

505-507 VALVES WITH SA ELECTRIC ACTUATOR

FEATURES

The 505+SA and 507+SA cast iron ball valves are dedicated to the automatic opening/shut-off of pipes carrying low pressure unloaded common fluids. The 505-507 full bore split body ball valve has the EC 2014/68 certification. The 505 valve complies with the NF 29323 face-to-face standards and the 507 valve complies with the DIN 3202 F4/F5 face-to-face standards. The ISO 5211 pad allows a direct mounting of the SA05 actuator. It is perfectly suitable for an indoor or outdoor industrial use.

AVAILABLE MODELS

505 : Face to face according to NF 29-323 F18 standard for DN 40 to 65.

507 : Face to face according to DIN 3202 F4/F5 standard for DN 15 to 65.

Flanged connections RF PN10/16.

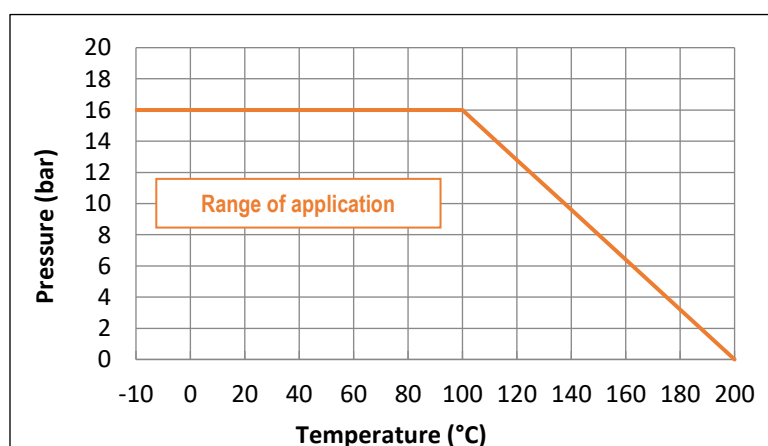
Supply voltages : 12V dc, 24V ac-dc and 230V ac.



IP
67

LIMITS OF USE

Fluid pressure : PS	16 bar (20°C)
Fluid temperature : TS	-10°C / +200°C
Prohibited use	Steam, compressed air and gases
Ambiant temperature	- 20°C / + 70°C
Service factor	<u>S2</u> : 15mn - <u>S4</u> : 50% (SA 05)
	<u>S2</u> : 15mn - <u>S4</u> : 30% (SA 09)



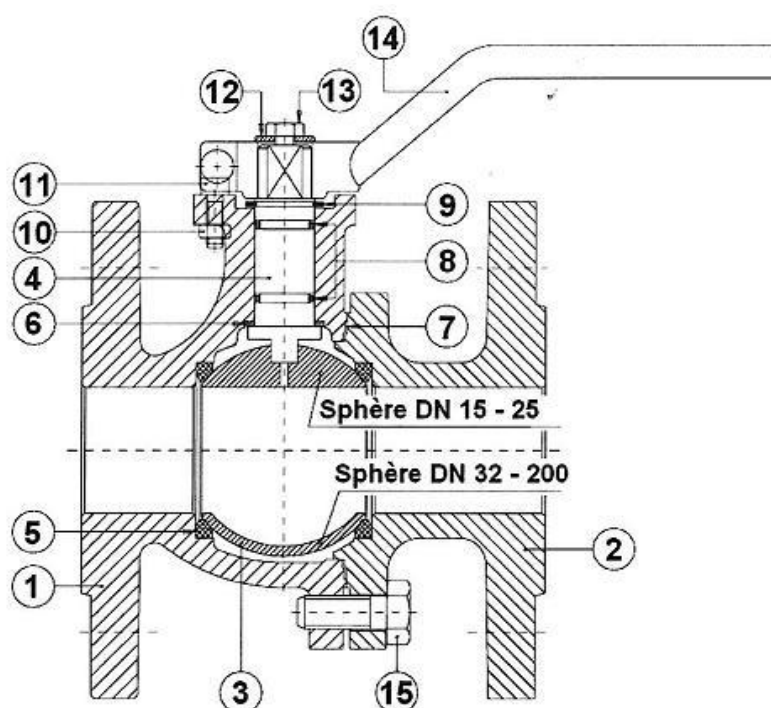
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DIRECTIVES AND MANUFACTURING STANDARDS

