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SA Pro SERIES ELECTRIC ACTUATOR

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About Us

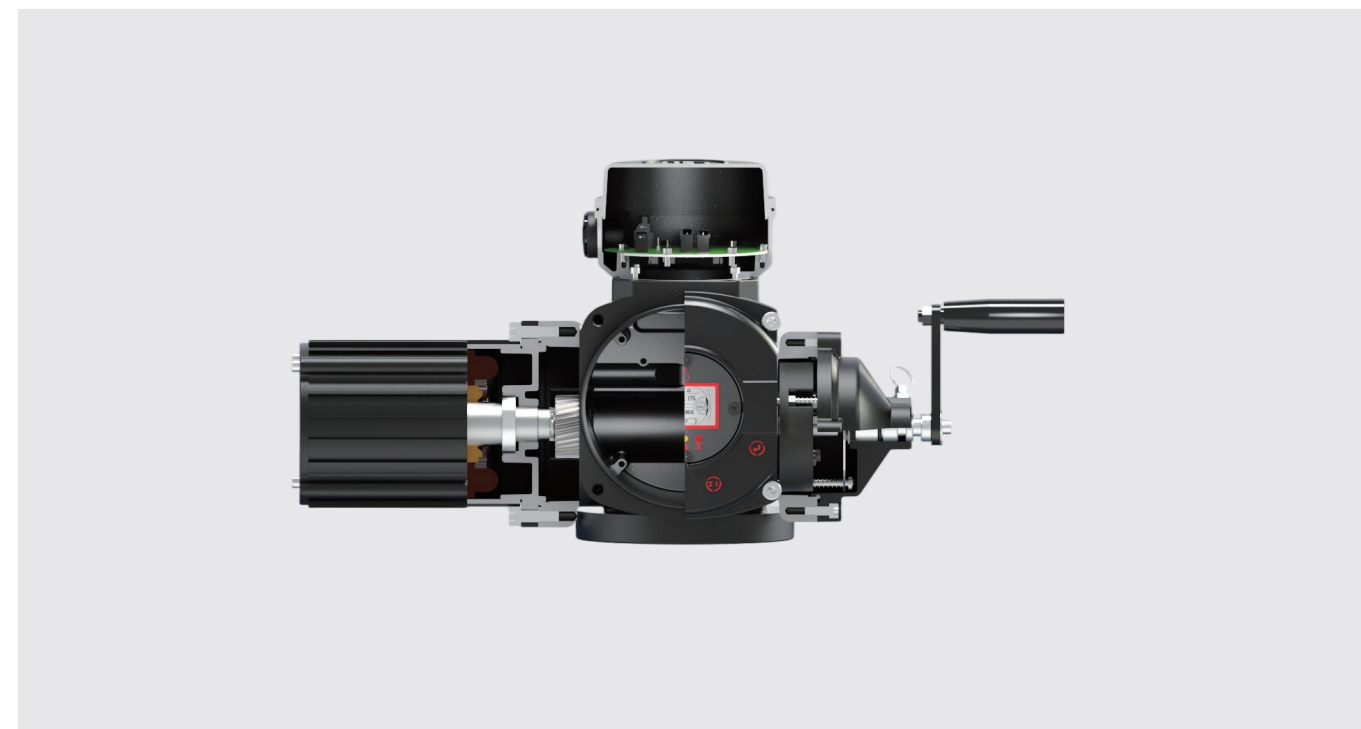


Baumann is a global professional manufacturer of process control.

After years of development, it has established operation or manufacturing centers in Germany, China, the United States, South Korea, Japan and other regions. Its products are widely applied in industries including chemical engineering, petroleum, natural gas, power, metallurgy, building materials, pulp and paper, food & beverage, pharmaceuticals, etc.

In China, Baumann provides services for customers such as China National Energy Group, State Power Investment Corporation, China Huadian Corporation, China Huaneng Group, Datang Group, Beijing Energy Investment Holding, Guangdong Power Investment, Hebei Construction & Investment Group, Shanxi Energy & Investment Group, PetroChina, Sinopec, Baowu Steel, Ansteel, Jianlong Steel and so on..

