

Bring Out the Best in Motion



MICRO AC GEAR MOTORS
微型交流减速电机

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PrimoPal Motor Co., Ltd. is a joint-venture manufacturing, engineering and trading company, located at the free-trade zone of Shanghai, China. PrimoPal specializes in development, production and selling of various high-quality and cost-effective precision motor and motion control products, including Hybrid stepper motors, PM stepper motors, Linear actuators, Closeloop stepper motors, Brushless DC motors, Brushless servo motors, AC servo motors, PM DC motors, AC induction motors, Synchronous motors, Gear motors, Stepper drives, Brushless DC drives, Hybrid servo drives, AC servo drives, Brushless servo drives, Brush servo drives, Encoders, Spur gearboxes, Planetary gearheads, Brakes, Power supplies, Accessories, and so on.

Since establishment, PrimoPal is committed to providing outstanding quality, economical solutions, impeccable support and after-sales service for every client. Our manufacturing bases are equipped with advanced quality testing devices, precise injection molding machines, auto high-speed punches, auto winding machines and other advanced manufacturing equipment. It makes us have the ability of continuously providing products with superior quality. Besides, we have an engineering team with many years of experience in motor design and application engineering. This ability of offering custom products often gives our customers the great benefit.

For PrimoPal, the customer is not only a buyer, but also a long-term business partner. We work not only to meet their expectations, but also to exceed them through continuous cycles of learning. We believe it is the key to a successful business relationship that understanding our customer's goals, delivering what our customers need and when they need it. To demonstrate our commitment to all our customers, PrimoPal has adopted "Bringing out the Best in Motion" as our official slogan, which means our ultimate goal is to become one of the world's top level companies in the industry of precision motor and motion control system. The pursuit of excellence encourages all PrimoPal employees to forge ahead into improving our business processes and increasing our management efficiency. We have no doubt that our endeavors enable us to maintain strong presence in the competitive market.

Now, let us help you find the right solution for your motor and motion control systems.

上海砺锋机电有限公司是一家合资制造、工程和贸易公司, 位于中国上海自贸区。砺锋专业研发、生产和销售各种高品质、高性价比的精密电机和运动控制产品, 包括混合式步进电机、永磁步进电机、直线执行器、闭环步进电机、无刷直流电机、无刷伺服电机、交流伺服电机、永磁直流电机、交流感应电机、同步电机、齿轮电机、步进驱动器、无刷直流驱动器、混合伺服驱动器交流伺服驱动器、无刷伺服驱动器、有刷伺服驱动器、编码器、正齿轮箱、行星齿轮箱、制动器、电源、配件等。

自成立以来, 砺锋致力于提供卓越品质、经济的解决方案, 无可挑剔的为每一位客户提供支持和售后服务。生产基地拥有先进的质量检测设备、精密注塑机、自动高速冲床、自动绕线机等先进制造设备。它使我们有能力持续提供质量上乘的产品。此外, 我们拥有一支具有多年电机设计和应用工程经验的工程团队。这种提供定制产品的能力通常会给我们的客户带来巨大的好处。

对于砺锋来说, 客户不仅是买家, 也是长期的业务合作伙伴。我们不仅要满足他们的期望, 还要通过不断的学习来了解他们。我们相信, 了解客户的目标、交付我们的客户服务是建立成功业务关系的关键。客户需要以及何时需要。为了向所有客户展示我们的承诺, 砺锋采用“展现最佳动态”作为我们的官方口号, 这意味着我们的最终目标是成为精密电机和运动控制系统行业的世界顶级公司之一。我们鼓励所有砺锋员工锐意进取, 改进我们的业务流程并提高我们的管理效率。毫无疑问, 我们的努力使我们能够在竞争激烈的市场中保持强势地位。

现在, 让我们帮助您找到适合您的电机和运动控制系统的解决方案。

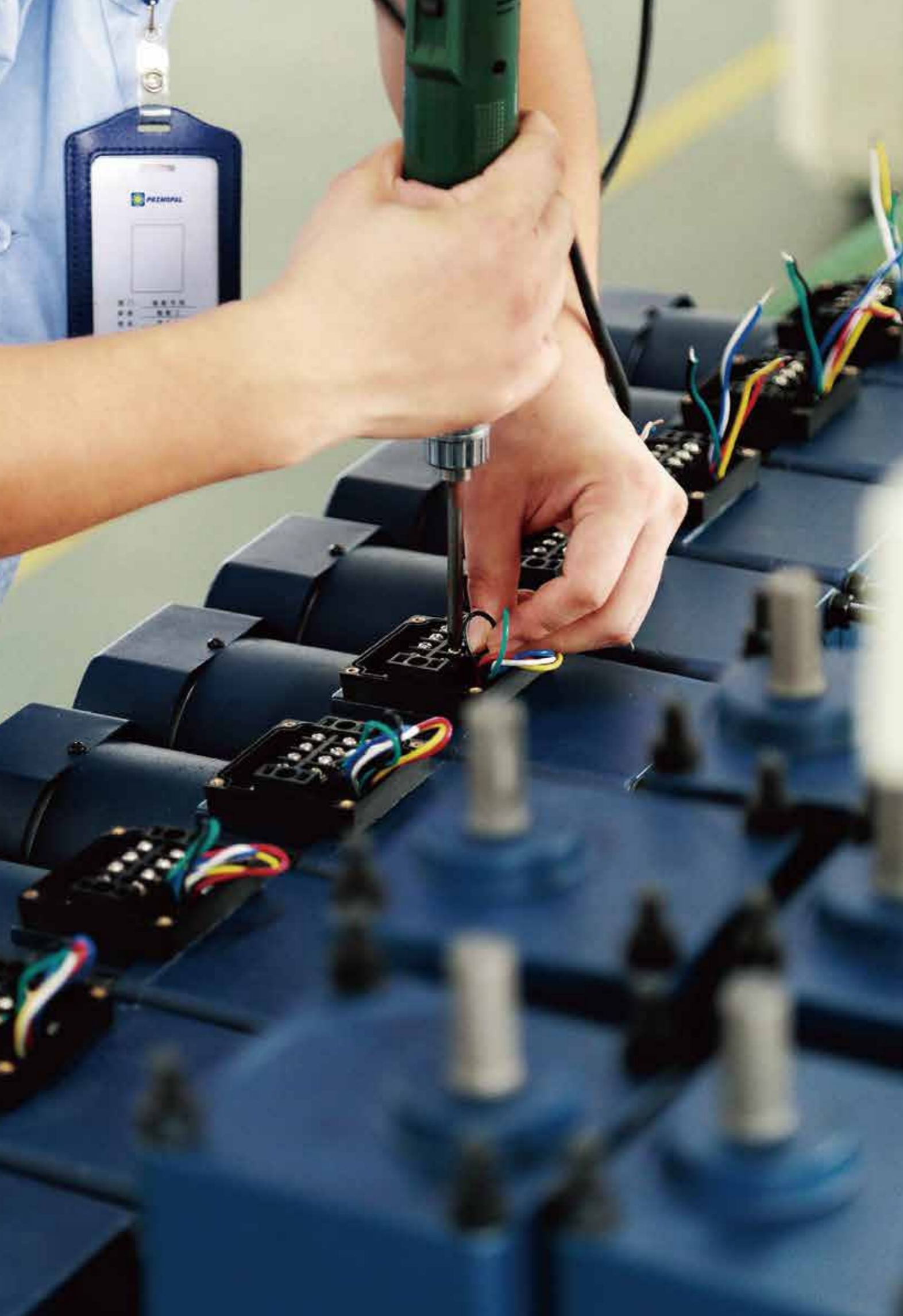




设备是保证产品品质的关键，我们本着工欲善其事，必先利其器的观念，引进国内最先进的生产设备，让科技贯穿生产的始终。科学的管理使其严谨、有序的运用，充分利用其资源，实现效益最大化。

The equipment is the key to the assurance of the product quality. Under the concept of always sharpen your tools before you start your work we introduced a number of advanced equipment to make products scientifically in the all way of the production. The scientific management means a rigorous and orderly operation to make full use of resource and achieve the maximum benefits.





值得您信赖的精密马达合作伙伴
Bring Out the Best in Motion



砺锋的创业是与人共创的事业, 砺锋的发展就是在与人合作中的发展, 追求的是共享成功。
PRIMOPAL entrepreneurship is a business created with others, and PRIMOPAL development is development in cooperation with others, and the pursuit of shared success.

微型交流减速电机

MICRO AC GEAR MOTORS

值得您信赖的精密马达合作伙伴



减速电机的一般规格

GENERAL SPECIFICATIONS OF GEAR MOTORS

● 6W~200W型

项目 Items	规格 Specifications
绝缘电阻 Insulation Resistance	于常温·常湿下的电机额定运行后,以DC500V电阻表测量线圈外壳间时,测量值为100MΩ以上 In the circumstance of normal temperature and humidity, the resistance can be up to 100100MΩ, measured DC 500vinsulation resistance measurerbetween the motor wiring and motor shell while the motor is working. ※
绝缘耐压 Insulation voltage	于常温·常湿下电动机额定运行后,在线圈外壳间施加一分钟 50Hz 或60Hz、1.5kv (三相380V为1.8kV) 的电压,亦无异常 In the circumstance of normal temperature and humidity there will be no problem supplying the power of 1.5kv(three-phase 380V is 1.8kV) at 50Hz/60Hz between the metal wiring and motor shellfor 1 minute while the motor is working.
温度上升 Temperature Rise	在装上减速机或同等散热板※并于常温·常湿下进行额定运行时,以电阻法测定其线圈温度上升值为80°C以下(三相型为70°C以下) The temperature rise of winding are 80°C or less measured by the resistance change method after rated motor operation under normal ambienttemperature and humidity, with connecting a gearhead or equivalent heat radiation plat.
绝缘等级 insulation Class	UL/CSA 规格:A种(105°C)、EN规格:B种(130°C)、F种(155°C) UL/CSA Standards:Class A (105°C) EN Standards:Class B (130°C), ClassF (155°C)
过热保护装置 Oevrhaet Protection	内藏热保护装置(自动复位型) B种(开放:120°C±5°C、80°C±15°C) F种(开放:145°C±5°C、95°C±15°C) Thermal protector inside (automatic return) Class B (opening: 120°C±5°C、80°C±15°C) Class F (opening: 145°C+5°C、95°C±15°C)
使用环境温度 Ambient Temperature	单相100V、三相200V-10~+50°C(无结冰)其他电压-10°C~+40°C(无结冰) Single-phase 100VAC.Three-phase 200VAC:-10°C~+50°C (Non Freezing) Others:-10°C~+40°C (Non Freezing)
使用环境湿度 Ambient Humidity	85%以下(无结露) ≤85% (Non condensing)
保护等级 protection Class	导线型Lead wire type:IP20 接线盒型 Terminal box type 单相 Single-phase100V 50/60HZ、110/120V 60HZ、220/230V 50Hz、220230V 60Hz 25W~180WTypeIP54 (不包括圆轴安装面 Excluding the installation surface of the round shaft type) 三相 Three-phase 200V/220V/230v 50/60HZ、380/400/415V 50/60HZ 25W~180W TypeIP54 (不包括圆轴安装面 Excluding the installation surface of the round shaft type)

型号的阅读方法

PART NUMBER NAMING RULE

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①	PrimoPal AC Spur Gearmotor Primopal交流感应减速电机	PAIS: 感应电机 PARS: 阻尼电机 PACS: 调速电机 PABS: 电磁制动电机 PATS: 力矩电机 PAAS: 直角电机	Induction Motor Reversible Motor Speed Contors Motor Brake Motor Torque Motor Right Motor
②	Frame Size 基座尺寸	60:60mm 70:70mm 80:80mm 90:90mm 104:104mm 120:120mm	
③	Voltage & Poles 电源电压·极数	A: 单相 Single-phase, 100V, 50/60Hz, 4P B: 单相 Single-phase, 110V, 50/60Hz, 2P C: 单相 Single-phase, 220/230V, 50Hz, 4P D: 单相 Single-phase, 220V, 50/60Hz, 2P E: 单相 Single-phase, 110/120V, 60Hz, 4P H: 单相 Single-phase, 220/230V, 60Hz, 4P S: 三相 Three-phase, 200/220/230V, 50/60Hz, 4P SH: 三相 Three-phase, 380/400/415V, 50/60Hz, 4P T: 三相 Three-phase, 200/220/230V, 50/60Hz, 2P TH: 三相 Three-phase, 380/400/415V, 50/60Hz, 2P	
④	Output Power 输出功率	例(Example)40:40W	
⑤	Shaft Type 转轴形状	GN: GN型齿轮轴 GN Type Pinion Shaft GU: GU型齿轮轴 GU Type Pinion Shaft A: 圆轴型 Round Shaft K: 键槽型 Keyway Shaft	
⑥	Special Type 特殊类型	T: 带接线盒型及方向Terminal boxtype:T常规、T1左方向、T2上方向、T3右方向 F: W/Fan 带风扇 FF: W/Forced Fan 强制风扇 M: 电磁制动电动机Power off activated electromagnrtic brake motor P: 带热保器Thermal protector	

PSG

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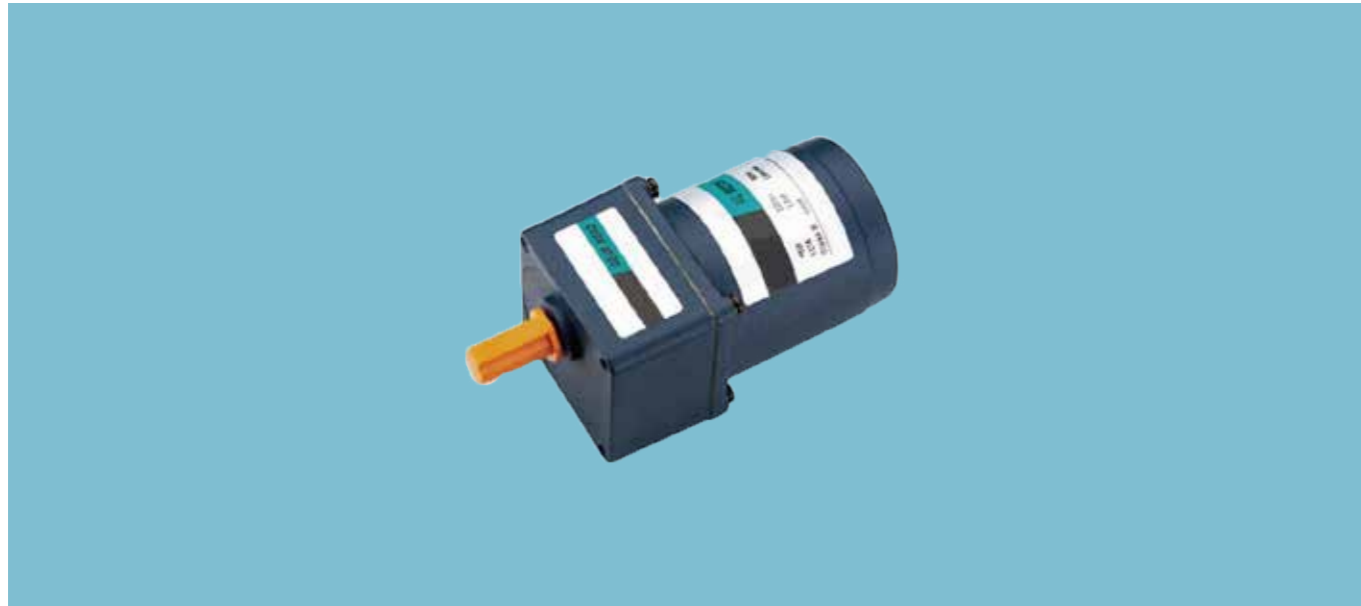
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①	PrimoPal Spur Gearbox	Primopal 齿轮变速箱
②	Frame Size 尺寸	60:60mm 70:70mm 80:80mm 90:90mm 104:104mm 120:120mm
③	Gear Type 类型	GN: GN型齿轮轴 Ordinary Helical Gear GU: GU型齿轮轴 Enhanced Helical Gear
④	Reduction Ratio 减速比	R30: 1:3 R36: 1:3.6
⑤	Bearing type 轴承种类	K: 滚珠轴承 (对5GU方型箱体标注为KB) Bearing (make KB for type GU square case)
⑥	Mounting hole type 安装孔类型	T: 箱体通孔, 无则表示箱体螺纹孔 If not it represents the threaded hole of box body

感应减速电机 INDUCTION GEAR MOTORS

6W 60mm



电机型号/性能 List of motor characteristics

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	额定转速 Rated Speed	额定转矩 Rated Torque	启动转矩 Start Torque	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	r/min	mN.m	mN.m	μF/VAC
PAIS60C6GN	PAIS60C6A	6	1ph220	50	0.13	1200	44	65	0.8/450
				60	0.12	1450	34	65	
PAIS60A6GN	PAIS60A6A	6	1ph110	50	0.24	1200	44	64	3.0/250
				60	0.21	1450	40	65	

- 各种安全规格以电机铭牌上的型号名取的认证。
- 注：“-A”型号中电压为110V时，配置电容器容量以实际铭牌为准。
- When the motor is approved under various safety standards, the model name on the nameplate is the approved model name.
- Note: -A means the voltage 110v. The matched capacitor vaule should be consistent with the nameplate.

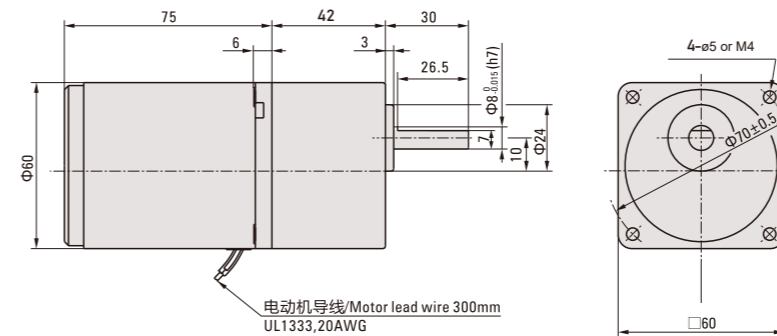
减速箱减速比/性能对照表 Gear reduction ratio performance comparison

频率 Frequency	转速 Speed r/min	转矩 Torque N.m	减速比 Gear Ratio																							
			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
50Hz	转速 Speed r/min		450	375	270	225	180	150	135	108	90	75	67.5	54	45	37.5	33.7	27	22.5	18	15	13.5	11	9	7.5	6.75
	转矩 Torque N.m		0.10	0.13	0.18	0.21	0.27	0.32	0.36	0.45	0.54	0.64	0.70	0.80	0.96	1.16	1.29	1.61	1.74	2.17	2.60	2.89	3.00	3.00	3.00	3.00
60Hz	转速 Speed r/min		516	430	310	258	206	172	155	124	103	86	77.5	62	51.6	43	38.75	31	25.8	20.6	17.2	15.5	12.9	10.3	8.6	7.75
	转矩 Torque N.m		0.09	0.11	0.15	0.18	0.23	0.27	0.30	0.38	0.45	0.54	0.60	0.68	0.82	0.98	1.09	1.36	1.47	1.84	2.20	2.45	2.94	3.00	3.00	3.00

- 表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
- 表中 色框表示输出轴的旋转方向与电机旋转方向相反。
- 表中转矩是以电机额定转矩×减速比×传动效率计算而得。
- 减速箱的最大容许转矩为3N·M。
- In the table, the speed is calculated from the base of the motor's average speed divided by the deceleration ratio. The actual speed , will vary with the load, ranging from 2% to 20%.
- The box in the table indicates the rotation direction of the gearbox output shaft is opposite to that of the motor.
- Torque in the table is calculated from motor rated torque * Reduction ratio * transmission efficiency.
- The maximum allowable torque of the gear box is 3N·M.

外形尺寸(单位mm) Dimension (unit: mm)

- 组合：引线型电机+标准减速箱（减速比1:3~200）
Combination: lead wire motor + standard gearbox (reduction ratio 1:3~200)
重量Weight:1.15kg



- 其中速比3~18可以做成短型减速箱,高度为32mm。
Gear ratio 3~18 can be made as short height type (32mm).

接线图Wiring Diagram

- 运转方向指从电机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
- 表中所记型号为齿轮轴型，圆轴型亦同。
- The direction of motor rotation is viewed from the shaft end of motor. CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- Part number indicated in the list is pinion shaft type, also valid for the equivalent round shaft type.



注意Note

- 单相电机运转方向的转换应在电机停止后进行。
- 若在电机运转时转换运转方向，可能发生无法转换运转方向或须费时较久的情况。
- Change the rotation direction of single-phase motor only after the motor is stopped.
- If an attempt is made to change the direction of rotation while the motor is running, motor may ignore reversing command or the direction of rotation is reversed with some delay.

感应减速电机 INDUCTION GEAR MOTORS

15W 70mm



电机型号/性能 List of motor characteristics

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	额定转速 Rated Speed	额定转矩 Rated Torque	启动转矩 Start Torque	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	r/min	mN.m	mN.m	μF/VAC
PAIS70C15GN	PAIS70C15A	15	1ph220	50	0.17	1250	125	84	1.2/450
				60	0.17	1450	92	86	
PAIS70A15GN	PAIS70A15A	15	1ph110	50	0.34	1250	127	109	5.0/250
				60	0.35	1450	94	120	

- 各种安全规格以电机铭牌上的型号名取的认证。
- 注：“-A”型号中电压为110V时，配置电容器容量以实际铭牌为准。
- When the motor is approved under various safety standards, the model name on the nameplate is the approved model name.
- Note: -A means the voltage 110v. The matched capacitor vaule should be consistent with the label.

减速箱减速比/性能对照表 Gear reduction ratio performance comparison

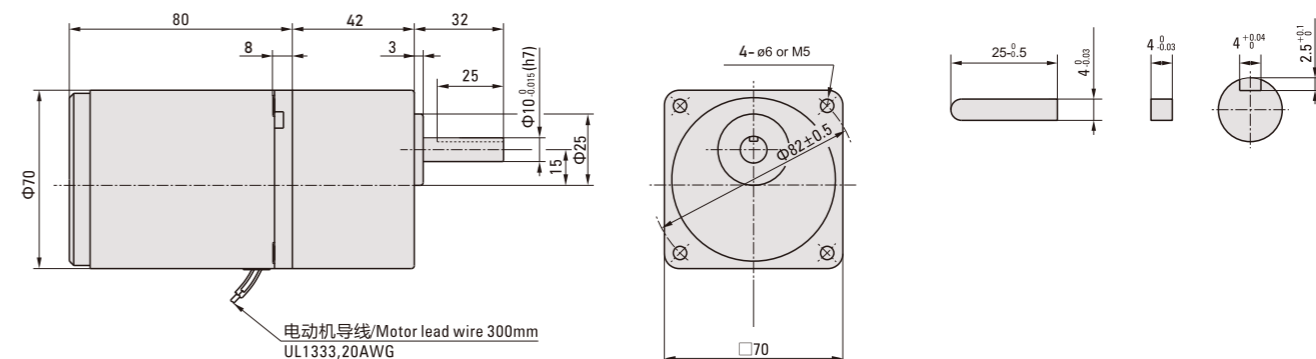
减速比 Gear Ratio		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
50Hz	转速 Speed r/min	450	375	270	225	180	150	135	108	90	75	67.5	54	45	37.5	33.7	27	22.5	18	15	13.5	11	9	7.5	6.75
	转矩 Torque N.m	1.05	0.36	0.50	0.61	0.76	0.91	1.01	1.26	1.5	1.64	1.82	2.27	2.73	3.27	3.63	4.54	4.90	5	5	5	5	5	5	5
60Hz	转速 Speed r/min	516	430	310	258	206	172	155	124	103	86	77.5	62	51.6	43	38.75	31	25.8	20.6	17.2	15.5	12.9	10.3	8.6	7.75
	转矩 Torque N.m	0.22	0.27	0.37	0.45	0.56	0.67	0.74	0.93	1.11	1.20	1.34	1.67	2.01	2.41	2.67	3.34	3.11	4.11	5	5	5	5	5	5

- 表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
- 表中 色框表示输出轴的旋转方向与电机旋转方向相反。
- 表中转矩是以电机额定转矩×减速比×传动效率计算而得。
- 减速箱的最大容许转矩为5N·M。
- In the table, the speed is calculated from the base of the motor's average speed divided by the deceleration ratio. The actual speed , will vary with the load,ranging from 2% to 20%.
- The box in the table indicates the rotation direction of the gearbox output shaft is opposite to that of the motor.
- Torque in the table is calculated from motor rated torque * Reduction ratio * transmission efficiency.
- The maximum allowable torque of the gear box is 5N · M.

外形尺寸(单位mm) Dimension (unit: mm)

- 组合：引线型电机+标准减速箱（减速比1:3~200）
Combination: lead wire motor + standard gearbox (reduction ratio 1:3~200)
重量Weight:1.6kg

- 键(减速器附件)
Key (gearbox accessory)



- 其中速比3~18可以做成短型减速箱,高度为32mm。
Gear ratio 3~18 can be made as short height type (32mm).

接线图Wiring Diagram

- 运转方向指从电机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
- 表中所记型号为齿轮轴型，圆轴型亦同。
- The direction of motor rotation is viewed from the shaft end of motor. CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- Part number indicated in the list is pinion shaft type, also valid for the equivalent round shaft type.

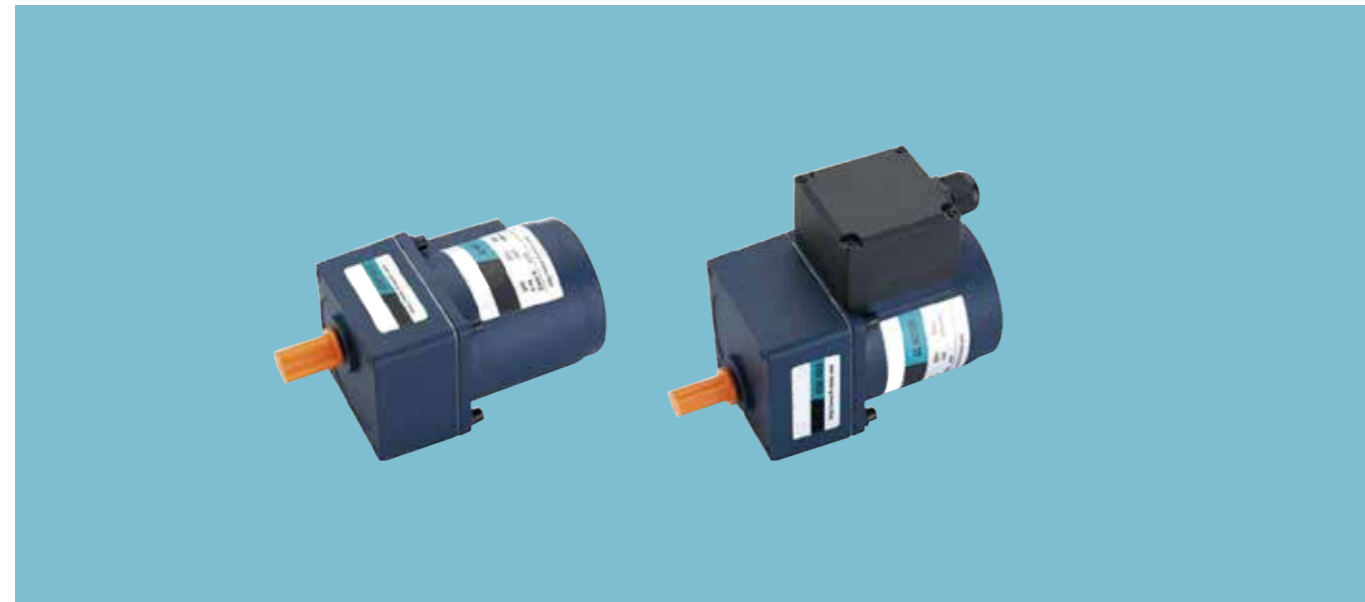


注意Note

- 单相电机运转方向的转换应在电机停止后进行。
- 若在电机运转时转换运转方向，可能发生无法转换运转方向或须费时较久的情况。
- Change the rotation direction of single-phase motor only after the motor is stopped.
- If an attempt is made to change the direction of rotation while the motor is running, motor may ignore reversing command, or the direction of rotation is reversed with some delay.

感应减速电机 INDUCTION GEAR MOTORS

25W 80mm



电机型号/性能 List of motor characteristics

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	额定转速 Rated Speed	额定转矩 Rated Torque	启动转矩 Start Torque	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	r/min	mN.m	mN.m	μF/VAC
PAIS80C25GN	PAIS80C25A	25	1ph220	50	0.24	1250	184	165	1.8/450
				60	0.24	1550	149	168	
PAIS80A25GN	PAIS80A25A	25	1ph110	50	0.54	1250	201	144	7.0/250
				60	0.50	1550	152	154	
PAIS80S25GN	PAIS80S25A	25	3ph220	50	0.26	1250	181	543	/
				60	0.21	1550	150	389	
PAIS80SH25GN	PAIS80SH25A	25	3ph380	50	0.15	1250	182	556	/
				60	0.12	1550	149	400	

- 各种安全规格以电机铭牌上的型号名取的认证。
- 注：“-A”型号中电压为110V时，配置电容器容量以实际铭牌为准。
- When the motor is approved under various safety standards, the model name on the nameplate is the approved model name.
- Note: -A means the voltage 110v. The matched capacitor vaule should be consistent with the nameplate.

减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

频率	转速 Speed r/min	转矩 Torque N.m	减速比 Gear Ratio																						
			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180
50Hz	转速	450	375	270	225	180	150	135	108	90	75	67.5	54	45	37.5	33.7	27	22.5	18	15	13.5	11	9	7.5	6.75
	转矩	0.45	0.54	0.75	0.90	1.12	1.35	1.50	1.87	2.25	2.69	2.99	3.37	4.04	4.85	5.39	6.74	7.27	8	8	8	8	8	8	8
60Hz	转速	516	430	310	258	206	172	155	124	103	86	77.5	62	51.6	43	38.75	31	25.8	20.6	17.2	15.5	12.9	10.3	8.6	7.75
	转矩	0.36	0.44	0.61	0.73	0.91	1.09	1.21	1.52	1.82	2.18	2.43	2.73	3.27	3.93	4.37	5.46	6.55	8	8	8	8	8	8	8

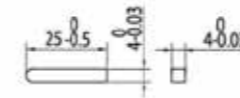
- 表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
- 表中色框表示输出轴的旋转方向与电机旋转方向相反。
- 表中转矩是以电机额定转矩×减速比×传动效率计算而得。
- 减速箱的最大容许转矩为 $8N \cdot m$ 。
- In the table, the speed is calculated from the base of the motors average speed divided by the deceleration ratio. The actual speed, will vary with the load ranging from 2% to 20%.
- The box in the table indicates the rotation direction of the gearbox output shaft is opposite to that of the motor.
- Torque in the table is calculated from motor rated torque * reduction ratio * transmission efficiency.
- The maximum allowable torque of the gear box is $8N \cdot m$.

外形尺寸 (单位mm) Dimension(Unit:mm)

- 圆轴电机
重量 Weighr: 1.6kg
 - 组合：引线型电机+标准减速箱（减速比1: 3~200）
重量 Weighr: 2.4kg
-

- 组合：接线盒型电机+标准减速箱（减速比1: 3~200）
重量 Weighr: 2.55kg
 - 中间齿轮箱 Decimal Gearhead
可安装在齿轮轴型上 Can be connected to GN pinion shaft type
重量 Weight: 0.41kg
-

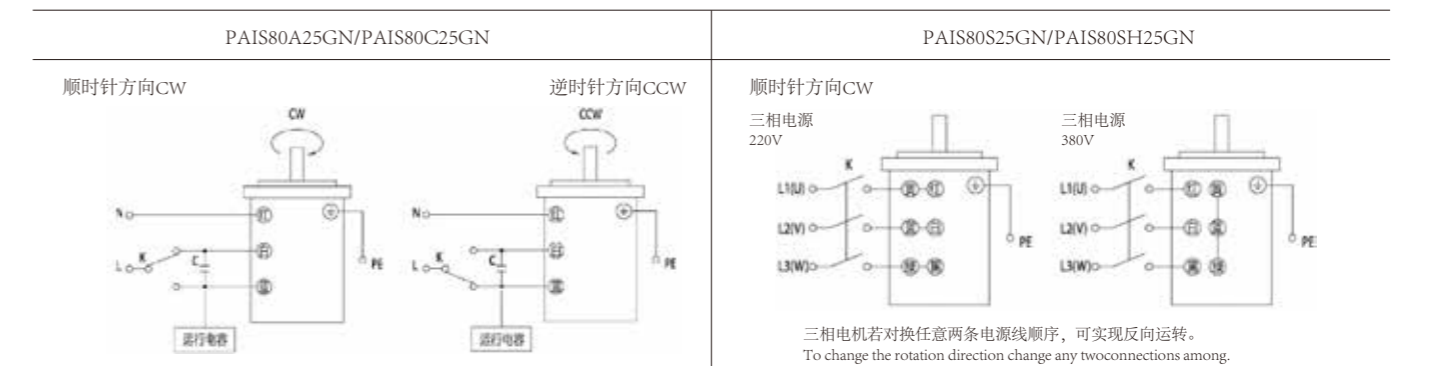
- 键（减速器附件）
Key (gearbox accessory)



- 其中速比3~20可以做成短型减速箱，高度为32mm。
Gear ratio 3~20 can be made as short height type (32mm).

接线图 Wiring Diagram

- 运转方向指从电机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
- 表中所记型号为齿轮轴型，圆轴型亦同。
- The direction of motor rotation is viewed from the shaft end of motor. CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- Part number indicated in the list is pinion shaft type also valid for the equivalent round shaft type.

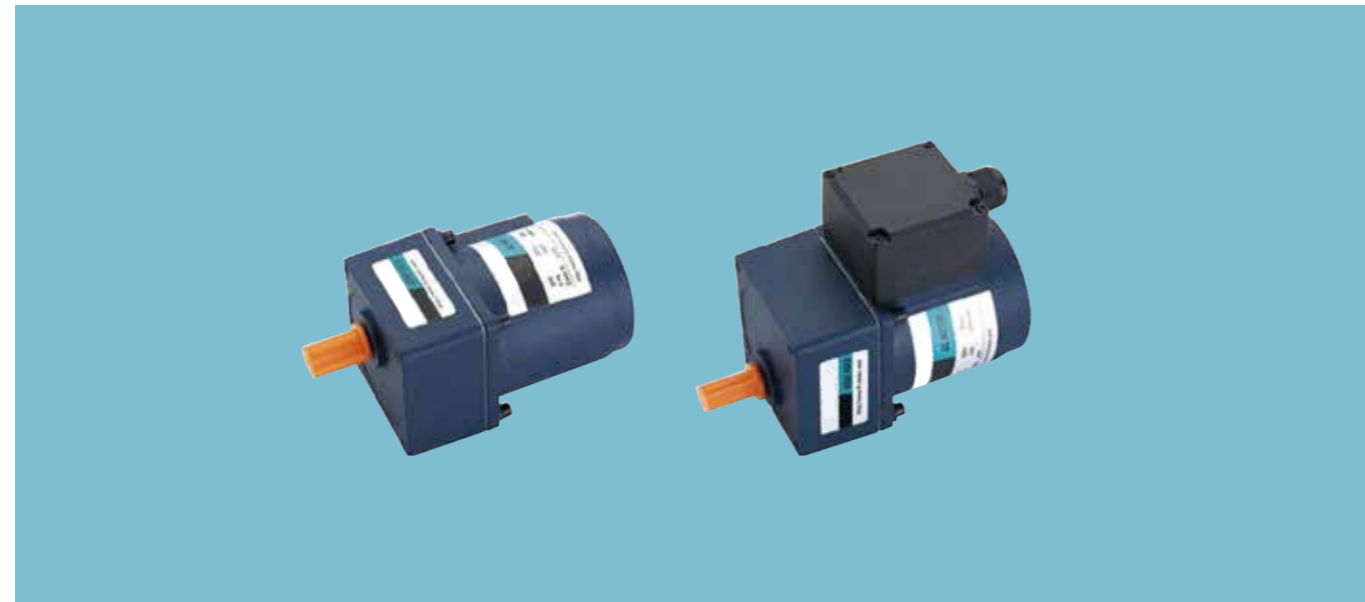


注意 Note

- 运转方向指从电机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
- 若在电机运转时转换运转方向，可能发生无法转换运转方向或须费时较久的情况。
- Change the rotation dircetion of single-phase motor only after the motor is stopped.
- If an attempt is made to change the direction of rotation while the motor is rotating, motor may ignore reversing command, or the direction of rotation is reversed with some delay.

感应减速电机 INDUCTION GEAR MOTORS

40W 90mm



电机型号/性能 List of motor characteristics

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	额定转速 Rated Speed	额定转矩 Rated Torque	启动转矩 Start Torque	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	r/min	mN.m	mN.m	μF/VAC
PAIS90C40GN	PAIS90C40A	40	1ph220	50	0.35	1350	294	194	2.5/450
				60	0.35	1550	232	199	
PAIS90A40GN	PAIS90A40A	40	1ph110	50	0.64	1350	286	226	10.0/250
				60	0.66	1550	234	231	
PAIS90S40GN	PAIS90S40A	40	3ph220	50	0.32	1350	284	1130	/
				60	0.28	1550	241	846	
PAIS90SH40GN	PAIS90SH40A	40	3ph380	50	0.18	1350	284	1086	/
				60	0.16	1550	241	837	

- 各种安全规格以电机铭牌上的型号名取的认证。
- 注：“-A”型号中电压为110V时，配置电容器容量以实际铭牌为准。
- When the motor is approved under various safety standards, the model name on the nameplate is the approved model name.
- Note: -A means the voltage 110v. The matched capacitor vaule should be consistent with the nameplate.