OBJET	Standard	OBJET	Standard
Pressure Equipment Directive 2014/68/EC	DN 15 and 20 : not subject	Final test	EN 12266-1
	DN 25 to 200 : category I	Face-to-face dimension 505	NF 29-323
Conception	DIN 3357	Face-to-face dimension 507	EN 558-1 series 27
Size	DIN 3840	Marking code	EN 19
Flanges dimension	EN 1092-2	Motorisation connection	ISO 5211



CONSTRUCTION

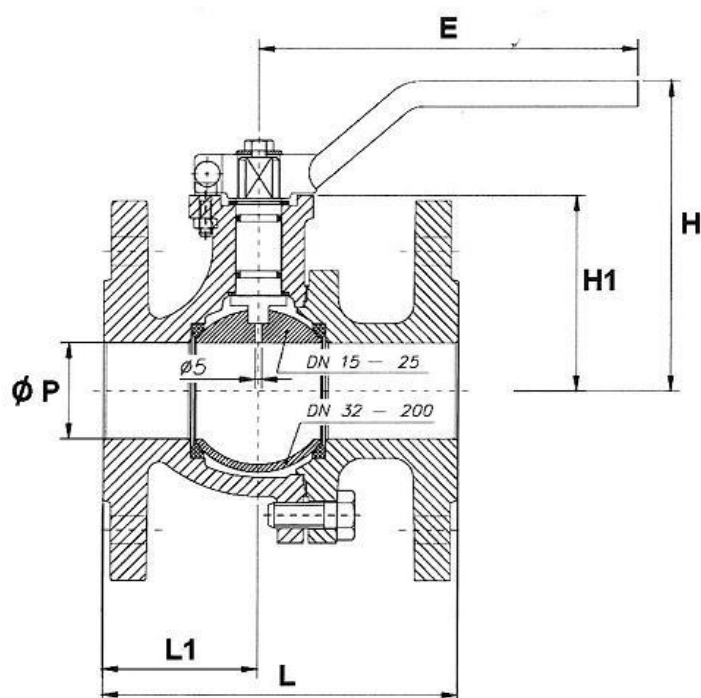
No.	Name	Material	No.	Name	Material
1	Body	EN GJL-250 Cast Iron	8	O ring	FKM
2	End	EN GJL-250 Cast Iron	9	Washer	DIN 471 steel
3	Ball DN 15-25	SS 303 Stainless steel	10	Nut	DIN 934-8 steel
3	Ball DN 32-200	SS 304 Stainless steel	11	Screw	DIN 912- 8.8 steel
4	Stem	SS 304 Stainless steel	12	Washer	Zinc plated steel
5	Seat	PTFE	13	Screw	DIN 935 5.6
6	Friction ring	PTFE	14	Handle	Steel
7	Body gasket	PTFE	15	Screw	DIN 933 5.6

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DIMENSIONS (mm)



DN	15	20	25	32	40	50	65	80	100	125	150	200
Ø P	13	17	24	31	38	50	65	80	100	125	150	200
L (505)	/	/	/	/	136	142	154	160	172	186	200	/
L (507)	115	120	125	130	140	150	170	180	190	200	210	400
L1	49	55.5	51.5	53	61	62	81.5	79	94	120.5	155	190
H	92	95.5	102.2	114.7	119	127	141	151.5	176.5	208	254.2	293.5
H1	48.5	53	59.5	72	77	85	98	108.5	134	165	190	229
E	170	170	170	170	302.5	302.5	224	335	350	350	500	500
Weight (kg)	2.12	2.72	3.62	5.32	6.90	9.00	11.7	14.7	20.2	33.8	49.8	81.8