SA Pro Type Multi-turn Electric Actuator



SAR Pro Type Part-turn Electric Actuator



Product Features

- Easy assembly and disassembly, lightweight, high energy density. Adopts pluggable modular design for functional units.
- Convenient wiring; supports two connection modes: rectangular plug connection and terminal plug connection.
- User-friendly operation with optional rotary knobs and buttons. Magnetic type , Compatible with infrared, Bluetooth, 5G and fieldbus communication.
- AI vector servo technology, stepless speed regulation, soft switching and smooth output. Extends valve service life and enables predictive equipment fault diagnosis.
- Water ingress hazard alarm for actuator (triggered when the wiring port is not sealed during on-site construction).



Technical Specifications

3-phase 3-wire: 220/380/460V±10%, 50/60Hz±5% 1-phase 2-wire: 220V±10%, 50/60Hz±5%
Input Signal: DC 4 – 20mA; passive dry contact; fieldbus (customizable input signals)
Output Signal: DC 4 – 20mA; 4 sets of field-configurable bistable output contacts; 1 set of monostable output contact for remote position indication, 1 set of monostable contact for fault alarm. (Customizable)
Output Current Load Impedance: <750Ω
Ambient Temperature: -30 ~ 70° C (ultra-low and high temperature versions available on request)
Protection Class: IP67 (IP68 customizable)
Explosion-proof Grade: Exd II BT4, (Exd II CT4 customizable) Hysteresis: ≤ ±1%
Basic Error: ±1%
Sensitivity: Continuously adjustable from 0.3 to 3

※ Customization available for special technical requirements.

Function Introduction

- 01

Local Control
- When the selector switch of the actuator is set to Local, the actuator can be opened or closed on-site via the operating knob or remote controller.Local operation supports Jog or Latch control modes.
- 02

Remote Discrete Control (Remote Manual Control)
- When the actuator’ s selector switch is set to Remote, discrete control provides three commands: Open, Close, Stop/Latch. Open and Close operations can be configured for either Latch or Jog mode.
- 03

Remote Analog Control (Remote Automatic Control)
- With the selector switch set to Remote, users control actuator operation via 4 – 20mA analog signal to achieve precise positioning of equipment.
- 04

ESD Control
- Under emergency conditions, the ESD signal overrides all local and remote signals to force the actuator to execute Hold, Open, or Close.The ESD signal can be configured for high-level or low-level activation. Optional priorities include motor overheating override, priority stop via selector switch, or cut-off operation during priority execution.
- 05

Fieldbus Control (Remote Digital Control)
- SA series intelligent electric actuators support fieldbus control.Supported protocols: Profibus-DP(V0 V1 V2), Modbus, DeviceNet, FF, HART.
- 06

Two-Wire Control
- SA series intelligent electric actuators feature two-wire electric control. It meets special control logic requirements: Open on signal, Close without signal and Close on signal, Open without signal.
- 07

Valve Limit Protection
- The actuator automatically stops upon reaching the fully open or fully closed position.
- 08

Torque Overload Protection
- Protects against increased torque caused by valve jamming during operation and ensures valve safety.
- 09

Automatic Phase Sequence Adjustment

Guarantees correct motor rotation direction. Users do not need to consider power wiring phase sequence of the actuator.