减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

50Hz	转速 Speed r/min	减速比 Gear Ratio																							
		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
60Hz	转矩 Torque N.m	0.71	0.86	1.19	1.43	1.79	2.14	2.38	2.98	3.57	3.86	4.29	5.36	6.43	7.72	9.64	10	10	10	10	10	10	10	10	10
	转矩 Torque N.m	0.56	0.68	0.94	1.13	1.41	1.69	1.88	2.35	2.82	3.04	3.38	4.23	5.07	6.09	7.61	9.13	10	10	10	10	10	10	10	10

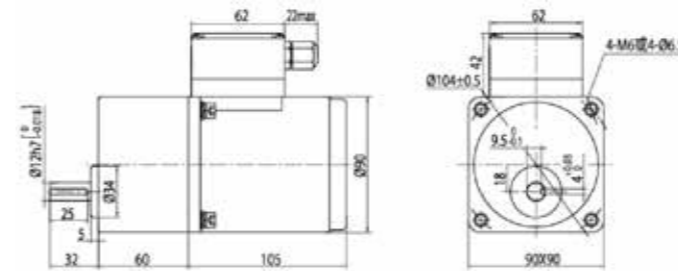
- 表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
- 表中 色框表示输出轴的旋转方向与电机旋转方向相反。
- 表中转矩是以电机额定转矩×减速比×传动效率计算而得。
- 减速箱的最大容许转矩为10N·m。
- In the table, the speed is calculated from the base of the motors average speed divided by the deceleration ratio. The actual speed, will vary with the load ranging from 2% to 20%.
- The box in the table indicates the rotation direction of the gearbox output shaft is opposite to that of the motor.
- Torque in the table is calculated from motor rated torque * reduction ratio * transmission efficiency.
- The maximum allowable torque of the gear box is 8N·m.

外形尺寸 (单位mm) Dimension(Unit:mm)

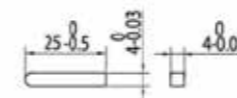
- 圆轴电机
重量 Welghr: 2.4kg



- 组合：接线盒型电机+标准减速箱 (减速比1: 3~200)
重量Weighr: 3.9kg



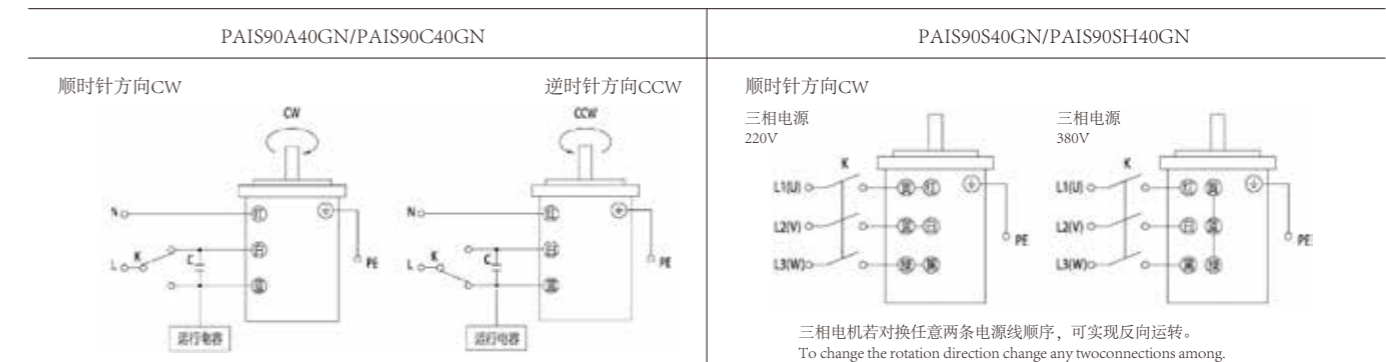
- 键 (减速器附件)
Key (gearbox accessory)



- 其中速比3~20可以做成短型减速箱，高度为42mm。
Gear ratio 3~20 can be made as short height type (42mm) .

接线图Wiring Diagram

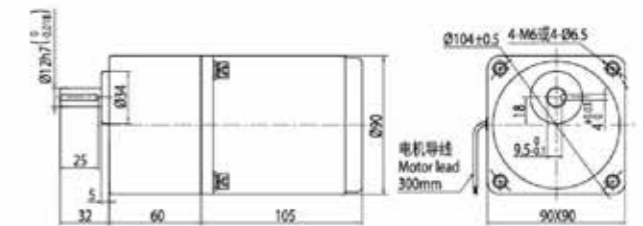
- 运转方向指从电机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
- 表中所记型号为齿轮轴型，圆轴型亦同。
- The direction of motor rotation is viewed from the shaft end of motor. CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- Part number indicated in the list is pinion shaft type also valid for the equivalent round shaft type.



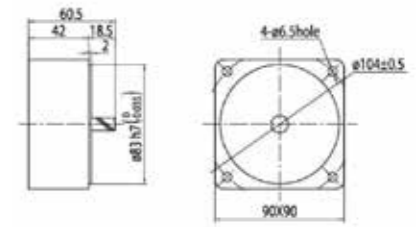
注意Note

- 运转方向指从电机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
- 若在电机运转时转换运转方向，可能发生无法转换运转方向或须费时较久的情况。
- Change the rotation dircion of single-phase motor only after the motor is stopped.
- If an atempt is made to change the direction of rotation while the motor is rotating, motor may ignore reversing command, or the direction of rotation is reversed with some delay.

- 组合：引线型电机+标准减速箱 (减速比1: 3~200)
重量Weighr: 3.75kg



- 中间齿轮箱 Decimal Gearhead
可安装在齿轮轴型上Can be connected to GN pinion shaft type
重量Weight: 0.6kg



说明 INSTRUCTIONS
感应减速电机 INDUCTION GEAR MOTOR
调速减速电机 SPEED CONTROL GEAR MOTOR
阻尼减速电机 REVERSIBLE GEAR MOTOR
电磁制动减速电机 BRAKE GEAR MOTOR
力矩减速电机 TORQUE GEAR MOTOR
直角减速电机 RIGHT ANGLE GEAR MOTOR
控制器 PANEL DRIVE
技术资料 TECHNICAL

说明 INSTRUCTIONS
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直角减速电机 RIGHT ANGLE GEAR MOTOR
控制器 PANEL DRIVE
技术资料 TECHNICAL

感应减速电机 INDUCTION GEAR MOTORS

60W 90mm



电机型号/性能 List of motor characteristics

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	额定转速 Rated Speed	额定转矩 Rated Torque	启动转矩 Start Torque	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	r/min	mN.m	mN.m	μF/VAC
PAIS90C60GN-F	PAIS90C60A-F	60	1ph220	50	0.50	1350	427	384	4.0/450
				60	0.54	1550	353	384	
PAIS90A60GN-F	PAIS90A60A-F	60	1ph110	50	0.91	1350	431	349	15.0/250
				60	1.01	1550	355	360	
PAIS90S60GN-F	PAIS90S60A-F	60	3ph220	50	0.38	1350	465	1110	/
				60	0.35	1550	390	840	
PAIS90SH60GN-F	PAIS90SH60A-F	60	3ph380	50	0.22	1350	464	1080	/
				60	0.20	1550	390	837	

● 各种安全规格以电机铭牌上的型号名取的认证。

● 注：“-A”型号中电压为110V时，配置电容器容量以实际铭牌为准。

● When the motor is approved under various safety standards, the model name on the nameplate is the approved model name.

● Note: -A means the voltage 110v. The matched capacitor vaule should be consistent with the nameplate.

减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

50Hz	转速 Speed r/min	减速比 Gear Ratio																							
		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
50Hz	转矩 Torque N.m	0.99	1.18	1.64	1.97	2.47	2.96	3.29	4.11	4.93	5.33	5.92	7.40	8.88	10	10	10	10	10	10	10	10	10	10	10
	转速 Speed r/min	450	375	270	225	180	150	135	108	90	75	67.5	54	45	37.5	33.7	27	22.5	18	15	13.5	11	9	7.5	6.75
60Hz	转矩 Torque N.m	0.86	1.03	1.72	2.14	2.57	2.86	1.88	3.57	4.29	4.63	5.15	6.43	7.72	9.26	9.5	10	10	10	10	10	10	10	10	10
	转速 Speed r/min	516	430	310	258	206	172	155	124	103	86	77.5	62	51.6	43	38.75	31	25.8	20.6	17.2	15.5	12.9	10.3	8.6	7.75

● 表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。

● 表中色框表示输出轴的旋转方向与电机旋转方向相反。

● 表中转矩是以电机额定转矩×减速比×传动效率计算而得。

● 减速箱的最大容许转矩为10N·m。

● In the table, the speed is calculated from the base of the motors average speed divided by the deceleration ratio. The actual speed, will vary with the load ranging from 2% to 20%.

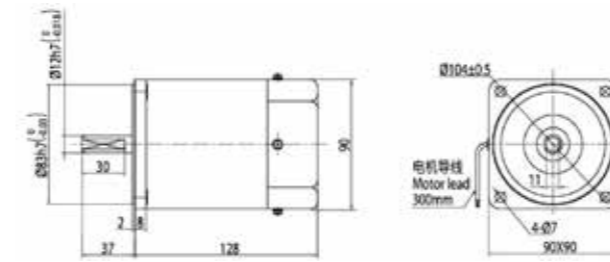
● The box in the table indicates the rotation direction of the gearbox output shaft is opposite to that of the motor.

● Torque in the table is calculated from motor rated torque * reduction ratio * transmission efficiency.

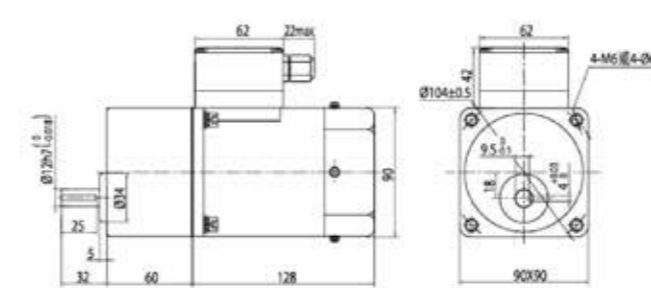
● The maximum allowable torque of the gear box is 10N·m.

外形尺寸 (单位mm) Dimension(Unit:mm)

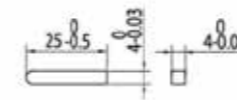
● 圆轴电机
重量 Weighr: 2.7kg



● 组合: 接线盒型电机+标准减速箱 (减速比1: 3~200)
重量 Weighr: 4.2kg



● 键 (减速器附件)
Key (gearbox accessory)



● 其中速比3~18可以做成短型减速箱，高度为42mm。
Gear ratio 3~18 can be made as short height type (42mm) .

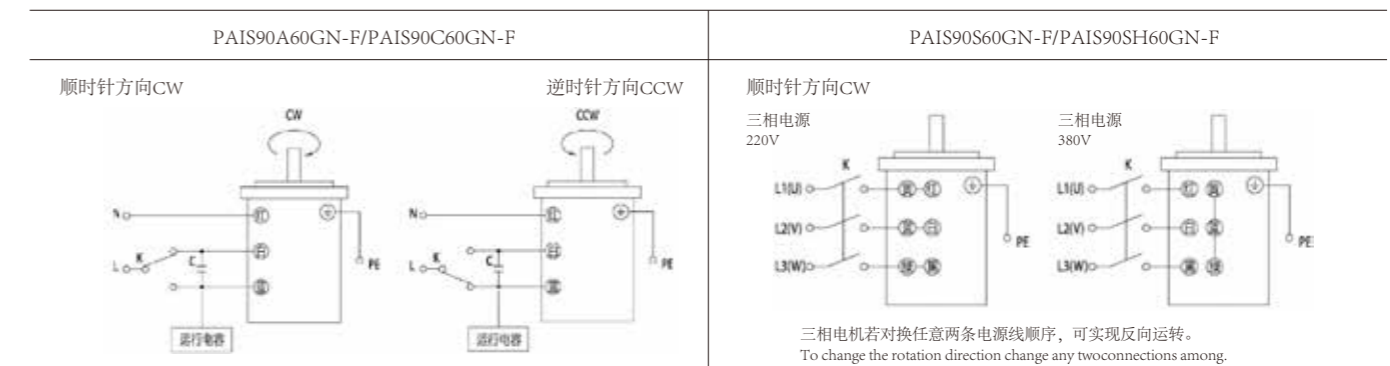
接线图Wiring Diagram

● 运转方向指从电机轴看来的方向。CW表示顺时针方向，CCw表示逆时针方向。

● 表中所记型号为齿轮轴型，圆轴型亦同。

● The direction of motor rotation is viewed from the shaft end of motor. CW represents the clockwise direction, while CCW represents the counterclockwise direction.

● Part number indicated in the list is pinion shaft type also valid for the equivalent round shaft type.



注意Note

● 运转方向指从电机轴看来的方向。CW表示顺时针方向，CCw表示逆时针方向。

● 若在电机运转时转换运转方向，可能发生无法转换运转方向或须费时较久的情况。

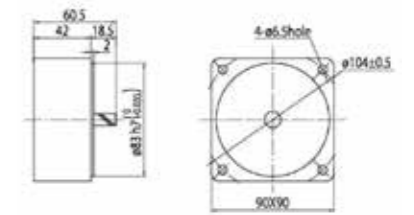
● Change the rotation dirction of single-phase motor only after the motor is stopped.

● Ifan atempt is made to change the direction of rotation while the motor is rotating motor may ignore reversing command or the direction of rotation is reversed with some delay.

● 组合: 引线型电机+标准减速箱 (减速比1: 3~200)
重量 Weighr: 4.05kg



● 中间齿轮箱 Decimal Gearhead
可安装在齿轮轴型上 Can be connected to GN pinion shafe type
重量 Weighr: 0.6kg

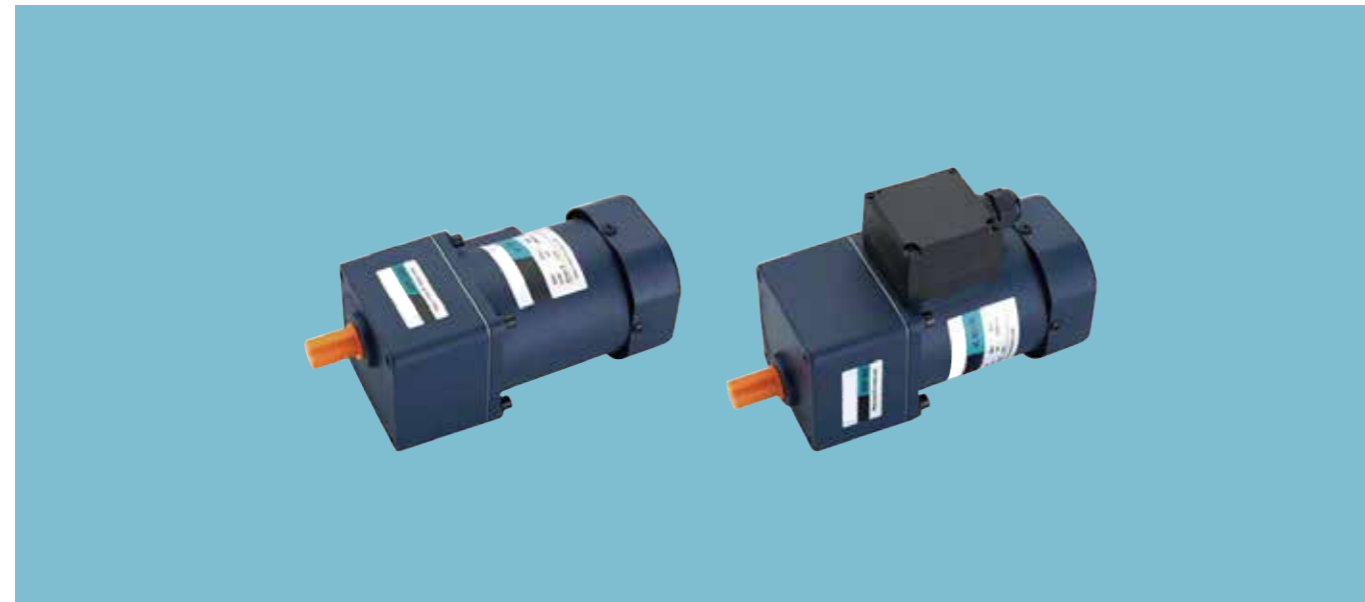


感应减速电机

INDUCTION GEAR MOTORS

60W

90mm



电机型号/性能 List of motor characteristics

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	额定转速 Rated Speed	额定转矩 Rated Torque	启动转矩 Start Torque	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	r/min	mN.m	mN.m	μF/VAC
PAIS90C60GU-F	PAIS90C60A-F	60	1ph220	50	0.50	1350	427	384	4.0/450
				60	0.54	1550	353	384	
PAIS90A60GU-F	PAIS90A60A-F	60	1ph110	50	0.91	1350	431	349	15.0/250
				60	1.01	1550	355	360	
PAIS90S60GU-F	PAIS90S60A-F	60	3ph220	50	0.38	1350	465	1110	/
				60	0.35	1550	390	840	
PAIS90SH60GU-F	PAIS90SH60A-F	60	3ph380	50	0.22	1350	464	1080	/
				60	0.20	1550	390	837	

- 各种安全规格以电机铭牌上的型号名取的认证。
- 注：“-A”型号中电压为110V时，配置电容器容量以实际铭牌为准。
- When the motor is approved under various safety standards, the model name on the nameplate is the approved model name.
- Note: -A means the voltage 110v. The matched capacitor vaule should be consistent with the nameplate.

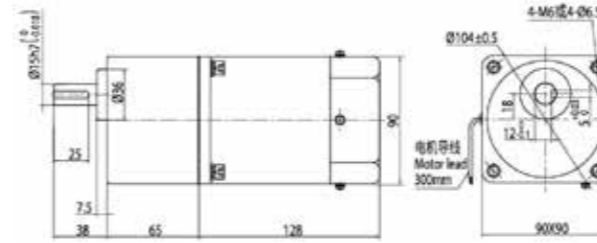
减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

50Hz	转速 Speed r/min	减速比 Gear Ratio																							
		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
50Hz	转速 Speed r/min	450	375	270	225	180	150	135	108	90	75	67.5	54	45	37.5	33.7	27	22.5	18	15	13.5	11	9	7.5	6.75
	转矩 Torque N.m	0.99	1.18	1.64	1.97	2.47	2.964	2.96	3.70	4.44	5.33	5.33	6.66	7.99	9.59	10.66	13.32	15.98	19.98	20	20	20	20	20	20
60Hz	转速 Speed r/min	516	430	310	258	206	172	155	124	103	86	77.5	62	51.6	43	38.75	31	25.8	20.6	17.2	15.5	12.9	10.3	8.6	7.75
	转矩 Torque N.m	0.86	1.03	1.43	1.72	2.14	2.57	2.87	3.22	3.22	3.86	4.63	5.79	6.95	8.34	9.26	11.58	13.90	17.37	18.76	20	20	20	20	20

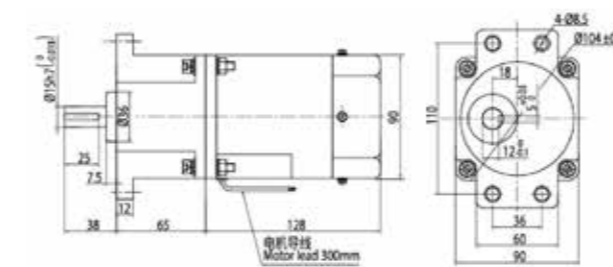
- 表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
- 表中 色框表示输出轴的旋转方向与电机旋转方向相反。
- 表中转矩是以电机额定转矩×减速比×传动效率计算而得。
- 减速箱的最大容许转矩为20N·m。
- In the table, the speed is calculated from the base of the motors average speed divided by the deceleration ratio. The actual speed, will vary with the load ranging from 2% to 20%.
- The box in the table indicates the rotation direction of the gearbox output shaft is opposite to that of the motor.
- Torque in the table is calculated from motor rated torque * reduction ratio * transmission efficiency.
- The maximum allowable torque of the gear box is 20N·m.

外形尺寸(单位mm) Dimension(Unit:mm)

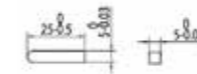
- 组合：引线型电机+标准减速箱（减速比1：3~200）
重量Weighr: 4.15kg



- 组合：引线型电机+带耳型减速箱（减速比1：3~200）
重量Weighr: 4.2kg



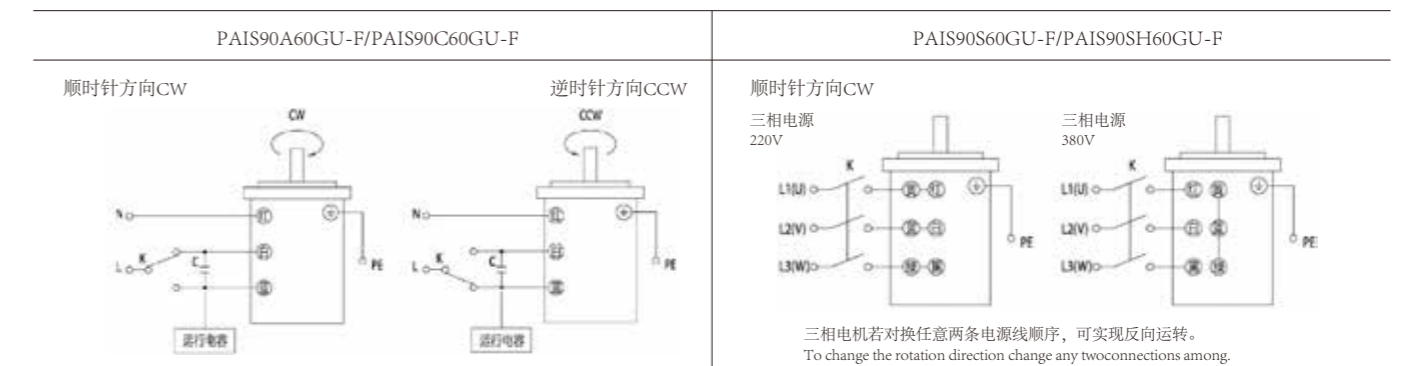
- 键（减速器附件）
Key (gearbox accessory)



- 其中速比3~18可以做成短型减速箱，高度为42mm。
Gear ratio 3~18 can be made as short height type (42mm).

接线图Wiring Diagram

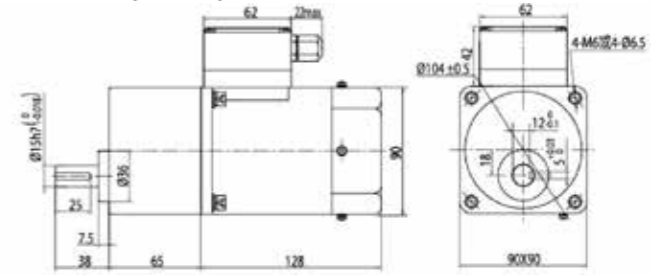
- 运转方向指从电机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
- 表中所记型号为齿轮轴型，圆轴型亦同。
- The direction of motor rotation is viewed from the shaft end of motor. CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- Part number indicated in the list is pinion shaft type also valid for the equivalent round shaft type.



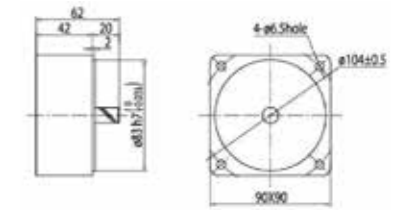
注意Note

- 运转方向指从电机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
- 若在电机运转时转换运转方向，可能发生无法转换运转方向或须费时较久的情况。
- Change the rotation dircetion of single-phase motor only after the motor is stopped.
- Ifan atempt is made to change the direction of rotation while the motor is rotating, motor may ignore reversing command, or the direction of rotation is reversed with some delay.

- 组合：引线型电机+标准减速箱（减速比1：3~200）
重量Weighr: 4.2kg

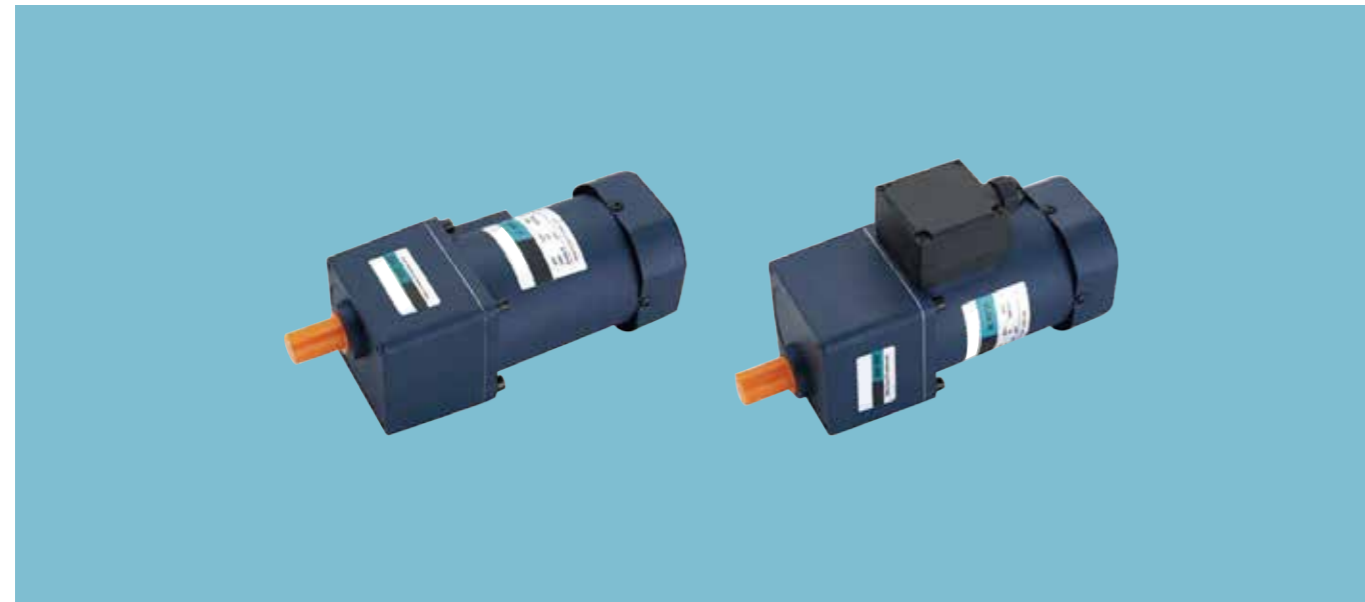


- 中间齿轮箱 Decimal Gearhead
可安装在GU齿轮轴型上Can be connected to GU pinion shafte type
重量Weight: 0.7kg



感应减速电机 INDUCTION GEAR MOTORS

90W 90mm



电机型号/性能 List of motor characteristics

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	额定转速 Rated Speed	额定转矩 Rated Torque	启动转矩 Start Torque	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	r/min	mN.m	mN.m	μF/VAC
PAIS90C90GU-F	PAIS90C90A-F	90	1ph220	50	0.64	1350	643	459	5.0/450
				60	0.71	1550	530	450	
PAIS90A90GU-F	PAIS90A90A-F	90	1ph110	50	1.26	1350	646	475	20.0/250
				60	1.40	1550	525	489	
PAIS90S90GU-F	PAIS90S90A-F	90	3ph220	50	0.74	1350	625	2800	/
				60	0.61	1550	527	2150	
PAIS90SH90GU-F	PAIS90SH90A-F	90	3ph380	50	0.42	1350	625	2660	/
				60	0.35	1550	519	2030	

- 各种安全规格以电机铭牌上的型号名取的认证。
- 注：“-A”型号中电压为110V时，配置电容器容量以实际铭牌为准。
- When the motor is approved under various safety standards, the model name on the nameplate is the approved model name.
- Note: -A means the voltage 110v. The matched capacitor vaule should be consistent with the nameplate.

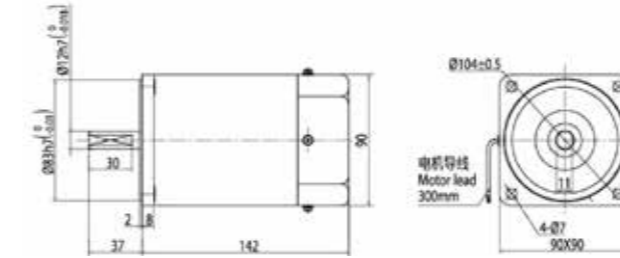
减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

50Hz	转速 Speed r/min	减速比 Gear Ratio																							
		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	450	375	270	225	180	150	135	108	90	75	67.5	54	45	37.5	33.7	27	22.5	18	15	13.5	11	9	7.5	6.75	
	转矩 Torque N.m	1.563	1.88	2.60	3.125	3.91	4.69	5.1	5.86	7.03	8.44	8.8	10.55	12.66	15.19	16.88	20	20	20	20	20	20	20	20	20
60Hz	转速 Speed r/min	516	430	310	258	206	172	155	124	103	86	77.5	62	51.6	43	38.75	31	25.8	20.6	17.2	15.5	12.9	10.3	8.6	7.75
	转矩 Torque N.m	1.29	1.55	2.15	2.58	3.22	3.86	4.3	4.83	5.80	6.96	7.3	8.69	10.43	12.52	13.91	17.39	20	20	20	20	20	20	20	20

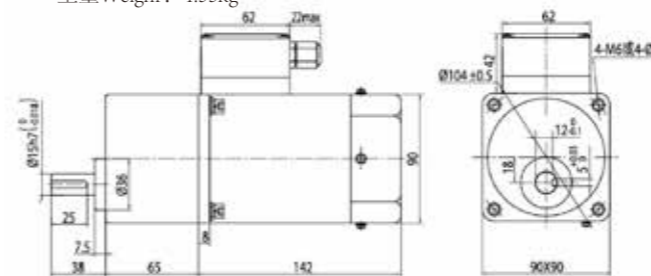
- 表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
- 表中色框表示输出轴的旋转方向与电机旋转方向相反。
- 表中转矩是以电机额定转矩×减速比×传动效率计算而得。
- 减速箱的最大容许转矩为20N·m。
- In the table, the speed is calculated from the base of the motors average speed divided by the deceleration ratio. The actual speed, will vary with the load ranging from 2% to 20%.
- The box in the table indicates the rotation direction of the gearbox output shaft is opposite to that of the motor.
- Torque in the table is calculated from motor rated torque * reduction ratio * transmission efficiency.
- The maximum allowable torque of the gear box is 20N·m.

外形尺寸 (单位mm) Dimension(Unit:mm)

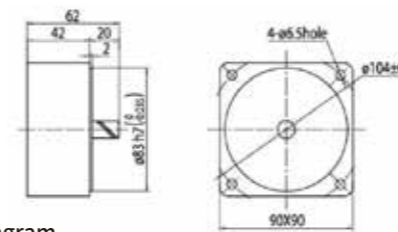
- 圆轴电机
重量Weighr: 2.7kg



- 组合: 引线型电机+带耳型减速箱 (减速比1: 3~200)
重量Weighr: 4.35kg

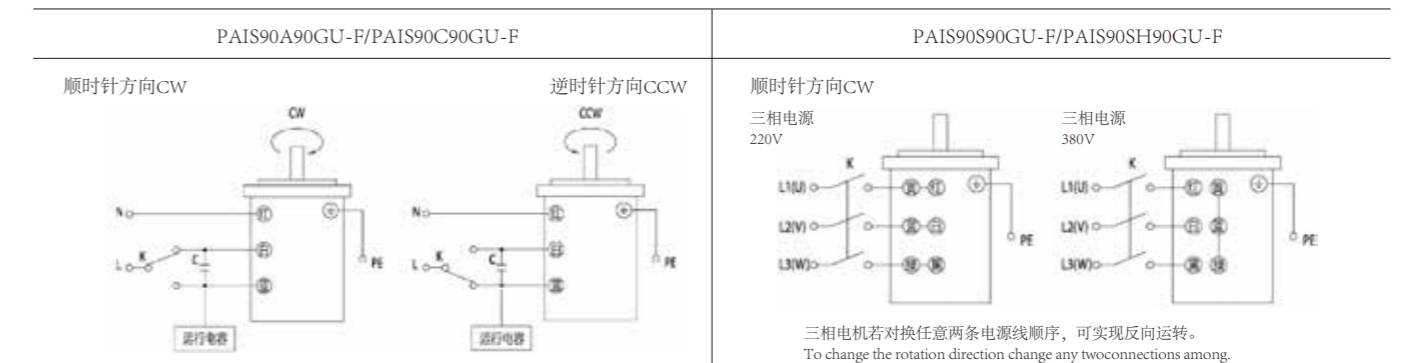


- 中间齿轮箱 Decimal Gearhead
可安装在GU齿轮轴型上.Can be connected to GU pinion shaft type
重量Weight: 0.7kg



接线图Wiring Diagram

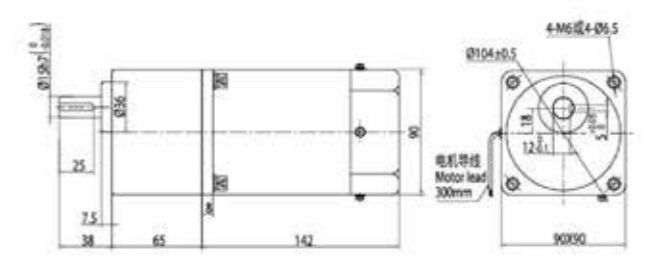
- 运转方向指从电机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
- 表中所记型号为齿轮轴型，圆轴型亦同。
- The direction of motor rotation is viewed from the shaft end of motor. CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- Part number indicated in the list is pinion shaft type also valid for the equivalent round shaft type.



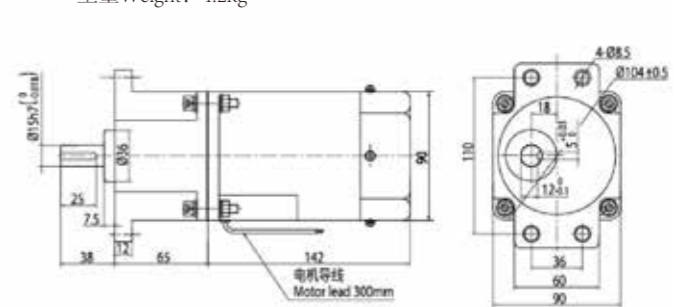
注意Note

- 单相电机运转方向的转换应在电机停止后进行。
- 若在电机运转时转换运转方向，可能发生无法转换运转方向或须费时较久的情况。
- Change the direction of single-phase motor rotation only after bring the motor to a stop.
- If an attempt is made to change the direction of rotation while the motor is rotating motor may ignore reversing command or the direction of rotation is reversed with some delay.

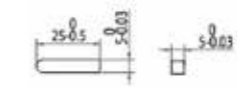
- 组合: 引线型电机+标准减速箱 (减速比1: 3~200)
重量Weighr: 4.2kg



- 组合: 引线型电机+带耳型减速箱 (减速比1: 3~200)
重量Weight: 4.2kg

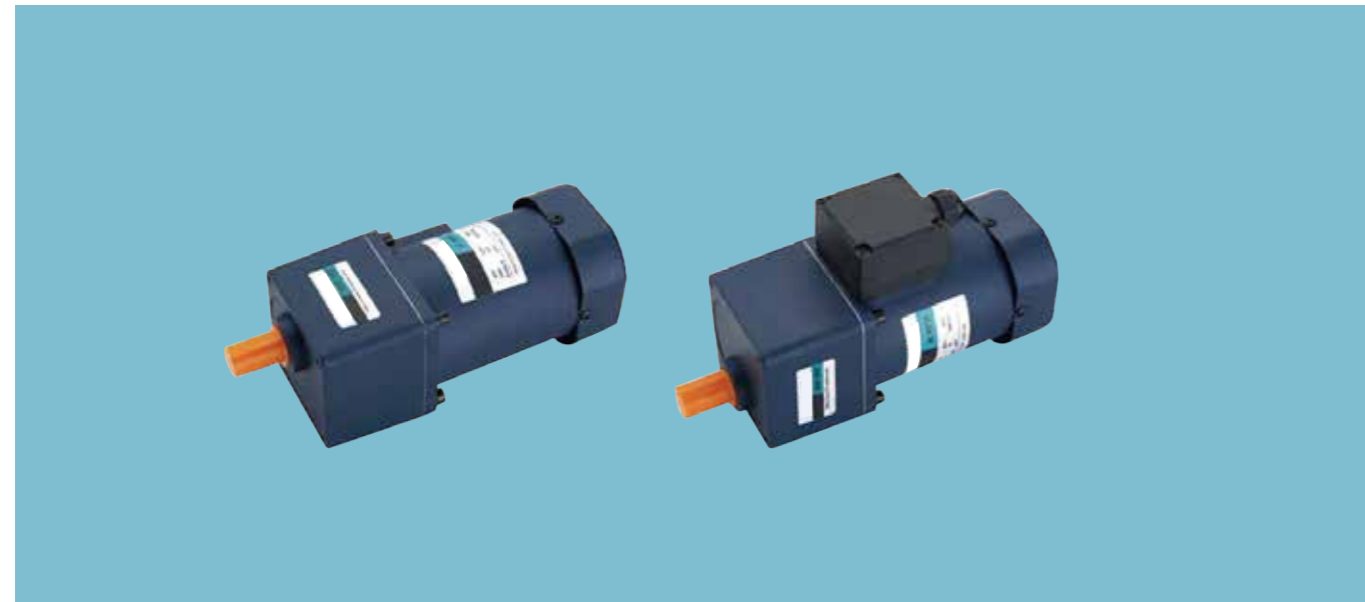


- 键 (减速器附件)
Key (gearbox accessory)



感应减速电机 INDUCTION GEAR MOTORS

120W 90mm



电机型号/性能 List of motor characteristics

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	额定转速 Rated Speed	额定转矩 Rated Torque	启动转矩 Start Torque	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	r/min	mN.m	mN.m	μF/VAC
PAIS90C120GU-F	PAIS90C120A-F	120	1ph220	50	0.87	1350	874	663	6.0/450
				60	0.90	1550	709	655	
PAIS90A120GU-F	PAIS90A120A-F	120	1ph110	50	1.79	1350	919	500	25.0/250
				60	1.65	1550	740	524	
PAIS90S120GU-F	PAIS90S120A-F	120	3ph220	50	0.81	1350	879	2800	/
				60	0.70	1550	735	2150	
PAIS90SH120GU-F	PAIS90SH120A-F	120	3ph380	50	0.46	1350	879	2660	/
				60	0.40	1550	731	2030	

● 各种安全规格以电机铭牌上的型号名取的认证。

● 注：“-A”型号中电压为110V时，配置电容器容量以实际铭牌为准。

● When the motor is approved under various safety standards, the model name on the nameplate is the approved model name.