FLOW-RATE COEFFICIENT Kv (m³/h)

DN	15	20	25	32	40	50	65	80	100	125	150	200
Kv	37.4	74.8	105	176	223	416	660	1200	1980	3600	5040	10890

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SA ELECTRICAL MOTORISATION

Suggested standard SA actuation under the following conditions :

- Electric actuator with an IP 67 epoxy coated aluminium enclosure and steel gears,
- A minimum 1.3 safety factor compared with the valve nominal torque rating,
- A maximum pressure differential up/downstream of 10 bar ($=\Delta P$)

Electric actuator mounted with stainless steel bracket and coupler according to the EN 15081 standard.

DN	Actuator	Power	Intensity 230V AC	Time*	Intensity 24V AC-DC	Time*	Standard equipment of the electric actuator
15	SA 05	6 W	23 mA	17 s	1,8 mA	17 s	2 adjustable limit switches. 2 dry auxiliary switches. 5 W anti-condensation heater. Actuator thermal cut-out Manual override by key. Backlit position indicator (except for SA-X). Electrical connection: 2 gland packs M20x1,5.
20	SA 05	6 W	23 mA	17 s	1,8 mA	17 s	
25	SA 05	6 W	23 mA	17 s	1,8 mA	17 s	
32	SA 05	6 W	23 mA	17 s	1,8 mA	17 s	
40	SA 05	6 W	23 mA	17 s	1,8 mA	17 s	
50	SA 09	6 W	25 mA	32 s	2,1 mA	22 s	
65	SA 09	6 W	25 mA	32 s	2,1 mA	22 s	
80	Refer to 505-507 + NA electric actuator						
100							

For any other operating conditions, please contact us.

* indicative time for actuator running empty

MOTORISATION OPTIONS

There are many options for which you are invited to contact our sales service:

1	2	3
SA 05 S : Slow closing electric actuator 70 s	SA 05 PCU : Regulation actuator 4-20 mA or 0-10 V	SA 05 SCP : Safety actuator with super capacitor
		
4	SAPUI electric actuator with a feedback potentiometer	
5	Electric actuator sized for a maximum pressure differential up/downstream over 10 bar ($=\Delta P$)	
6	NA electric actuator with a declutchable manual override by handwheel	

