

2SA5...系列智能变频型电动执行器

2SA5...Series Intelligent Frequency Convertible Electric Actuator

2SA5...系列智能变频型电动执行器是采用德国西门子技术开发的先进电动执行器。该产品采用西门子矢量变频控制、模糊控制技术，自适应控制技术。具有高效节能、高精度、高可靠性、高抗干扰性、适应范围宽、安装方便、使用寿命长、维护量小等优点。广泛应用于石油、化工、电厂、钢铁、水处理、食品等行业。

2SA5...Series Intelligent Frequency Convertible Electric Actuator is an advanced electric actuator which developed by the technology of German Siemens. The product adopted Siemens vector inverter control, fuzzy control technology, and self adaptive control technology. It has a lot of advantages, such as energy-efficient, long service life, high processing precision, anti-interference capability, self-diagnosis function and wide range of torque. They are heavily used in power stations, chemical industry, steel plant and food industry etc...

▶ 产品规格 Product specifications

2SA5...系列多回转电动执行器

2SA5...Series multi-turn electric actuators



常规型 Conventional type



防爆型 Explosion-proof type

2SA5...系列多回转执行器技术数据

2SA5...Series multi-turn electric actuators technical data

型号规格 Type	额定转矩(Nm) Adjustable tripping torque	最大转圈数 Maximum rotation	输出转速(r/min) Output speed	法兰尺寸 Flange size
2SA5510/2SA5010	9-30	0.8-4020	5-40/10-80/20-160	F07
2SA5511/2SA5011	9-30	0.8-4020	5-40/10-80/20-160	F10
2SA5521/2SA5021	18-60	0.8-4020	5-40/10-80/20-160	F10
2SA5531/2SA5031	37-125	0.8-4020	5-40/10-80/20-160	F10
2SA5532/2SA5032	37-125	0.8-4020	5-40/10-80/20-160	F12
2SA5533/2SA5033	75-250	0.8-4020	5-40/10-80/20-160	F14
2SA5542/2SA5042	75-250	0.8-4020	5-40/10-80/20-160	F12
2SA5543/2SA5043	75-250	0.8-4020	5-40/10-80/20-160	F14
2SA5553/2SA5053	150-500	0.8-4020	5-40/10-80/20-160	F14
2SA5554/2SA5054	150-500	0.8-4020	5-40/10-80/20-160	F16
2SA5564/2SA5064	300-1000	0.8-4020	5-40/10-80	F16
2SA5575/2SA5075	600-2000	0.8-4020	2.5-20/5-28	F25
2SA5586/2SA5086	1200-4000	0.8-4020	1.25-10/2.5-20	F30

GST.../GK...系列多回转减速箱

GST.../GK...Series multi-turn reduction gear box

GST...系列多回转减速箱
GST...Series multi-turn reduction gear boxGK...系列多回转减速箱
GK...Series multi-turn reduction gear box

GST...系列多回转减速箱的技术数据

GST...Series multi-turn reduction gear box technical data

型号 Type	减速比 Reduction ratio	输出扭矩 Output torque(Nm)	输入扭矩 Input torque(Nm)	输入法兰 Input flange	输出法兰 Output flange (JB2920)	放大倍率 Magnification	重量 Weight(Kg)
GST04	2.5:1	675	340	F14	4	2	13
GST05	6:1	1350	270	F14	5	5	22
GST07	3.8:1	3000	1000	F16	7	3	60
GST07	3:1	3000	1200	F16	7	2.5	60
GST08	3.5:1	6000	2100	F16	8	2.8	68

GK...系列多回转减速箱的技术数据

GK...Series multi-turn reduction gear box of technical data

型号 Type	减速比 Reduction ratio	输出扭矩 Output torque(Nm)	输入扭矩 Input torque(Nm)	输入法兰 Input flange	输出法兰 Output flange		放大倍率 Magnification	重量 Weight(Kg)
					ISO5210	JB2920		
GK10.2	4:1	120	34	F10	F10	2	3.6	13
GK14.2	4:1	250	70	F14	F14	3	3.6	14
GK14.6	4:1	500	139	F14	F14	4	3.6	18
GK16.2	4:1	1000	278	F16	F16	5	3.6	33
GK16.2	6:1	1000	200	F16	F16	5	5	35
GK25.2	4:1	2000	556	F25	F25	7	3.6	56
GK25.2	6:1	2000	400	F25	F25	7	5	58
GK30.2	4:1	4000	1112	F30	F30	8	3.6	85
GK35.2	4:1	8000	2224	F35	F35	9	3.6	120
GK40.2	4:1	16000	4448	F40	F40	10	3.6	330