● Note: -A means the voltage 110v. The matched capacitor vaule should be consistent with the nameplate.

减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

转速 Speed r/min	转矩 Torque N.m	减速比 Gear Ratio																							
		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
50Hz	转速 Speed r/min	450	375	270	225	180	150	135	108	90	75	67.5	54	45	37.5	33.7	27	22.5	18	15	13.5	11	9	7.5	6.75
	转矩 Torque N.m	2.12	2.55	3.54	4.25	5.31	6.37	6.9	7.96	9.56	11.47	12	14.36	17.20	20	20	20	20	20	20	20	20	20	20	20
60Hz	转速 Speed r/min	516	430	310	258	206	172	155	124	103	86	77.5	62	51.6	43	38.75	31	25.8	20.6	17.2	15.5	12.9	10.3	8.6	7.75
	转矩 Torque N.m	1.72	2.07	2.87	3.45	4.31	5.17	5.8	6.46	7.75	9.30	9.9	11.63	13.96	16.75	18.61	20	20	20	20	20	20	20	20	20

● 表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。

● 表中色框表示输出轴的旋转方向与电机旋转方向相反。

● 表中转矩是以电机额定转矩×减速比×传动效率计算而得。

● 减速箱的最大容许转矩为20N·m。

● In the table, the speed is calculated from the base of the motors average speed divided by the deceleration ratio. The actual speed, will vary with the load ranging from 2% to 20%.

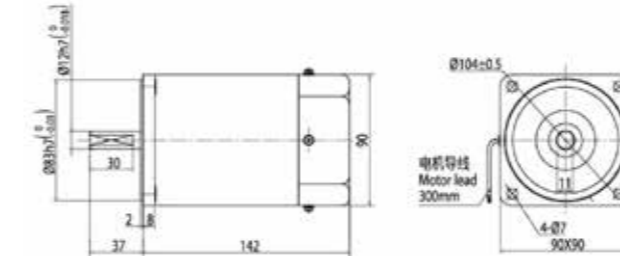
● The box in the table indicates the rotation direction of the gearbox output shaft is opposite to that of the motor.

● Torque in the table is calculated from motor rated torque * reduction ratio * transmission efficiency.

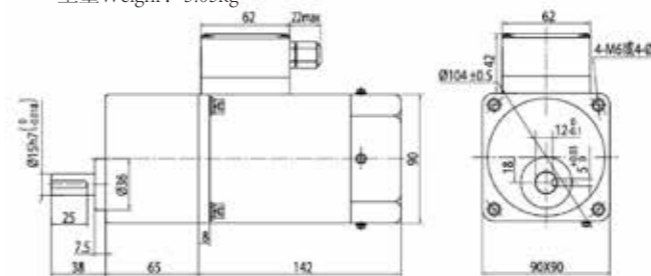
● The maximum allowable torque of the gear box is 20N·m.

外形尺寸(单位mm) Dimension(Unit:mm)

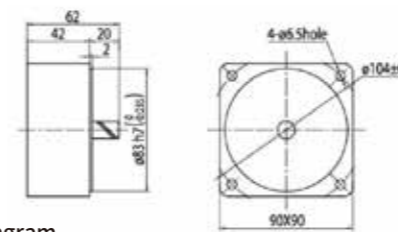
● 圆轴电机
重量Weighr: 3.4kg



● 组合: 引线型电机+带耳型减速箱 (减速比1: 3~200)
重量Weight: 5.05kg



● 中间齿轮箱 Decimal Gearhead
可安装在GU齿轮轴型上Can be connected to GU pinion shaft type
重量Weight: 0.7kg



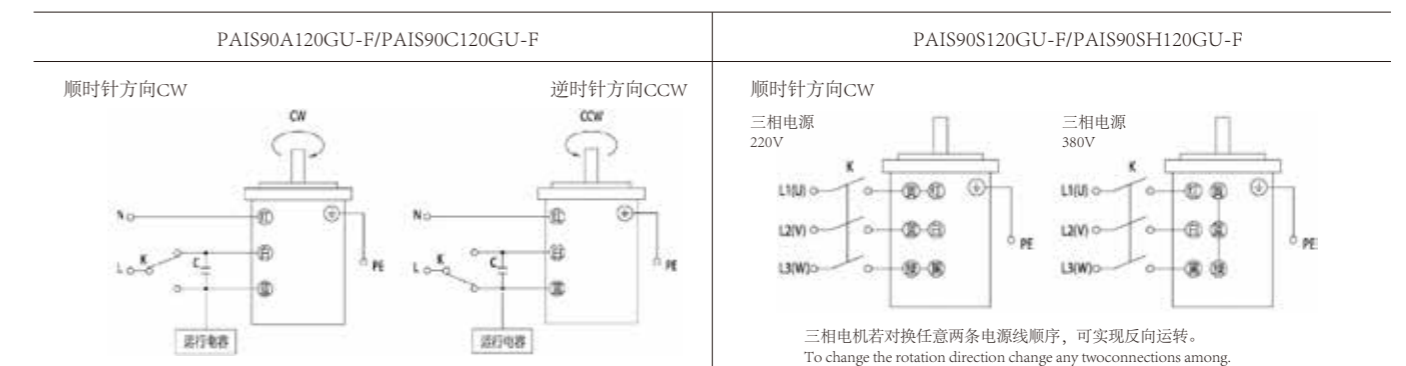
接线图Wiring Diagram

● 运转方向指从电机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。

● 表中所记型号为齿轮轴型，圆轴型亦同。

● The direction of motor rotation is viewed from the shaft end of motor. CW represents the clockwise direction, while CCW represents the counterclockwise direction.

● Part number indicated in the list is pinion shaft type also valid for the equivalent round shaft type.



注意Note

● 单相电机运转方向的转换应在电机停止后进行。

● 若在电机运转时转换运转方向，可能发生无法转换运转方向或须费时较久的情况。

● Change the direction of single-phase motor rotation only after bring the motor to a stop.

● If an attempt is made to change the direction of rotation while the motor is rotating, motor may ignore reversing command, or the direction of rotation is reversed with some delay.

说明

感应减速电机

调速减速电机

阻尼减速电机

电磁制动减速电机

力矩减速电机

直角减速电机

控制器

技术资料

说明

感应减速电机

调速减速电机

阻尼减速电机

电磁制动减速电机

力矩减速电机

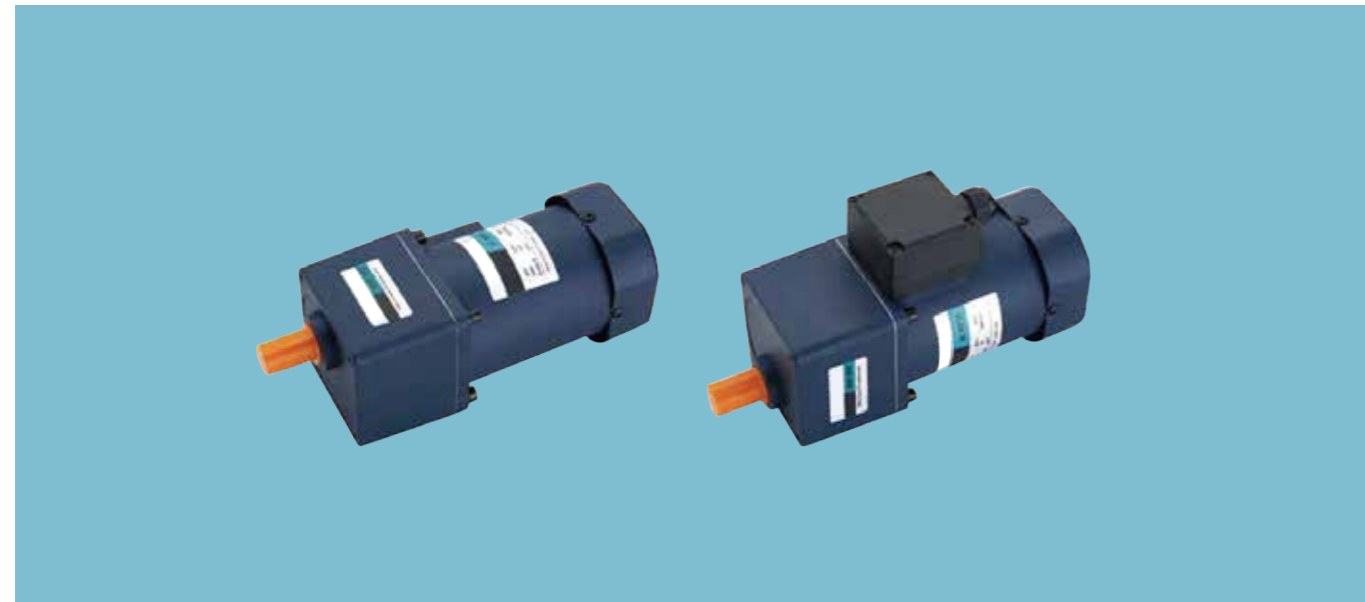
直角减速电机

控制器

技术资料

感应减速电机 INDUCTION GEAR MOTORS

200W 104mm



电机型号/性能 List of motor characteristics

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	额定转速 Rated Speed	额定转矩 Rated Torque	启动转矩 Start Torque	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	r/min	mN.m	mN.m	μF/VAC
PAIS104C200GU-F	PAIS104C200A-F	200	1ph220	50	1.31	1350	1281	1290	12.0/450
				60	1.73	1550	1060	1220	
PAIS104A200GU-F	PAIS104A200A-F	200	1ph110	50	2.36	1350	1310	890	20.0/250
				60	2.57	1550	1090	880	
PAIS104S200GU-F	PAIS104S200A-F	200	3ph220	50	1.17	1350	1460	4620	/
				60	0.98	1550	1070	3420	
PAIS104SH200GU-F	PAIS104SH200A-F	200	3ph380	50	0.66	1350	1550	4500	/
				60	0.57	1550	1350	3500	

● 各种安全规格以电机铭牌上的型号名取的认证。

● 注：“-A”型号中电压为110V时，配置电容器容量以实际铭牌为准。

● When the motor is approved under various safety standards, the model name on the nameplate is the approved model name.

● Note: -A means the voltage 110v. The matched capacitor vaule should be consistent with the nameplate.

减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

50Hz	转速 Speed r/min	减速比 Gear Ratio																							
		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
60Hz	转速 Speed r/min	450	375	270	225	180	150	135	108	90	75	67.5	54	45	37.5	33.7	27	22.5	18	15	13.5	11	9	7.5	6.75
	转矩 Torque N.m	3.11	3.74	5.19	6.23	7.78	9.34	9.34	11.67	14.01	16.81	16.81	21.01	25.21	30.26	33.62	40	40	40	40	40	40	40	40	40
60Hz	转速 Speed r/min	516	430	310	258	206	172	155	124	103	86	77.5	62	51.6	43	38.75	31	25.8	20.6	17.2	15.5	12.9	10.3	8.6	7.75
	转矩 Torque N.m	2.58	3.09	4.29	5.15	6.44	7.73	7.73	9.66	11.60	13.91	13.91	17.40	20.86	25.05	27.82	34.77	40	40	40	40	40	40	40	40

● 表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。

● 表中色框表示输出轴的旋转方向与电机旋转方向相反。

● 表中转矩是以电机额定转矩×减速比×传动效率计算而得。

● 减速箱的最大容许转矩为40N·m。

● In the table, the speed is calculated from the base of the motors average speed divided by the deceleration ratio. The actual speed, will vary with the load ranging from 2% to 20%.

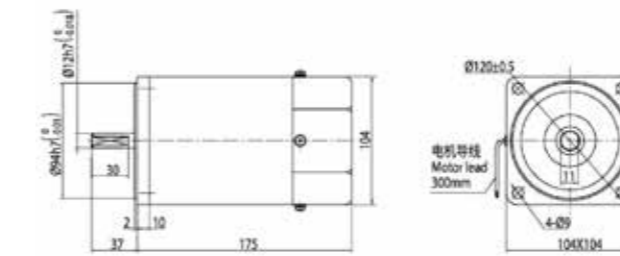
● The box in the table indicates the rotation direction of the gearbox output shaft is opposite to that of the motor.

● Torque in the table is calculated from motor rated torque * reduction ratio * transmission efficiency.

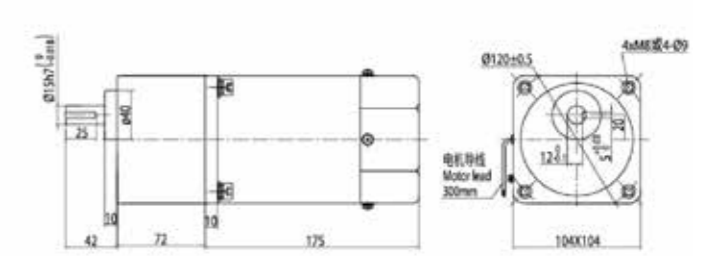
● The maximum allowable torque of the gear box is 40N·m.

外形尺寸(单位mm) Dimension(Unit:mm)

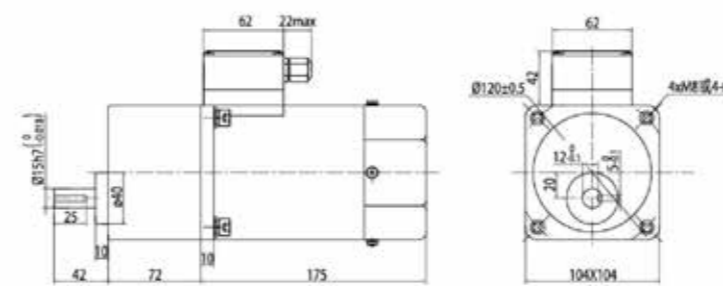
● 组合：引线型电机+标准减速箱（减速比1：3~200）
重量Weighr: 5.0kg



● 组合：带端子型电机+标准减速箱（减速比1：3~200）
重量Weighr: 7.1kg



● 组合：接线盒型电机+带耳型减速箱（减速比1：3~200）
重量Weighr: 5.05kg



● 键（减速器附件）
Key (gearbox accessory)



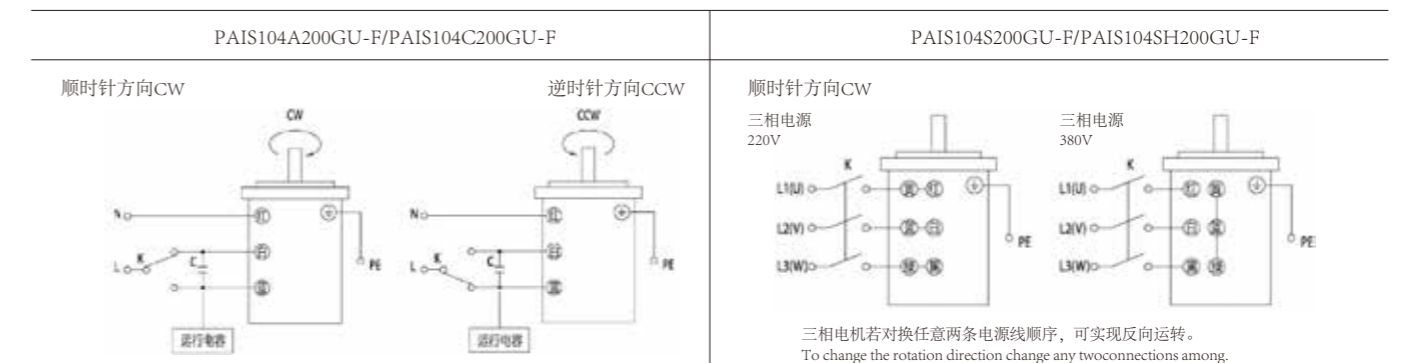
接线图Wiring Diagram

● 运转方向指从电机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。

● 表中所记型号为齿轮轴型，圆轴型亦同。

● The direction of motor rotation is viewed from the shaft end of motor. CW represents the clockwise direction, while CCW represents the counterclockwise direction.

● Part number indicated in the list is pinion shaft type also valid for the equivalent round shaft type.



注意Note

● 单相电机运转方向的转换应在电机停止后进行。

● 若在电机运转时转换运转方向，可能发生无法转换运转方向或须费时较久的情况。

● Change the direction of single-phase motor rotation only after bring the motor to a stop.

● If an attempt is made to change the direction of rotation while the motor is rotating, motor may ignore reversing command, or the direction of rotation is reversed with some delay.

感应减速电机

INDUCTION GEAR MOTORS

400W

120mm



电机型号/性能 List of motor characteristics

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	额定转速 Rated Speed	额定转矩 Rated Torque	启动转矩 Start Torque	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	r/min	mN.m	mN.m	μF/VAC
PAIS120S400GU-F	PAIS120S400A-F	400	3ph220	50	2.2	1350	2700	5900	/
PAIS120SH400GU-F	PAIS120SH400A-F	400	3ph380	50	1.2	1350	2700	5900	/

- 各种安全规格以电机铭牌上的型号名取的认证。
- 注：“-A”型号中电压为110V时，配置电容器容量以实际铭牌为准。
- When the motor is approved under various safety standards, the model name on the nameplate is the approved model name.
- Note: -A means the voltage 110v. The matched capacitor vaule should be consistent with the nameplate.

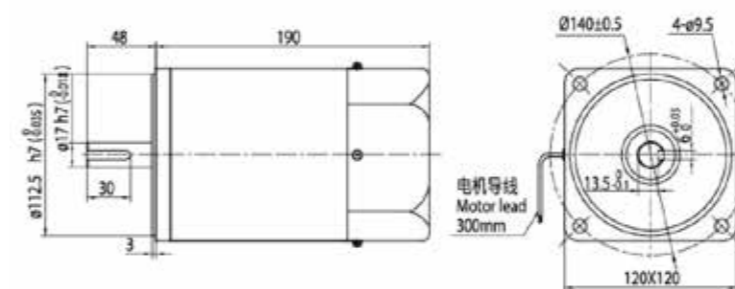
减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

减速比 Gear Ratio	Gear Ratio																		
	3	5	7.5	10	12.5	15	18	20	25	30	40	50	60	75	90	100	120	150	180
50Hz 转速 Speed r/min	450	270	180	135	108	90	75	67.5	54	45	33.7	27	22.5	18	15	13.5	11	9	7.5
60Hz 转矩 Torque N.m	6.5	10.9	16.4	21.8	24.5	29.5	35.4	39.3	49.2	59.0	78.7	88.5	106.2	132.8	159.4	177.1	200	200	200

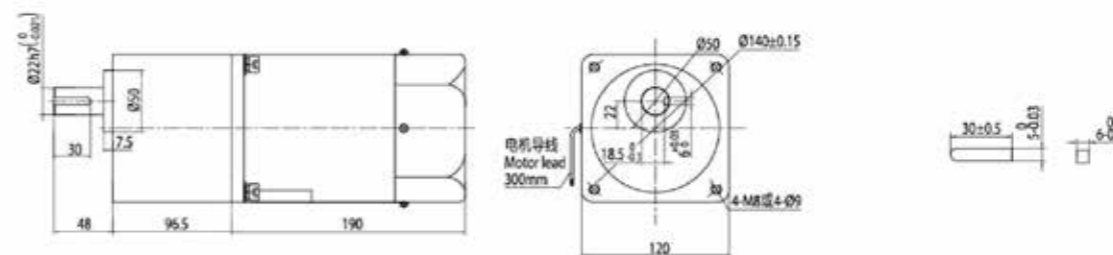
- 表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
- 表中 色框表示输出轴的旋转方向与电机旋转方向相反。
- 表中转矩是以电机额定转矩×减速比×传动效率计算而得。
- 减速箱的最大容许转矩为200N·m。
- In the table, the speed is calculated from the base of the motors average speed divided by the deceleration ratio. The actual speed, will vary with the load ranging from 2% to 20%.
- The box in the table indicates the rotation direction of the gearbox output shaft is opposite to that of the motor.
- Torque in the table is calculated from motor rated torque * reduction ratio * transmission efficiency.
- The maximum allowable torque of the gear box is 200N·m.

外形尺寸(单位mm) Dimension(Unit:mm)

- 组合：引线型电机+标准减速箱（减速比1：3~200）



- 组合：接线盒型电机+带耳型减速箱（减速比1：3~200）

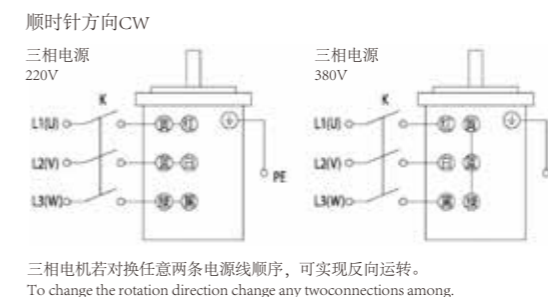


- 键（减速器附件）
Key (gearbox accessory)

接线图Wiring Diagram

- 运转方向指从电机轴看来的方向。CW表示顺时针方向，CCw表示逆时针方向。
- 表中所记型号为齿轮轴型，圆轴型亦同。
- The direction of motor rotation is viewed from the shaft end of motor. CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- Part number indicated in the list is pinion shaft type also valid for the equivalent round shaft type.

PAIS104S200GU-F/PAIS104SH200GU-F



注意Note

- 单相电机运转方向的转换应在电机停止后进行。
- 若在电机运转时转换运转方向，可能发生无法转换运转方向或须费时较久的情况。
- Change the direction of single-phase motor rotation only after bring the motor to a stop.
- If an attempt is made to change the direction of rotation while the motor is rotating motor may ignore reversing command or the direction of rotation is reversed with some delay.

调速减速电机

SPEED CONTROL GEAR MOTORS

6W

60mm



电机型号/性能List of motor characteristics

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	额定转速 Rated Speed	额定转矩 Rated Torque		启动转矩 Start Torque	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	r/min	90r/min	1200r/min	mN.m	μF/VAC
							mN.m			
PACS60C6GN	PACS60C6A	6	1ph220	50	0.12	90~1350	19	45	38	0.8/450
				60	0.11	90~1550	20	36	40	
PACS60A6GN	PACS60A6A	6	1ph110	50	0.25	90~1350	19	45	38	3.0/250
				60	0.22	90~1550	20	36	40	

- 从调速电机转矩/转速曲线可知,虽然调速电机的调速范围为:50Hz...90-1350转/分钟;60Hz...90-1550转/分钟。但由于低速时(≤ 400 转/分钟),电机转矩下降较多,易发生过载,且电机直连风扇冷却效果差,易发热,因此必须预留足够的功率余量,并且不要经常工作在低速区因此电机最佳调速范围为:50Hz...900-1350转/分钟;60Hz...900-1550转/分钟。
- 各种安全规格以电机铭牌上的型号名取的认证。
- 注:“-A”型号中电压为110v时,配置电容器容量以实际铭牌为准。
- It can be seen from the torque/speed curve of the speed-regulating motor, although the speed range of the speed regulating motor is :50Hz... 90-1350 RPM; 60Hz...90-1550 revolutions per minute. But due to the low speed (400 RPM) or less, when the motor torque drop more, prone to overload, and poor motor directly connected the fan cooling effect easy to heat, so must set aside enough power margin, and don't often work in low speed zone. Therefore, the optimal speed range of the motor is: 50Hz...900-1350 revolutions per minute; 60Hz...900-1550 RPM.
- When the motor is approved under various safety standards, the model name on the nameplate is the approved model name.
- Note: -A means the voltage 110v. The matched capacitor vaule should be consistent with the nameplate.

减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

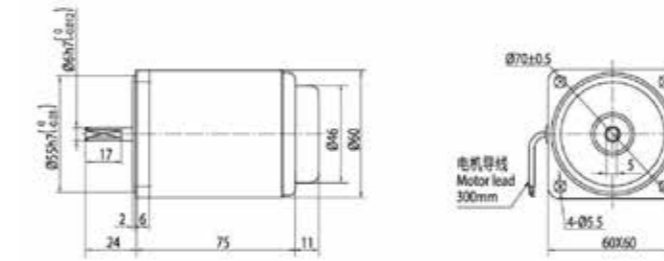
减速比 Gear Ratio		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
50Hz	转速 Speed r/min	450	375	270	225	180	150	135	108	90	75	67.5	54	45	37.5	33.7	27	22.5	18	15	13.5	11	9	7.5	6.75
	转矩 Torque N.m	0.11	0.13	0.18	0.21	0.27	0.32	0.36	0.45	0.54	0.64	0.7	0.80	0.97	1.16	1.29	1.61	1.74	2.17	2.60	2.89	3	3	3	3
60Hz	转速 Speed r/min	516	430	310	258	206	172	155	124	103	86	77.5	62	51.6	43	38.75	31	25.8	20.6	17.2	15.5	12.9	10.3	8.6	7.75
	转矩 Torque N.m	0.09	0.11	0.15	0.18	0.23	0.27	0.30	0.38	0.45	0.54	0.6	0.68	0.821	0.98	1.09	1.36	1.47	1.84	2.20	2.45	2.94	3	3	3

- 表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化,变化范围2~20%。
- 表中色框表示输出轴的旋转方向与电机旋转方向相反。
- 表中转矩是以电机额定转矩 \times 减速比 \times 传动效率计算而得。
- 减速箱的最大容许转矩为 $3N \cdot m$ 。
- In the table, the speed is calculated from the base of the motors average speed divided by the deceleration ratio. The actual speed, will vary with the load ranging from 2% to 20%.

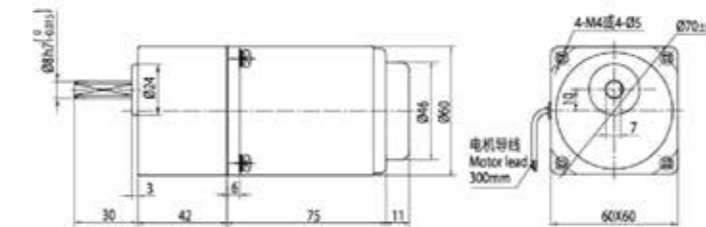
- The box in the table indicates the rotation direction of the gearbox output shaft is opposite to that of the motor.
- Torque in the table is calculated from motor rated torque * reduction ratio * transmission efficiency.
- The maximum allowable torque of the gear box is $3N \cdot m$.

外形尺寸 (单位mm) Dimension(Unit:mm)

- 圆轴电机
重量Weighr: 1.10kg

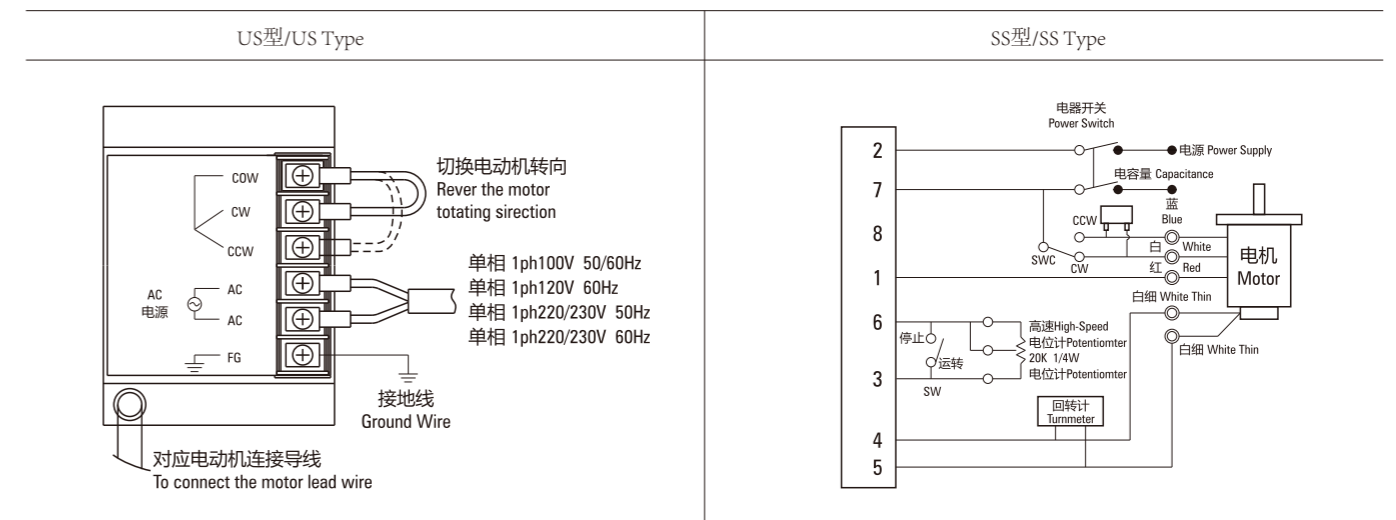


- 组合: 引线型电机+标准减速箱 (减速比1: 3~200)
重量Weighr: 1.60kg



接线图Wiring Diagram

- 运转方向指从电机轴看来的方向。CW表示顺时针方向,CCW表示逆时针方向。
- 表中所记型号为齿轮轴型,圆轴型亦同。
- The direction of motor rotation is viewed from the shaft end of motor. CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- Part number indicated in the list is pinion shaft type also valid for the equivalent round shaft type.



INSTRUCTIONS 说明
INDUCTION GEAR MOTOR 感应减速电机
SPEED CONTROL GEAR MOTOR 调速减速电机
REVERSIBLE GEAR MOTOR 阻尼减速电机
BRAKE GEAR MOTOR 电磁制动减速电机
TORQUE GEAR MOTOR 力矩减速电机
RIGHT ANGLE GEAR MOTOR 直角减速电机
PANEL DRIVE 控制器
TECHNICAL 技术资料

INSTRUCTIONS 说明
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PANEL DRIVE 控制器
TECHNICAL 技术资料

调速减速电机

SPEED CONTROL GEAR MOTORS

15W

70mm



电机型号/性能List of motor characteristics

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	额定转速 Rated Speed	额定转矩 Rated Torque		启动转矩 Start Torque	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	r/min	90r/min mN.m	1200r/min mN.m	mN.m	μF/VAC
PACS70C15GN	PACS70C15A	15	1ph220	50	0.17	90~1350	40	110	80	1.2/450
				60	0.15	90~1550	37	90	75	
PACS70A15GN	PACS70A15A	15	1ph110	50	0.34	90~1350	40	110	80	5.0/250
				60	0.30	90~1550	20	37	75	

- 从调速电机转矩/转速曲线可知,虽然调速电机的调速范围为:50Hz...90-1350转/分钟;60Hz...90-1550转/分钟。但由于低速时(≤ 400 转/分钟),电机转矩下降较多,易发生过载,且电机直连风扇冷却效果差,易发热,因此必须预留足够的功率余量,并且不要经常工作在低速区因此电机最佳调速范围为:50Hz...900-1350转/分钟;60Hz...900-1550转/分钟。
- 各种安全规格以电机铭牌上的型号名取的认证。
- 注:“-A”型号中电压为110v时,配置电容器容量以实际铭牌为准。
- It can be seen from the torque/speed curve of the speed-regulating motor, although the speed range of the speed regulating motor is :50Hz... 90-1350 RPM; 60Hz...90-1550 revolutions per minute. But due to the low speed (400 RPM) or less, when the motor torque drop more prone to overload, and poor motor directly connected the fan cooling effect easy to heat, so must set aside enough power margin, and dont often work in low speed zone. Therefore the optimal speed range of the motor is: 50Hz...900-1350 revolutions per minute; 60Hz...900-1550 RPM.
- When the motor is approved under various safety standards, the model name on the nameplate is the approved model name.
- Note: -A means the voltage 110v. The matched capacitor vaule should be consistent with the nameplate.

减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

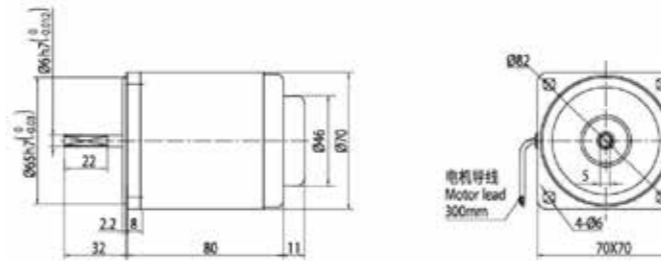
减速比 Gear Ratio		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
50Hz	转速 Speed r/min	450	375	270	225	180	150	135	108	90	75	67.5	54	45	37.5	33.7	27	22.5	18	15	13.5	11	9	7.5	6.75
	转矩 Torque N.m	0.30	0.36	0.51	0.61	0.76	0.91	1.01	1.261	1.511	1.64	1.82	2.27	2.73	3.27	3.63	4.54	4.91	5	5	5	5	5	5	5
60Hz	转速 Speed r/min	516	430	310	258	206	172	155	124	103	86	77.5	62	51.6	43	38.75	31	25.8	20.6	17.2	15.5	12.9	10.3	8.6	7.75
	转矩 Torque N.m	0.22	0.27	0.37	0.45	0.56	0.67	0.74	0.93	1.11	1.20	1.34	1.67	2.01	2.41	2.67	3.34	3.11	4.11	5	5	5	5	5	5

- 表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化,变化范围2~20%。
- 表中色框表示输出轴的旋转方向与电机旋转方向相反。
- 表中转矩是以电机额定转矩 \times 减速比 \times 传动效率计算而得。
- 减速箱的最大容许转矩为 $5N \cdot M$ 。
- In the table, the speed is calculated from the base of the motors average speed divided by the deceleration ratio. The actual speed will vary with the load ranging from 2% to 20%.

- The box in the table indicates the rotation direction of the gearbox output shaft is opposite to that of the motor.
- Torque in the table is calculated from motor rated torque * reduction ratio * transmission efficiency.
- The maximum allowable torque of the gear box is $5N \cdot m$.

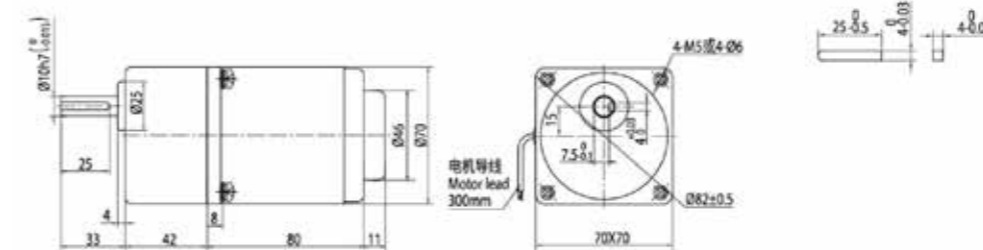
外形尺寸 (单位mm) Dimension(Unit:mm)

- 圆轴电机
重量Weighr: 1.45kg



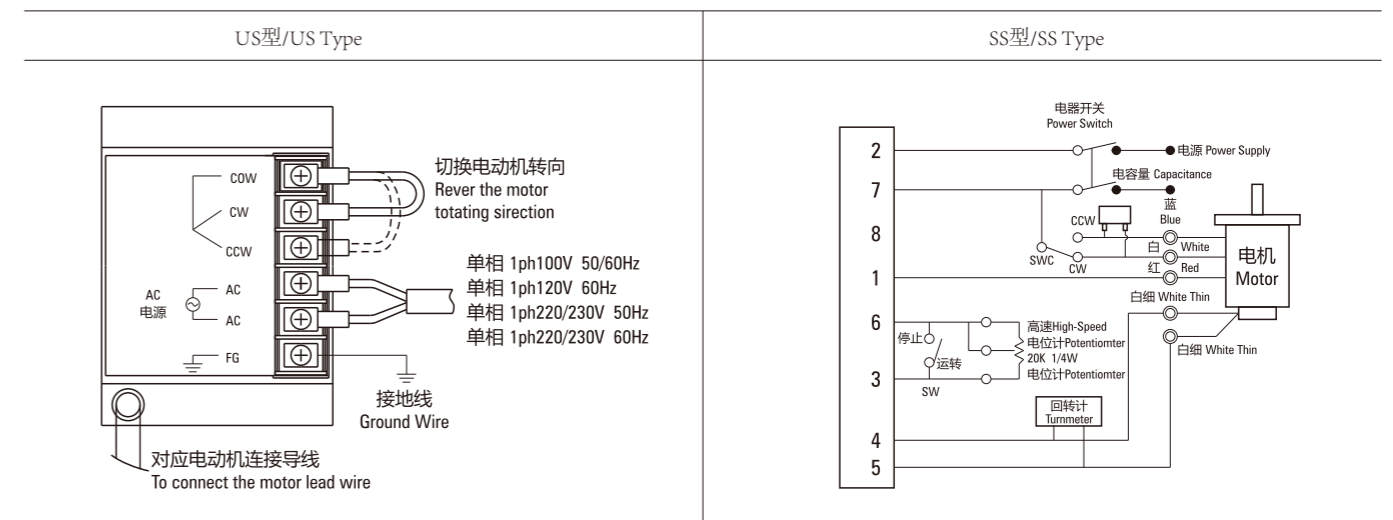
- 组合: 引线型电机+标准减速箱 (减速比1: 3~200)
重量Weighr: 1.95kg

- 键 (减速器附件)
Key (gearbox accessory)



接线图Wiring Diagram

- 运转方向指从电机轴看来的方向。CW表示顺时针方向,CCW表示逆时针方向。
- 表中所记型号为齿轮轴型,圆轴型亦同。
- The direction of motor rotation is viewed from the shaft end of motor. CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- Part number indicated in the list is pinion shaft type also valid for the equivalent round shaft type.