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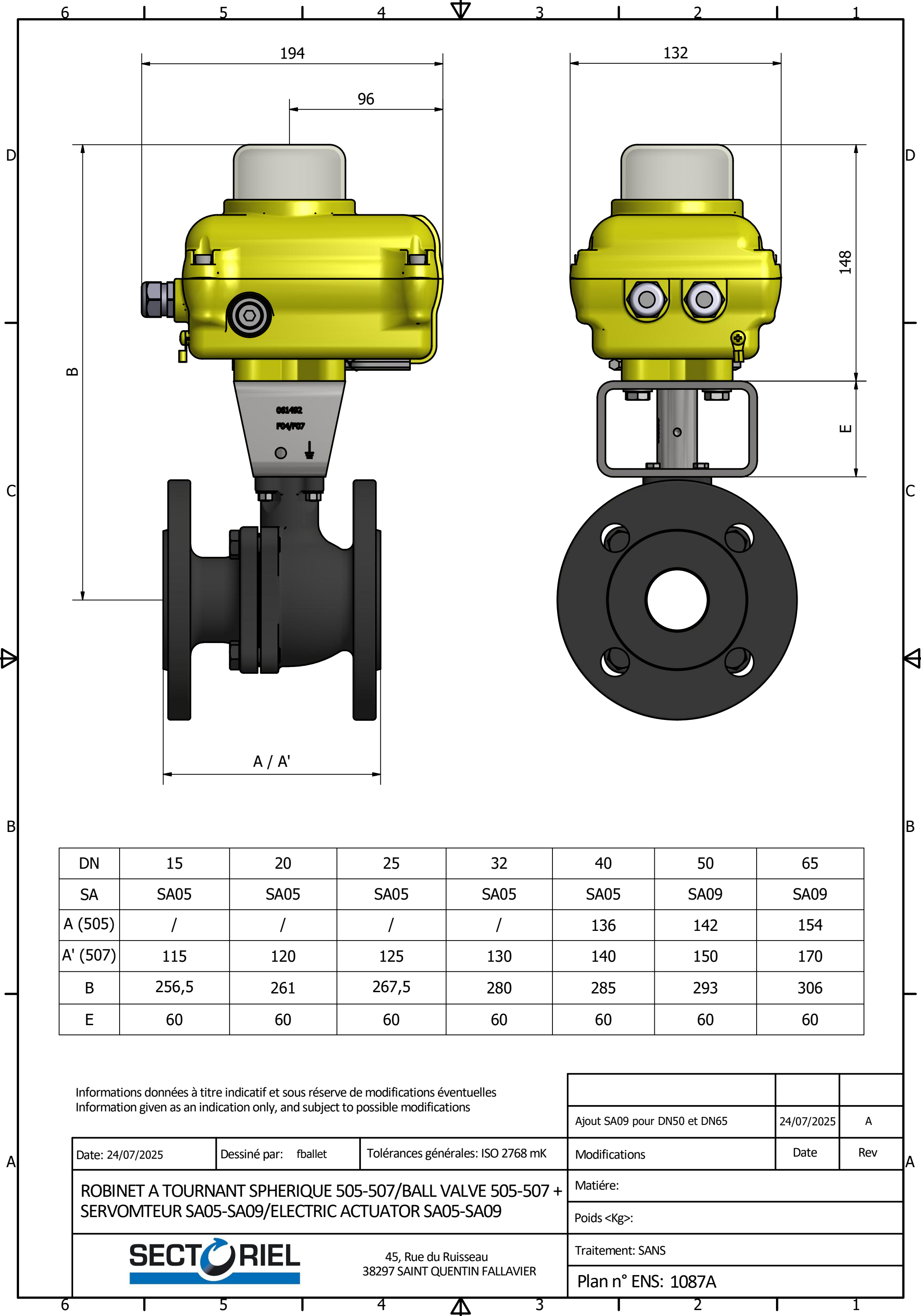
505-507 VALVES WITH SA ELECTRIC ACTUATOR

SPARE PARTS

505/507 Electric actuator SA05-SA09
Gear box
Printed circuit board
Electric motor
Pinon
VS 505/507 gasket kit
https://www.sectoriel.com/fr/505-robinet-a-boisseau-spherique-fonte-et-servomoteur-sa.html  https://www.sectoriel.com/fr/507-robinet-a-boisseau-spherique-fonte-et-servomoteur-electrique-sa.html 

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SA 05 - SA 09 ELECTRIC ACTUATOR

FEATURES

The SA 05 / SA 09 electric actuator are intended for motorising industrial 1/4 turn valves. The torques are 50 Nm and 90 Nm. With a compact, robust construction and IP67 epoxy-coated aluminium housing, the SA actuator is especially well suited for motorising ball valves and butterfly valves installed in workshops or outdoors. The SA has a manual key control and a 3D visual position indicator. Compliant with the EN 15714-2 standard.

AVAILABLE MODELS

Supply voltages: 230 Vac (50-60Hz), 24 Vac/dc and 12 Vdc.

Options: 110 Vac, feedback potentiometer, local command.