Function Introduction

- 10

Instant Reverse Protection
- When the actuator receives a command to move in the opposite direction, an automatic time delay is activated to avoid unnecessary wear on connected equipment.
- 11

Phase Loss Protection
- The actuator is equipped with reliable phase loss protection. It inhibits motor operation upon power phase loss to prevent motor overheating caused by phase-missing operation.
- 12

Jam Release Protection
- When executing the opening action, the torque protection function is temporarily disabled for 0.2 – 0.3 seconds after the motor excitation signal is output.When executing the closing action, the torque protection function is temporarily disabled for 5 – 8 seconds after the motor excitation signal is output to release valve jamming.
- 13

Motor Overheat Protection
- A thermal relay is mounted at the motor winding terminal to directly monitor winding temperature. Once overheating is detected, the control circuit cuts off power to the motor and stops the actuator.
- 14

Electrical Isolation Protection
- All input and output channels connecting the actuator to external systems adopt optoelectronic isolation, ensuring the actuator operates reliably and stably free from interference.

Electric Actuator Model Specification

Control Mode:N: Intelligent Type,
C: Intelligent Fieldbus Type,S: Split Type

Rated Speed: Expressed by Arabic numerals (Unit: r/min)

Voltage: F = 380V, K = 220V

Rated Torque (Thrust): Expressed by Arabic numerals
(Unit: kgf • m)

Series Code
SA – Multi-turn Electric Actuator
SAR – Part-turn Electric Actuator
SAL – Linear Stroke Electric Actuator

Example: SA30-F18N

SA	Multi-turn Electric Actuator
30	Rated Torque: 300 N • m
F	Power Supply Voltage: 380V
18	Output Speed: 18 r/min
N	Intelligent Type

SA Pro Type Multi-turn Electric Actuator Selection Parameters



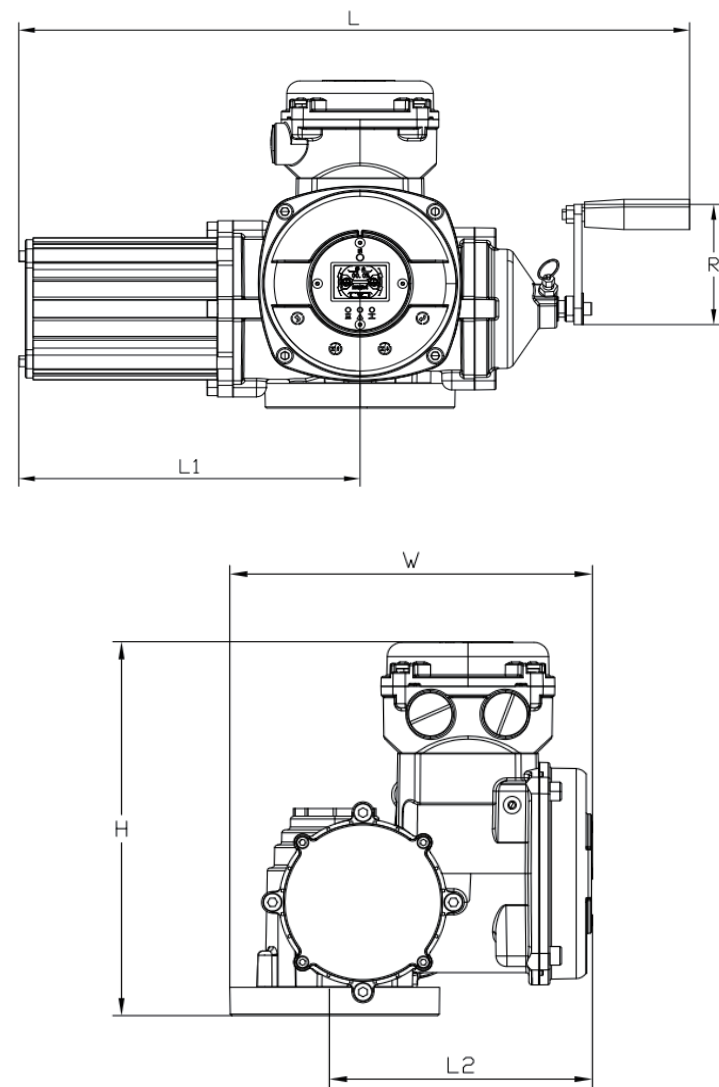
Model Specification	Torque (N · m)	Max. Valve Stem Diameter (mm)	Manual Gear Ratio	Output Speed (r/min)	Motor Power (kW)	Rated Current (A)	Custom Code
SA10	100	28	38:1	18-144	0.37	1.38	
SA15	150			18-144	0.37	1.38	
SA20	200	40	38:1	18-144	0.55	2.7	
SA30	300			18-144	0.55	2.7	
SA45	450	48	25:1	24-144	1.1	4	
SA60	600			24-144	1.5	4.12	
SA90	900	60	25:1	24-72	2.2	5.25	
SA120	1200			24-72	3	7.9	
SA180	1800	70	22.5:1	24	4	8.87	
SA250	2500			24	5.5	12.1	
SA350	3500	80	22.5:1	24	7.5	15.6	
SA550	5500	80	22.5:1	24	9	16.3	