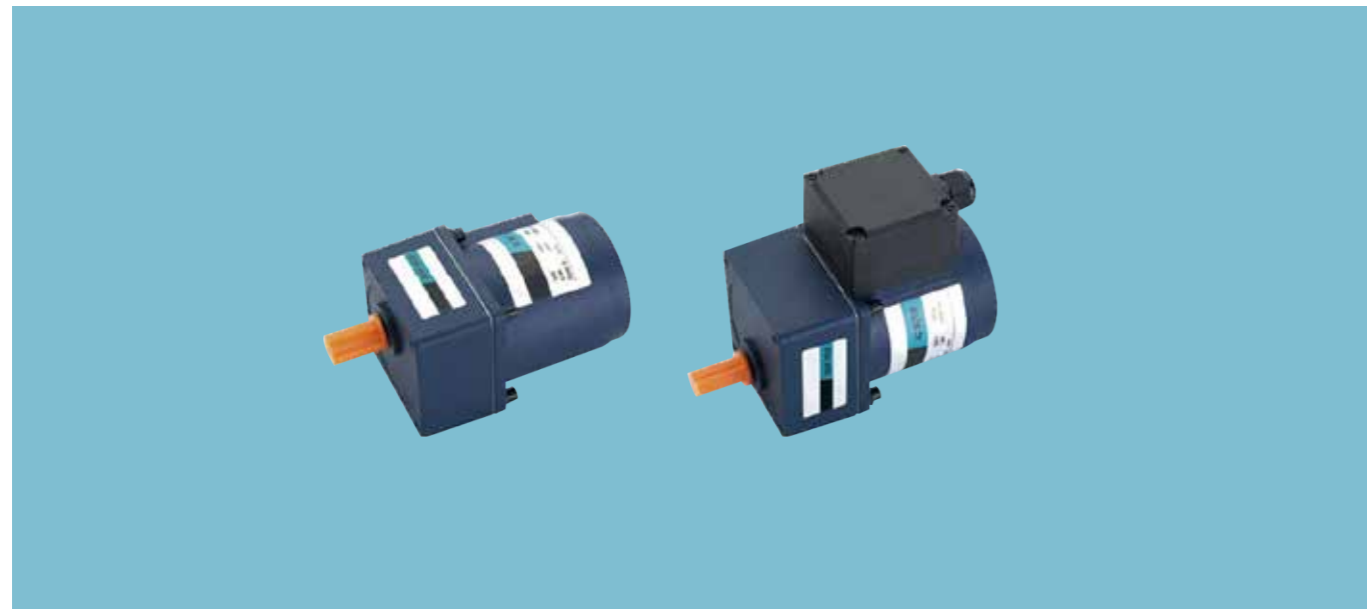


调速减速电机

SPEED CONTROL GEAR MOTORS

25W

80mm



电机型号/性能List of motor characteristics

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	额定转速 Rated Speed	额定转矩 Rated Torque		启动转矩 Start Torque	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	r/min	90r/min	1200r/min	mN.m	μF/VAC
							mN.m			
PACS80C25GN	PACS80C25A	25	1ph220	50	0.22	90~1350	70	190	80	1.8/450
				60	0.22	90~1550	60	153	75	
PACS80A25GN	PACS80A25A	25	1ph110	50	0.43	90~1350	70	190	80	7.0/250
				60	0.41	90~1550	60	153	75	

- 从调速电机转矩/转速曲线可知,虽然调速电机的调速范围为:50Hz...90-1350转/分钟;60Hz...90-1550转/分钟。但由于低速时(≤400转/分钟),电机转矩下降较多,易发生过载,且电机直连风扇冷却效果差,易发热,因此必须预留足够的功率余量,并且不要经常工作在低速区因此电机最佳调速范围为:50Hz...900-1350转/分钟;60Hz...900-1550转/分钟。
- 各种安全规格以电机铭牌上的型号名取的认证。
- 注:“-A”型号中电压为110v时,配置电容器容量以实际铭牌为准。
- It can be seen from the torque/speed curve of the speed-regulating motor although the speed range of the speed regulating motor is :50Hz... 90-1350 RPM; 60Hz...90-1550 revolutions per minute. But due to the low speed (400 RPM) or less when the motor torque drop more prone to overload and poor motor directly connected the fan cooling effect easy to heat so must set aside enough power margin and dont often work in low speed zone. Therefore the optimal speed range of the motor is: 50Hz...900-1350 revolutions per minute; 60Hz...900-1550 RPM.
- When the motor is approved under various safety standards the model name on the nameplate is the approved model name.
- Note: -A means the voltage 110v. The matched capacitor vaule should be consistent with the nameplate.

减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

减速比 Gear Ratio		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
50Hz	转速 Speed r/min	450	375	270	225	180	150	135	108	90	75	67.5	54	45	37.5	33.7	27	22.5	18	15	13.5	11	9	7.5	6.75
	转矩 Torque N.m	0.45	0.54	0.75	0.90	1.12	1.35	1.50	1.87	2.25	2.69	2.99	3.37	4.04	4.85	5.39	6.74	7.28	8	8	8	8	8	8	8
60Hz	转速 Speed r/min	516	430	310	258	206	172	155	124	103	86	77.5	62	51.6	43	38.75	31	25.8	20.6	17.2	15.5	12.9	10.3	8.6	7.75
	转矩 Torque N.m	0.36	0.437	0.61	0.73	0.91	1.09	1.21	1.52	1.82	2.18	2.43	2.73	3.27	3.93	4.37	5.46	6.55	8	8	8	8	8	8	8

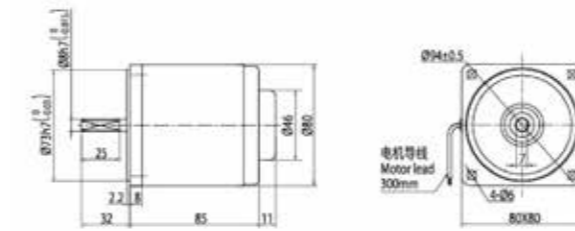
- 表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化,变化范围2~20%。
- 表中色框表示输出轴的旋转方向与电机旋转方向相反。
- 表中转矩是以电机额定转矩×减速比×传动效率计算而得。
- 减速箱的最大容许转矩为8N·M。
- In the table, the speed is calculated from the base of the motors average speed divided by the deceleration ratio. The actual speed, will vary with the load ranging from 2% to 20%.

- The box in the table indicates the rotation direction of the gearbox output shaft is opposite to that of the motor.
- Torque in the table is calculated from motor rated torque * reduction ratio * transmission efficiency.
- The maximum allowable torque of the gear box is 8N · m.

外形尺寸(单位mm) Dimension(Unit:mm)

- 圆轴电机

重量Weighr: 1.95kg

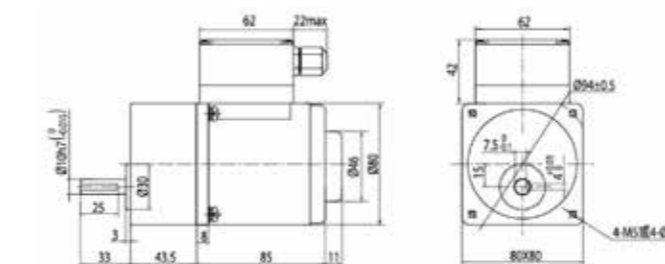


- 组合: 引线型电机+标准减速箱(减速比1: 3~200)
- 重量Weighr: 2.85kg



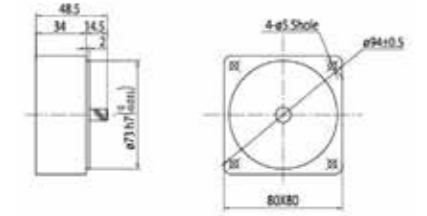
- 组合: 接线盒型电机+标准减速箱(减速比1: 3~200)

重量Weighr: 2.65kg



- 中间齿轮箱 Decimal Gearhead

可安装在齿轮轴型上 Can be connected to GN pinion shafte type
重量Weight: 0.41kg



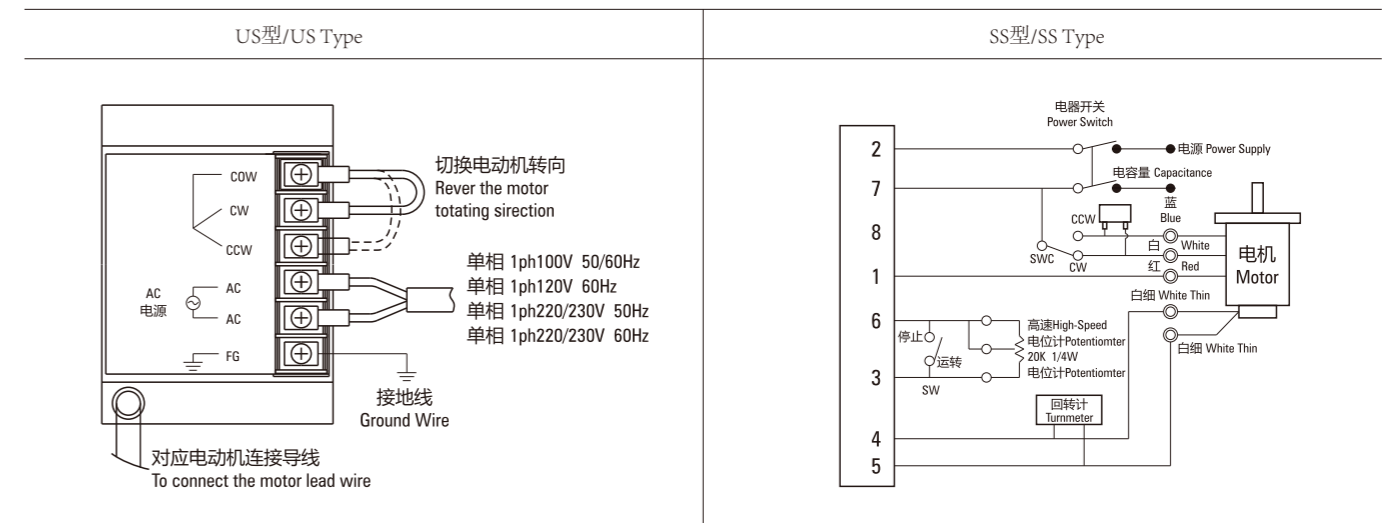
- 键(减速器附件)

Key (gearbox accessory)



接线图Wiring Diagram

- 运转方向指从电机轴看来的方向。CW表示顺时针方向,CCW表示逆时针方向。
- 表中所记型号为齿轮轴型,圆轴型亦同。
- The direction of motor rotation is viewed from the shaft end of motor. CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- Part number indicated in the list is pinion shaft type also valid for the equivalent round shaft type.

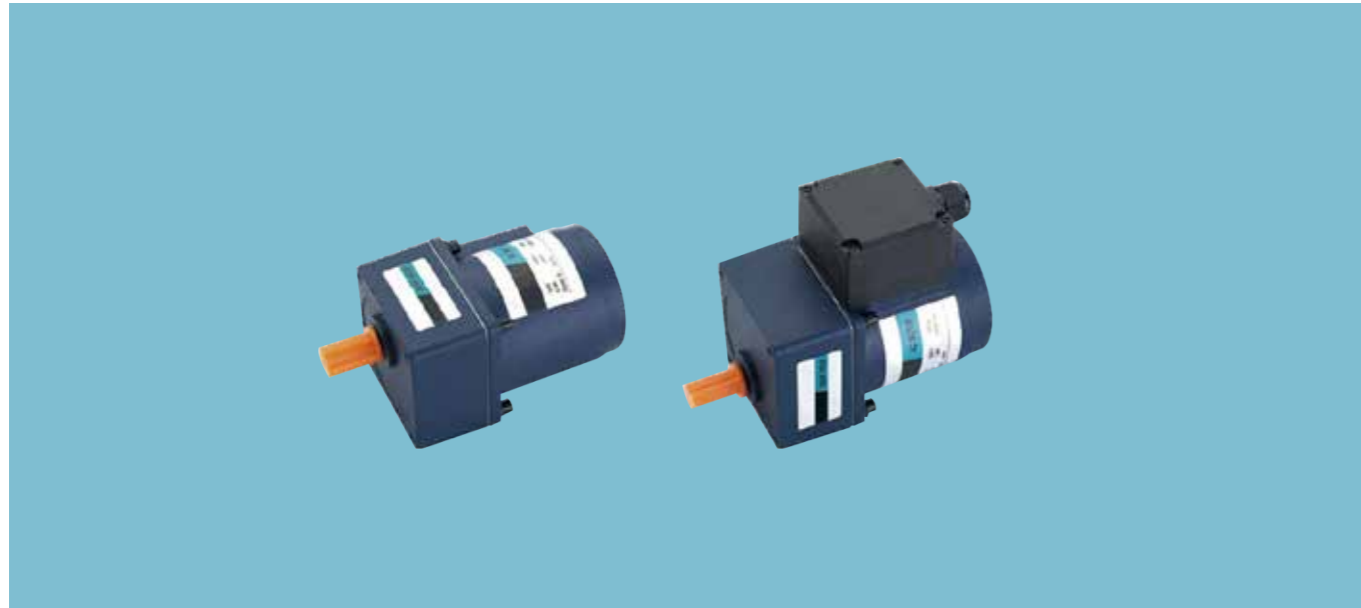


调速减速电机

SPEED CONTROL GEAR MOTORS

40W

90mm



电机型号/性能List of motor characteristics

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	额定转速 Rated Speed	额定转矩 Rated Torque		启动转矩 Start Torque	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	r/min	90r/min	1200r/min	mN.m	μF/VAC
							mN.m			
PACS90C40GN	PACS90C40A	40	1ph220	50	0.32	90~1350	110	320	220	2.5/450
				60	0.36	90~1550	110	230	220	
PACS90A40GN	PACS90A40A	40	1ph110	50	0.64	90~1350	110	300	220	10.0/250
				60	0.64	90~1550	110	230	220	

- 从调速电机转矩/转速曲线可知,虽然调速电机的调速范围为:50Hz...90-1350转/分钟;60Hz...90-1550转/分钟。但由于低速时(<=400转/分钟),电机转矩下降较多,易发生过载,且电机直连风扇冷却效果差,易发热,因此必须预留足够的功率余量,并且不要经常工作在低速区因此电机最佳调速范围为:50Hz...900-1350转/分钟;60Hz...900-1550转/分钟。
- 各种安全规格以电机铭牌上的型号名取的认证。
- 注:“-A”型号中电压为110v时,配置电容器容量以实际铭牌为准。
- It can be seen from the torque/speed curve of the speed-regulating motor although the speed range of the speed regulating motor is :50Hz... 90-1350 RPM; 60Hz...90-1550 revolutions per minute. But due to the low speed (400 RPM) or less when the motor torque drop more prone to overload and poor motor directly connected the fan cooling effect easy to heat so must set aside enough power margin and dont often work in low speed zone. Therefore, the optimal speed range of the motor is: 50Hz...900-1350 revolutions per minute; 60Hz...900-1550 RPM.
- When the motor is approved under various safety standards, the model name on the nameplate is the approved model name.
- Note: -A means the voltage 110v. The matched capacitor vaule should be consistent with the nameplate.

减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

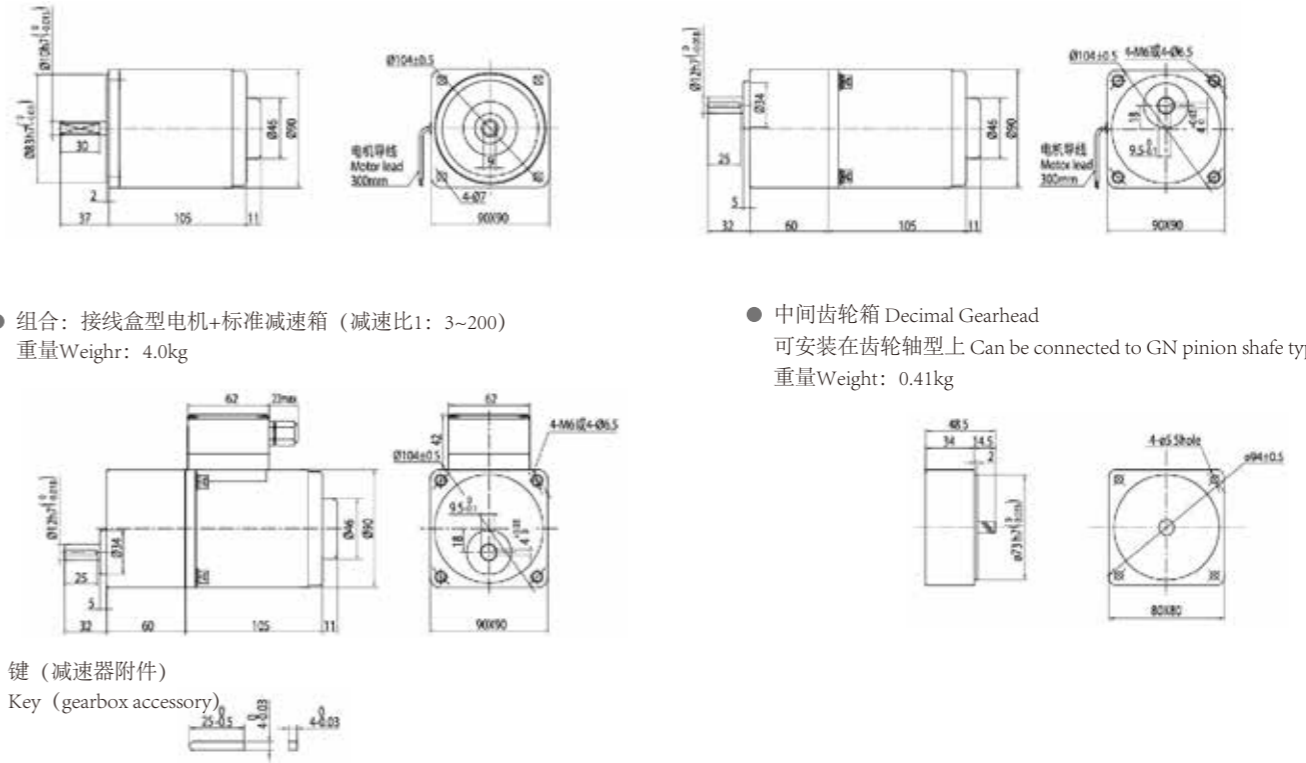
50Hz	转速 Speed r/min	减速比 Gear Ratio																							
		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
60Hz	转速 Speed r/min	450	375	270	225	180	150	135	108	90	75	67.5	54	45	37.5	33.7	27	22.5	18	15	13.5	11	9	7.5	6.75
	转矩 Torque N.m	0.71	0.86	1.19	1.43	1.79	2.14	2.38	2.98	3.57	3.86	4.29	5.36	6.43	7.72	7.72	9.65	10	10	10	10	10	10	10	10
60Hz	转速 Speed r/min	516	430	310	258	206	172	155	124	103	86	77.5	62	51.6	43	38.75	31	25.8	20.6	17.2	15.5	12.9	10.3	8.6	7.75
	转矩 Torque N.m	0.56	0.68	0.94	1.13	1.41	1.69	1.88	2.35	2.82	3.04	3.38	4.23	5.07	6.09	6.09	7.61	9.13	10	10	10	10	10	10	10

- 表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化,变化范围2~20%。
- 表中色框表示输出轴的旋转方向与电机旋转方向相反。
- 表中转矩是以电机额定转矩×减速比×传动效率计算而得。
- 减速箱的最大容许转矩为10N·M。
- In the table the speed is calculated from the base of the motors average speed divided by the deceleration ratio. The actual speed will vary with the load ranging from 2% to 20%.

- The box in the table indicates the rotation direction of the gearbox output shaft is opposite to that of the motor.
- Torque in the table is calculated from motor rated torque *reduction ratio * transmission efficiency.
- The maximum allowable torque of the gear box is 10N·m.

外形尺寸(单位mm) Dimension(Unit:mm)

- 圆轴电机
重量Weighr: 2.15kg
- 组合: 引线型电机+标准减速箱(减速比1: 3~200)
重量Weighr: 3.85kg
- 组合: 接线盒型电机+标准减速箱(减速比1: 3~200)
重量Weighr: 4.0kg
- 中间齿轮箱 Decimal Gearhead
可安装在齿轮轴型上 Can be connected to GN pinion shaft type
重量Weight: 0.41kg

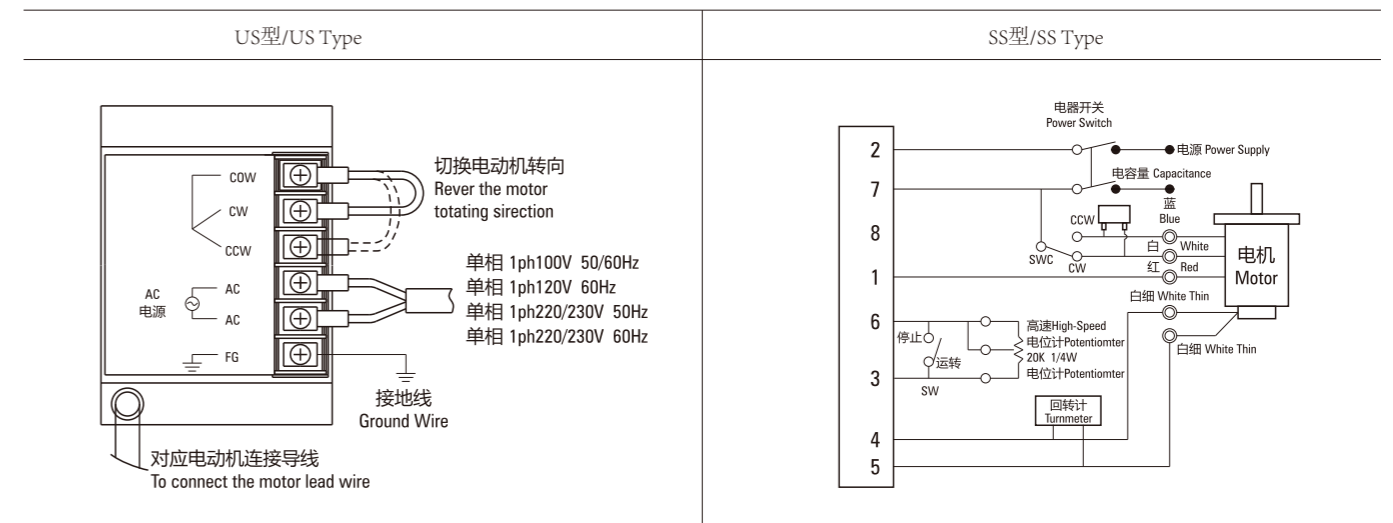


键(减速器附件)

Key (gearbox accessory)

接线图Wiring Diagram

- 运转方向指从电机轴看来的方向。CW表示顺时针方向,CCW表示逆时针方向。
- 表中所记型号为齿轮轴型,圆轴型亦同。
- The direction of motor rotation is viewed from the shaft end of motor. CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- Part number indicated in the list is pinion shaft type also valid for the equivalent round shaft type.

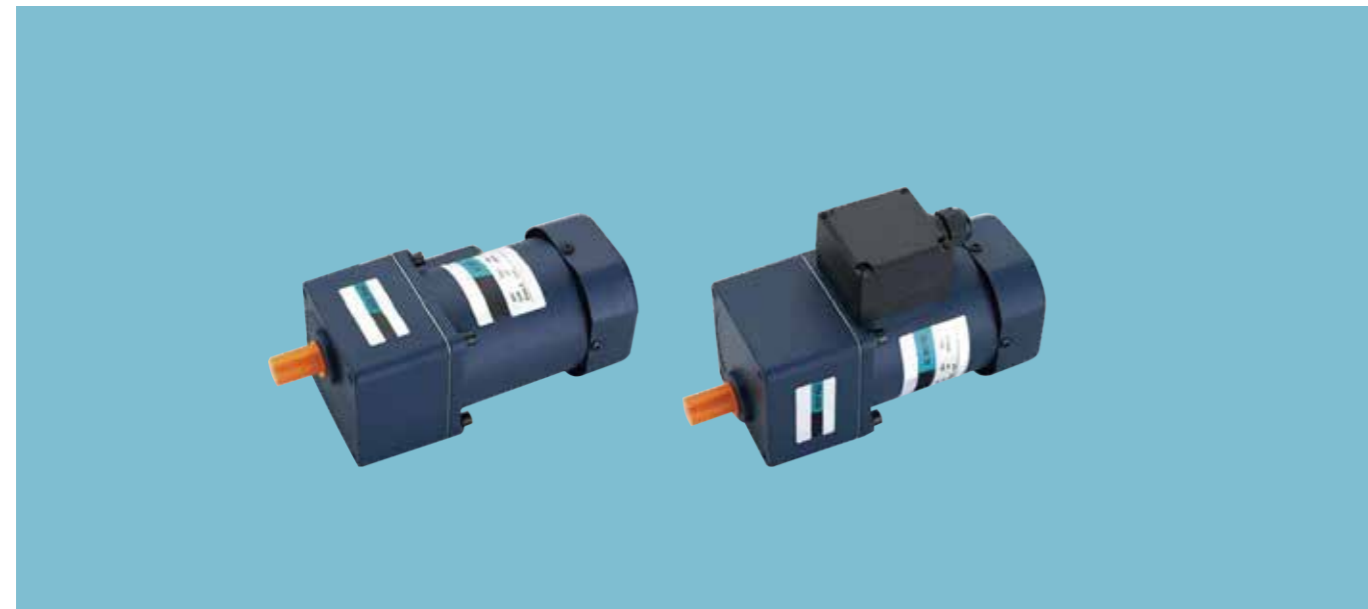


调速减速电机

SPEED CONTROL GEAR MOTORS

60W

90mm



电机型号/性能List of motor characteristics

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	额定转速 Rated Speed	额定转矩 Rated Torque		启动转矩 Start Torque	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	r/min	90r/min	1200r/min	mN.m	μF/VAC
PACS90C60GN-F	PACS90C60A-F	60	1ph220	50	0.47	90~1350	175	450	350	4.0/450
				60	0.50	90~1550	175	360	350	
PACS90A60GN-F	PACS90A60A-F	60	1ph110	50	0.92	90~1350	175	450	350	15.0/250
				60	0.93	90~1550	175	360	350	

- 从调速电机转矩/转速曲线可知,虽然调速电机的调速范围为:50Hz...90-1350转/分钟;60Hz...90-1550转/分钟。但由于低速时(≤ 400 转/分钟),电机转矩下降较多,易发生过载,且电机直连风扇冷却效果差,易发热,因此必须预留足够的功率余量,并且不要经常工作在低速区因此电机最佳调速范围为:50Hz...900-1350转/分钟;60Hz...900-1550转/分钟。
- 各种安全规格以电机铭牌上的型号名取的认证。
- 注:“-A”型号中电压为110v时,配置电容器容量以实际铭牌为准。
- It can be seen from the torque/speed curve of the speed-regulating motor although the speed range of the speed regulating motor is :50Hz... 90-1350 RPM; 60Hz...90-1550 revolutions per minute. But due to the low speed (400 RPM) or less when the motor torque drop more prone to overload and poor motor directly connected the fan cooling effect easy to heat so must set aside enough power margin and dont often work in low speed zone. Therefore the optimal speed range of the motor is: 50Hz...900-1350 revolutions per minute; 60Hz...900-1550 RPM.
- When the motor is approved under various safety standards the model name on the nameplate is the approved model name.
- Note: -A means the voltage 110v. The matched capacitor vaule should be consistent with the nameplate.

减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

50Hz	转速 Speed r/min	减速比 Gear Ratio																							
		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
60Hz	转矩 Torque N.m	0.99	1.18	1.64	1.97	2.47	2.96	3.29	4.11	4.93	5.33	5.92	7.40	8.88	10	10	10	10	10	10	10	10	10	10	10
	转速 Speed r/min	516	430	310	258	206	172	155	124	103	86	77.5	62	51.6	43	38.75	31	25.8	20.6	17.2	15.5	12.9	10.3	8.6	7.75
60Hz	转矩 Torque N.m	0.86	1.03	1.43	1.72	2.15	2.57	2.86	3.57	4.29	4.63	5.15	6.43	7.72	9.26	9.5	10	10	10	10	10	10	10	10	10
	转速 Speed r/min	516	430	310	258	206	172	155	124	103	86	77.5	62	51.6	43	38.75	31	25.8	20.6	17.2	15.5	12.9	10.3	8.6	7.75

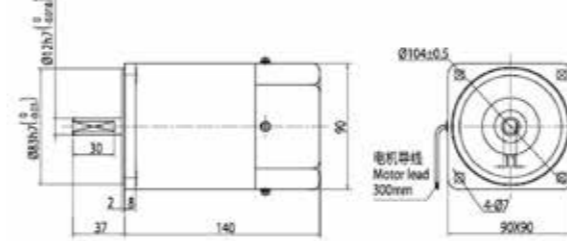
- 表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化,变化范围2~20%。
- 表中色框表示输出轴的旋转方向与电机旋转方向相反。
- 表中转矩是以电机额定转矩 \times 减速比 \times 传动效率计算而得。
- 减速箱的最大容许转矩为 $10N \cdot M$ 。
- In the table, the speed is calculated from the base of the motors average speed divided by the deceleration ratio. The actual speed will vary with the load ranging from 2% to 20%.

- The box in the table indicates the rotation direction of the gearbox output shaft is opposite to that of the motor.
- Torque in the table is calculated from motor rated torque *reduction ratio * transmission efficiency.
- The maximum allowable torque of the gear box is $10N \cdot m$.

外形尺寸(单位mm) Dimension(Unit:mm)

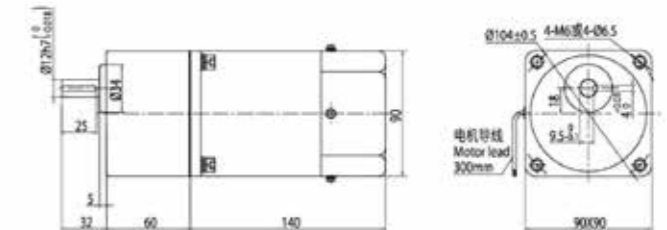
圆轴电机

重量Weighr: 2.8kg



组合: 引线型电机+标准减速箱(减速比1: 3~200)

重量Weighr: 4.15kg



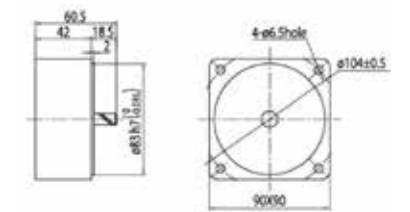
组合: 接线盒型电机+标准减速箱(减速比1: 3~200)

重量Weighr: 4.3kg



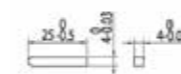
中间齿轮箱 Decimal Gearhead

可安装在齿轮轴型上 Can be connected to GN pinion shafte type
重量Weight: 0.6kg



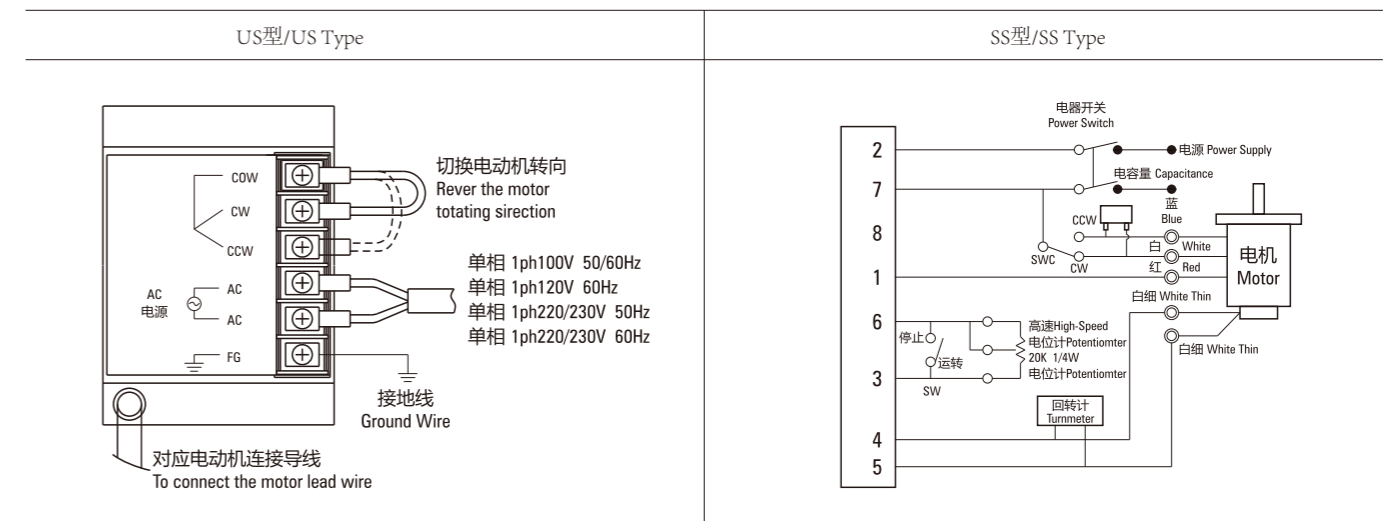
键(减速器附件)

Key (gearbox accessory)



接线图Wiring Diagram

- 运转方向指从电机轴看来的方向。CW表示顺时针方向,CCW表示逆时针方向。
- 表中所记型号为齿轮轴型,圆轴型亦同。
- The direction of motor rotation is viewed from the shaft end of motor. CW represents the clockwise direction, while CCW represents the counterclock wise direction.
- Part number indicated in the list is pinion shaft type also valid for the equivalent round shaft type.



说明 INSTRUCTIONS
感应减速电机 INDUCTION GEAR MOTOR
调速减速电机 SPEED CONTROL GEAR MOTOR
阻尼减速电机 REVERSIBLE GEAR MOTOR
电磁制动减速电机 BRAKE GEAR MOTOR
力矩减速电机 TORQUE GEAR MOTOR
直角减速电机 RIGHT ANGLE GEAR MOTOR
控制器 PANEL DRIVE
技术资料 TECHNICAL

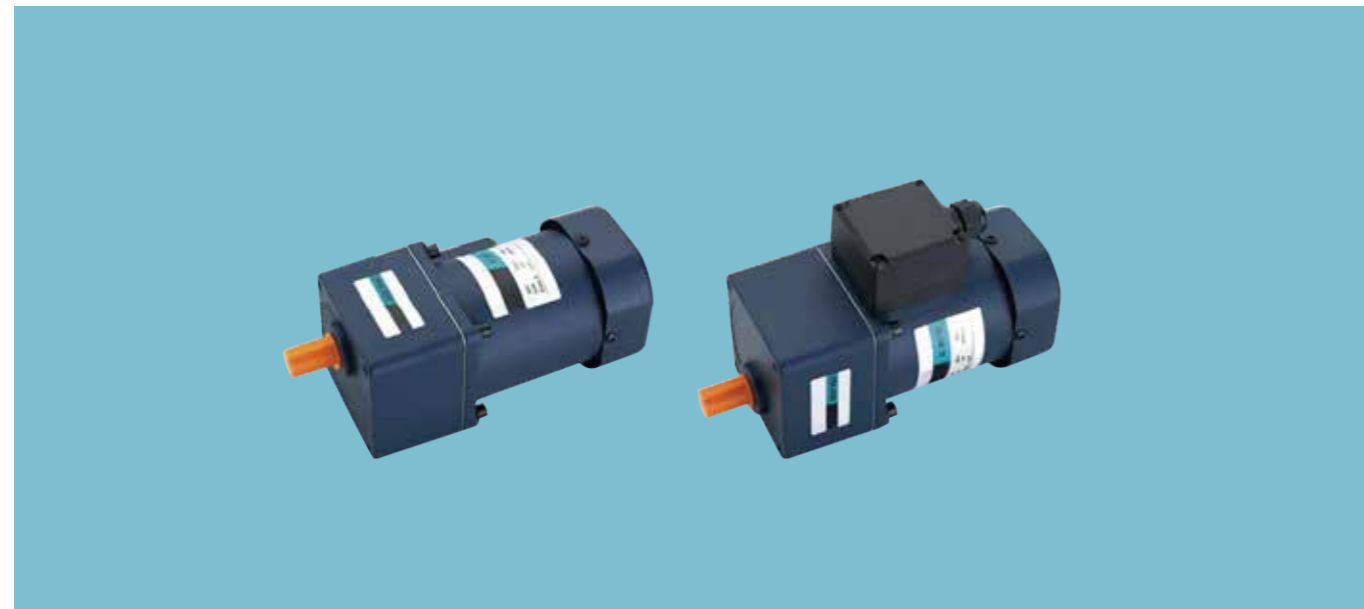
说明 INSTRUCTIONS
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直角减速电机 RIGHT ANGLE GEAR MOTOR
控制器 PANEL DRIVE
技术资料 TECHNICAL

调速减速电机

SPEED CONTROL GEAR MOTORS

60W

90mm



电机型号/性能List of motor characteristics

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	额定转速 Rated Speed	额定转矩 Rated Torque	启动转矩 Start Torque	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	r/min	90r/min 1200r/min mN.m	mN.m	μF/VAC
PACS5C60GU-F	PACS5C60A-F	60	1ph220	50	0.47	90~1350	175 450	350	4.0/450
				60	0.50	90~1550	175 360	350	
PACS5A60GU-F	PACS5A60A-F	60	1ph110	50	0.92	90~1350	175 450	350	15.0/250
				60	0.93	90~1550	175 360	350	

- 从调速电机转矩/转速曲线可知,虽然调速电机的调速范围为:50Hz...90-1350转/分钟;60Hz...90-1550转/分钟。但由于低速时(≤ 400 转/分钟),电机转矩下降较多,易发生过载,且电机直连风扇冷却效果差,易发热,因此必须预留足够的功率余量,并且不要经常工作在低速区因此电机最佳调速范围为:50Hz...900-1350转/分钟;60Hz...900-1550转/分钟。
- 各种安全规格以电机铭牌上的型号名取的认证。
- 注:“-A”型号中电压为110v时,配置电容器容量以实际铭牌为准。
- It can be seen from the torque/speed curve of the speed-regulating motor, although the speed range of the speed regulating motor is :50Hz... 90-1350 RPM; 60Hz...90-1550 revolutions per minute. But due to the low speed (400 RPM) or less when the motor torque drop more prone to overload and poor motor directly connected the fan cooling effect easy to heat, so must set aside enough power margin and dont often work in low speed zone. Therefore the optimal speed range of the motor is: 50Hz...900-1350 revolutions per minute; 60Hz...900-1550 RPM.
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- Note: -A means the voltage 110v. The matched capacitor vaule should be consistent with the nameplate.