LIMITS OF USE

IP rating	IP 67
Ambient temperature	- 20°C / +70°C
Service factor	S2: 15mn - S4: 50% (SA 05)
	S2: 15mn - S4: 30% (SA 09)



MECHANICAL FEATURES

Gear box	treated steel pinions
Torque	50 Nm / 90 Nm
Angle of rotation	90° +/- 5°
Declutching	Without
Override control	by key (except for SA 05 S)

Actuator	SA 05 / SA 09			SA 05 S	
Voltage	230V AC	24V AC/DC	12V DC	230V AC	24V AC/DC
Torque (Nm)	50 / 90			50	
Manoeuvring time (s)	17 / 32	10 / 22	11 / 25	100	100
ISO 5211	F03/F05/F07 star 14				

ELECTRICAL FEATURES

Motor protection	Thermal switch	Anti-condensation	5W heater
Limit switches	2 adjustable switches	Electrical connection	2 x P.E. M20x1.5
Auxiliary switches	2 adjustable dry switches		

Actuator	SA 05 / SA 09			SA 05 S	
Voltage	230V AC	24V AC/DC	12V DC	230V AC	24V AC/DC
Power (W)	6 W	15 W	6 W	6 W	6 W
Current (A)	0,23 / 0,25	1,8 / 2,1	3,2 / 3,4	0,23	1,8

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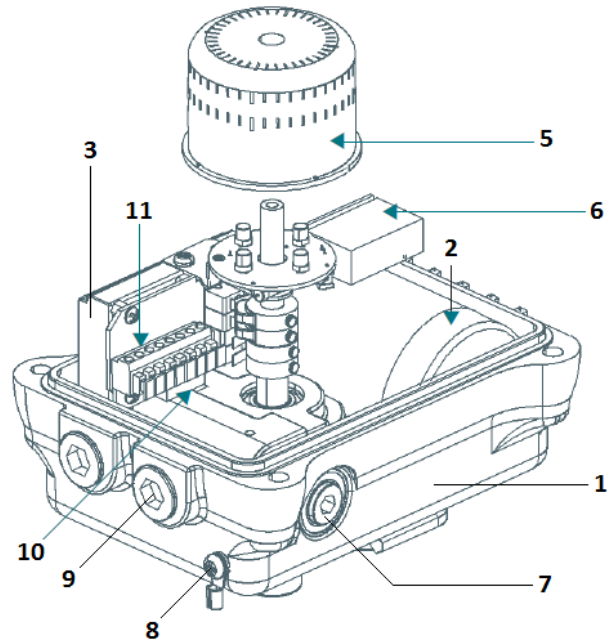
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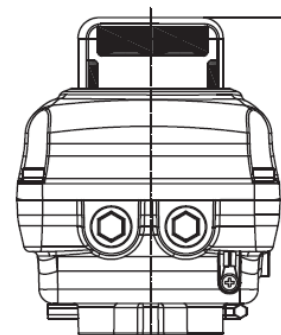
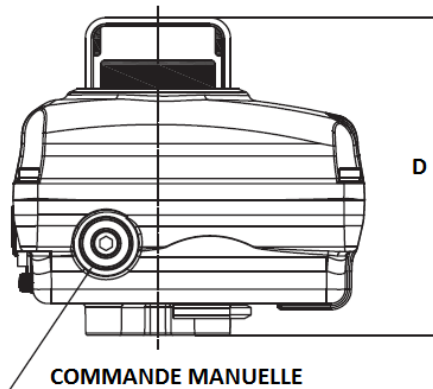
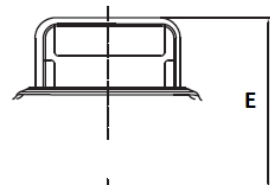
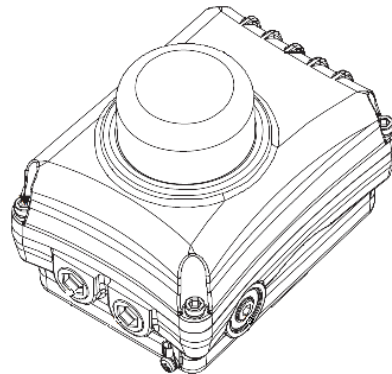
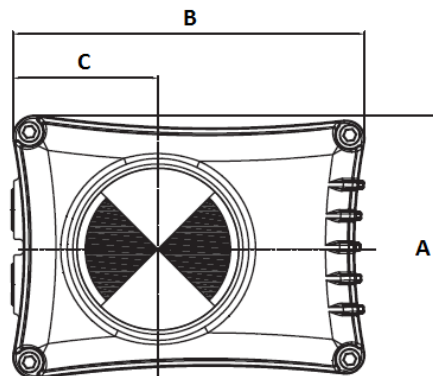
CONSTRUCTION