SAR Pro Type Part-turn Electric Actuator Selection Parameters



Model Specification	Output Speed (r/min)	Output Torque (N · m)	Motor Power (kW)	Rated Current (A)	Max. Valve Stem Diameter (mm)	Manual Gear Ratio	Overall Weight (kg)	Custom Code
SAR05	0.5	50	0.06	0.16	19	60:1	8	
SAR10	0.5	100	0.06	0.18			8	
SAR15	0.5	150	0.06	0.22			8	
SAR20	0.5	200	0.06	0.26			13	
SAR30	0.5	300	0.09	0.32	28	90:1	13	
SAR40	0.5	400	0.09	0.37			13	
SAR60	0.5	600	0.09	0.72			23	
SAR120	0.5	1200	0.37	1	38	87:1	23	
SAR180	0.5	1800	0.37	1.65			23	
SAR250	0.5	2500	0.37	1.65			23	

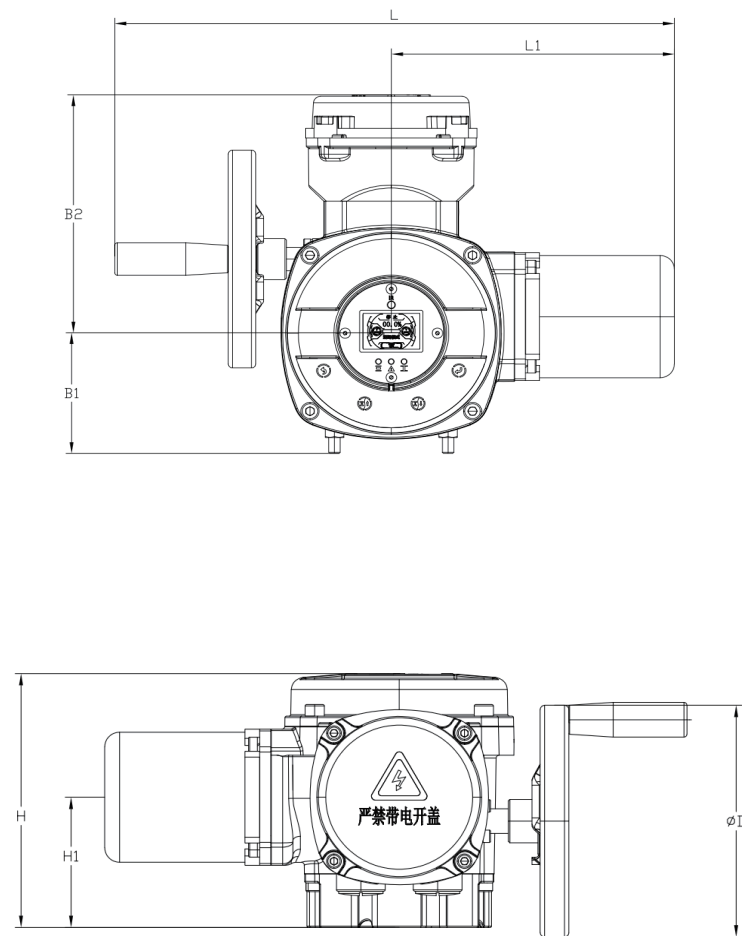
SA Pro Type Multi-turn Electric Actuator Overall Dimensions