2SA5...系列直行程电动执行器

2SA5...Series linear electric actuators



常规型 Conventional type

防爆型 Explosion-proof type

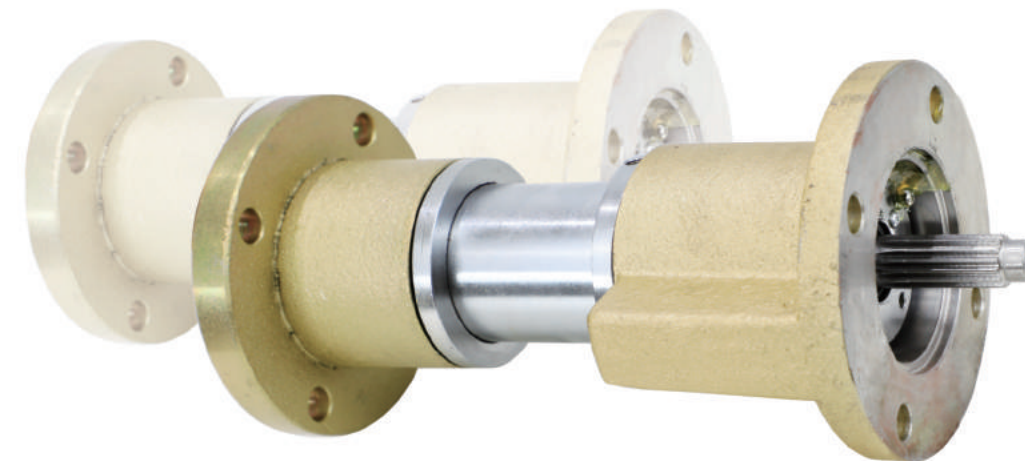
2SA5...系列直行程电动执行器的技术数据

2SA5...Series linear electric actuators technical data

型号规格 Type	推力(KN) The shaft thrust	推杆运动速度(mm/min) Pushrod speed	螺距(mm) Screw pitch	输出法兰 Flange output
2SA5511+LE12.1	3.4-11.5	25-200/50-400/100-800	5	F10
2SA5011+LE12.1				
2SA5521+LE25.1	6.9-23	25-200/50-400/100-800	5	F10
2SA5021+LE25.1				
2SA5531+LE50.1	11.7-39	30-240/60-480/120-960	6	F10
2SA5031+LE50.1				
2SA5543+LE70.1	19.2-64	35-280/70-560/140-1120	7	F14
2SA5043+LE70.1				
2SA5553+LE100.1	38.4-128	35-280/70-560	7	F14
2SA5053+LE100.1				
2SA5564+LE200.1	65.2-217	40-320	8	F16
2SA5064+LE200.1				

LE...系列配件装置

LE...Series accessories device



直行程执行机构的输出推力(kN)=多回转执行机构的输出力矩(Nm) / 直线推进装置的转换系数(f)

Output thrust (kN) of linear actuator = multi-turn actuator output torque (Nm) / linear propulsion plant conversion coefficient (f)

直行程执行机构输出轴的直线运动速度=多回转执行机构输出轴的转速×直线推进装置的螺距

Linear motion speed of linear actuator output shaft = multi-turn actuator output shaft speed x linear propulsion plant pitch

LE...系列直线推进装置的技术数据

LE...Series linear propulsion plant technical data

推力Thrust(kN)		型号 Type	最大行程 Maximum stroke mm	安装法兰 Mounting flange DIN3358	推杆螺纹 Pushrod & thread	螺距 Screw pitch mm	转换系数 Conversion coefficient f	配套执行机构 Matched actuators	重量 Weight Kg
最小Min	最大Max								
3.4	11.5	LE12.1	50	F10	26x5LH	5	2.6	2SA5011 2SA5511	8
			100						9
			200						10
			400						13
			500						14
6.9	23	LE25.1	50	F10	26x5LH	5	2.6	2SA5021 2SA5521	8
			100						9
			200						10
			400						13
			500						14
11.7	39	LE50.1	63	F10	32x6LH	6	3.2	2SA5031 2SA5531	10
			125						12
			250						15
			400						18
19.2	64	LE70.1	80	F14	40x7LH	7	3.9	2SA5043 2SA5543	23
			160						26
			320						32
			400						35
38.4	128	LE100.1	160	F14	40x7LH	7	3.9	2SA5053 2SA5553	23
			320						26
			400						32
65.2	217	LE200.1	100	F16	48x8LH	8	4.6	2SA5064 2SA5564	45
			200						50
			400						62
			500						68

2SA5...系列直连式角行程电动执行器

2SA5...Series direct-connected angular travel electric actuators



常规型 Conventional type

防爆型 Explosion-proof type

2SA5...系列直连式角行程电动执行器的技术数据

2SA5...Series direct-connected angular travel electric actuator

型号规格 Type	输出力矩 Output torque	全行程时间(S/90°) Full stroke time	安装法兰 Flange
2SA511+GS40.2	80-270	8-64	F07
2SA5011+GS40.2			
2SA511+GS63.3	150-500	20-56	F10/F12
2SA5011+GS63.3			
2SA521+GS63.3	300-700	20-56	F10/F12
2SA5021+GS63.3			
2SA521+GS80.3	320-1080	20-56	F12/F14
2SA5021+GS80.3			
2SA531+GS80.3	670-1350	20-56	F12/F14
2SA5031+GS80.3			
2SA511+GS100.3-VZ4.3	670-2220	20-56	F14/F16
2SA5011+GS100.3-VZ4.3			
2SA531+GS100.3	710-2250	20-56	F14/F16
2SA5031+GS100.3			
2SA521+GS125.3-VZ4.3	1360-4520	20-56	F16/F25
2SA5021+GS125.3-VZ4.3			
2SA5543+GS125.3	1440-4800	20-56	F16/F25
2SA5043+GS125.3			
2SA521+GS160-GZ14(8:1)	3000-10020	40-112	F25/F30
2SA5021+GS160-GZ14(8:1)			
2SA531+GS160-GZ14(4:1)	3110-10370	20-56	F25/F30
2SA5031+GS160-GZ14(4:1)			
2SA553+GS160	3150-10500	20-56	F25/F30
2SA5053+GS160			
2SA521+GS200-GZ16(16:1)	5240-17460	80-224	F30/F35
2SA5021+GS200-GZ16(16:1)			
2SA531+GS200-GZ16(8:1)	6190-20630	40-112	F30/F35
2SA5031+GS200-GZ16(8:1)			
2SA543+GS200-GZ16(4:1)	6080-20250	20-56	F30/F35
2SA5043+GS200-GZ16(4:1)			
2SA553+GS250-GZ25(4:1)	12000-40000	28-56	F35/F40
2SA5053+GS250-GZ25(4:1)			