1	Housing	Polyester-coated aluminium
2	Electrical motor	
3	Gear box	Treated steel pinions
4	Cover	Polyester-coated aluminium
5	Position indicator	Polycarbonate plastic
6	Condenser	
7	Handle override	
8	Earthing	
9	Cable inlet	
10	Anti-condensation heater	
11	Terminal box	



DIMENSIONS (mm) AND WEIGHT (kg)

Dimensions (mm)	A	B	C	D	E	Weight (kg)
SA 05 / SA 09	127	170	70	153	80	3.2



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SA 05 - SA 09 ELECTRIC ACTUATOR

WIRING DIAGRAM 230V AC 50Hz/60Hz

1	common	CLS : Close Limit Switch (250VAC 3A) OLS : Open Limit Switch (250VAC 3A) ACLS : Aux Close Limit Switch (250VAC 3A) AOLS : Aux Open Limit Switch (250VAC 3A) TP : Thermal Protector (250VAC 3A) RM : Motor Regulation
2	anti-condensation heater	
3	closing command	
4	opening command	
5	closing auxiliary	
6	closing auxiliary	
7	opening auxiliary	
8	opening auxiliary	

WIRING DIAGRAM 24V AC/DC-12V DC

1	common or +	CLS : Close Limit Switch (250VAC 3A) OLS : Open Limit Switch (250VAC 3A) ACLS : Aux Close Limit Switch (250VAC 3A) AOLS : Aux Open Limit Switch (250VAC 3A) TP : Thermal Protector (250VAC 3A) RM : Motor Regulation
2	closing command	
3	opening command	
4	closing auxiliary	
5	opening auxiliary	
6	auxiliaries common	
7	anti-condensation heater power supply	
8	anti-condensation heater power supply	

OPTIONS

1	SA 05 / SA 09 X: version for ATEX zone
2	SA 05 / SA 09 PIU: version with feedback potentiometer
3	SA 05 / SA 09 CPT: version with position transmitter 4-20 mA
4	SA 05 / SA 09 PCU: version with adjustment card 0-10, 2-10V, 2-20 mA, 4-20 mA
5	SA 05 / SA 09 LCU: version with local control
6	SA 05 / SA 09 SCP: version with super capacitor safety

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SA 05 - SA 09 ELECTRIC ACTUATOR

SPARE PARTS

SA05 Electric actuator	
Gear box	
Printed circuit board	
Electrical motor	
Pinion	
https://www.sectoriel.com/fr/sa05-servomoteur-electrique-aluminium-1-4-tour-50-nm-on-off-ip67.html	

SA09 Electrical actuator	
Gear box	
Printed circuit board	
Electrical motor	
https://www.sectoriel.com/fr/sa09-servomoteur-electrique-aluminium-1-4-tour-90-nm-on-off-ip67.html	

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SA 05 - SA 09 ELECTRIC ACTUATOR

ASSEMBLING AND MAINTENANCE INSTRUCTIONS



SA05 - SA05S - SA09



SA05X - SA09X

1. DESCRIPTION

- 1.1 Electric actuator for motorising 90° turn valves.
- 1.2 The full features of this device are given in sheet FT23010 / FT23310.
- 1.3 Before operating this device, read the present instructions carefully.

