn the manual override until the yellow indicator shows 270° (see “CORRECT POSITION” picture)



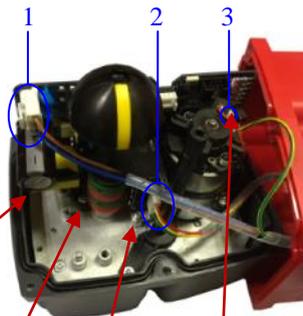
**CORRECT POSITION**

3-Open the actuator:

Remove the screw from the top of the hand-wheel and take it off  
Remove the screws which are fixing the cover to the body carefully

4-Disconnect the wiring (1, 2 & 3), going from the cover to the print circuit board

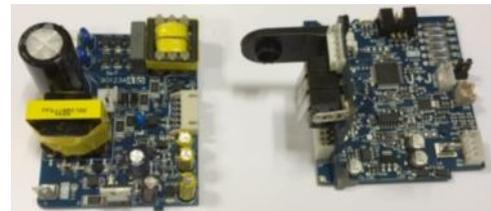
5-Remove carefully the 4 screws (4, 5, 6 & 7) which are fixing the print circuit board to the lower metal plate and take the PCB off.



6-Disconnect the “POWER SUPPLY” from the “CONTROL PCB “ by separating a part of the other.

7-Assemble the “12 VDC/ VAC POWER SUPPLY” to the “CONTROL” and fix it to the metal plate by the screws (4,6 & 7).

8-Connect the cover’s wiring; fix it and the hand-wheel as well



**POWER  
SUPPLY PCB**

**CONTROL PCB**