GS...系列配件装置

GS...Series accessories device



角行程执行机构的输出力矩=多回转执行机构的输出力矩X减速箱的力矩放大系数

Angular travel actuator output torque = multi-turn actuator output torque X reducer torque amplification factor f

角行程执行机构的全行程时间(秒/90°) = (15x 减速箱的减速比) / 多回转执行机构的输出轴转速

Angular travel actuator full travel time (seconds/90°) = (15x reduction gear ratio) / multi-turn actuator output shaft speed

GS...系列直连式减速箱的技术数据

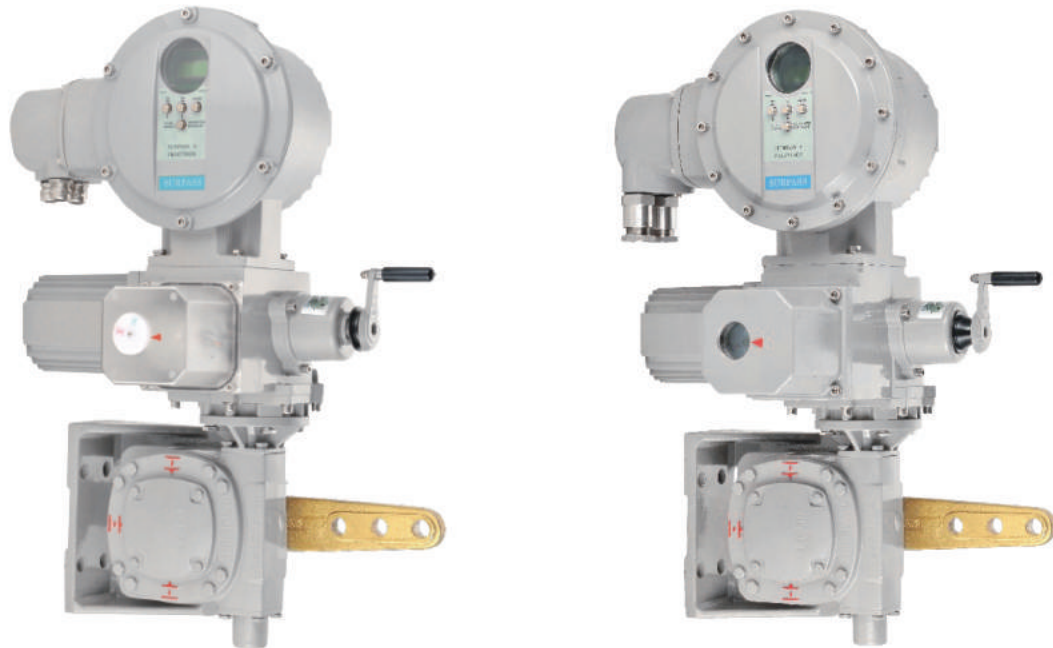
GS...Series direct-connected Gear box technical data

减速箱型号 Gear box type	GS 40.2	GS 50.3	GS 63.3	GS 80.3	GS100.3			GS125.3				
					VZ2.3	VZ3.3	VZ4.3	VZ2.3	VZ3.3	VZ4.3		
与阀门连接的法兰 DIN ISO 5211	F07	F07/F10	F10/F12	F12/F14	F14/F16			F16/F25				
最大输出力矩 Nm	420	350	700	1400	2800			5600				
额定输出力矩 Nm	300	250	500	1000	2000			4000				
减速箱一级减速比 GS	21:1	51:1	51:1	53:1	52:1			52:1				
减速箱二级减速比 VZ	-	-	-	-	-	2.4:1	3.1:1	4:1	-	2.4:1	3.1:1	4:1
减速箱总减速比 GS+VZ	-	-	-	-	-	126:1	160:1	208:1	-	126:1	160:1	208:1
力矩放大系数 F	9	16.7	16.3	17.9	18.7	44.4	55.5	74	19.2	45.4	57.9	75.4
对应额定输出力矩的输入力矩	33	15	31	56	107	45	36	27	208	88	69	53
重量 约kg	3.5	6	10	13.5	25	33	33	33	32	43	43	43
与SURPASS 5 PROFITRON的连接法兰 DIN ISO 5210	F10	F07	F10		F10	F10			F14	F10		
对应的SURPASS 5 PROFITRON	2SA5011 2SA5511	2SA5010 2SA5510	2SA501/21 2SA551/21	2SA502/21 2SA552/21	2SA5031 2SA5531	2SA5021 2SA5521	2SA5021 2SA5521	2SA5043 2SA5543	2SA5031 2SA5531	2SA5021 2SA5521		
标准配置的全行程时间(秒/90°)	8-64		20-56		20-56	20-56	20-56	20-56	20-56	20-56	20-56	
执行机构+减速箱的总重量 kg	23	25.5	29.5/30.5	34/46.5	58	53.5	52.5	71	76	76	63.5	