2. GUARANTEE

- 2.1 Before any contact with our services, identify the type of actuator.
- 2.2 SECTORIEL actuators have a 12-month guarantee from the delivery date. Parts recognized as defective by an assessment at our facility, will be replaced at our expense. Complaints generated by incorrect use or a modification of the actuator cannot be taken into account.

3. VERIFICATIONS AND ACCEPTANCE

- 3.1 At acceptance, check that:
 - the packaging is in good condition;
 - the actuator is as ordered;
 - the equipment is not damaged.
- 3.2 It is recommended to install the actuator as soon as accepted and not to leave it unused. If the equipment has to be stored, it has to be in a dry place protected from weather.

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SA 05 - SA 09 ELECTRIC ACTUATOR

4. PRECAUTIONS FOR OPERATION

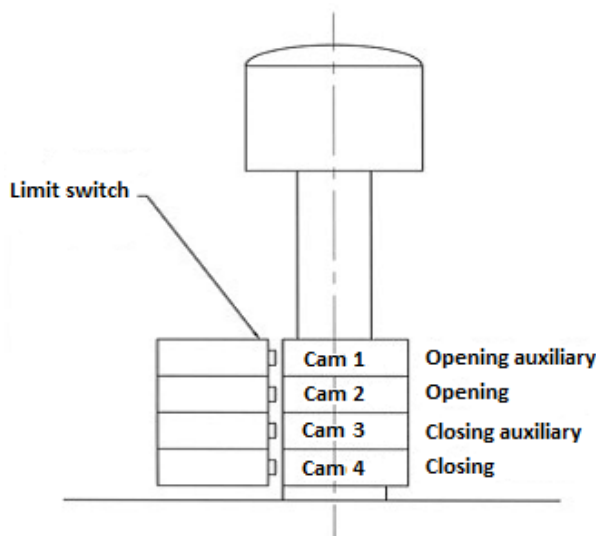
- 4.1 Before installing, make sure that the installation is completely depressurized and brought to ambient temperature.
- 4.2 In a zone classified as explosive, install only model SA05X / SA09X.
- 4.3 The protection class of the actuator is IP67 for indoors or outdoors installation. Do not install this actuator in a marine environment and do not immerse it.
- 4.4 The actuator must not be electrically powered during the installation and maintenance of the valve on the pipework, and of the actuator on the valve
- 4.5 Before proceeding to the electrical connection, check the supply voltage of the actuator.
- 4.6 Do not mount the actuator in series or in parallel with other electrical motors. If need be, use relays.
- 4.7 Do not mount the actuator on valves with higher torque than the nominal torque of the actuator.
- 4.8 The anti-condensation heater must be wired, indoors and outdoors, on special applications.

5. INSTALLATION AND OPERATION

- 5.1 Install the actuator on the valve (already done for units assembled in our workshops)
- 5.2 Perform the electrical wiring as shown in the diagram below.
- 5.3 Adjust the switch stops (already done for units assembled in our workshops).
- 5.4 View the valve's movement using the indicator light on the cover.
- 5.5 SA05 / SA09 and SA05X / SA09X actuator: to actuate the handle override, first disconnect the electrical power supply, then turn the hollow hex-head screw with an Allen key.
No handle override for SA05S.
- 5.6 SA05X actuator: the electrical connection must be carried out using an ATEX approved cable gland (CG) CG M20x1.5 which corresponds to the same operation zones as SA05X / SA09X.
SA05X has 2 connections M20x1.5. If using only one CG ATEX cable gland, the 2nd connection must be provided with an ATEX-approved plug which corresponds to the same operation zones as SA05X / SA09X.
CG and ATEX plug are not provided as standard. Option when ordering.

6. SWITCH SETTING

- 6.1 The cams are attached to the drive stem.
- 6.2 Clockwise rotation = valve closing. The micro-switch stops the actuator.
- 6.3 Anti-clockwise rotation = valve opening. The micro-switch stops the actuator.



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