减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

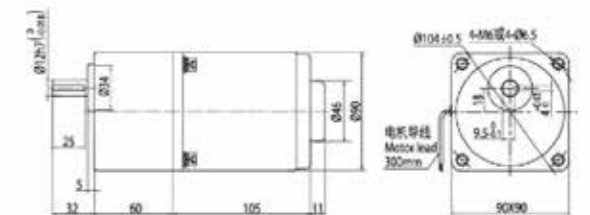
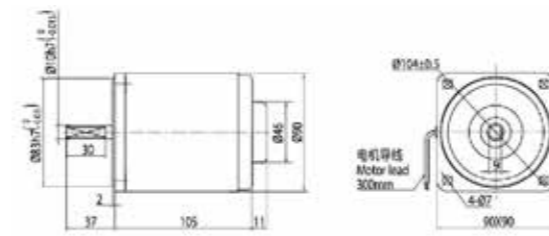
减速比 Gear Ratio		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
50Hz	转速 Speed r/min	450	375	270	225	180	150	135	108	90	75	67.5	54	45	37.5	33.7	27	22.5	18	15	13.5	11	9	7.5	6.75
	转矩 Torque N.m	0.99	1.18	1.64	1.97	2.47	2.96	3.70	4.44	5.33	5.33	6.66	7.99	9.59	10.66	13.32	15.98	19.98	20	20	20	20	20	20	20
60Hz	转速 Speed r/min	516	430	310	258	206	172	155	124	103	86	77.5	62	51.6	43	38.75	31	25.8	20.6	17.2	15.5	12.9	10.3	8.6	7.75
	转矩 Torque N.m	0.86	1.03	1.43	1.72	2.15	2.57	2.87	3.22	3.86	4.63	5.01	5.79	6.95	8.34	9.26	11.58	13.90	17.37	18.76	20	20	20	20	20

- 表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化,变化范围2~20%。
- 表中色框表示输出轴的旋转方向与电机旋转方向相反。
- 表中转矩是以电机额定转矩 \times 减速比 \times 传动效率计算而得。
- 减速箱的最大容许转矩为20N·M。
- In the table, the speed is calculated from the base of the motors average speed divided by the deceleration ratio. The actual speed will vary with the load ranging from 2% to 20%.

- The box in the table indicates the rotation direction of the gearbox output shaft is opposite to that of the motor.
- Torque in the table is calculated from motor rated torque * reduction ratio * transmission efficiency.
- The maximum allowable torque of the gear box is 10N·m.

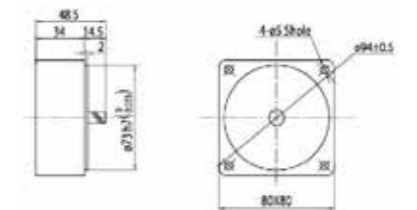
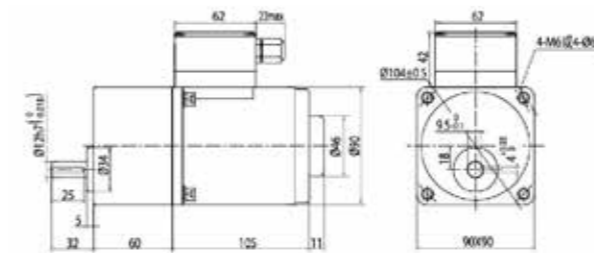
外形尺寸(单位mm) Dimension(Unit:mm)

- 圆轴电机
重量Weighr: 2.8kg
- 组合: 引线型电机+标准减速箱(减速比1: 3~200)
重量Weighr: 4.3kg

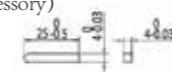


- 组合: 接线盒型电机+标准减速箱(减速比1: 3~200)
重量Weighr: 4.45kg

- 中间齿轮箱 Decimal Gearhead
可安装在齿轮轴型上 Can be connected to GN pinion shaft type
重量Weight: 0.7kg

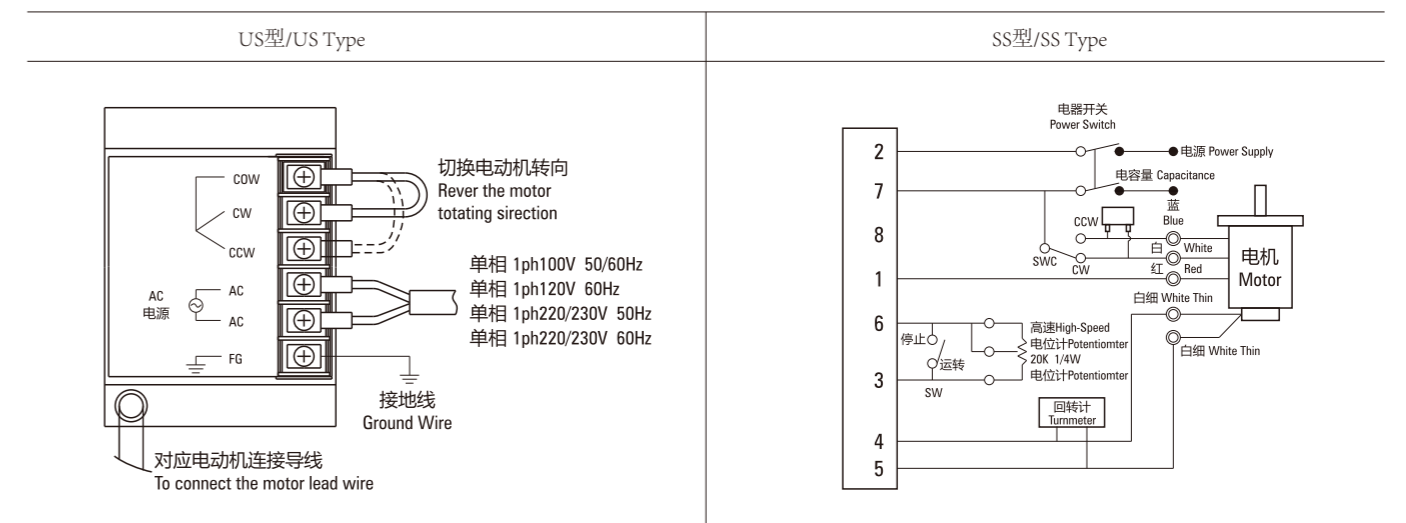


- 键(减速器附件)
Key (gearbox accessory)



接线图Wiring Diagram

- 运转方向指从电机轴看来的方向。CW表示顺时针方向,CCW表示逆时针方向。
- 表中所记型号为齿轮轴型,圆轴型亦同。
- The direction of motor rotation is viewed from the shaft end of motor. CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- Part number indicated in the list is pinion shaft type also valid for the equivalent round shaft type.



说明 INSTRUCTIONS
感应减速电机 INDUCTION GEAR MOTOR
调速减速电机 SPEED CONTROL GEAR MOTOR
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力矩减速电机 TORQUE GEAR MOTOR
直角减速电机 RIGHT ANGLE GEAR MOTOR
控制器 PANEL DRIVE
技术资料 TECHNICAL

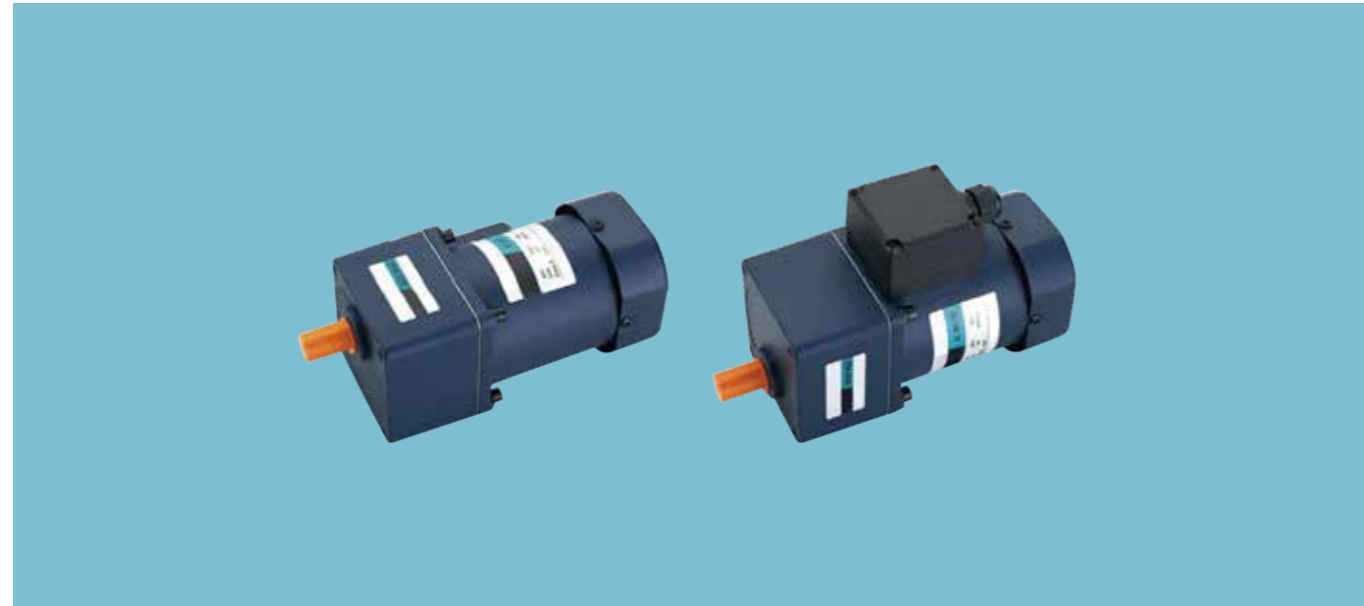
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感应减速电机 INDUCTION GEAR MOTOR
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控制器 PANEL DRIVE
技术资料 TECHNICAL

调速减速电机

SPEED CONTROL GEAR MOTORS

90W

90mm



电机型号/性能List of motor characteristics

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	额定转速 Rated Speed	额定转矩 Rated Torque		启动转矩 Start Torque	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	r/min	90r/min	1200r/min	mN.m	μF/VAC
PACS90C90GU-F	PACS90C90A-F	90	1ph220	50	0.65	90~1350	240	675	480	5.0/450
				60	0.78	90~1550	210	540	420	
PACS90A90GU-F	PACS90A90A-F	90	1ph110	50	1.30	90~1350	240	675	480	20.0/250
				60	1.40	90~1550	210	540	420	

- 从调速电机转矩/转速曲线可知,虽然调速电机的调速范围为:50Hz...90-1350转/分钟;60Hz...90-1550转/分钟。但由于低速时(≤ 400 转/分钟),电机转矩下降较多,易发生过载,且电机直连风扇冷却效果差,易发热,因此必须预留足够的功率余量,并且不要经常工作在低速区因此电机最佳调速范围为:50Hz...900-1350转/分钟;60Hz...900-1550转/分钟。
- 各种安全规格以电机铭牌上的型号名取的认证。
- 注:“-A”型号中电压为110v时,配置电容器容量以实际铭牌为准。
- It can be seen from the torque/speed curve of the speed-regulating motor although the speed range of the speed regulating motor is :50Hz... 90-1350 RPM; 60Hz...90-1550 revolutions per minute. But due to the low speed (400 RPM) or less when the motor torque drop more prone to overload and poor motor directly connected the fan cooling effect easy to heat so must set aside enough power margin and dont often work in low speed zone. Therefore the optimal speed range of the motor is: 50Hz...900-1350 revolutions per minute; 60Hz...900-1550 RPM.
- When the motor is approved under various safety standards the model name on the nameplate is the approved model name.
- Note: -A means the voltage 110v. The matched capacitor vaule should be consistent with the nameplate.

减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

50Hz	转速 Speed r/min	减速比 Gear Ratio																							
		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
60Hz	转速 Speed r/min	450	375	270	225	180	150	135	108	90	75	67.5	54	45	37.5	33.7	27	22.5	18	15	13.5	11	9	7.5	6.75
	转矩 Torque N.m	1.56	1.88	2.60	3.13	3.91	4.69	5.1	5.86	7.03	8.44	8.8	10.55	12.66	15.19	16.88	20	20	20	20	20	20	20	20	20
60Hz	转速 Speed r/min	516	430	310	258	206	172	155	124	103	86	77.5	62	51.6	43	38.75	31	25.8	20.6	17.2	15.5	12.9	10.3	8.6	7.75
	转矩 Torque N.m	1.29	1.55	2.15	2.58	3.22	3.86	4.3	4.83	5.80	6.96	7.3	8.69	10.43	12.52	13.91	17.39	20	20	20	20	20	20	20	20

- 表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化,变化范围2~20%。
- 表中 色框表示输出轴的旋转方向与电机旋转方向相反。
- 表中转矩是以电机额定转矩 \times 减速比 \times 传动效率计算而得。
- 减速箱的最大容许转矩为 $20N \cdot M$ 。
- In the table, the speed is calculated from the base of the motors average speed divided by the deceleration ratio. The actual speed will vary with the load ranging from 2% to 20%.

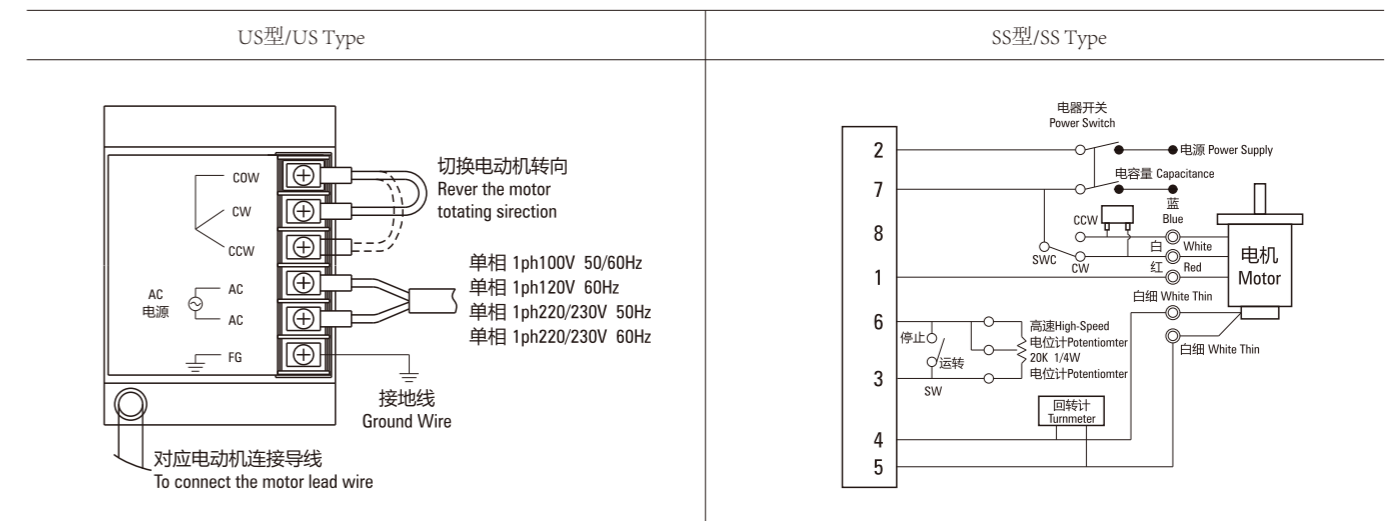
- The box in the table indicates the rotation direction of the gearbox output shaft is opposite to that of the motor.
- Torque in the table is calculated from motor rated torque *reduction ratio * transmission efficiency.
- The maximum allowable torque of the gear box is $20N \cdot m$.

外形尺寸 (单位mm) Dimension(Unit:mm)

- 圆轴电机
重量Weighr: 3.3kg
- 组合: 引线型电机+标准减速箱 (减速比1: 3~200)
重量Weighr: 4.8kg
- 组合: 接线盒型电机+标准减速箱 (减速比1: 3~200)
重量Weighr: 4.95kg
- 中间齿轮箱 Decimal Gearhead
可安装在齿轮轴型上 Can be connected to GN pinion shaft type
重量Weight: 4.8kg
- 中间齿轮箱 Decimal Gearhead
可安装在GU齿轮轴型上 Can be connected to GU pinion shaft type
重量Weight: 0.7kg
- 键 (减速器附件)
Key (gearbox accessory)

接线图Wiring Diagram

- 运转方向指从电机轴看来的方向。CW表示顺时针方向, CCw表示逆时针方向。
- 表中所记型号为齿轮轴型, 圆轴型亦同。
- The direction of motor rotation is viewed from the shaft end of motor. CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- Part number indicated in the list is pinion shaft type also valid for the equivalent round shaft type.



说明 INSTRUCTIONS
感应减速电机 INDUCTION GEAR MOTOR
调速减速电机 SPEED CONTROL GEAR MOTOR
阻尼减速电机 REVERSIBLE GEAR MOTOR
电磁制动减速电机 BRAKE GEAR MOTOR
力矩减速电机 TORQUE GEAR MOTOR
直角减速电机 RIGHT ANGLE GEAR MOTOR
控制器 PANEL DRIVE
技术资料 TECHNICAL

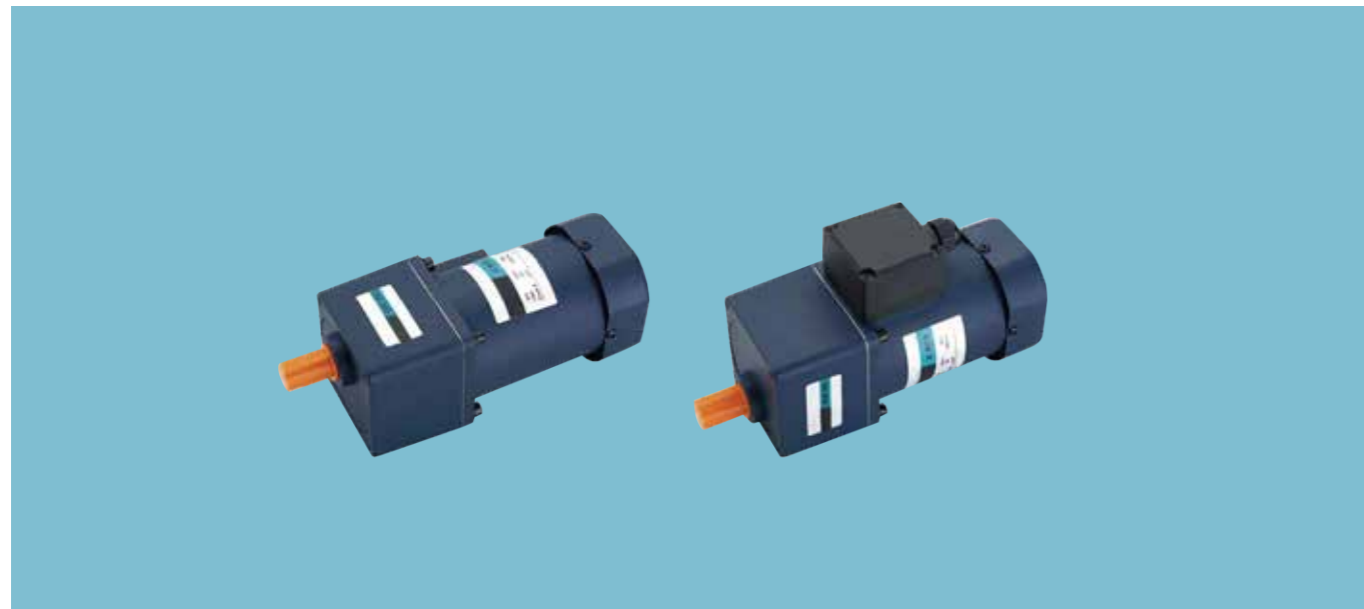
说明 INSTRUCTIONS
感应减速电机 INDUCTION GEAR MOTOR
调速减速电机 SPEED CONTROL GEAR MOTOR
阻尼减速电机 REVERSIBLE GEAR MOTOR
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力矩减速电机 TORQUE GEAR MOTOR
直角减速电机 RIGHT ANGLE GEAR MOTOR
控制器 PANEL DRIVE
技术资料 TECHNICAL

调速减速电机

SPEED CONTROL GEAR MOTORS

120W

90mm



电机型号/性能List of motor characteristics

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	额定转速 Rated Speed	额定转矩 Rated Torque		启动转矩 Start Torque	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	r/min	90r/min	1200r/min	mN.m	μF/VAC
PACS90C120GU-F	PACS90C120A-F	120	1ph220	50	1.24	90~1350	320	900	620	6.0/450
				60	1.12	90~1550	280	720	540	
PACS90A120GU-F	PACS90A120A-F	120	1ph110	50	1.70	90~1350	320	900	620	25.0/250
				60	1.82	90~1550	280	720	540	

●从调速电机转矩/转速曲线可知,虽然调速电机的调速范围为:50Hz...90-1350转/分钟;60Hz...90-1550转/分钟。但由于低速时(≤400转/分钟),电机转矩下降较多,易发生过载,且电机直连风扇冷却效果差,易发热,因此必须预留足够的功率余量,并且不要经常工作在低速区因此电机最佳调速范围为:50Hz...900-1350转/分钟;60Hz...900-1550转/分钟。

●各种安全规格以电机铭牌上的型号名取的认证。

●注:“-A”型号中电压为110v时,配置电容器容量以实际铭牌为准。

●It can be seen from the torque/speed curve of the speed-regulating motor although the speed range of the speed regulating motor is :50Hz... 90-1350 RPM; 60Hz...90-1550 revolutions per minute. But due to the low speed (400 RPM) or less when the motor torque drop more prone to overload and poor motor directly connected the fan cooling effect easy to heat so must set aside enough power margin and don't often work in low speed zone. Therefore, the optimal speed range of the motor is: 50Hz...900-1350 revolutions per minute; 60Hz...900-1550 RPM.

●When the motor is approved under various safety standards the model name on the nameplate is the approved model name.

●Note: -A means the voltage 110v. The matched capacitor vaule should be consistent with the nameplate.

减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

减速比 Gear Ratio		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
50Hz	转速 Speed r/min	450	375	270	225	180	150	135	108	90	75	67.5	54	45	37.5	33.7	27	22.5	18	15	13.5	11	9	7.5	6.75
	转矩 Torque N.m	1.56	1.88	2.60	3.13	3.91	4.69	5.1	5.86	7.03	8.44	8.8	10.55	12.66	15.19	16.88	20	20	20	20	20	20	20	20	20
60Hz	转速 Speed r/min	516	430	310	258	206	172	155	124	103	86	77.5	62	51.6	43	38.75	31	25.8	20.6	17.2	15.5	12.9	10.3	8.6	7.75
	转矩 Torque N.m	1.29	1.55	2.15	2.58	3.22	3.86	4.3	4.83	5.80	6.96	7.3	8.69	10.43	12.52	13.91	17.39	20	20	20	20	20	20	20	20

●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化,变化范围2~20%。

●表中色框表示输出轴的旋转方向与电机旋转方向相反。

●表中转矩是以电机额定转矩×减速比×传动效率计算而得。

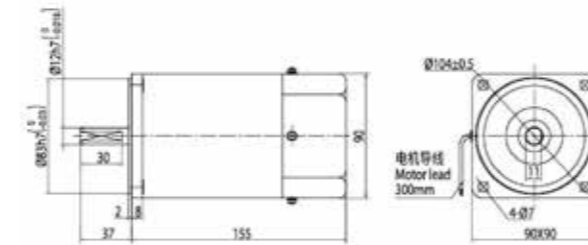
●减速箱的最大容许转矩为20N·M。

●In the table, the speed is calculated from the base of the motors average speed divided by the deceleration ratio. The actual speed will vary with the load ranging from 2% to 20%.

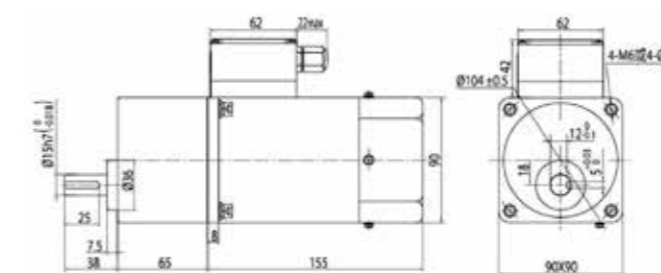
- The box in the table indicates the rotation direction of the gearbox output shaft is opposite to that of the motor.
- Torque in the table is calculated from motor rated torque *reduction ratio * transmission efficiency.
- The maximum allowable torque of the gear box is 20N · m.

外形尺寸(单位mm) Dimension(Unit:mm)

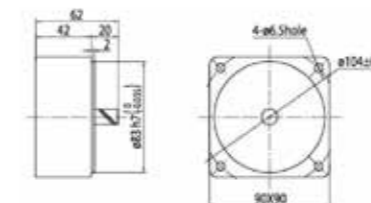
- 圆轴电机
重量Weighr: 3.5kg



- 组合: 接线盒型电机+标准减速箱(减速比1: 3~200)
重量Weighr: 5.15kg

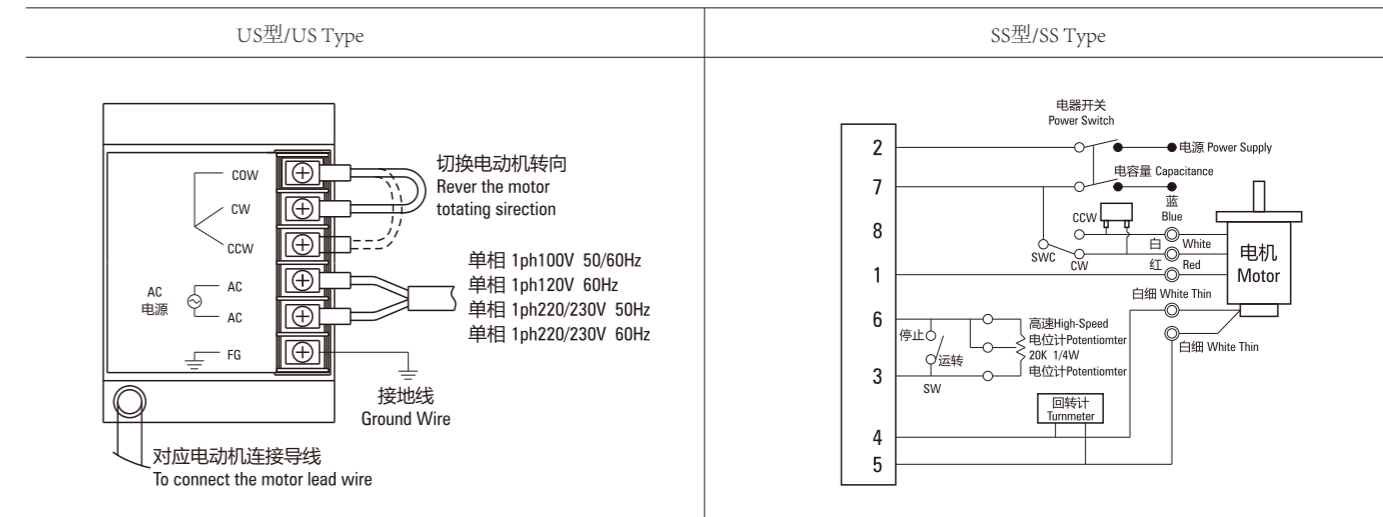


- 中间齿轮箱Decimal Gearhead
可安装在GU齿轮轴型上Can be connected to GU pinion shaft type
重量Weight: 0.7kg



接线图Wiring Diagram

- 运转方向指从电机轴看来的方向。CW表示顺时针方向,CCW表示逆时针方向。
- 表中所记型号为齿轮轴型,圆轴型亦同。
- The direction of motor rotation is viewed from the shaft end of motor. CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- Part number indicated in the list is pinion shaft type also valid for the equivalent round shaft type.

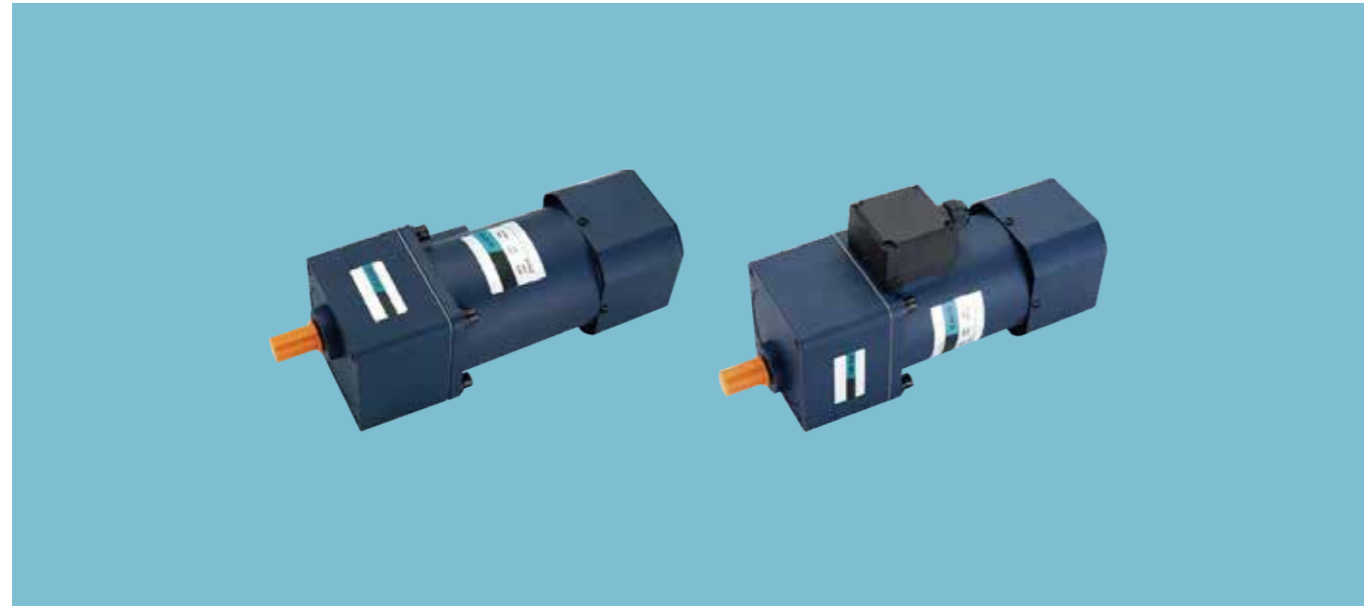


调速减速电机

SPEED CONTROL GEAR MOTORS

200W

104mm



电机型号/性能List of motor characteristics

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	额定转速 Rated Speed	额定转矩 Rated Torque		启动转矩 Start Torque	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	r/min	90r/min	1200r/min	mN.m	μF/VAC
PACS104C200GU-F	PACS104A200A-F	200	1ph220	50	1.45	90~1350	500	1450	1000	12.0/450
				60	1.50	90~1550	450	1200	900	
PACS104A200GU-F	PACS104A200A-F	200	1ph110	50	2.90	90~1350	500	1450	1000	35.0/250
				60	3.00	90~1550	450	1200	900	

- 从调速电机转矩/转速曲线可知,虽然调速电机的调速范围为:50Hz...90-1350转/分钟;60Hz...90-1550转/分钟。但由于低速时(≤ 400 转/分钟),电机转矩下降较多,易发生过载,且电机直连风扇冷却效果差,易发热,因此必须预留足够的功率余量,并且不要经常工作在低速区因此电机最佳调速范围为:50Hz...900-1350转/分钟;60Hz...900-1550转/分钟。
- 各种安全规格以电机铭牌上的型号名取的认证。
- 注:“-A”型号中电压为110v时,配置电容器容量以实际铭牌为准。
- It can be seen from the torque/speed curve of the speed-regulating motor although the speed range of the speed regulating motor is :50Hz... 90-1350 RPM; 60Hz...90-1550 revolutions per minute. But due to the low speed (400 RPM) or less when the motor torque drop more prone to overload and poor motor directly connected the fan cooling effect easy to heat so must set aside enough power margin and dont often work in low speed zone. Therefore the optimal speed range of the motor is: 50Hz...900-1350 revolutions per minute; 60Hz...900-1550 RPM.
- When the motor is approved under various safety standards the model name on the nameplate is the approved model name.
- Note: -A means the voltage 110v. The matched capacitor vaule should be consistent with the nameplate.

减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

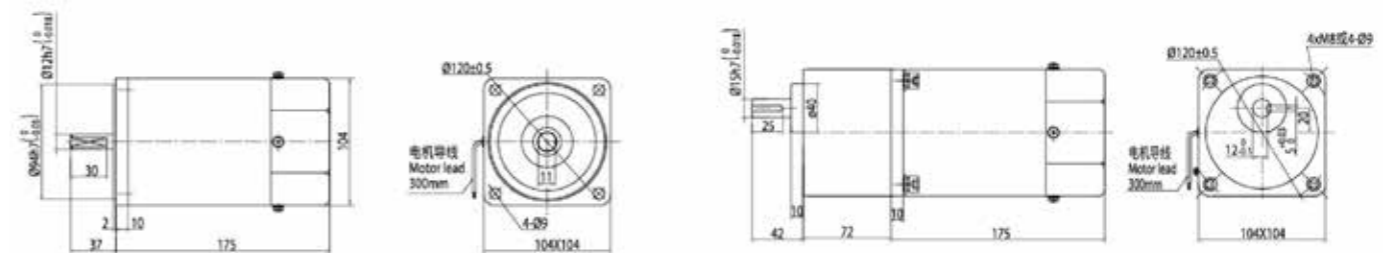
减速比 Gear Ratio		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
50Hz	转速 Speed r/min	450	375	270	225	180	150	135	108	90	75	67.5	54	45	37.5	33.7	27	22.5	18	15	13.5	11	9	7.5	6.75
	转矩 Torque N.m	3.11	3.74	5.19	6.23	7.78	9.34	9.34	11.67	14.01	16.81	16.81	21.01	25.21	30.26	33.62	40	40	40	40	40	40	40	40	40
60Hz	转速 Speed r/min	516	430	310	258	206	172	155	124	103	86	77.5	62	51.6	43	38.75	31	25.8	20.6	17.2	15.5	12.9	10.3	8.6	7.75
	转矩 Torque N.m	2.58	3.09	4.29	5.15	6.44	7.73	7.73	9.66	11.59	13.91	13.91	17.39	20.86	25.04	27.82	34.77	40	40	40	40	40	40	40	40

- 表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化,变化范围2~20%。
- 表中色框表示输出轴的旋转方向与电机旋转方向相反。
- 表中转矩是以电机额定转矩 \times 减速比 \times 传动效率计算而得。
- 减速箱的最大容许转矩为40N·M。
- In the table, the speed is calculated from the base of the motors average speed divided by the deceleration ratio. The actual speed will vary with the load ranging from 2% to 20%.

- The box in the table indicates the rotation direction of the gearbox output shaft is opposite to that of the motor.
- Torque in the table is calculated from motor rated torque * reduction ratio * transmission efficiency.
- The maximum allowable torque of the gear box is 40N·m.

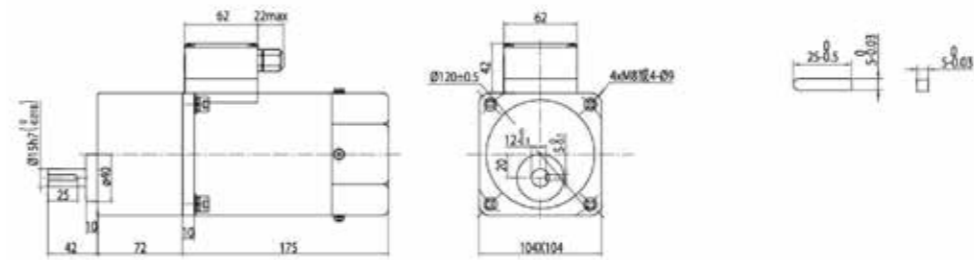
外形尺寸(单位mm) Dimension(Unit:mm)

- 圆轴电机
重量Weighr: 5.1kg
- 组合: 引线型电机+标准减速箱(减速比1: 3~200)
重量Weighr: 7.2kg



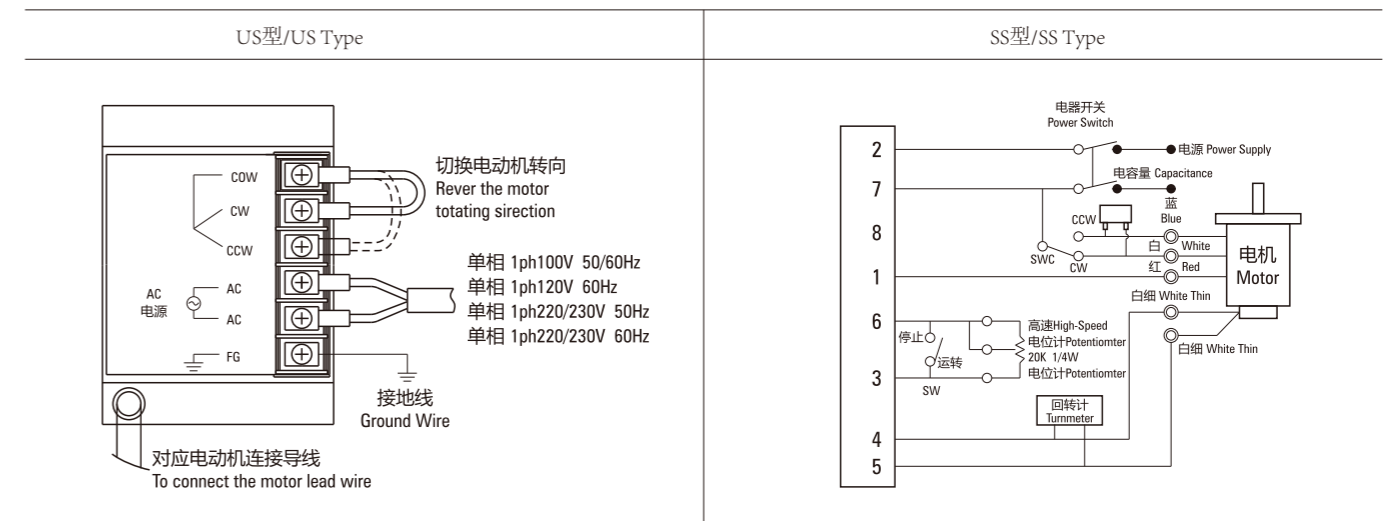
- 组合: 接线盒型电机+标准减速箱(减速比1: 3~200)
重量Weighr: 7.35kg

- 键(减速器附件)
Key (gearbox accessory)



接线图Wiring Diagram

- 运转方向指从电机轴看来的方向。CW表示顺时针方向,CCW表示逆时针方向。
- 表中所记型号为齿轮轴型,圆轴型亦同。
- The direction of motor rotation is viewed from the shaft end of motor. CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- Part number indicated in the list is pinion shaft type also valid for the equivalent round shaft type.