减速箱型号 Gear box type	GS160		GS200			GS250				
	GZ14		GZ16			GZ25				
与阀门连接的法兰 DIN ISO 5211	F25/F30		F30/F35			F35/F40				
最大输出力矩 Nm	11250		22500			45000				
额定输出力矩 Nm	8000		16000			32000				
减速箱一级减速比 GS	54:1	54:1	54:1	53:1	54:1	53:1	53:1	52:1	52:1	52:1
减速箱二级减速比 GZ		4:1	8:1		4:1	8:1	16:1	4:1	8:1	16:1
减速箱总减速比 GS+GZ		218:1	442:1		214:1	434:1	864:1	210:1	426:1	848:1
力矩放大系数 F	21	21	167	20.7	81	165	291	80	162	288
对应额定输出力矩的输入力矩	381	381	48	773	197	97	55	400	198	111
重量 约kg	80	80	91	140	160	160	170	296	296	308
与SURPASS 5 PROFITRON的连接法兰 DIN ISO 5210	F14	F10	F10	F16	F14	F10	F10		F14	
对应的SURPASS 5 PROFITRON	2SA5053 2SA5553	2SA5031 2SA5531	2SA5021 2SA5521	2SA5064 2SA5564	2SA5043 2SA5543	2SA5031 2SA5531	2SA5021 2SA5521	2SA5053 2SA5553	2SA5043 2SA5543	2SA5033 2SA5533
标准配置的全行程时间(秒/90°)	20-56	20-56	40-112	20-56	20-56	40-112	80-224	28-56	40-112	80-224
执行机构+减速箱的总重量 kg	144	124	111.5	210	199	193	190.5	360	335	341

2SA5...系列底座式角行程电动执行器

2SA5...Series foot-mounted angle travel electric actuators



常规型 Conventional type

防爆型 Explosion-proof type

2SA5...系列底座式角行程电动执行器的技术数据

2SA5...Series foot-mounted angle travel electric actuators technical data

型号规格 Type	输出力矩 Output torque	全行程时间(S/90°) Full stroke time
2SA5511+GF40.2	80-270	8-64
2SA5011+GF40.2		
2SA5511+GF63.3	150-500	20-56
2SA5011+GF63.3		
2SA5521+GF63.3	300-700	20-56
2SA5021+GF63.3		
2SA5521+GF80.3	320-1080	20-56
2SA5021+GF80.3		
2SA5531+GF80.3	670-1350	20-56
2SA5031+GF80.3		
2SA5511+GF100.3-VZ4.3	670-2220	20-56
2SA5011+GF100.3-VZ4.3		
2SA5531+GF100.3	710-2250	20-56
2SA5031+GF100.3		
2SA5521+GF125.3-VZ4.3	1360-4520	20-56
2SA5021+GF125.3-VZ4.3		
2SA5543+GF125.3	1440-4800	20-56
2SA5043+GF125.3		
2SA5521+GF160-GZ14(8:1)	3000-10020	40-112
2SA5021+GF160-GZ14(8:1)		
2SA5531+GF160-GZ14(4:1)	3110-10370	20-56
2SA5031+GF160-GZ14(4:1)		
2SA5553+GF160	3150-10500	20-56
2SA5053+GF160		
2SA5521+GF200-GZ16(16:1)	5240-17460	80-224
2SA5021+GF200-GZ16(16:1)		
2SA5531+GF200-GZ16(8:1)	6190-20630	40-112
2SA5031+GF200-GZ16(8:1)		
2SA5543+GF200-GZ16(4:1)	6080-20250	20-56
2SA5043+GF200-GZ16(4:1)		
2SA5553+GF250-GZ25(4:1)	12000-40000	28-56
2SA5053+GF250-GZ25(4:1)		

GF...系列配件装置

GF...Series accessories device



角行程执行机构的输出力矩=多回转执行机构的输出力矩X减速箱的力矩放大系数F

Angular travel actuator output torque = multi-turn actuator output torque X reducer torque amplification factor f

角行程执行机构的全行程时间(秒/90°) = (15x减速箱的减速比) / 多回转执行机构的输出轴转速

Angular travel actuator full travel time (second/90°) = (15x reduction gear ratio) / multi-turn actuator output shaft speed