Model	L	W	H	L1	L2	R
SA10-15	511	251	262	260	179	95,5
SA20-60*	587	295	262	293	201	95,5
SA45-120	682	400	346	370	264	145,5
SA180-500	712	429	484	370	264	145,5

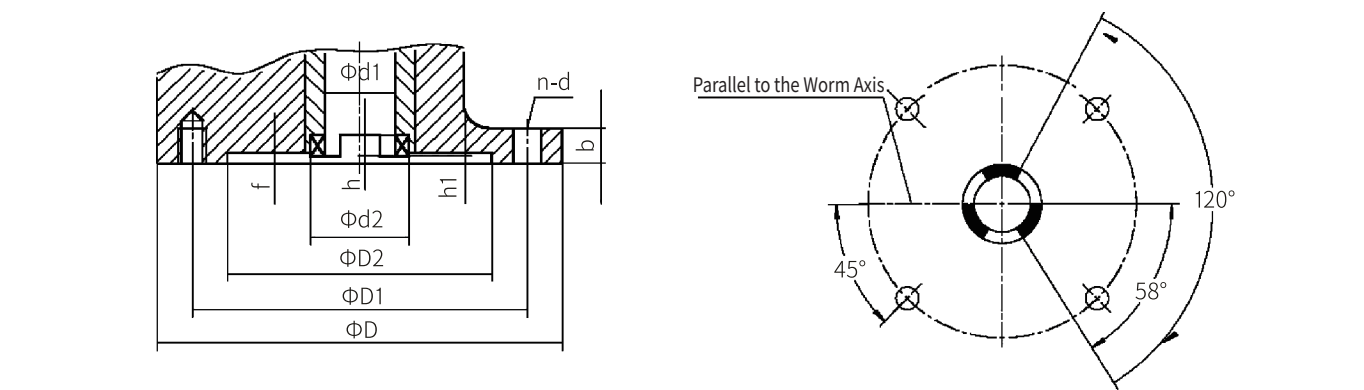
Model: SA20-60*, Output speed: 18 rpm

SAR Pro Type Multi-turn Electric Actuator Overall Dimensions



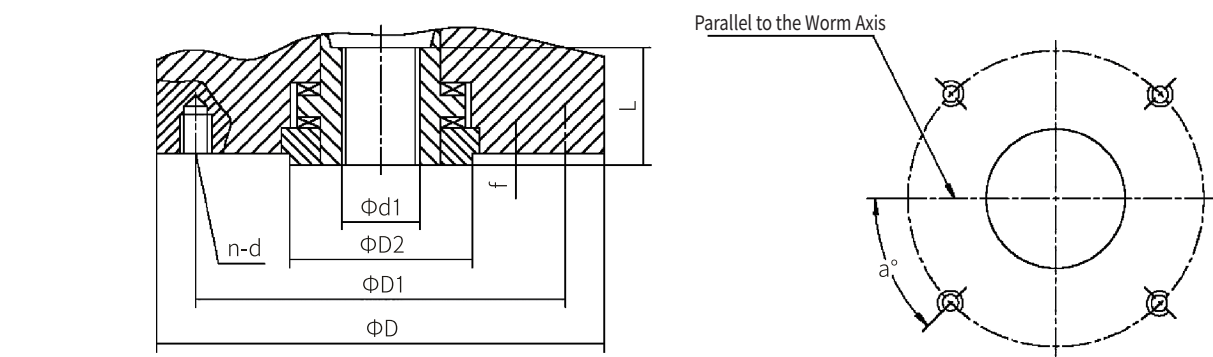
Model	B1	B2	H	H1	L	L1	ΦD
SAR05-20	70	186	168	61	280	167	120
SAR30-60	90	201	193	90	314	202	160
SAR120-180	139	214	226	107	416	245	280