阻尼减速电机 REVERSIBLE GEAR MOTORS

6W 60mm



电机型号/性能List of motor characteristics (30分钟额定30minutes Rating)

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	额定转速 Rated Speed	额定转矩 Rated Torque	启动转矩 Start Torque	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	r/min	mN.m	mN.m	μF/VAC
PARS60C6GN	PARS60C6A	6	1ph220	50	0.14	1200	50	40	1.0/450
				60	0.13	1450	40	43	
PARS60A6GN	PARS60A6A	6	1ph110	50	0.31	1200	50	40	3.5/250
				60	0.26	1450	40	43	

- 阻尼电动机的额定转矩、启动转矩数值均为未安装简易制动时的数值。
- 各种安全规格以电动机铭牌上的型号取得认定。
- 内藏热保护装置（自动复位型）。在电动机因某种原因过热时会自行启动使电动机停止。
- 电动机温度下降后会自行恢复运行，故在进行检查作业时请务必事先切断电源。
- 注：“-A”型号中电压为110V时，配置电容器容量以实际铭牌为准。
- Values shown for rated torque and starting torque are measured for operation without the friction brake installed.
- When the motor is approved under various safety standards the model name on the nameplate is the approved model name.
- Contains a built-in thermal protector(automatic return). If a motor overheats for any reason the thermal protector is opened and the motor stops.
- When the motor temperature drops the thermal protector closes and the motor restarts. Be sure to turn the motor off before inspecting.
- Note:“-A” it means the voltage 110v, the assembly capacitor vaule it is according the nameplate.

减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

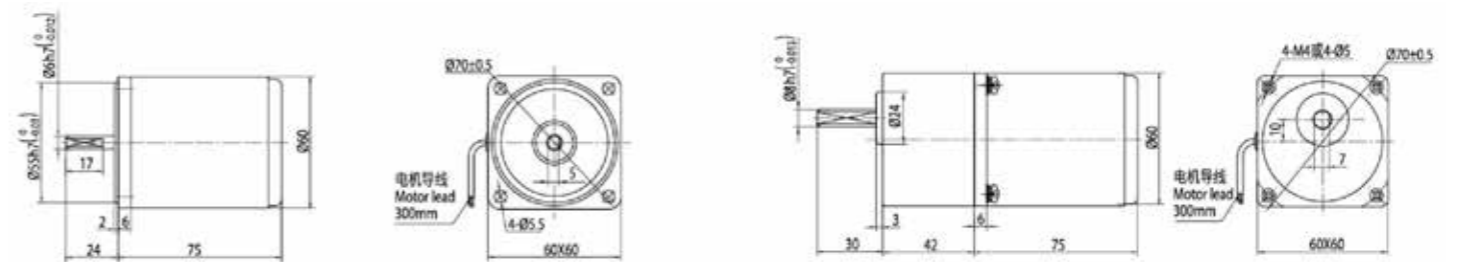
减速比 Gear Ratio		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
50Hz	转速 Speed r/min	450	375	270	225	180	150	135	108	90	75	67.5	54	45	37.5	33.7	27	22.5	18	15	13.5	11	9	7.5	6.75
	转矩 Torque N.m	0.11	0.13	0.18	0.21	0.27	0.32	0.36	0.45	0.54	0.64	0.7	0.80	0.97	1.16	1.29	1.61	1.74	2.17	2.60	2.89	3	3	3	3
60Hz	转速 Speed r/min	516	430	310	258	206	172	155	124	103	86	77.5	62	51.6	43	38.75	31	25.8	20.6	17.2	15.5	12.9	10.3	8.6	7.75
	转矩 Torque N.m	0.09	0.11	0.15	0.18	0.23	0.27	0.30	0.38	0.45	0.54	0.6	0.68	0.82	0.98	1.09	1.36	1.47	1.84	2.20	2.45	2.94	3	3	3

- 表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
- 表中色框表示输出轴的旋转方向与电机旋转方向相反。
- 表中转矩是以电机额定转矩×减速比×传动效率计算而得。
- 减速箱的最大容许转矩为3N·m。

- In the table the speed is calculated from the base of the motors average speed divided by the deceleration ratio. The actual speed, will vary with the load ranging from 2% to 20%.
- The box in the table indicates the rotation direction of the gearbox output shaft is opposite to that of the motor.
- Torque in the table is calculated from motor rated torque * reduction ratio * transmission efficiency.
- The maximum allowable torque of the gear box is 3N·m.

外形尺寸 (单位mm) Dimension(Unit:mm)

- 圆轴电机
重量Weighr: 0.75kg
- 组合: 引线型电机+标准减速箱 (减速比1: 3~200)
重量Weighr: 1.15kg



- 键 (减速器附件)
Key (gearbox accessory)



接线图Wiring Diagram

- 运转方向指从电机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
- 表中所记型号为齿轮轴型，圆轴型亦同。
- The direction of motor rotation is viewed from the shaft end of motor. CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- Part number indicated in the list is pinion shaft type also valid for the equivalent round shaft type.



注意Note

- 单相电机运转方向的转换应在电机停止后进行。
- 若在电机运转时转换运转方向，可能发生无法转换运转方向或须费时较久的情况。
- Change the direction of single-phase motor rotation only after bring the motor to a stop.
- If an attempt is made to change the direction of rotation while the motor is rotating, motor may ignore reversing command, or the direction of rotation is reversed with some delay.

阻尼减速电机 REVERSIBLE GEAR MOTORS

15W 70mm



电机型号/性能List of motor characteristics (30分钟额定30minutes Rating)

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	额定转速 Rated Speed	额定转矩 Rated Torque	启动转矩 Start Torque	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	r/min	mN.m	mN.m	μF/VAC
PARS70C15GN	PARS70C15A	15	1ph220	50	0.21	1250	125	86	1.5/450
				60	0.19	1500	100	81	
PARS70A15GN	PARS70A15A	15	1ph110	50	0.42	1250	125	86	6.0/250
				60	0.36	1500	100	81	

- 阻尼电动机的额定转矩、启动转矩数值均为未安装简易制动时的数值。
- 各种安全规格以电动机铭牌上的型号取得认定。
- 内藏热保护装置（自动复位型）。在电动机因某种原因过热时会自行启动使电动机停止。
- 电动机温度下降后会自动恢复运行，故在进行检查作业时请务必事先切断电源。
- 注：“-A”型号中电压为110V时，配置电容器容量以实际铭牌为准。
- Values shown for rated torque and starting torque are measured for operation without the friction brake installed.
- When the motor is approved under various safety standards the model name on the nameplate is the approved model name.
- Contains a built-in thermal protector(automatic return). If a motor overheats for any reason the thermal protector is opened and the motor stops.
- When the motor temperature drops the thermal protector closes and the motor restarts. Be sure to turn the motor off before inspecting.
- Note:“-A” it means the voltage 110v the assembly capacitor vaule it is according the nameplate.

减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

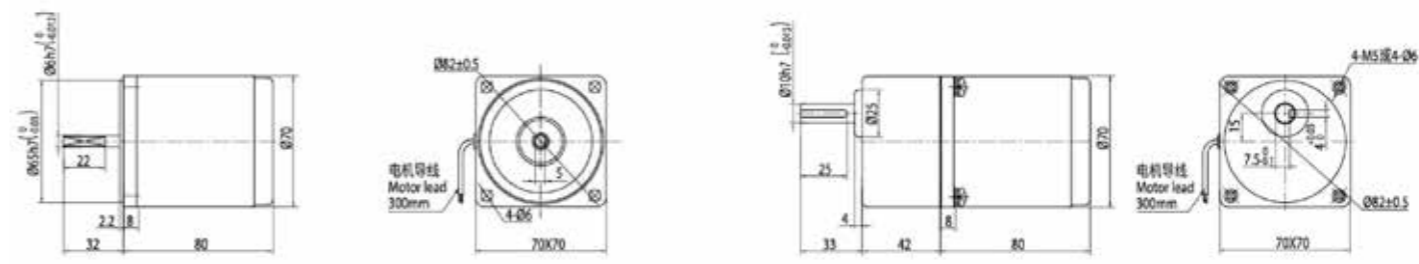
50Hz	转速 Speed r/min	减速比 Gear Ratio																							
		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	转矩 Torque N.m	0.30	0.36	0.51	0.61	0.76	0.91	1.01	1.26	1.51	1.64	1.82	2.27	2.73	3.27	3.63	4.54	4.91	5	5	5	5	5	5	5
60Hz	转速 Speed r/min	516	430	310	258	206	172	155	124	103	86	77.5	62	51.6	43	38.75	31	25.8	20.6	17.2	15.5	12.9	10.3	8.6	7.75
	转矩 Torque N.m	0.22	0.27	0.37	0.45	0.56	0.67	0.74	0.93	1.11	1.20	1.34	1.67	2.01	2.41	2.67	3.34	3.11	4.11	5	5	5	5	5	5

- 表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
- 表中 色框表示输出轴的旋转方向与电机旋转方向相反。
- 表中转矩是以电机额定转矩×减速比×传动效率计算而得。
- 减速箱的最大容许转矩为5N·M。

- In the table, the speed is calculated from the base of the motors average speed divided by the deceleration ratio. The actual speed, will vary with the load ranging from 2% to 20%.
- The box in the table indicates the rotation direction of the gearbox output shaft is opposite to that of the motor.
- Torque in the table is calculated from motor rated torque *reduction ratio * transmission efficiency.
- The maximum allowable torque of the gear box is 5N · m.

外形尺寸 (单位mm) Dimension(Unit:mm)

- 圆轴电机
重量Weighr: 1.10kg
- 组合: 引线型电机+标准减速箱 (减速比1: 3~200)
重量Weighr: 1.6kg



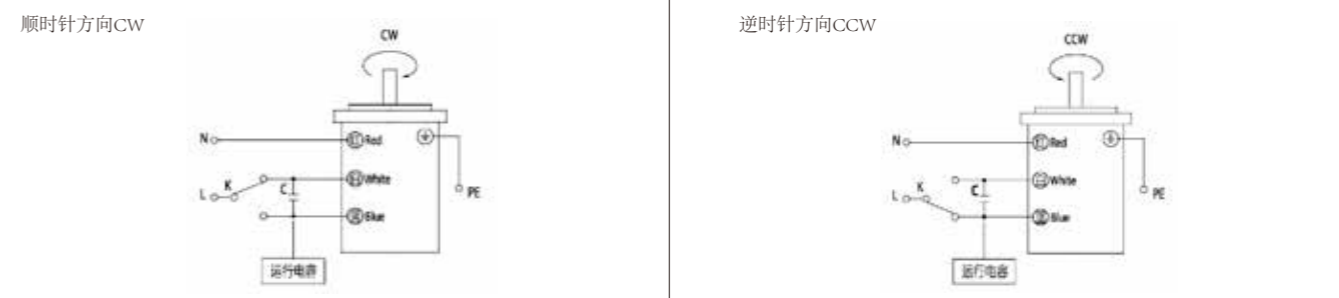
- 键 (减速器附件)
Key (gearbox accessory)



接线图Wiring Diagram

- 运转方向指从电机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
- 表中所记型号为齿轮轴型，圆轴型亦同。
- The direction of motor rotation is viewed from the shaft end of motor. CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- Part number indicated in the list is pinion shaft type also valid for the equivalent round shaft type.

PARS70A15GN/PARS70C15GN



注意Note

- 单相电机运转方向的转换应在电机停止后进行。
- 若在电机运转时转换运转方向，可能发生无法转换运转方向或须费时较久的情况。
- Change the direction of single-phase motor rotation only after bring the motor to a stop.
- If an attempt is made to change the direction of rotation while the motor is rotating motor may ignore reversing command or the direction of rotation is reversed with some delay.

阻尼减速电机 REVERSIBLE GEAR MOTORS

25W 80mm



电机型号/性能List of motor characteristics (30分钟额定30minutes Rating)

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	额定转速 Rated Speed	额定转矩 Rated Torque	启动转矩 Start Torque	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	r/min	mN.m	mN.m	μF/VAC
PARS80C25GN	PARS80C25A	25	1ph220	50	0.30	1250	210	163	2.0/450
				60	0.30	1550	170	140	
PARS80A25GN	PARS80A25A	25	1ph110	50	0.57	1250	210	163	8.0/250
				60	0.54	1550	170	140	

- 阻尼电动机的额定转矩、启动转矩数值均为未安装简易制动时的数值。
- 各种安全规格以电动机铭牌上的型号取得认定。
- 内置热保护装置（自动复位型）。在电动机因某种原因过热时会自行启动使电动机停止。
- 电动机温度下降后会自行恢复运行，故在进行检查作业时请务必事先切断电源。
- 注：“-A”型号中电压为110V时，配置电容器容量以实际铭牌为准。
- Values shown for rated torque and starting torque are measured for operation without the friction brake installed.
- When the motor is approved under various safety standards the model name on the nameplate is the approved model name.
- Contains a built-in thermal protector(automatic return). If a motor overheats for any reason the thermal protector is opened and the motor stops.
- When the motor temperature drops the thermal protector closes and the motor restarts. Be sure to turn the motor off before inspecting.
- Note: "-A" it means the voltage 110v, the assembly capacitor vaule it is according to the nameplate.

减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

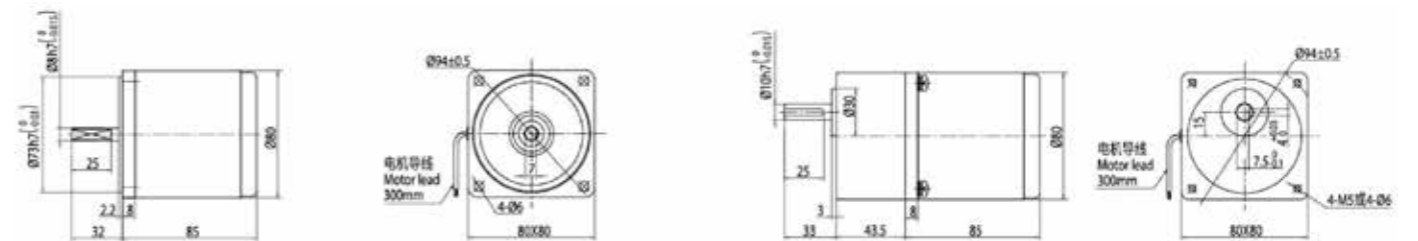
减速比 Gear Ratio		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
50Hz	转速 Speed r/min	450	375	270	225	180	150	135	108	90	75	67.5	54	45	37.5	33.7	27	22.5	18	15	13.5	11	9	7.5	6.75
	转矩 Torque N.m	0.45	0.54	0.70	0.90	1.12	1.35	1.50	1.87	2.25	2.69	2.99	3.37	4.04	4.85	5.39	6.746	7.28	8	8	8	8	8	8	8
60Hz	转速 Speed r/min	516	430	310	258	206	172	155	124	103	86	77.5	62	51.6	43	38.75	31	25.8	20.6	17.2	15.5	12.9	10.3	8.6	7.75
	转矩 Torque N.m	0.36	0.44	0.61	0.73	0.91	1.09	1.21	1.52	1.82	2.18	2.43	2.73	3.27	3.93	4.37	5.46	6.55	8	8	8	8	8	8	8

- 表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
- 表中 色框表示输出轴的旋转方向与电机旋转方向相反。
- 表中转矩是以电机额定转矩×减速比×传动效率计算而得。
- 减速箱的最大容许转矩为8N·M。

- In the table, the speed is calculated from the base of the motors average speed divided by the deceleration ratio. The actual speed will vary with the load ranging from 2% to 20%.
- The 色框 box in the table indicates the rotation direction of the gearbox output shaft is opposite to that of the motor.
- Torque in the table is calculated from motor rated torque * reduction ratio * transmission efficiency.
- The maximum allowable torque of the gear box is 8N·m.

外形尺寸 (单位mm) Dimension(Unit:mm)

- 圆轴电机
重量Weighr: 1.60kg
- 组合: 引线型电机+标准减速箱 (减速比1: 3~200)
重量Weighr: 2.55kg



- 键 (减速器附件)
Key (gearbox accessory)



接线图Wiring Diagram

- 运转方向指从电机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
- 表中所记型号为齿轮轴型，圆轴型亦同。
- The direction of motor rotation is viewed from the shaft end of motor. CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- Part number indicated in the list is pinion shaft type also valid for the equivalent round shaft type.



注意Note

- 单相电机运转方向的转换应在电机停止后进行。
- 若在电机运转时转换运转方向，可能发生无法转换运转方向或须费时较久的情况。
- Change the direction of single-phase motor rotation only after bring the motor to a stop.
- If an attempt is made to change the direction of rotation while the motor is rotating motor may ignore reversing command or the direction of rotation is reversed with some delay.

说明 INSTRUCTIONS
感应减速电机 INDUCTION GEAR MOTOR
调速减速电机 SPEED CONTROL GEAR MOTOR
阻尼减速电机 REVERSIBLE GEAR MOTOR
电制动减速电机 BRAKE GEAR MOTOR
力矩减速电机 TORQUE GEAR MOTOR
直角减速电机 RIGHT ANGLE GEAR MOTOR
控制器 PANEL DRIVE
技术资料 TECHNICAL

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控制器 PANEL DRIVE
技术资料 TECHNICAL

阻尼减速电机 REVERSIBLE GEAR MOTORS

40W 90mm



电机型号/性能List of motor characteristics (30分钟额定30minutes Rating)

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	额定转速 Rated Speed	额定转矩 Rated Torque	启动转矩 Start Torque	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	r/min	mN.m	mN.m	μF/VAC
PARS90C40GN	PARS90C40A	40	1ph220	50	0.43	1350	210	163	3.0/450
				60	0.52	1550	170	140	
PARS90A40GN	PARS90A40A	40	1ph110	50	0.92	1350	210	163	12.0/250
				60	0.92	1550	170	140	

- 阻尼电动机的额定转矩、启动转矩数值均为未安装简易制动时的数值。
- 各种安全规格以电动机铭牌上的型号取得认定。
- 内藏热保护装置（自动复位型）。在电动机因某种原因过热时会自行启动使电动机停止。
- 电动机温度下降后会自动恢复运行，故在进行检查作业时请务必事先切断电源。
- 注：“-A”型号中电压为110V时，配置电容器容量以实际铭牌为准。
- Values shown for rated torque and starting torque are measured for operation without the friction brake installed.
- When the motor is approved under various safety standards the model name on the nameplate is the approved model name.
- Contains a built-in thermal protector(automatic return). If a motor overheats for any reason the thermal protector is opened and the motor stops.
- When the motor temperature drops the thermal protector closes and the motor restarts. Be sure to turn the motor off before inspecting.
- Note: "-A" it means the voltage 110v the assembly capacitor vaule it is according the nameplate.

减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

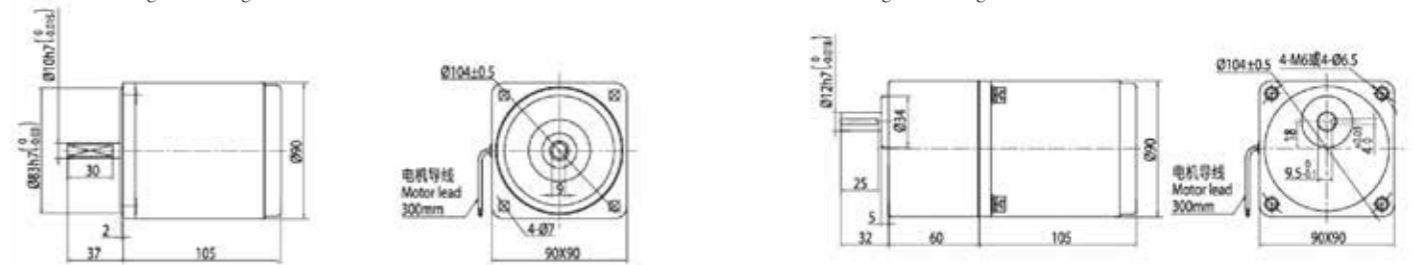
减速比 Gear Ratio		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
50Hz	转速 Speed r/min	450	375	270	225	180	150	135	108	90	75	67.5	54	45	37.5	33.7	27	22.5	18	15	13.5	11	9	7.5	6.75
	转矩 Torque N.m	0.71	0.86	1.19	1.43	1.79	2.14	2.38	2.98	3.57	3.86	4.29	5.36	6.43	7.72	7.72	9.65	10	10	10	10	10	10	10	10
60Hz	转速 Speed r/min	516	430	310	258	206	172	155	124	103	86	77.5	62	51.6	43	38.75	31	25.8	20.6	17.2	15.5	12.9	10.3	8.6	7.75
	转矩 Torque N.m	0.56	0.68	0.94	1.13	1.41	1.69	1.88	2.35	2.82	3.04	3.38	4.23	5.07	6.09	6.09	7.61	9.13	10	10	10	10	10	10	10

- 表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
- 表中 色框表示输出轴的旋转方向与电机旋转方向相反。
- 表中转矩是以电机额定转矩×减速比×传动效率计算而得。
- 减速箱的最大容许转矩为10N·M。

- In the table, the speed is calculated from the base of the motors average speed divided by the deceleration ratio. The actual speed, will vary with the load ranging from 2% to 20%.
- The box in the table indicates the rotation direction of the gearbox output shaft is opposite to that of the motor.
- Torque in the table is calculated from motor rated torque * reduction ratio * transmission efficiency.
- The maximum allowable torque of the gear box is 10N · m.

外形尺寸 (单位mm) Dimension(Unit:mm)

- 圆轴电机
重量Weighr: 2.40kg
- 组合: 引线型电机+标准减速箱 (减速比1: 3~200)
重量Weighr: 3.75kg



- 键 (减速器附件)
Key (gearbox accessory)



接线图Wiring Diagram

- 运转方向指从电机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
- 表中所记型号为齿轮轴型，圆轴型亦同。
- The direction of motor rotation is viewed from the shaft end of motor. CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- Part number indicated in the list is pinion shaft type also valid for the equivalent round shaft type.

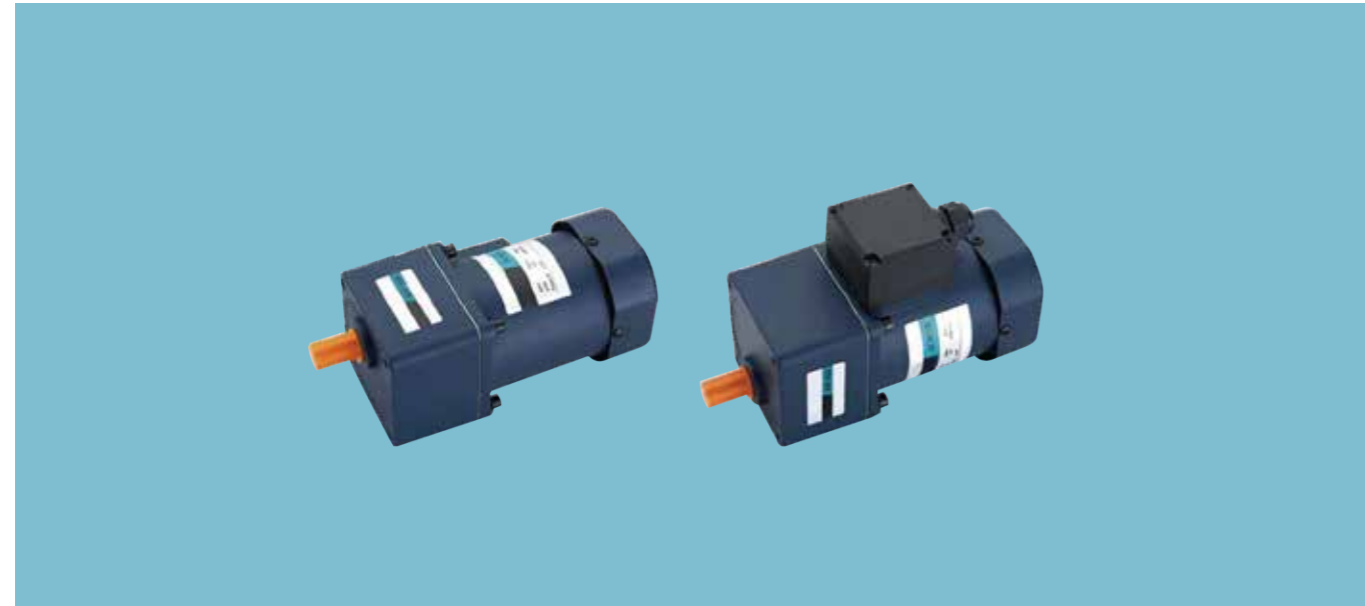


注意Note

- 单相电机运转方向的转换应在电机停止后进行。
- 若在电机运转时转换运转方向，可能发生无法转换运转方向或须费时较久的情况。
- Change the direction of single-phase motor rotation only after bring the motor to a stop.
- If an attempt is made to change the direction of rotation while the motor is rotating motor may ignore reversing command or the direction of rotation is reversed with some delay.

阻尼减速电机 REVERSIBLE GEAR MOTORS

60W 90mm



电机型号/性能List of motor characteristics (30分钟额定30minutes Rating)

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	额定转速 Rated Speed	额定转矩 Rated Torque	启动转矩 Start Torque	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	r/min	mN.m	mN.m	μF/VAC
PARS90C60GN-F	PARS90C60A-F	60	1ph220	50	0.62	1350	500	490	4.5/450
				60	0.66	1550	405	490	
PARS90A60GN-F	PARS90A60A-F	60	1ph110	50	1.22	1350	500	490	18.0/250
				60	1.24	1550	405	490	

- 阻尼电动机的额定转矩、启动转矩数值均为未安装简易制动时的数值。
- 各种安全规格以电动机铭牌上的型号取得认定。
- 内藏热保护装置（自动复位型）。在电动机因某种原因过热时会自行启动使电动机停止。
- 电动机温度下降后会自动恢复运行，故在进行检查作业时请务必事先切断电源。
- 注：“-A”型号中电压为110V时，配置电容器容量以实际铭牌为准。
- Values shown for rated torque and starting torque are measured for operation without the friction brake installed.
- When the motor is approved under various safety standards the model name on the nameplate is the approved model name.
- Contains a built-in thermal protector(automatic return). If a motor overheats for any reason the thermal protector is opened and the motor stops.
- When the motor temperature drops the thermal protector closes and the motor restarts. Be sure to turn the motor off before inspecting.
- Note:“-A” it means the voltage 110v the assembly capacitor vaule it is according the nameplate.

减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

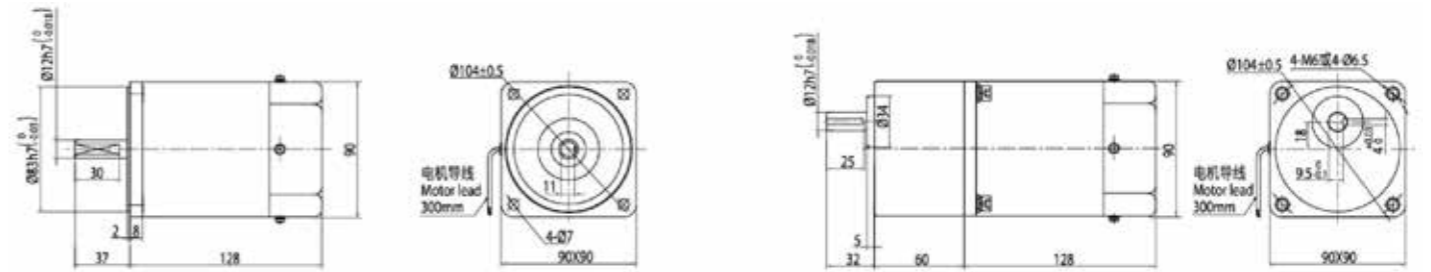
减速比 Gear Ratio		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
50Hz	转速 Speed r/min	450	375	270	225	180	150	135	108	90	75	67.5	54	45	37.5	33.7	27	22.5	18	15	13.5	11	9	7.5	6.75
	转矩 Torque N.m	0.71	0.86	1.19	1.43	1.79	2.14	2.38	2.98	3.57	3.86	4.29	5.36	6.43	7.72	7.72	9.65	10	10	10	10	10	10	10	10
60Hz	转速 Speed r/min	516	430	310	258	206	172	155	124	103	86	77.5	62	51.6	43	38.75	31	25.8	20.6	17.2	15.5	12.9	10.3	8.6	7.75
	转矩 Torque N.m	0.56	0.68	0.94	1.13	1.41	1.69	1.88	2.35	2.82	3.04	3.38	4.23	5.07	6.09	6.09	7.61	9.13	10	10	10	10	10	10	10

- 表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
- 表中 色框表示输出轴的旋转方向与电机旋转方向相反。
- 表中转矩是以电机额定转矩×减速比×传动效率计算而得。
- 减速箱的最大容许转矩为10N·M。

- In the table the speed is calculated from the base of the motors average speed divided by the deceleration ratio. The actual speed will vary with the load ranging from 2% to 20%.
- The 色框 box in the table indicates the rotation direction of the gearbox output shaft is opposite to that of the motor.
- Torque in the table is calculated from motor rated torque *reduction ratio * transmission efficiency.
- The maximum allowable torque of the gear box is 10N·m.

外形尺寸 (单位mm) Dimension(Unit:mm)

- 圆轴电机
重量Weighr: 2.70kg
- 组合: 引线型电机+标准减速箱 (减速比1: 3~200)
重量Weighr: 4.05kg



- 键 (减速器附件)
Key (gearbox accessory)



接线图Wiring Diagram

- 运转方向指从电机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
- 表中所记型号为齿轮轴型，圆轴型亦同。
- The direction of motor rotation is viewed from the shaft end of motor. CW represents the clockwise direction while CCW represents the counterclockwise direction.
- Part number indicated in the list is pinion shaft type also valid for the equivalent round shaft type.



注意Note

- 单相电机运转方向的转换应在电机停止后进行。
- 若在电机运转时转换运转方向，可能发生无法转换运转方向或须费时较久的情况。
- Change the direction of single-phase motor rotation only after bring the motor to a stop.
- If an attempt is made to change the direction of rotation while the motor is rotating motor may ignore reversing command or the direction of rotation is reversed with some delay.

说明
INSTRUCTIONS

感应减速电机
INDUCTION GEAR MOTOR

调速减速电机
SPEED CONTROL GEAR MOTOR

阻尼减速电机
REVERSIBLE GEAR MOTOR

电磁制动减速电机
BRAKE GEAR MOTOR

力矩减速电机
TORQUE GEAR MOTOR

直角减速电机
RIGHT ANGLE GEAR MOTOR

控制器
PANEL DRIVE

技术资料
TECHNICAL

说明
INSTRUCTIONS

感应减速电机
INDUCTION GEAR MOTOR

调速减速电机
SPEED CONTROL GEAR MOTOR

阻尼减速电机
REVERSIBLE GEAR MOTOR

电磁制动减速电机
BRAKE GEAR MOTOR

力矩减速电机
TORQUE GEAR MOTOR

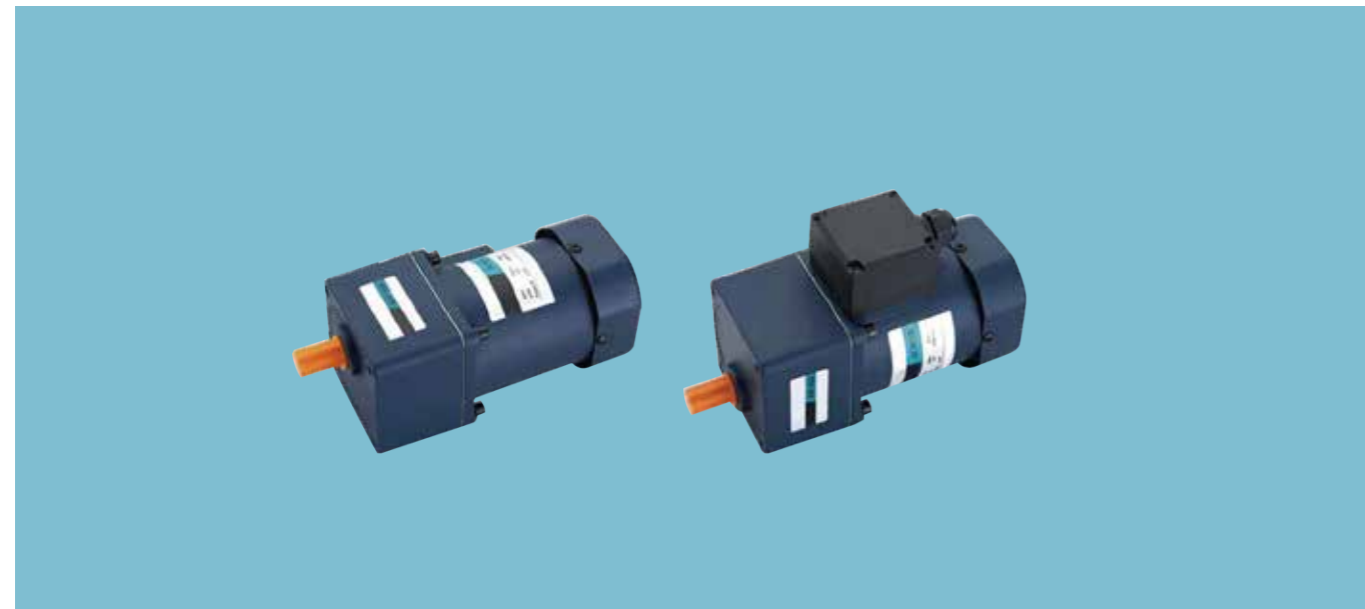
直角减速电机
RIGHT ANGLE GEAR MOTOR

控制器
PANEL DRIVE

技术资料
TECHNICAL

阻尼减速电机 REVERSIBLE GEAR MOTORS

60W 90mm



电机型号/性能List of motor characteristics (30分钟额定30minutes Rating)

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	额定转速 Rated Speed	额定转矩 Rated Torque	启动转矩 Start Torque	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	r/min	mN.m	mN.m	μF/VAC
PARS90C60GU-F	PARS90C60A-F	60	1ph220	50	0.62	1350	500	490	4.5/450
				60	0.66	1550	405	490	
PARS90A60GU-F	PARS90A60A-F	60	1ph110	50	1.22	1350	500	490	18.0/250
				60	1.24	1550	405	490	

- 阻尼电动机的额定转矩、启动转矩数值均为未安装简易制动时的数值。
- 各种安全规格以电动机铭牌上的型号取得认定。
- 内藏热保护装置（自动复位型）。在电动机因某种原因过热时会自行启动使电动机停止。
- 电动机温度下降后会自动恢复运行，故在进行检查作业时请务必事先切断电源。
- 注：“-A”型号中电压为110V时，配置电容器容量以实际铭牌为准。
- Values shown for rated torque and starting torque are measured for operation without the friction brake installed.
- When the motor is approved under various safety standards, the model name on the nameplate is the approved model name.
- Contains a built-in thermal protector(automatic return). If a motor overheats for any reason the thermal protector is opened and the motor stops.
- When the motor temperature drops the thermal protector closes and the motor restarts. Be sure to turn the motor off before inspecting.
- Note:“-A” it means the voltage 110v the assembly capacitor vaule it is according to the nameplate.