GF...系列底座曲柄式减速箱的技术数据

GF...Series foot-mounted crank type gear box technical data

减速箱型号 Gear box type	GF 40.2	GF 50.3	GF 63.3	GF 80.3	GF100.3			GF125.3				
					VZ2.3	VZ3.3	VZ4.3	VZ2.3	VZ3.3	VZ4.3		
最大输出力矩 Nm	420	350	700	1400	2800			5600				
额定输出力矩 Nm	300	250	500	1000	2000			4000				
减速箱一级减速比 GF	21:1	51:1	51:1	53:1	52:1			52:1				
减速箱二级减速比 VZ	-	-	-	-	2.4:1	3.1:1	4:1	-	2.4:1	3.1:1	4:1	
减速箱总减速比 GF+VZ	-	-	-	-	-	126:1	160:1	208:1	-	126:1	160:1	208:1
力矩放大系数 F	9	16.7	16.3	17.9	18.7	44.4	55.5	74	19.2	45.4	57.9	75.4
对应额定输出力矩的输入力矩	33	15	31	56	107	45	36	27	208	88	69	53
重量 约kg	11	14.5	23	29	50	56	56	56	63	73	73	73
与SURPASS 5 PROFITRON的连接法兰 DIN ISO 5210	F10	F07	F10		F10	F10			F14	F10		
对应的SURPASS 5 PROFITRON	2SA5011 2SA5511	2SA5010 2SA5510	2SA5011 2SA5511	2SA502/31 2SA552/31	2SA5031 2SA5531	2SA5021 2SA5521	2SA5011 2SA5511	2SA5043 2SA5543	2SA5031 2SA5531	2SA5021 2SA5521		
标准配置的全行程时间(秒/90°)	8-64	20-56	20-56	20-56	20-56	12-96	15-120	20-56	20-56	12-96	15-120	20-56
执行机构+减速箱的总重量 kg	30.5	34	42.5	49.5/62	83	76.5	75.5	102	106	106	93.5	

减速箱型号 Gear box type	GF 160		GF 200			GF 250		
	GZ 14		GZ 16			GZ 25		
最大输出力矩 Nm	11250		22500			45000		
额定输出力矩 Nm	8000		16000			32000		
减速箱一级减速比 GF	54:1	54:1	54:1	53:1	53:1	53:1	52:1	52:1
减速箱二级减速比 VZ	-	4:1	8:1	-	4:1	8:1	16:1	4:1
减速箱总减速比 GF+GZ	-	216:1	432:1	-	212:1	424:1	848:1	208:1
力矩放大系数 F	24.2	82	164	23.9	82	163	320	80
对应额定输出力矩的输入力矩	330	98	49	670	196	98	50	400
重量 约kg	120	140	140	220	255	255	255	
与SURPASS 5 PROFITRON的连接法兰 DIN ISO 5210	F14	F10	F10	F16	F14	F10	F10	F14
对应的SURPASS 5 PROFITRON	2SA5053 2SA5553	2SA5031 2SA5531	2SA5021 2SA5521	2SA5064 2SA5564	2SA5043 2SA5543	2SA5031 2SA5531	2SA5021 2SA5521	2SA5053 2SA5553
标准配置的全行程时间(秒/90°)	20-56	20-56	40-112	20-56	20-56	40-112	80-224	20-56
执行机构+减速箱的总重量 kg	184	173	160.5	290	294	288	275.5	

► 设计结构 Design structure

结构简化、合理——用电子部件代替机械部件，采用模块化结构

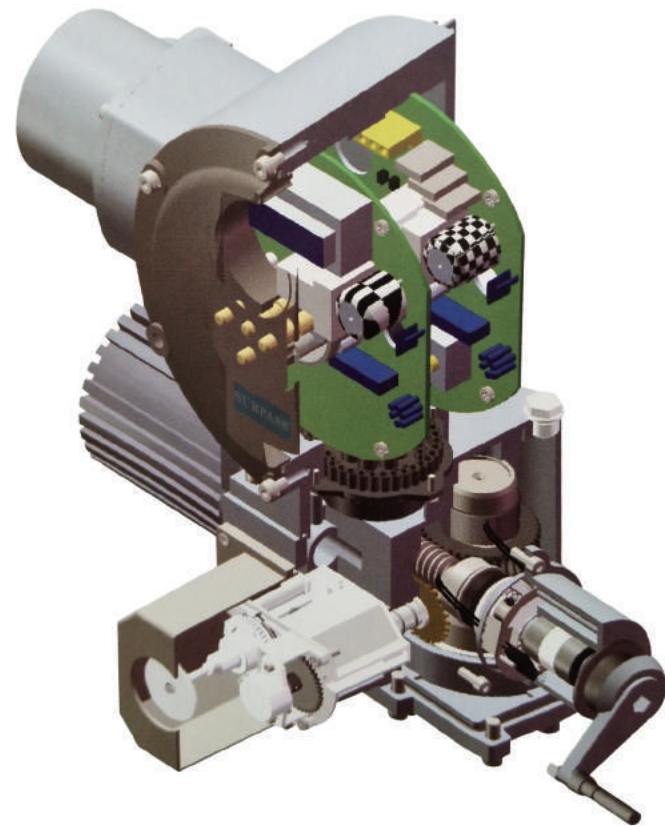
Simplify Structure, reasonable -- use electronic components instead of mechanical components, adopt modular structure.

● 防护等级——最低为IP67，符合DIN EN 60529标准 (注:需要时可提供IP68防护等级)

Protection grade: lowest level is IP67, meet the DIN EN 60529 standard. (Note: can provide IP68 protection grade when needed)

● 分体安装——如现场安装空间不够、现场温度过高、现场振动过大或安装现场不便于调试，则可将智能控制单元（电子舱）和机械部分分开安装。即可解决以上问题，又丝毫不影响执行器的性能。

Separate installation: when installation space is at a premium, the temperature is too high, the vibration is excessive or harder to debug and test on-site, then intelligent control unit and main part can be installed separately.