SA Pro Type Multi-turn



Torque Type Connection Dimensions (JB2920)

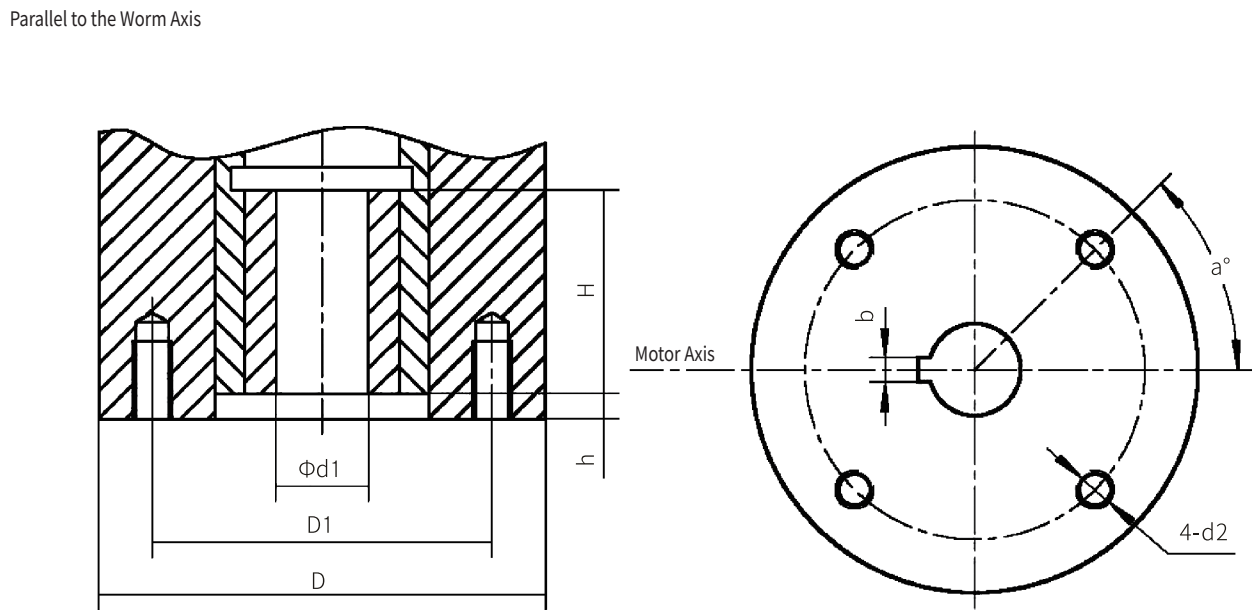
Model	FrameSize	D	D1	D2(H9)	d1	d2	h	h1	f	n-d
SA10-15	2	145	120	90	30	45	8	2	5	4-M10
SA20-30	3	185	160	125	42	58	10	2	5	4-M12
SA45-60	4	225	195	150	50	72	12	2	5	4-M16
SA90-120	5	275	235	180	62	82	14	2	5	4-M20
SA180-250	7	330	285	220	72	98	16	3	6	4-M24
SA350	8	380	340	280	82	118	20	3	6	8-M22



SA Thrust Type Connection Dimensions

Model	Flange Code	D	D1	D2(f8)	d1	n-d	f
SA10-15	F10	125	102	70	Tr28	4-M10	3
SA20-30	F14	175	140	100	Tr36	4-M16	4
SA45-60	F16	210	165	130	Tr44	4-M20	5
SA90-120	F25	300	254	200	Tr60	8-M16	5
SA180-250	F30	350	298	230	Tr70	8-M20	5
SA350	F35	415	356	260	Tr80	8-M30	5