减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

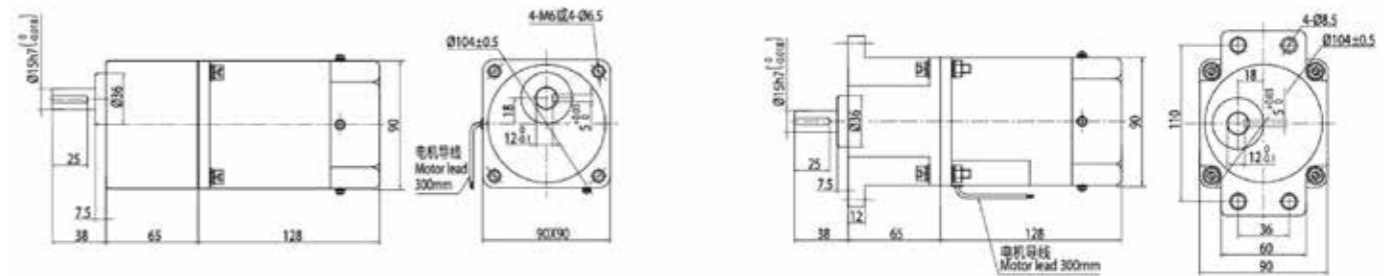
减速比 Gear Ratio		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
50Hz	转速 Speed r/min	450	375	270	225	180	150	135	108	90	75	67.5	54	45	37.5	33.7	27	22.5	18	15	13.5	11	9	7.5	6.75
	转矩 Torque N.m	0.71	0.86	1.19	1.43	1.79	2.14	2.38	2.98	3.57	3.86	4.29	5.36	6.43	7.72	7.72	9.65	10	10	10	10	10	10	10	10
60Hz	转速 Speed r/min	516	430	310	258	206	172	155	124	103	86	77.5	62	51.6	43	38.75	31	25.8	20.6	17.2	15.5	12.9	10.3	8.6	7.75
	转矩 Torque N.m	0.56	0.68	0.94	1.13	1.41	1.69	1.88	2.35	2.82	3.04	3.38	4.23	5.07	6.09	6.09	7.61	9.13	10	10	10	10	10	10	10

- 表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
- 表中 色框表示输出轴的旋转方向与电机旋转方向相反。
- 表中转矩是以电机额定转矩×减速比×传动效率计算而得。
- 减速箱的最大容许转矩为20N·M。

- In the table, the speed is calculated from the base of the motors average speed divided by the deceleration ratio. The actual speed will vary with the load ranging from 2% to 20%.
- The box in the table indicates the rotation direction of the gearbox output shaft is opposite to that of the motor.
- Torque in the table is calculated from motor rated torque * reduction ratio * transmission efficiency.
- The maximum allowable torque of the gear box is 20N · m.

外形尺寸 (单位mm) Dimension(Unit:mm)

- 圆轴电机
重量Weighr: 4.15kg
- 组合: 引线型电机+标准减速箱 (减速比1: 3~200)
重量Weighr: 4.35kg

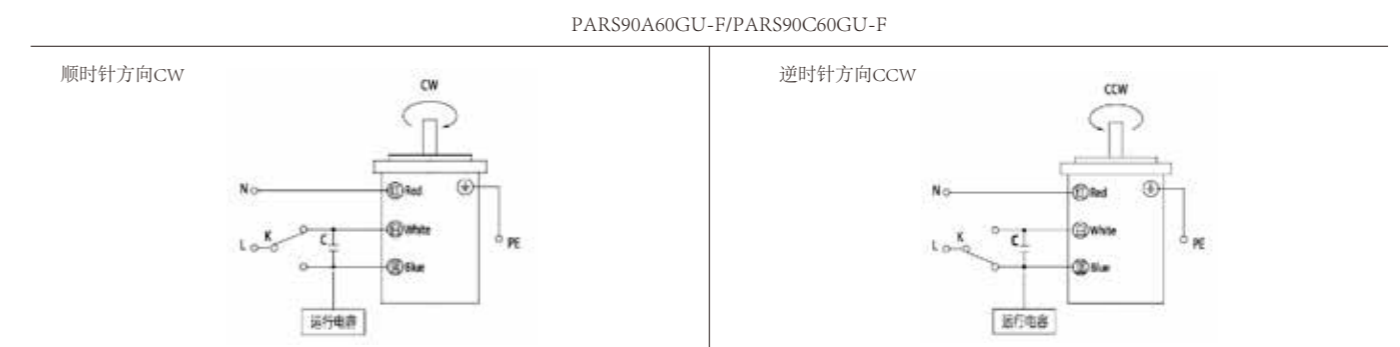


- 键 (减速器附件)
Key (gearbox accessory)



接线图Wiring Diagram

- 运转方向指从电机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
- 表中所记型号为齿轮轴型，圆轴型亦同。
- The direction of motor rotation is viewed from the shaft end of motor. CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- Part number indicated in the list is pinion shaft type also valid for the equivalent round shaft type.

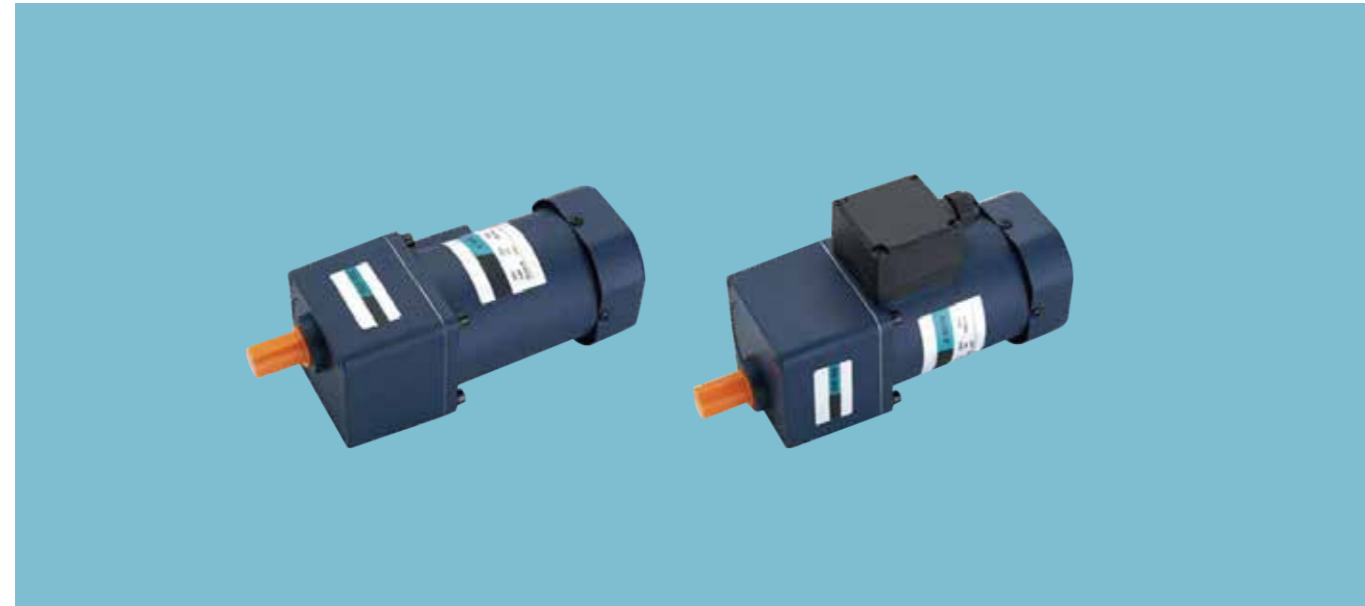


注意Note

- 单相电机运转方向的转换应在电机停止后进行。
- 若在电机运转时转换运转方向，可能发生无法转换运转方向或须费时较久的情况。
- Change the direction of single-phase motor rotation only after bring the motor to a stop.
- If an attempt is made to change the direction of rotation while the motor is rotating motor may ignore reversing command or the direction of rotation is reversed with some delay.

阻尼减速电机 REVERSIBLE GEAR MOTORS

90W 90mm



电机型号/性能List of motor characteristics (30分钟额定30minutes Rating)

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	额定转速 Rated Speed	额定转矩 Rated Torque	启动转矩 Start Torque	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	r/min	mN.m	mN.m	μF/VAC
PARS90C90GU-F	PARS90C90A-F	90	1ph220	50	0.83	1350	750	559	6.0/450
				60	0.99	1550	600	481	
PARS90A90GU-F	PARS90A90A-F	90	1ph110	50	1.64	1350	750	559	25.0/250
				60	1.77	1550	600	481	

- 阻尼电动机的额定转矩、启动转矩数值均为未安装简易制动时的数值。
- 各种安全规格以电动机铭牌上的型号取得认定。
- 内藏热保护装置（自动复位型）。在电动机因某种原因过热时会自行启动使电动机停止。
- 电动机温度下降后会自动恢复运行，故在进行检查作业时请务必事先切断电源。
- 注：“-A”型号中电压为110V时，配置电容器容量以实际铭牌为准。
- Values shown for rated torque and starting torque are measured for operation without the friction brake installed.
- When the motor is approved under various safety standards the model name on the nameplate is the approved model name.
- Contains a built-in thermal protector (automatic return). If a motor overheats for any reason the thermal protector is opened and the motor stops.
- When the motor temperature drops the thermal protector closes and the motor restarts. Be sure to turn the motor off before inspecting.
- Note: "-A" it means the voltage 110v the assembly capacitor value it is according to the nameplate.

减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

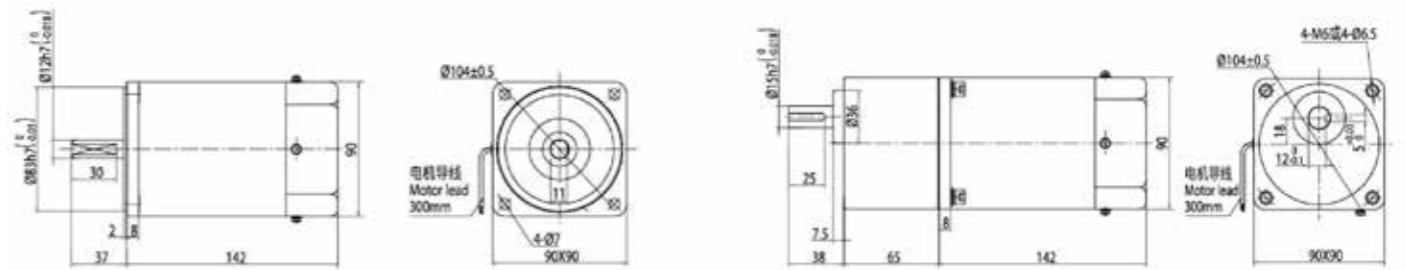
减速比 Gear Ratio		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
50Hz	转速 Speed r/min	450	375	270	225	180	150	135	108	90	75	67.5	54	45	37.5	33.7	27	22.5	18	15	13.5	11	9	7.5	6.75
	转矩 Torque N.m	1.56	1.88	2.60	3.13	3.91	4.69	5.1	5.86	7.03	8.44	8.8	10.55	12.66	15.19	16.88	20	20	20	20	20	20	20	20	20
60Hz	转速 Speed r/min	516	430	310	258	206	172	155	124	103	86	77.5	62	51.6	43	38.75	31	25.8	20.6	17.2	15.5	12.9	10.3	8.6	7.75
	转矩 Torque N.m	1.29	1.55	2.15	2.58	3.22	3.86	4.3	4.83	5.80	6.96	7.3	8.69	10.43	12.52	13.91	17.39	20	20	20	20	20	20	20	20

- 表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
- 表中 色框表示输出轴的旋转方向与电机旋转方向相反。
- 表中转矩是以电机额定转矩×减速比×传动效率计算而得。
- 减速箱的最大容许转矩为20N·M。

- In the table, the speed is calculated from the base of the motors average speed divided by the deceleration ratio. The actual speed will vary with the load ranging from 2% to 20%.
- The box in the table indicates the rotation direction of the gearbox output shaft is opposite to that of the motor.
- Torque in the table is calculated from motor rated torque * reduction ratio * transmission efficiency.
- The maximum allowable torque of the gear box is 20N · m.

外形尺寸 (单位mm) Dimension(Unit:mm)

- 圆轴电机
重量Weighr: 2.90kg
- 组合: 引线型电机+标准减速箱 (减速比1: 3~200)
重量Weighr: 4.35kg

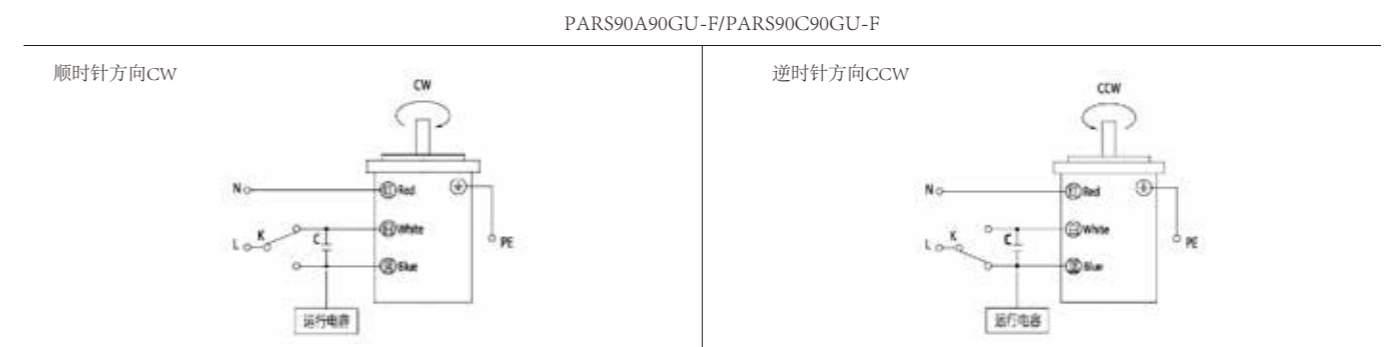


- 键 (减速器附件)
Key (gearbox accessory)



接线图Wiring Diagram

- 运转方向指从电机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
- 表中所记型号为齿轮轴型，圆轴型亦同。
- The direction of motor rotation is viewed from the shaft end of motor. CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- Part number indicated in the list is pinion shaft type also valid for the equivalent round shaft type.

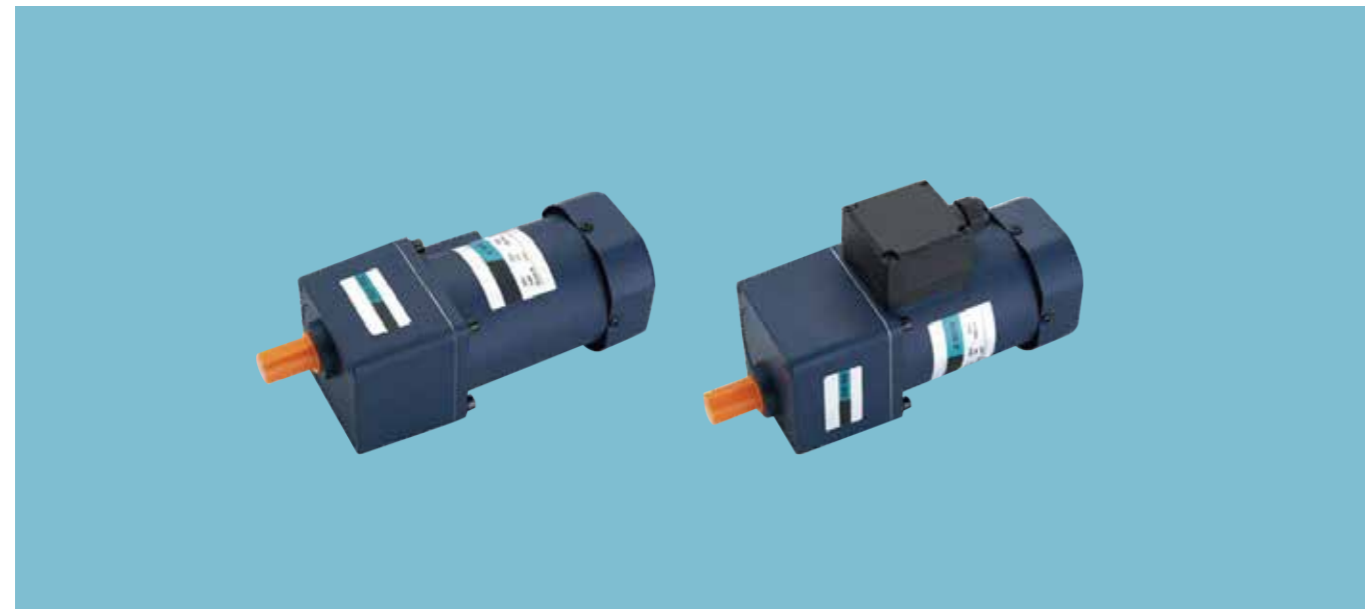


注意Note

- 单相电机运转方向的转换应在电机停止后进行。
- 若在电机运转时转换运转方向，可能发生无法转换运转方向或须费时较久的情况。
- Change the direction of single-phase motor rotation only after bring the motor to a stop.
- If an attempt is made to change the direction of rotation while the motor is rotating motor may ignore reversing command or the direction of rotation is reversed with some delay.

阻尼减速电机 REVERSIBLE GEAR MOTORS

120W 90mm



电机型号/性能List of motor characteristics (30分钟额定30minutes Rating)

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	额定转速 Rated Speed	额定转矩 Rated Torque	启动转矩 Start Torque	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	r/min	mN.m	mN.m	μF/VAC
PARS90C120GU-F	PARS90C120A-F	120	1ph220	50	1.03	1350	1000	638	7.0/450
				60	1.23	1550	800	556	
PARS90A120GU-F	PARS90A120A-F	120	1ph110	50	2.05	1350	1000	638	30.0/250
				60	2.20	1550	800	556	

- 阻尼电动机的额定转矩、启动转矩数值均为未安装简易制动时的数值。
- 各种安全规格以电动机铭牌上的型号取得认定。
- 内藏热保护装置（自动复位型）。在电动机因某种原因过热时会自行启动使电动机停止。
- 电动机温度下降后会自动恢复运行，故在进行检查作业时请务必事先切断电源。
- 注：“-A”型号中电压为110V时，配置电容器容量以实际铭牌为准。
- Values shown for rated torque and starting torque are measured for operation without the friction brake installed.
- When the motor is approved under various safety standards the model name on the nameplate is the approved model name.
- Contains a built-in thermal protector(automatic return). If a motor overheats for any reason the thermal protector is opened and the motor stops.
- When the motor temperature drops the thermal protector closes and the motor restarts. Be sure to turn the motor off before inspecting.
- Note:“-A” it means the voltage 110v the assembly capacitor vaule it is according the nameplate.

减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

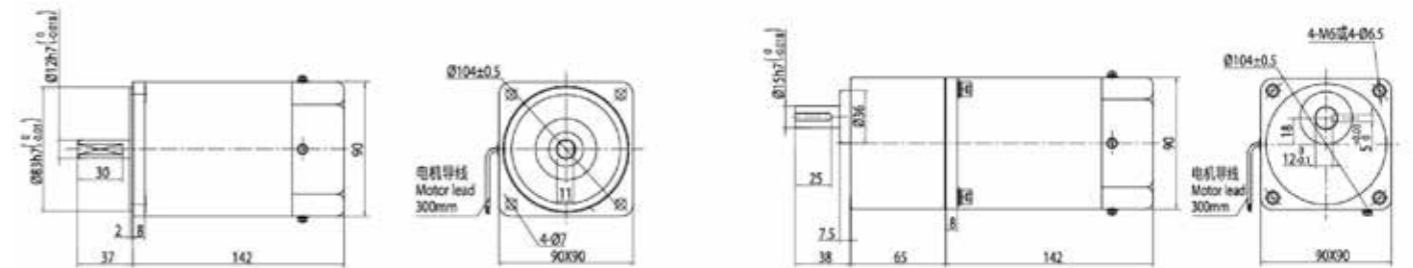
减速比 Gear Ratio		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
50Hz	转速 Speed r/min	450	375	270	225	180	150	135	108	90	75	67.5	54	45	37.5	33.7	27	22.5	18	15	13.5	11	9	7.5	6.75
	转矩 Torque N.m	2.12	2.55	3.54	4.25	5.31	6.37	6.9	7.96	9.56	11.47	12	14.34	17.20	20	20	20	20	20	20	20	20	20	20	20
60Hz	转速 Speed r/min	516	430	310	258	206	172	155	124	103	86	77.5	62	51.6	43	38.75	31	25.8	20.6	17.2	15.5	12.9	10.3	8.6	7.75
	转矩 Torque N.m	1.72	2.07	2.87	3.45	4.31	5.17	5.8	6.46	7.76	9.30	9.9	11.63	13.96	16.75	18.61	20	20	20	20	20	20	20	20	20

- 表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
- 表中 色框表示输出轴的旋转方向与电机旋转方向相反。
- 表中转矩是以电机额定转矩×减速比×传动效率计算而得。
- 减速箱的最大容许转矩为20N·M。

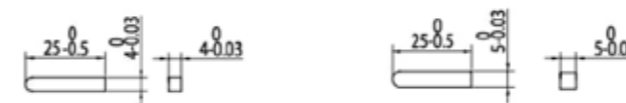
- In the table, the speed is calculated from the base of the motors average speed divided by the deceleration ratio. The actual speed will vary with the load ranging from 2% to 20%.
- The 色 box in the table indicates the rotation direction of the gearbox output shaft is opposite to that of the motor.
- Torque in the table is calculated from motor rated torque *reduction ratio * transmission efficiency.
- The maximum allowable torque of the gear box is 20N · m.

外形尺寸 (单位mm) Dimension(Unit:mm)

- 圆轴电机
重量Weighr: 2.90kg
- 组合: 引线型电机+标准减速箱 (减速比1: 3~200)
重量Weighr: 4.35kg

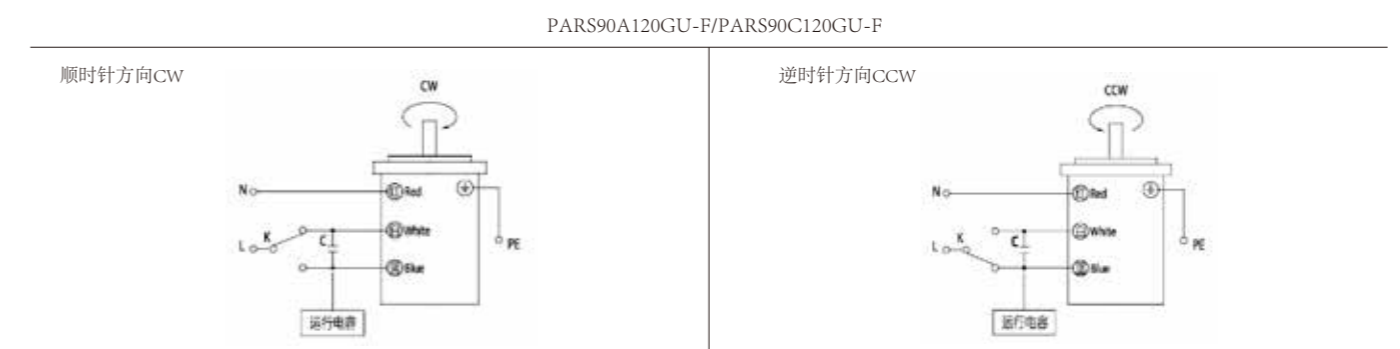


- 键 (减速器附件)
Key (gearbox accessory)



接线图Wiring Diagram

- 运转方向指从电机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
- 表中所记型号为齿轮轴型，圆轴型亦同。
- The direction of motor rotation is viewed from the shaft end of motor. CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- Part number indicated in the list is pinion shaft type also valid for the equivalent round shaft type.



注意Note

- 单相电机运转方向的转换应在电机停止后进行。
- 若在电机运转时转换运转方向，可能发生无法转换运转方向或须费时较久的情况。
- Change the direction of single-phase motor rotation only after bring the motor to a stop.
- If an attempt is made to change the direction of rotation while the motor is rotating motor may ignore reversing command or the direction of rotation is reversed with some delay.

说明
INSTRUCTIONS

感应减速电机
INDUCTION GEAR MOTOR

调速减速电机
SPEED CONTROL GEAR MOTOR

阻尼减速电机
REVERSIBLE GEAR MOTOR

电磁制动减速电机
BRAKE GEAR MOTOR

力矩减速电机
TORQUE GEAR MOTOR

直角减速电机
RIGHT ANGLE GEAR MOTOR

控制器
PANEL DRIVE

技术资料
TECHNICAL

说明
INSTRUCTIONS

感应减速电机
INDUCTION GEAR MOTOR

调速减速电机
SPEED CONTROL GEAR MOTOR

阻尼减速电机
REVERSIBLE GEAR MOTOR

电磁制动减速电机
BRAKE GEAR MOTOR

力矩减速电机
TORQUE GEAR MOTOR

直角减速电机
RIGHT ANGLE GEAR MOTOR

控制器
PANEL DRIVE

技术资料
TECHNICAL

电磁制动减速电机 BRAKE GEAR MOTORS

15W 70mm



电机型号/性能 List of motor characteristics

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	额定转速 Rated Speed	额定转矩 Rated Torque	启动转矩 Start Torque	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	r/min	mN.m	mN.m	μF/VAC
PABS70C15GN-M	PABS70C15A-M	15	1ph220	50	0.21	1250	125	86	1.5/450
				60	0.19	1550	100	81	
PABS70A15GN-M	PABS70A15A-M	15	1ph110	50	0.42	1250	125	86	6.0/250
				60	0.36	1550	100	81	

- 各种安全规格以电机铭牌上的型号取得认定。
- 内藏热保护装置(自动复位型)。在电机因某种原因过热时会自行启动使电机停止。
- 电机温度下降后会自行恢复运行,故在进行检查作业时请务必先切断电源。
- 注:“-A”型号中电压为110v时,配置电容器容量以实际铭牌为准。
- When the motor is approved under various safety standards, the model name on the nameplate is the approved model name.
- A thermal protector (automatic reset type) is built-in. If the motor has the problem of overheat for any reason, the thermal protector will be effective to stop the motor.
- When the motor temperature drops the motor will automatically resume operation. Be sure to cut off the power supply before inspecting.
- Note: -A means the voltage 110v. The matched capacitor vaule should be consistent with the nameplate.

减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

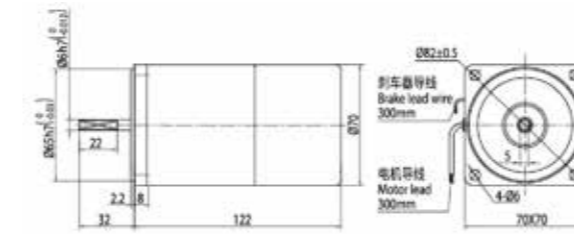
50Hz	转速 Speed r/min	减速比 Gear Ratio																							
		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	转矩 Torque N.m	0.30	0.36	0.51	0.61	0.76	0.91	1.01	1.26	1.51	1.64	1.82	2.27	2.732	3.27	3.63	4.54	4.91	5	5	5	5	5	5	5
60Hz	转速 Speed r/min	516	430	310	258	206	172	155	124	103	86	77.5	62	51.6	43	38.75	31	25.8	20.6	17.2	15.5	12.9	10.3	8.6	7.75
	转矩 Torque N.m	0.22	0.27	0.37	0.45	0.56	0.67	0.74	0.93	1.11	1.20	1.34	1.67	2.01	2.41	2.67	3.34	3.11	4.11	5	5	5	5	5	5

- 表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化,变化范围2~20%。
- 表中 色框表示输出轴的旋转方向与电机旋转方向相反。
- 表中转矩是以电机额定转矩×减速比×传动效率计算而得。
- 减速箱的最大容许转矩为5N·M。
- In the table the speed is calculated from the base of the motors average speed divided by the deceleration ratio. The actual speed will vary with the load ranging from 2% to20%.
- The box in the table indicates the rotation direction of the gearbox output shaft is opposite to that of the motor.
- Torque in the table is calculated from motor rated torque *reduction ratio * transmission efficiency.
- The maximum allowable torque of the gear box is 5N·m.

外形尺寸 (单位mm) Dimension(Unit:mm)

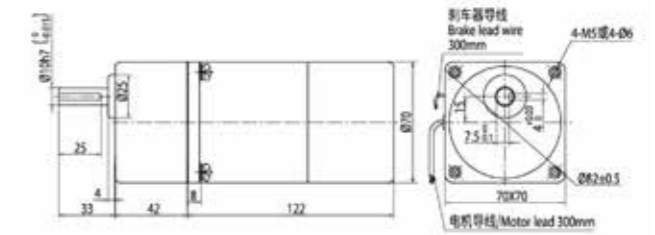
- 圆轴电机

重量Weighr: 1.8kg



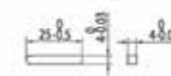
- 组合: 引线型电机+标准减速箱 (减速比1: 3~200)

重量Weighr: 2.3kg



- 键 (减速器附件)

Key (gearbox accessory)

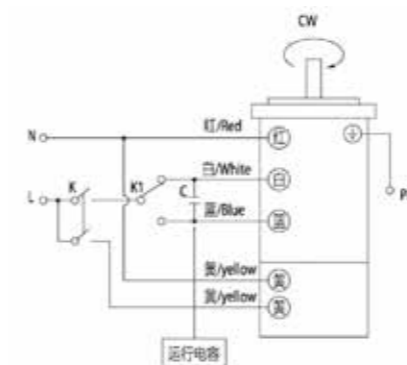


接线图Wiring Diagram

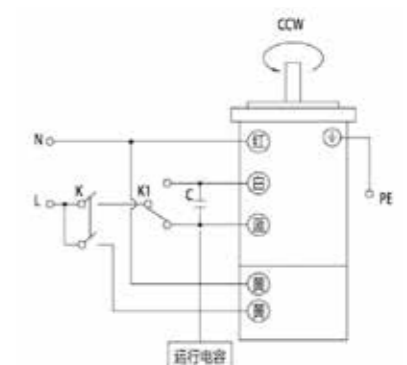
- 运转方向指从电机轴看来的方向。CW表示顺时针方向, CCw表示逆时针方向。
- 表中所记型号为齿轮轴型, 圆轴型亦同。
- B1B2请按图示由联动开关K控制, 请勿直接并联于电机主绕组上, 因为电机停止过程中, 主绕组会短时间发电, 继续供电给B1B2, 造成制动器断电延时, 电机制动时间将延长150毫秒以上。
- 请勿使用固态继电器控制电机和制动器, 因为电机和制动器的工作电流很小, 易造成固态继电器压降过大, 制动器B1B2电压偏低, 制动器无法正常吸合, 造成制动器无法脱开、松闸。
- The direction of motor rotation is viewed from the shaft end of motor. CW represents the clockwise direction while CCW represents the counterclockwise direction.
- Part number indicated in the list is pinion shaft type also valid for the equivalent round shaft type.
- B1B2 please click here is controlled by linkage switch K, please do not directly on the main motor windings in parallel in the process of motor stops, the primary winding can short time power continue to power supply for B1B2 knocked out power delay brake motor braking time wllextend more than 150 milliseconds.
- Do not use solid state relay control motor and brake because motor and brake working current is small easy to cause the pressure drop of the solid state relay is too large the brake B1B2voltage on the low side the brake is not normal and, causing brake release, loose brake.

PABS70A15GN-M/PABS70C15GN-M

顺时针方向CW



逆时针方向CCW



请注意 Note

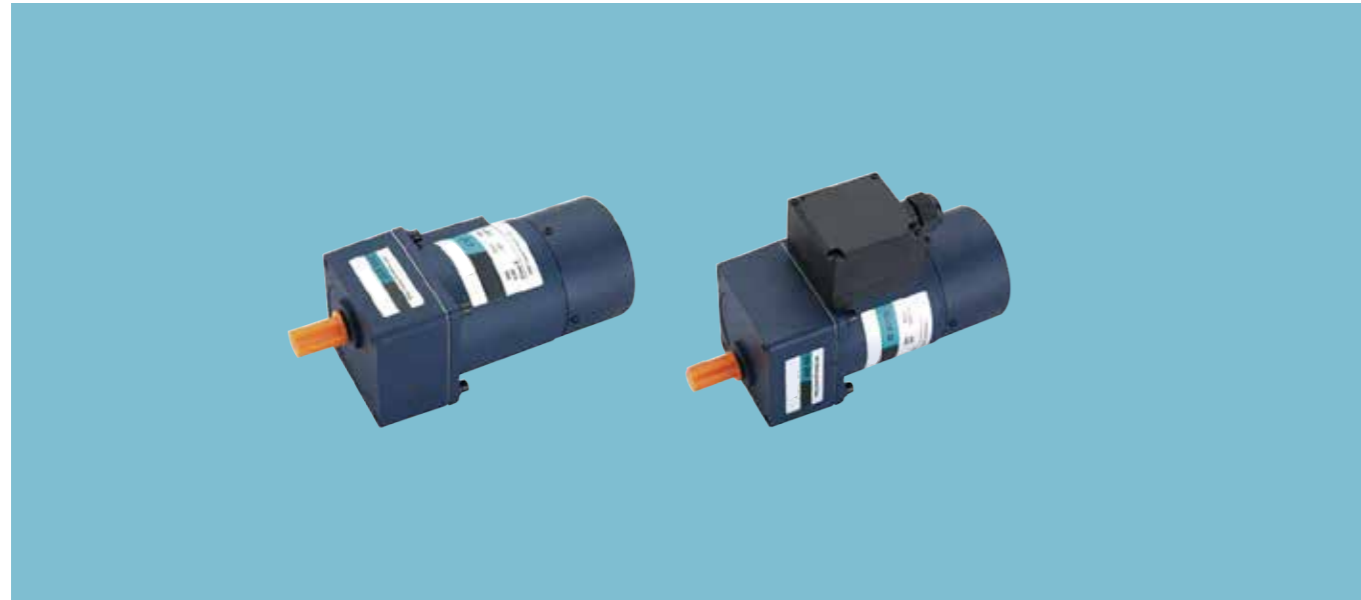
- 单相电机运转方向的转换应在电机停止后进行。
- 若在电机运转时转换运转方向, 可能发生无法转换运转方向或须费时较久的情况。
- Change the direction of single-phase motor rotation only after bring the motor to a stop.
- If an attempt is made to change the direction of rotation while the motor is rotating motor may ignore reversing command or change its direction of rotation after some delay.

说明 INSTRUCTIONS
感应减速电机 INDUCTION GEAR MOTOR
调速减速电机 SPEED CONTROL GEAR MOTOR
阻尼减速电机 REVERSIBLE GEAR MOTOR
电磁制动减速电机 BRAKE GEAR MOTOR
力矩减速电机 TORQUE GEAR MOTOR
直角减速电机 RIGHT ANGLE GEAR MOTOR
控制器 PANEL DRIVE
技术资料 TECHNICAL

说明 INSTRUCTIONS
感应减速电机 INDUCTION GEAR MOTOR
调速减速电机 SPEED CONTROL GEAR MOTOR
阻尼减速电机 REVERSIBLE GEAR MOTOR
电磁制动减速电机 BRAKE GEAR MOTOR
力矩减速电机 TORQUE GEAR MOTOR
直角减速电机 RIGHT ANGLE GEAR MOTOR
控制器 PANEL DRIVE
技术资料 TECHNICAL

电磁制动减速电机 BRAKE GEAR MOTORS

25W 80mm



电机型号/性能 List of motor characteristics

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	额定转速 Rated Speed	额定转矩 Rated Torque	启动转矩 Start Torque	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	r/min	mN.m	mN.m	μF/VAC
PABS80C25GN-M	PABS80C25A-M	25	1ph220	50	0.30	1250	210	163	1.8/450
				60	0.30	1550	170	140	
PABS80A25GN-M	PABS80A25A-M	25	1ph110	50	0.57	1250	210	163	7.0/250
				60	0.54	1550	170	140	
PABS80S25GN-M	PABS80S25A-M	25	3ph220	50	0.24	1250	195	720	/
				60	0.20	1550	160	540	
PABS80SH25GN-M	PABS80SH25A-M	25	3ph380	50	0.14	1250	195	720	/
				60	0.12	1550	160	540	

- 各种安全规格以电机铭牌上的型号取得认定。
- 内藏热保护装置(自动复位型)。在电机因某种原因过热时会自行启动使电机停止。
- 电机温度下降后会自动恢复运行,故在进行检查作业时请务必事先切断电源。
- 注:“-A”型号中电压为110v时,配置电容器容量以实际铭牌为准。
- When the motor is approved under various safety standards the model name on the nameplate is the approved model name.
- A thermal protector (automatic reset type) is built-in. If the motor has the problem of overheat for any reason, the thermal protector will be effective to stop the motor.
- When the motor temperature drops, the motor will automatically resume operation. Be sure to cut off the power supply before inspecting.
- Note: -A means the voltage 110v. The matched capacitor vaule should be consistent with the nameplate.

减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

减速比 Gear Ratio		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
50Hz	转速 Speed r/min	450	375	270	225	180	150	135	108	90	75	67.5	54	45	37.5	33.7	27	22.5	18	15	13.5	11	9	7.5	6.75
	转矩 Torque N.m	0.45	0.54	0.75	0.90	1.12	1.35	1.50	1.87	2.25	2.69	2.99	3.37	4.04	4.85	5.39	6.74	7.28	8	8	8	8	8	8	8
60Hz	转速 Speed r/min	516	430	310	258	206	172	155	124	103	86	77.5	62	51.6	43	38.75	31	25.8	20.6	17.2	15.5	12.9	10.3	8.6	7.75
	转矩 Torque N.m	0.36	0.44	0.60	0.73	0.91	1.09	1.21	1.52	1.82	2.18	2.43	2.73	3.27	3.93	4.37	5.46	6.55	8	8	8	8	8	8	8

- 表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化,变化范围2~20%。
- 表中色框表示输出轴的旋转方向与电机旋转方向相反。
- 表中转矩是以电机额定转矩×减速比×传动效率计算而得。
- 减速箱的最大容许转矩为8N·M。

- In the table the speed is calculated from the base of the motors average speed divided by the deceleration ratio. The actual speed will vary with the load ranging from 2% to20%.
- The box in the table indicates the rotation direction of the gearbox output shaft is opposite to that of the motor.
- Torque in the table is calculated from motor rated torque *reduction ratio * transmission efficiency.
- The maximum allowable torque of the gear box is 8N · m.