LOCAL/REMOTE

短按：用于现场和远控两种模式之间切换；参数设置模式时菜单翻页

长按：进入或退出参数设置模式

Short press: for the shifting of the remote controlling mode and the on-site mode; the menu page turning when setting the mode

Long press: enter or exit the parameter setting mode



就地模式时：执行机构朝开方向运行

参数设置模式时：用于修改参数值

Local mode: the actuator operates in the forward direction

Setting mode: use for parameter alteration



就地模式时：执行机构朝关方向运行

参数设置模式时：用于修改参数值

Local mode: the actuator operates in the turning-off direction

Setting mode: use for parameter alteration

ENTER

长按：用于参数值修改后的确认和保存

Long press: use to confirm and save after modify the parameter values

● 箱体材质 Box Body Material

采用防腐性能极佳的特制铝合金。同传统执行机构的箱体材质采用球墨铸铁相比，它具有强度高、重量轻的优点。在一般的环境中，即使表面不喷漆，SURPASS 5 PROFITRON 也可在室外使用，对于极为恶劣的环境，比如，在冷却塔内使用时，可提供另外一种，防护严重腐蚀的喷漆。

Use aluminum alloy with strong corrosion protection. Compare to traditional box body, it has the advantages of lightweight and high strength. Even there is no-spray on the box body, Surpass 5 Profitron can be used outdoors under the normal environment. We still can provide spray with strong corrosion protection in hostile environments (such as use in cooling tower).

● 交流异步电机

Ac asynchronous motor

● 通过开、关就地操作执行机构 Operate actuator by local through open/close button

就地操作按钮还可以用于参数设置和浏览执行机构的信息。

This operating button still can use to set up parameters and browse the information of actuator.



● 就地操作面板及信号齿轮罩 On-site operation panel and Signal gear cover

用坚固的聚碳酸酯制成
(可选金属材质)

Made by polycarbonate (metal material is optional).

● 不锈钢螺丝 Stainless steel bolt

为保障长期的防腐能力，所有的紧固件都采用不锈钢材质。

In order to ensure superior corrosion resistance in long term, all the clamping units are use stainless steel.

● 手柄 Handle

可以锁住，以防止未经授权的操作。

Can be locked to protect unauthorized operate.

● 观察窗 Observation window

透过信号齿轮单元的罩子可看到机械式位置指示器（可选），全开和全关的符号来表示阀门位置。

Look through the signal of gear unit covers, users could see the mechanical position indicator (optional), the symbols of full open and close represent the valve position.

产品优势 Product advantages

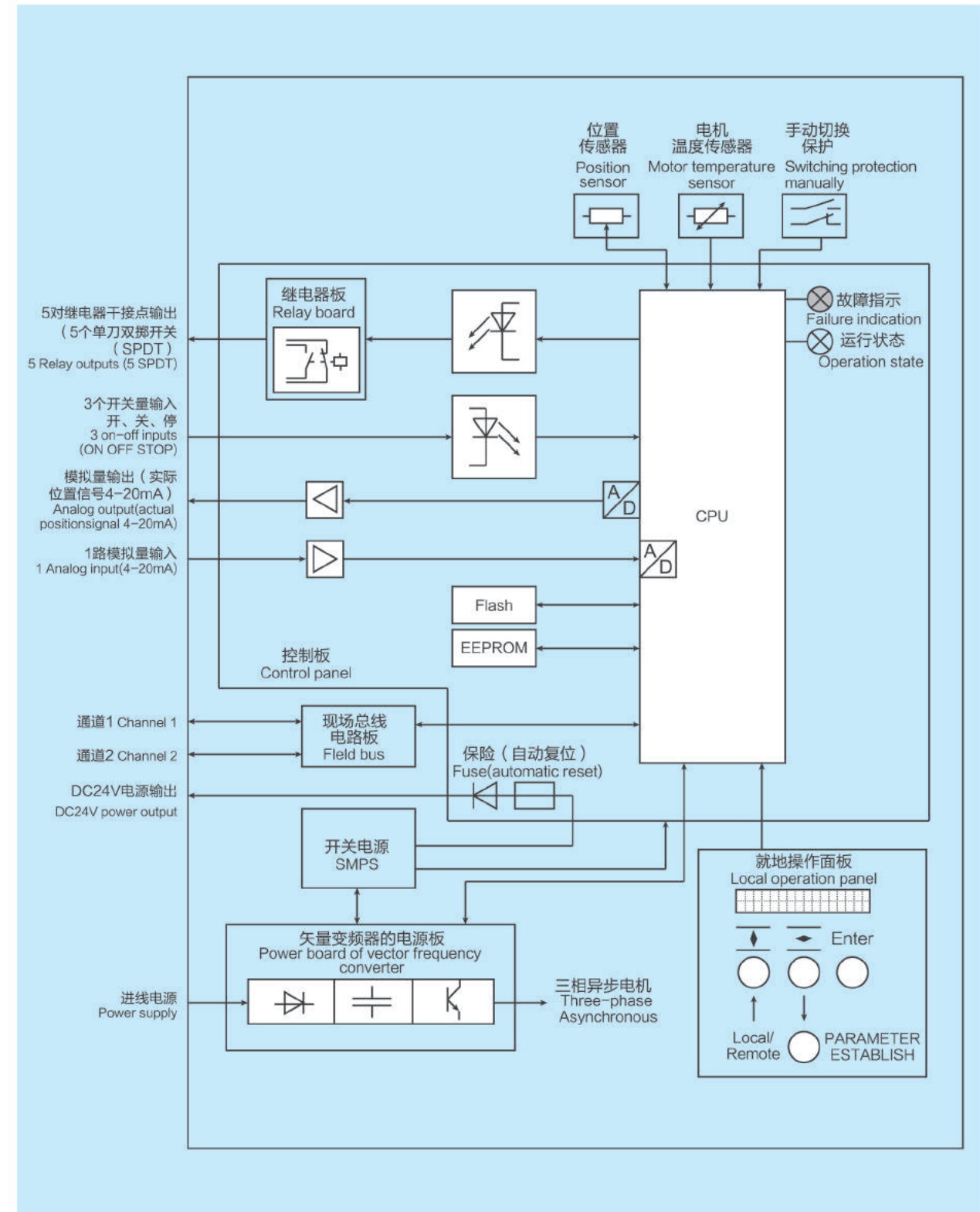
2SA5...系列电动执行器与国产电动执行器比较 2SA5...Series electric actuators Vs. Domestic electric actuators