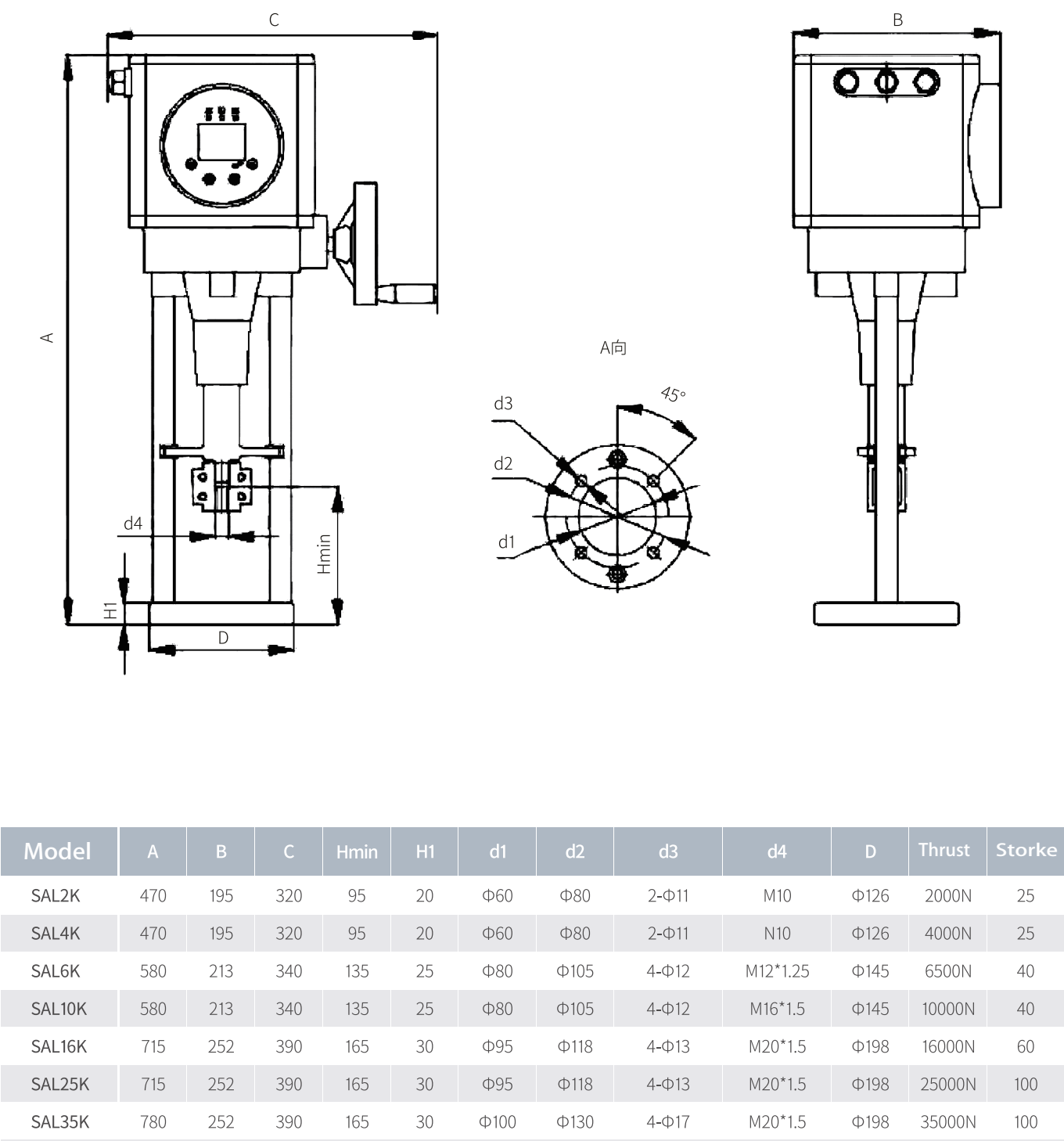
SAR Pro Type Partial Rotation



SAR Part-turn Electric Actuator Connection Dimensions (GB/T12223-2005)