项目 Items	2SA5...系列电动执行器 2SA5...Series electric actuators	国产电动执行器 Domestic electric actuators
电机驱动 Motor drive	采用矢量变频驱动控制，速度可调，力矩可调，使用寿命长 Vector frequency drive control, speed and torque are adjustable, long service life	采用交流接触器或固态继电器方式驱动，驱动寿命不长，速度不可调 AC contactor or solid-state relay driven, lifespan of the drive is short, speed is fixed.
故障诊断 Failure diagnosis	故障诊断（缺相，过流，过压，欠压，电机过热，电子单元过热，过力矩，断信号）等各种故障报警，有利于用户及时处理和执行器的保护 Failure warning for phase failure, overcurrent, overvoltage, undervoltage, motor overheating, the electronic unit overheating, over torque and interrupt signal etc...it benefits the user figure out issues on time and protect the actuator.	无故障诊断功能，给维护带来不便 Don't have diagnosis function, causing inconvenience to maintenance
节能环保 Energy saving and eco-friendly	采用矢量变频驱动控制，可以减少其能量消耗，与同类产品相比节能30% Adopt vector frequency drive control, reducing energy consumption, using 30% less energy than similar products	采用交流接触器驱动，耗能巨大。对当今社会要求低碳要求，不合时宜。 AC contactor drive, consume energy heavily.
控制接口 Control interface	采用4-20mA或PROFIBUS-Dp总线控制，控制方式多样 Adopt 4-20mA or PROFIBUS-Dp bus control, diversification of control methods.	采用传统4-20mA控制，控制方式单一 Adopt traditional 4-20mA control, single control method.
阀门保护 Valve protection	采用矢量变频驱动，速度可以控制，具有柔性开启、柔性关闭功能，这样不会对阀门造成冲击 Speed can be controlled, flexible opening/closing function, have no impact on valve	由于采用传统驱动方式，导致阀门到全关位置时，仍以恒定的速度运行，这样很容易对阀门造成冲击，既而影响阀门寿命 Constant speed, have bad impact on valve and shorten the valve's life.
控制精度 Control accuracy	采用自适应控制算法以及速度可调，可以达到较高的控制精度 Adaptive control algorithm, speed is adjustable, high control precision	由于速度不可调，导致到速度过快，因而定位精度不高 Speed is not adjustable, low positioning accuracy.
库存备件 Spare part inventory	采用变频控制以及执行机构的软件功能，可以使备件减少到最低程度 Frequency converting control and software function, reducing the spare part inventory.	由于力矩不可调，使用厂家必须采购很多备件。 Traditional torque is not adjustable, must keep a lot of spare part inventory.

电气原理 Electrical working principles

控制可靠，灵活，优化——执行机构将以低速-高速-低速的曲线式运行，较好的解决了运行速度与定位精度的矛盾，从而实现控制过程最优化。

Control with high reliability, flexible and optimizing --- electric actuator operate from low speed to high speed and then to low speed again (curvilinear style), solving the conflict between running speed and positional accuracy, optimizing the control process.



分体安装 Split installation

分体安装现场应用图例



任何一台SURPASS 5 PROFITRON执行机构，无论在出厂前或出厂后，都可以通过采用分体安装组件来实现其控制单元和机械部份的分开安装。分体安装距离3~10米，如需10米~1000米需定做。

Every Surpass 5 Profitron could be installed separately, no matter before or after manufactured products. The maximum distance of split installation is 3~10 meters (need to order if excess 10~1000 meters).

在以下现场环境，需要分体安装：

The following environments have to adopt split installation:

01 安装现场环境温度过高
The on-site temperature is too high

02 安装现场振动很大
The vibration is excessive

03 安装现场不便于调试、操作、维护
Not convenient to debug and test

04 现场安装空间不够
The installation space is not big enough

变频与快速调节 Frequency conversion and quick adjustment

通过变频控制技术，SURPASS 5 PROFITRON系列电动执行机构，轻松实现了快速调节和快开慢关的控制功能。

Surpass 5 Profitron with frequency conversion control technology which can achieve quick adjustment, quick-opening and slow-closing control.

在某些使用场合，要求阀门控制具有快速调节或快速关断功能才能符合其生产工艺，而SURPASS 5 PROFITRON系列电动执行机构采用变频控制方式，可以在精确定位的前提下，实现了阀门快速调节和快开慢关的控制功能。

In some case, it requires valve control with quick adjustment and quick shutoff feature. Surpass 5 Profitron adopts frequency conversion control system which can achieve valve quick adjustment and quick-opening, slow-closing control under accurate positioning.



1、SURPASS 5 PROFITRON系列直行程电动执行机构最快运行速度为16mm/s,10~100mm运行时间最快为1~7s。

1. The fastest speed of SURPASS 5 PROFITRON series linear electric actuator is 16mm/s, 0-100mm running time is 1-7s.



2、SURPASS 5 PROFITRON系列角行程电动执行机构运行全程时间最快为3~10s/90

2. The entire running time of Surpass 5 Profitron series angular travel electric actuator is 3-10s/90

现场总线 Profibus

Profibus Dp总线 Profibus Dp Bus

Profibus Dp是用于工厂自动化，电厂和机器自动化的现场总线版本。由于其简单而坚固的物理层(RS-485)和不同的服务等级Dp-V0(快速循环的确定性的数据交换)，Dp-V1(非循环访问设备参数和诊断数据)以及Dp-V2(更多功能如时间戳记或冗余)，而作为工厂自动化理想的解决方案。

Profibus Dp is a type of fieldbus which applies to factory automation, power station and machine automation. Due to the simple and strong physical layer (RS-485) and several levels of service Dp-V0 (rapid cycling and determinate data exchange), Dp-V1 (non-cyclical accessing equipment parameters and diagnostic data), and Dp-V2 (more features), Profibus Dp is the most suitable for the factory automation.

SURPASS 5 PROFITRON电动执行机构支持Profibus Dp总线，并具有以下特点：

Surpass 5 profitron supports Profibus Dp, it has following features:

- 01 支持Profibus Dp-V0,Dp-V1,Dp-V2功能等级。
Support Profibus Dp-V0, Dp-V1, Dp-V2
- 02 高速数据交换(到达1.5Mbit/s-对应大约0.3ms/执行器)。
High speed data exchange (reach 1.5Mbit/s corresponding to about 0.3ms/actuator)
- 03 电缆长度达到大约10Km (两台执行器之间不带中继器达到1200m)。
Cable length is about 10Km (the length between two actuators is about 1200m).
- 04 可连接多达126个设备。
About 126 devices can be attached
- 05 冗余线型拓扑作为选择。
Redundancy bus topology as an alternative

对于Profibus Dp总线,基本拓扑是通过RS485线/树结构, 如图所示:

To Profibus Dp, basic topologies is go through RS 485 results, see chart:



Modbus RTU总线 Modbus RTU Bus

Modbus是一个相对简单但是多功能的现场总线协议，它提供了工厂自动化的所有服务（例如简单的二进制信息、模拟量、设备参数或诊断数据的交换）。

Modbus is a relatively simple but multifunction field-bus protocol. It provides all the service for the factory automation (e.g: simple binary information, analog quantity, device parameters or diagnose data exchange).

SURPASS 5 PROFITRON 电动执行机构支持Modbus RTU总线，并具有以下特点：

Surpass 5 Profitron supports Modbus RTU, it has following features:

- 01 快速数据交换 (达到115Kbit/s-对应大约30ms/执行器)。
High speed data exchange (reach 115Mbit/s corresponding to about 30ms/actuator)
- 02 电缆长度达到大约10km (两台执行器之间不带中继器达到1200m)。
Cable length is about 10Km (the length between two actuators is about 1200m).
- 03 可连接多达247个设备。
About 247 devices can be attached
- 04 冗余线形拓扑作为选择。
Redundancy bus topology as an alternative

对于Modbus RTU总线，基本拓扑是通过RS485线/树结构，和Profibus Dp总线一样的。
To Modbus RTU, basic topologies are going through RS 485 results, same as Profibus Dp.

APP控制 APP control

中文版SURPASS手机控制 Using mobile to control the SURPASS electric actuator

通过中文版SURPASS手机控制软件，实现远距离无线调试、操作及监控、执行机构诊断、执行机构所有信息的下载、执行机构所有信息的保存、执行机构信息的上传等功能。极大的方便了用户操作、调试、诊断。

the user can remote control the actuator by the SURPASS mobile software/app, the app can wireless debug, operate, monitor and diagnose the actuator, even download, save and upload information from far away, brought the convenience to the user.

- 1、可视化 Visualization
- 2、调试方便 Debugging convenient
- 3、操作及监控功能 Operation and monitoring functions
- 4、执行机构诊断功能 Diagnostic function
- 5、执行机构的所有信息可以下载、保存、上传功能 Download, save, upload all the information