Model	Flange Code	D	D1	4-d2	d1(Max)	H	h	a
SAR05								
SAR10	F05 F07	92	50 70	4-M6 4-M8	17	33		
SAR15								
SAR20								
SAR30	F07 F10	125	70 102	4-M8 4-M10	32	42	2	45
SAR40								
SAR60								
SAR120	F10 F12	150	102 125	4-M10 4-M12	38	50		
SAR180	F12 F14	197	140	4-M16	38	60	3	
SAR250								

SAL Linear Stroke Electric Actuator Outline and Connection



Selection Parameters

Gate Valve																
DN PN	50	65	80	100	125	150	200	250	300	350	400	450	500	600	700	800
10	10	10	10	15	15	20	20	30	45	45	60	90	90	90	120	120
16	10	10	15	20	20	30	30	45	60	90	90	120	180	180	180	250
25	10	10	15	20	30	30	45	60	90	90	120	120	180	250	350	500
40	10	10	15	20	30	45	60	90	90	120	180	180	250	350	500	650
64	10	10	20	30	45	60	60	90	120	180	250	250	350	500	800	1000
100	15	20	30	45	60	60	90	120	180	250	350	500	600	800	1000	1500
160	20	30	45	60	90	90	120	180	250	350	500	800	1000	1200	1500	2000
200	20	45	60	90	90	120	180	250	350	500	700	1000	1200	1600	2000	3000
320	30	60	90	120	180	180	250	350	500	700	1000	1500	2000	2400	3000	4000

Globe Valve																
DN PN	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	
10	5	5	5	5	5	5	5	10	10	15	20	30	60	90	120	
16	5	5	5	5	10	10	10	20	30	30	45	60	120	180	180	
25	5	5	5	10	10	15	20	30	30	45	50	90	120	180	250	
40	5	5	10	10	20	30	30	45	45	60	90	120	250	350	500	
64	5	5	10	20	30	30	45	45	60	120	120	180	350	500	700	
100	10	10	20	25	30	30	45	60	90	120	180	350	550	800	1000	
160	10	10	30	30	45	45	60	100	120	180	350	550	800	1200	1600	
320	10	10	30	45	60	90	100	180	250	350	600	1000	1600	2400	3200	

Ball Valve																
DN PN	50	65	80	100	150	200	250	300	350	400	450	500	600	700	800	
16	5	10	10	20	60	60	120	200	250 SA15	400 SA20	500 SA30	600 SA30	800 SA45	1200 SA60	2500 SA120	
25	5	10	20	20	60	90	200	250 SA15	400 SA20	500 SA30	600 SA30	800 SA45	1200 SA60	2000 SA90	3000 SA120	
40	10	20	20	40	90	200	250 SA15	400 SA20	500 SA30	600 SA30	800 SA45	1200 SA60	2000 SA90	3000 SA120	6000 SA250	
64	20	20	30	60	200	200	400 SA20	600 SA30	800 SA45	1000 SA60	1200 SA60	1500 SA90	3000 SA120	4500 SA180	8500 SA350	
100	20	40	60	90	200		700 SA45	1000 SA60	1200 SA60	1500 SA90	2000 SA60	3000 SA120				

Butterfly Valve																
DN PN	100	150	200	250	300	350	400	450	500	600	700	800	900	1000		
10	10	30	60	90	120	200	300 SA20	400 SA20	500 SA30	500 SA30	800 SA45	1200 SA60	1500 SA90	2000 SA60		
16	20	40	90	120	200	250 SA15	300 SA20	400 SA20	500 SA30	800 SA45	1200 SA60	2000 SA60	2500 SA120	3500 SA120		
25	30	60	120	200	300 SA20	400 SA20	450 SA30	500 SA30	700 SA45	1000 SA60	1500 SA90	2500 SA120	3500 SA120	4500 SA180		
40	40	90	200	250 SA15	400 SA20	600 SA30	700 SA45	800 SA45	1000 SA60	2000 SA90						
64	90	200	250 SA15	300 SA20	500 SA30	700 SA45	1000 SA60	1500 SA90	2500 SA120	3800 SA180						

Parameters in this selection table are for customer reference only.