外形尺寸 (单位mm) Dimension(Unit:mm)

- 圆轴电机
重量Weighr: 2.15kg
- 组合: 引线型电机+标准减速箱 (减速比1: 3~200)
重量Weighr: 2.95kg

- 组合: 接线盒型电机+标准减速箱 (减速比1: 3~200)
重量Weighr: 3.1kg
- 中间齿轮箱 Decimal Gearhead
可安装在齿轮轴型上Can be connected to GN pinion shafe type
重量Weight: 0.41kg

- 键 (减速器附件)
Key (gearbox accessory)



接线图Wiring Diagram

- 运转方向指从电机轴看来的方向。CW表示顺时针方向, CCw表示逆时针方向。
- 表中所记型号为齿轮轴型, 圆轴型亦同。
- B1B2请按图示由联动开关K控制, 请勿直接并联于电机主绕组上, 因为电机停止过程中, 主绕组会短时间发电, 继续供电给B1B2, 造成制动器断电延时, 电机制动时间将延长150毫秒以上。
- 请勿使用固态继电器控制电机和制动器, 因为电机和制动器的工作电流很小, 易造成固态继电器压降过大, 制动器B1B2电压偏低, 制动器无法正常吸合, 造成制动器无法脱开、松闸。
- The direction of motor rotation is viewed from the shaft end of motor. CW represents the clockwise direction while CCW represents the counterclockwise direction.
- Part number indicated in the list is pinion shaft type also valid for the equivalent round shaft type.
- B1B2 please click here is controlled by linkage switch K, please do not directly on the main motor windings in parallel in the process of motor stops, the primary winding can short time power continue to power supply for B1B2 knocked out power delay brake motor braking time will extend more than 150 milliseconds.
- Do not use solid state relay control motor and brake because motor and brake working current is small easy to cause the pressure drop of the solid state relay is too large the brake B1B2voltage on the low side the brake is not normal and, causing brake release loose brake.

说明 INSTRUCTIONS
感应减速电机 INDUCTION GEAR MOTOR
调速减速电机 SPEED CONTROL GEAR MOTOR
阻尼减速电机 REVERSIBLE GEAR MOTOR
电磁制动减速电机 BRAKE GEAR MOTOR
力矩减速电机 TORQUE GEAR MOTOR
直角减速电机 RIGHT ANGLE GEAR MOTOR
控制器 PANEL DRIVE
技术资料 TECHNICAL

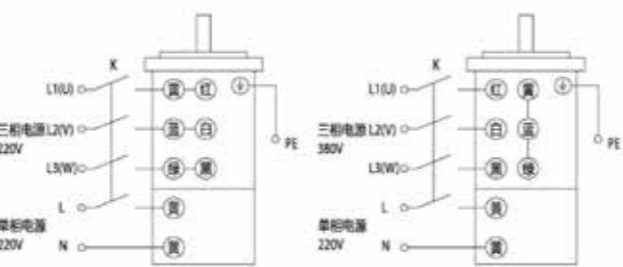
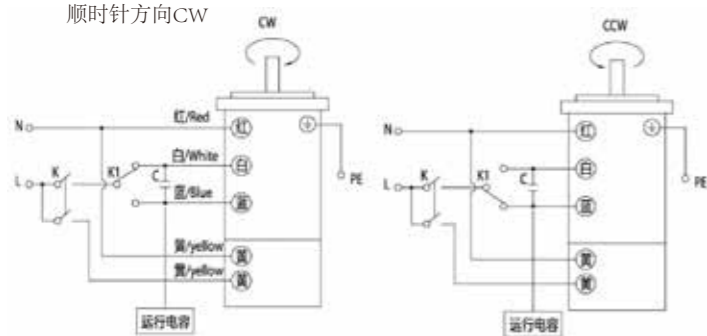
说明 INSTRUCTIONS
感应减速电机 INDUCTION GEAR MOTOR
调速减速电机 SPEED CONTROL GEAR MOTOR
阻尼减速电机 REVERSIBLE GEAR MOTOR
电磁制动减速电机 BRAKE GEAR MOTOR
力矩减速电机 TORQUE GEAR MOTOR
直角减速电机 RIGHT ANGLE GEAR MOTOR
控制器 PANEL DRIVE
技术资料 TECHNICAL

PABS80A25GN-M/PABS80C25GN-M

PABS80S25GN-M/PABS80SH25GN-M

顺时针方向CW

逆时针方向CCW



三相电机若对换任意两条电源线顺序, 可实现反向运转。
 To change the rotation direction change any two connections among.

● 请注意 Note

- 单相电机运转方向的转换应在电机停止后进行。
- 若在电机运转时转换运转方向, 可能发生无法转换运转方向或须费时较久的情况。
- Change the direction of single-phase motor rotation only after bring the motor to a stop.
- If an attempt is made to change the direction of rotation while the motor is rotating motor may ignore reversing command or change its direction of rotation after some delay.

电磁制动减速电机 BRAKE GEAR MOTORS

40W 90mm



● 电机型号/性能 List of motor characteristics

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	额定转速 Rated Speed	额定转矩 Rated Torque	启动转矩 Start Torque	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	r/min	mN.m	mN.m	μF/VAC
PABS90C40GN-M	PABS90C40A-M	40	1ph220	50	0.43	1350	335	260	2.5/450
				60	0.52	1550	260	260	
PABS90A40GN-M	PABS90A40A-M	40	1ph110	50	0.92	1350	335	260	10.0/250
				60	0.92	1550	360	260	
PABS90S40GN-M	PABS90S40A-M	40	3ph220	50	0.27	1350	310	900	/
				60	0.23	1550	260	750	
PABS90SH40GN-M	PABS90SH40A-M	40	3ph380	50	0.16	1350	310	900	/
				60	0.14	1550	260	750	

- 各种安全规格以电机铭牌上的型号取得认定。
- 内藏热保护装置(自动复位型)。在电机因某种原因过热时会自行启动使电机停止。
- 电机温度下降后会自动恢复运行,故在进行检查作业时请务必事先切断电源。
- 注:“-A”型号中电压为110v时,配置电容器容量以实际铭牌为准。
- When the motor is approved under various safety standards the model name on the nameplate is the approved model name.
- A thermal protector (automatic reset type) is built-in. If the motor has the problem of overheat for any reason, the thermal protector will be effective to stop the motor.
- When the motor temperature drops the motor will automatically resume operation. Be sure to cut off the power supply before inspecting.
- Note: -A means the voltage 110v. The matched capacitor vaule should be consistent with the nameplate.

● 减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

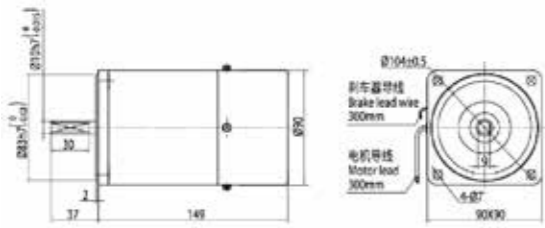
减速比 Gear Ratio		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
50Hz	转速 Speed r/min	450	375	270	225	180	150	135	108	90	75	67.5	54	45	37.5	33.7	27	22.5	18	15	13.5	11	9	7.5	6.75
	转矩 Torque N.m	0.71	0.86	1.20	1.43	1.79	2.14	2.38	2.98	3.57	3.86	4.29	5.36	6.44	7.72	7.72	9.65	10	10	10	10	10	10	10	10
60Hz	转速 Speed r/min	516	430	310	258	206	172	155	124	103	86	77.5	62	51.6	43	38.75	31	25.8	20.6	17.2	15.5	12.9	10.3	8.6	7.75
	转矩 Torque N.m	0.56	0.68	0.94	1.13	1.41	1.69	1.88	2.35	2.82	3.04	3.38	4.23	5.07	6.09	6.09	7.61	9.13	10	10	10	10	10	10	10

- 表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化, 变化范围2~20%。
- 表中 色框表示输出轴的旋转方向与电机旋转方向相反。
- 表中转矩是以电机额定转矩×减速比×传动效率计算而得。
- 减速箱的最大容许转矩为10N·M。

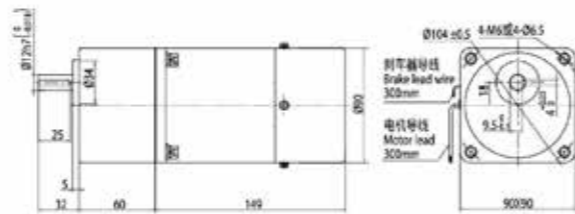
- In the table the speed is calculated from the base of the motors average speed divided by the deceleration ratio. The actual speed will vary with the load ranging from 2% to20%.
- The box in the table indicates the rotation direction of the gearbox output shaft is opposite to that of the motor.
- Torque in the table is calculated from motor rated torque *reduction ratio * transmission efficiency.
- The maximum allowable torque of the gear box is 10N · m.

● 外形尺寸 (单位mm) Dimension(Unit:mm)

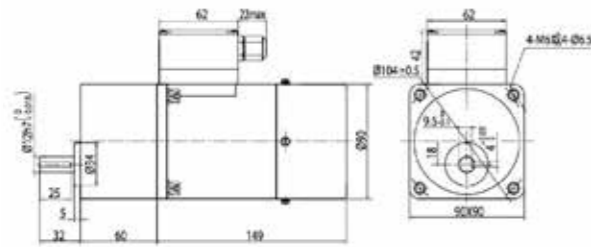
- 圆轴电机
重量Weighr: 3.1kg



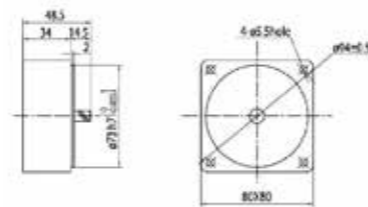
- 组合: 引线型电机+标准减速箱 (减速比1: 3~200)
重量Weighr: 4.45kg



- 组合: 接线盒型电机+标准减速箱 (减速比1: 3~200)
重量Weighr: 4.6kg



- 中间齿轮箱 Decimal Gearhead
可安装在齿轮轴型上.Can be connected to GN pinion shafte type
重量Weight: 0.41kg



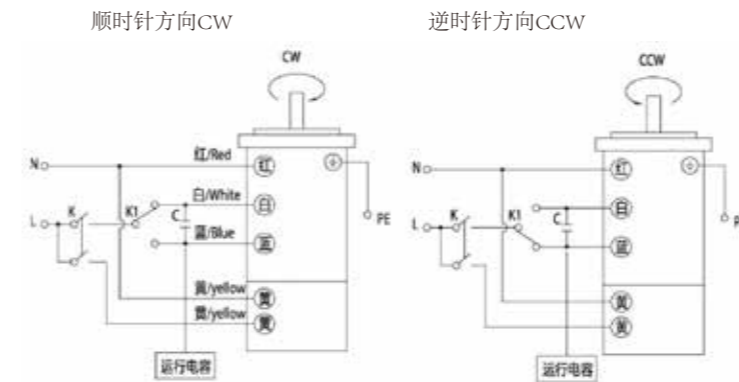
- 键 (减速器附件)
Key (gearbox accessory)



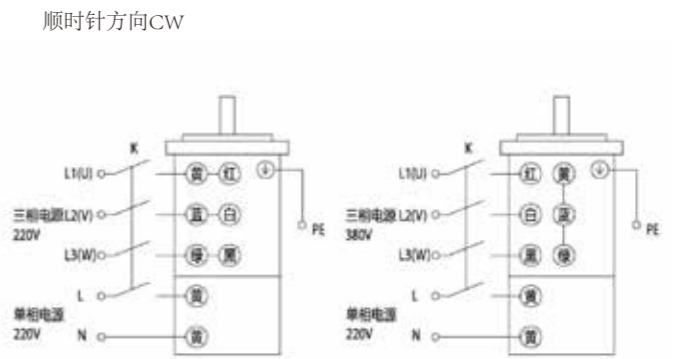
● 接线图Wiring Diagram

- 运转方向指从电机轴看来的方向。CW表示顺时针方向，CCw表示逆时针方向。
- 表中所记型号为齿轮轴型，圆轴型亦同。
- B1B2请按图示由联动开关K控制，请勿直接并联于电机主绕组上，因为电机停止过程中，主绕组会短时间发电，继续供电给B1B2，造成制动器断电延时，电机制动时间将延长150毫秒以上。
- 请勿使用固态继电器控制电机和制动器，因为电机和制动器的工作电流很小，易造成固态继电器压降过大，制动器B1B2电压偏低，制动器无法正常吸合，造成制动器无法脱开、松闸。
- The direction of motor rotation is viewed from the shaft end of motor. CW represents the clockwise direction while CCW represents the counterclockwise direction.
- Part number indicated in the list is pinion shaft type also valid for the equivalent round shaft type.
- B1B2 please click here is controlled by linkage switch K please do not directly on the main motor windings in parallel in the process of motor stops, the primary winding can short time power continue to power supply brake motor braking time will extend more than 150 milliseconds.
- Do not use solid state relay control motor and brake because motor and brake working current is small easy to cause the pressure drop of the solid state relay is too large the brake B1B2 voltage on the low side the brake is not normal and causing brake release loose brake.

PABS90A40GN-M/PABS90C40GN-M



PABS90S40GN-M/PABS90SH40GN-M



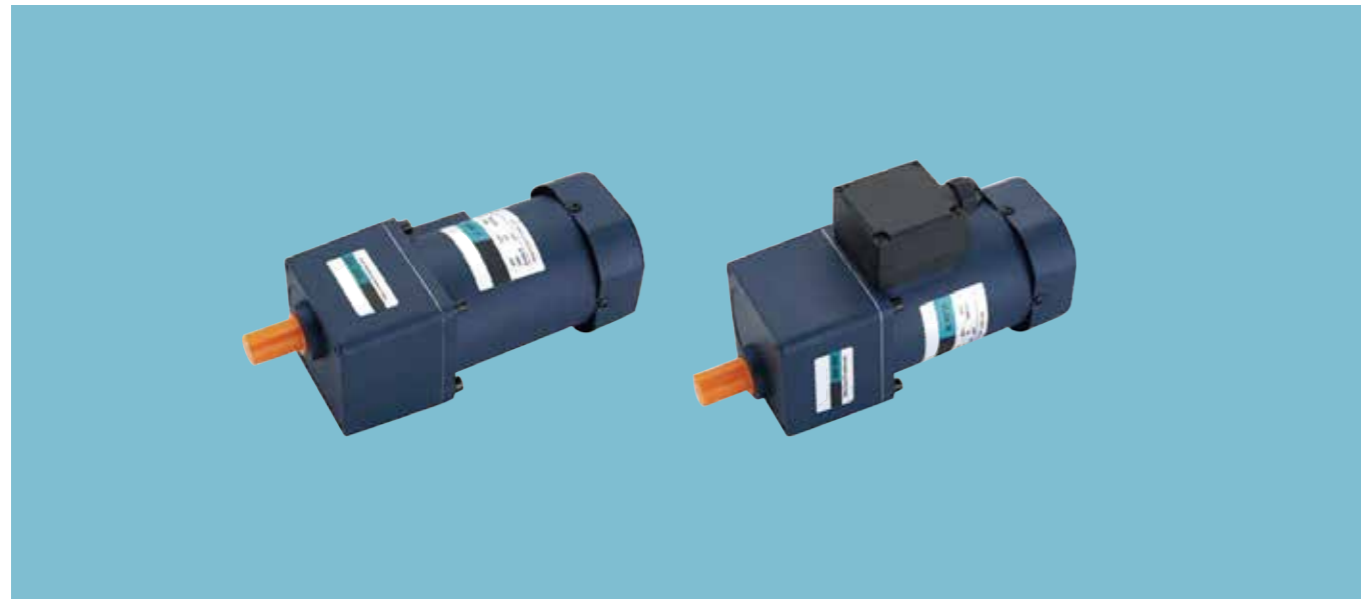
三相电机若对换任意两条电源线顺序，可实现反向运转。
To change the rotation direction change any two connections among.

● 请注意 Note

- 单相电机运转方向的转换应在电机停止后进行。
- 若在电机运转时转换运转方向，可能发生无法转换运转方向或须费时较久的情况。
- Change the direction of single-phase motor rotation only after bring the motor to a stop.
- If an attempt is made to change the direction of rotation while the motor is rotating motor may ignore reversing command or change its direction of rotation after some delay.

电磁制动减速电机 BRAKE GEAR MOTORS

60W 90mm



电机型号/性能 List of motor characteristics

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	额定转速 Rated Speed	额定转矩 Rated Torque	启动转矩 Start Torque	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	r/min	mN.m	mN.m	μF/VAC
PABS90C60GN-MF	PABS90C60A-MF	60	1ph220	50	0.62	1350	500	490	4.0/450
				60	0.66	1550	405	490	
PABS90A60GN-MF	PABS90A60A-MF	60	1ph110	50	1.22	1350	500	490	15.0/250
				60	1.24	1550	405	490	
PABS90S60GN-MF	PABS90S60A-MF	60	3ph220	50	0.41	1350	460	1400	/
				60	0.34	1550	375	1100	
PABS90SH60GN-MF	PABS90S60A-MF	60	3ph380	50	0.25	1350	460	1400	/
				60	0.21	1550	375	1100	

- 各种安全规格以电机铭牌上的型号取得认定。
- 内藏热保护装置(自动复位型)。在电机因某种原因过热时会自行启动使电机停止。
- 电机温度下降后会自动恢复运行,故在进行检查作业时请务必事先切断电源。
- 注:“-A”型号中电压为110v时,配置电容器容量以实际铭牌为准。
- When the motor is approved under various safety standards the model name on the nameplate is the approved model name.
- A thermal protector (automatic reset type) is built-in. If the motor has the problem of overheat for any reason the thermal protector will be effective to stop the motor.
- When the motor temperature drops the motor will automatically resume operation. Be sure to cut off the power supply before inspecting.
- Note: -A means the voltage 110v. The matched capacitor vaule should be consistent with the nameplate.

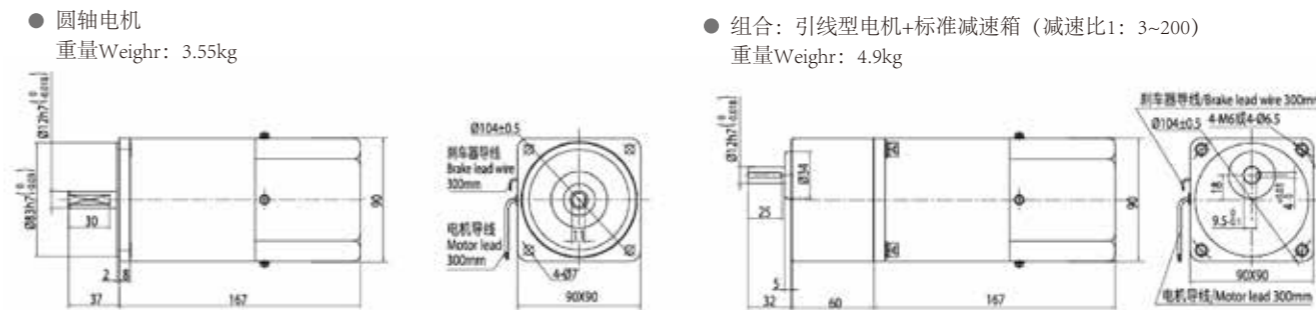
减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

减速比 Gear Ratio		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
50Hz	转速 Speed r/min	450	375	270	225	180	150	135	108	90	75	67.5	54	45	37.5	33.7	27	22.5	18	15	13.5	11	9	7.5	6.75
	转矩 Torque N.m	0.97	1.18	1.64	1.97	2.47	2.96	3.29	4.11	4.93	5.33	5.92	7.40	8.88	10	10	10	10	10	10	10	10	10	10	10
60Hz	转速 Speed r/min	516	430	310	258	206	172	155	124	103	86	77.5	62	51.6	43	38.75	31	25.8	20.6	17.2	15.5	12.9	10.3	8.6	7.75
	转矩 Torque N.m	0.86	1.03	1.43	1.72	2.15	2.57	2.86	3.57	4.29	4.63	5.15	6.43	7.72	9.26	9.5	10	10	10	10	10	10	10	10	10

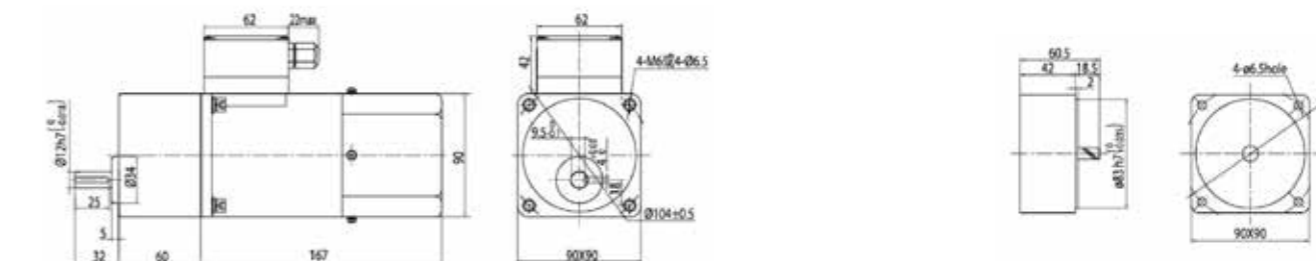
- 表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化,变化范围2~20%。
- 表中 色框表示输出轴的旋转方向与电机旋转方向相反。
- 表中转矩是以电机额定转矩×减速比×传动效率计算而得。
- 减速箱的最大容许转矩为10N·M。

- In the table the speed is calculated from the base of the motors average speed divided by the deceleration ratio. The actual speed will vary with the load ranging from 2% to20%.
- The 色框 box in the table indicates the rotation direction of the gearbox output shaft is opposite to that of the motor.
- Torque in the table is calculated from motor rated torque *reduction ratio * transmission efficiency.
- The maximum allowable torque of the gear box is 10N · m.

外形尺寸 (单位mm) Dimension(Unit:mm)



- 圆轴电机
重量Weighr: 3.55kg
- 组合: 引线型电机+标准减速箱 (减速比1: 3~200)
重量Weighr: 4.9kg
- 接线盒型电机+标准减速箱 (减速比1: 3~200)
重量Weighr: 5.05kg
- 中间齿轮箱 Decimal Gearhead
可安装在齿轮轴型上Can be connected to GN pinion shaft type
重量Weight: 0.6kg



- 键 (减速器附件)
Key (gearbox accessory)



接线图Wiring Diagram

- 运转方向指从电机轴看来的方向。CW表示顺时针方向, CCw表示逆时针方向。
- 表中所记型号为齿轮轴型, 圆轴型亦同。
- B1B2请按图示由联动开关K控制, 请勿直接并联于电机主绕组上, 因为电机停止过程中, 主绕组会短时间发电, 继续供电给B1B2, 造成制动器断电延时, 电机制动时间将延长150毫秒以上。
- 请勿使用固态继电器控制电机和制动器, 因为电机和制动器的工作电流很小, 易造成固态继电器压降过大, 制动器B1B2电压偏低, 制动器无法正常吸合, 造成制动器无法脱开、松闸。
- The direction of motor rotation is viewed from the shaft end of motor. CW represents the clockwise direction while CCW represents the counterclockwise direction.
- Part number indicated in the list is pinion shaft type also valid for the equivalent round shaft type.
- B1B2 please click here is controlled by linkage switch K, please do not directly on the main motor windings in parallel in the process of motor stops, the primary winding can short time power continue to power supply for B1B2 knocked out power delay brake motor braking time will extend more than 150 milliseconds.
- Do not use solid state relay control motor and brake because motor and brake working current is small easy to cause the pressure drop of the solid state relay is too large the brake B1B2 voltage on the low side the brake is not normal and causing brake release loose brake.

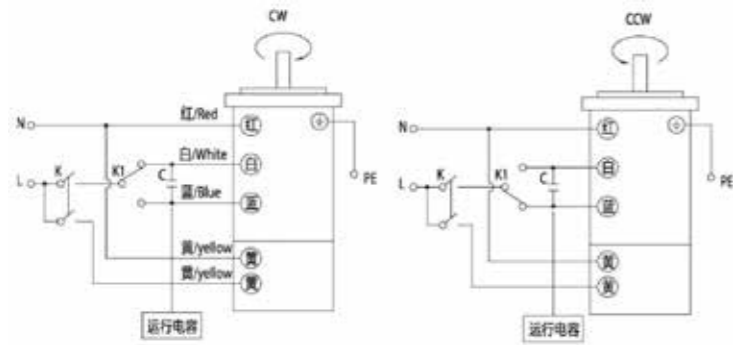
说明 INSTRUCTIONS
感应减速电机 INDUCTION GEAR MOTOR
调速减速电机 SPEED CONTROL GEAR MOTOR
阻尼减速电机 REVERSIBLE GEAR MOTOR
电磁制动减速电机 BRAKE GEAR MOTOR
力矩减速电机 TORQUE GEAR MOTOR
直角减速电机 RIGHT ANGLE GEAR MOTOR
控制器 PANEL DRIVE
技术资料 TECHNICAL

说明 INSTRUCTIONS
感应减速电机 INDUCTION GEAR MOTOR
调速减速电机 SPEED CONTROL GEAR MOTOR
阻尼减速电机 REVERSIBLE GEAR MOTOR
电磁制动减速电机 BRAKE GEAR MOTOR
力矩减速电机 TORQUE GEAR MOTOR
直角减速电机 RIGHT ANGLE GEAR MOTOR
控制器 PANEL DRIVE
技术资料 TECHNICAL

PABS90A60GN-MF/PABS90C60GN-MF

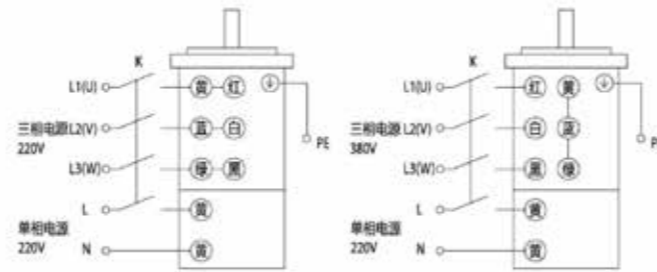
顺时针方向CW

逆时针方向CCW



PABS90S60GN-MF/PABS90SH60GN-MF

顺时针方向CW



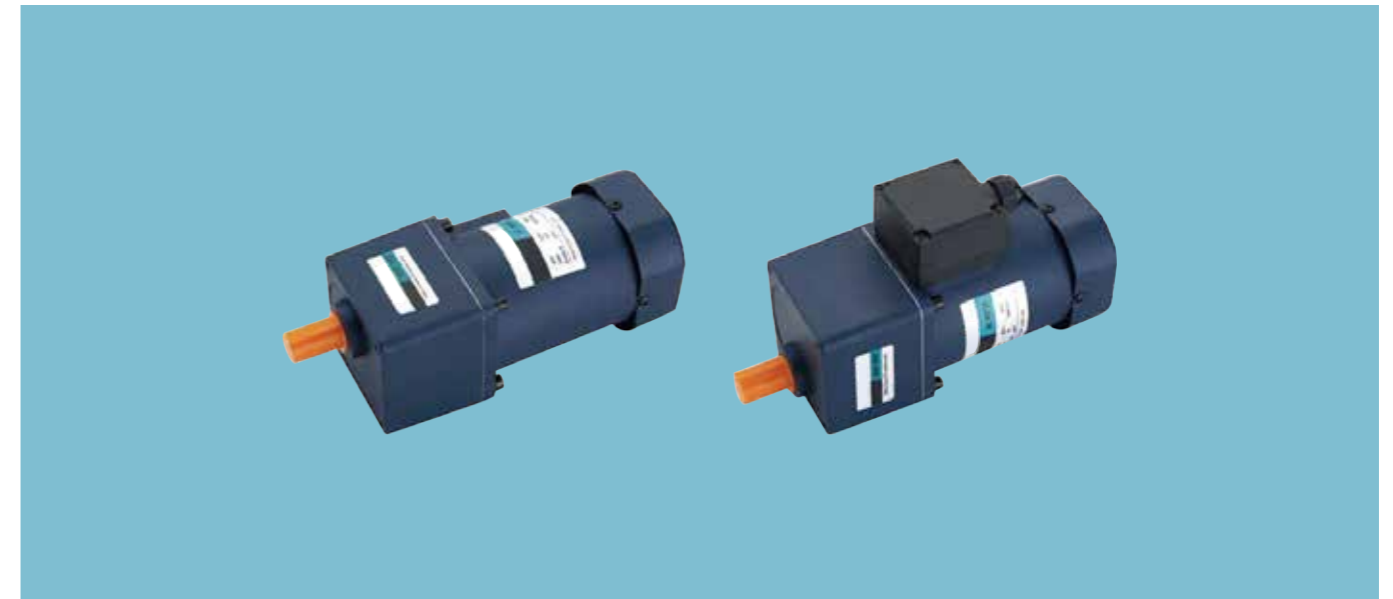
三相电机若对换任意两条电源线顺序, 可实现反向运转。
 To change the rotation direction change any two connections among.

● 请注意 Note

- 单相电机运转方向的转换应在电机停止后进行。
- 若在电机运转时转换运转方向, 可能发生无法转换运转方向或须费时较久的情况。
- Change the direction of single-phase motor rotation only after bring the motor to a stop.
- If an attempt is made to change the direction of rotation while the motor is rotating motor may ignore reversing command or change its direction of rotation after some delay.

电磁制动减速电机 BRAKE GEAR MOTORS

60W 90mm



● 电机型号/性能 List of motor characteristics

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	额定转速 Rated Speed	额定转矩 Rated Torque	启动转矩 Start Torque	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	r/min	mN.m	mN.m	μF/VAC
PABS90C60GU-MF	PABS90C60A-MF	60	1ph220	50	0.62	1350	500	490	4.0/450
				60	0.66	1550	405	490	
PABS90A60GU-MF	PABS90A60A-MF	60	1ph110	50	1.22	1350	500	490	15.0/250
				60	1.24	1550	405	490	
PABS90S60GU-MF	PABS90S60A-MF	60	3ph220	50	0.41	1350	460	1400	/
				60	0.34	1550	375	1100	
PABS90SH60GU-MF	PABS90SH60A-MF	60	3ph380	50	0.25	1350	460	1400	/
				60	0.21	1550	375	1100	

- 各种安全规格以电机铭牌上的型号取得认定。
- 内藏热保护装置(自动复位型)。在电机因某种原因过热时会自行启动使电机停止。
- 电机温度下降后会自行恢复运行,故在进行检查作业时请务必事先切断电源。
- 注:“-A”型号中电压为110v时,配置电容器容量以实际铭牌为准。
- When the motor is approved under various safety standards the model name on the nameplate is the approved model name.
- A thermal protector (automatic reset type) is built-in. If the motor has the problem of overheat for any reason the thermal protector will be effective to stop the motor.
- When the motor temperature drops x the motor will automatically resume operation. Be sure to cut off the power supply before inspecting.
- Note: -A means the voltage 110v. The matched capacitor vaule should be consistent with the nameplate.

● 减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

减速比 Gear Ratio		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
50Hz	转速 Speed r/min	450	375	270	225	180	150	135	108	90	75	67.5	54	45	37.5	33.7	27	22.5	18	15	13.5	11	9	7.5	6.75
	转矩 Torque N.m	0.97	1.18	1.64	1.97	2.47	2.96	2.96	3.70	4.44	5.33	5.33	6.66	7.99	9.59	10.66	13.32	15.98	19.98	20	20	20	20	20	20
60Hz	转速 Speed r/min	516	430	310	258	206	172	155	124	103	86	77.5	62	51.6	43	38.75	31	25.8	20.6	17.2	15.5	12.9	10.3	8.6	7.75
	转矩 Torque N.m	0.86	1.03	1.43	1.72	2.15	2.57	2.87	3.22	3.86	4.63	5.01	5.79	6.95	8.34	9.26	11.58	13.90	17.37	18.76	20	20	20	20	20

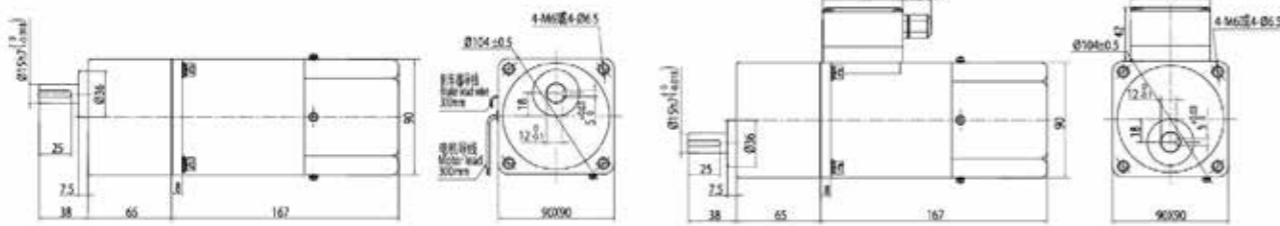
- 表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化, 变化范围2~20%。
- 表中 ■ 色框表示输出轴的旋转方向与电机旋转方向相反。
- 表中转矩是以电机额定转矩×减速比×传动效率计算而得。
- 减速箱的最大容许转矩为20N·M。

- In the table the speed is calculated from the base of the motors average speed divided by the deceleration ratio. The actual speed will vary with the load ranging from 2% to20%.
- The box in the table indicates the rotation direction of the gearbox output shaft is opposite to that of the motor.
- Torque in the table is calculated from motor rated torque *reduction ratio * transmission efficiency.
- The maximum allowable torque of the gear box is 20N · m.

● 外形尺寸 (单位mm) Dimension(Unit:mm)

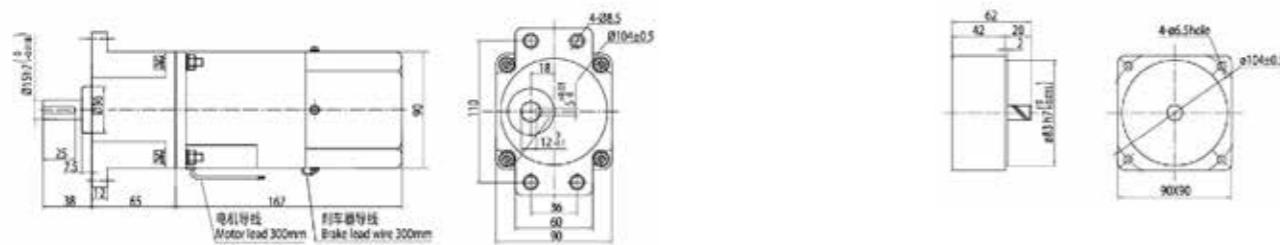
- 圆轴电机
重量Weighr: 3.55kg

- 组合: 接线盒型电机+标准减速箱 (减速比1: 3~200)
重量Weighr: 5.05kg



- 组合: 引线型电机+带耳型减速箱 (减速比1: 3~200)
重量Weighr: 5.2kg

- 中间齿轮箱 Decimal Gearhead
可安装在齿轮轴型上Can be connected to GU pinion shaft type
重量Weight: 0.7kg



- 键 (减速器附件)
Key (gearbox accessory)

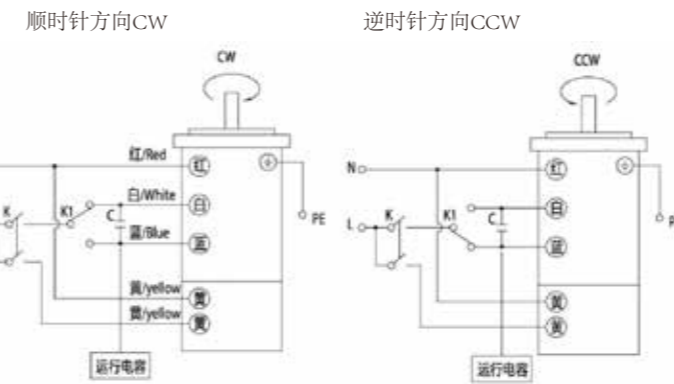


● 接线图Wiring Diagram

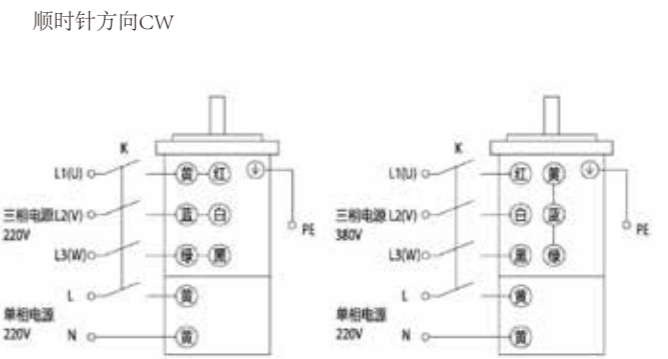
- 运转方向指从电机轴看来的方向。CW表示顺时针方向, CCw表示逆时针方向。
- 表中所记型号为齿轮轴型, 圆轴型亦同。
- B1B2请按图示由联动开关K控制, 请勿直接并联于电机主绕组上, 因为电机停止过程中, 主绕组会短时间发电, 继续供给B1B2, 造成制动器断电延时, 电机制动时间将延长150毫秒以上。
- 请勿使用固态继电器控制电机和制动器, 因为电机和制动器的工作电流很小, 易造成固态继电器压降过大, 制动器B1B2电压偏低, 制动器无法正常吸合, 造成制动器无法脱开、松闸。

- The direction of motor rotation is viewed from the shaft end of motor. CW represents the clockwise direction while CCW represents the counterclockwise direction.
- Part number indicated in the list is pinion shaft type also valid for the equivalent round shaft type.
- B1B2 please click here is controlled by linkage switch K please do not directly on the main motor windings in parallel in the process of motor stops, the primary winding can short time power continue to power supply for B1B2 knocked out power delay brake motor braking time will extend more than 150 milliseconds.
- Do not use solid state relay control motor and brake because motor and brake working current is small easy to cause the pressure drop of the solid state relay is too large the brake B1B2 voltage on the low side the brake is not normal and, causing brake release loose brake.

PABS90A60GU-MF/PABS90C60GU-MF



PABS90S60GU-MF/PABS90SH60GU-MF



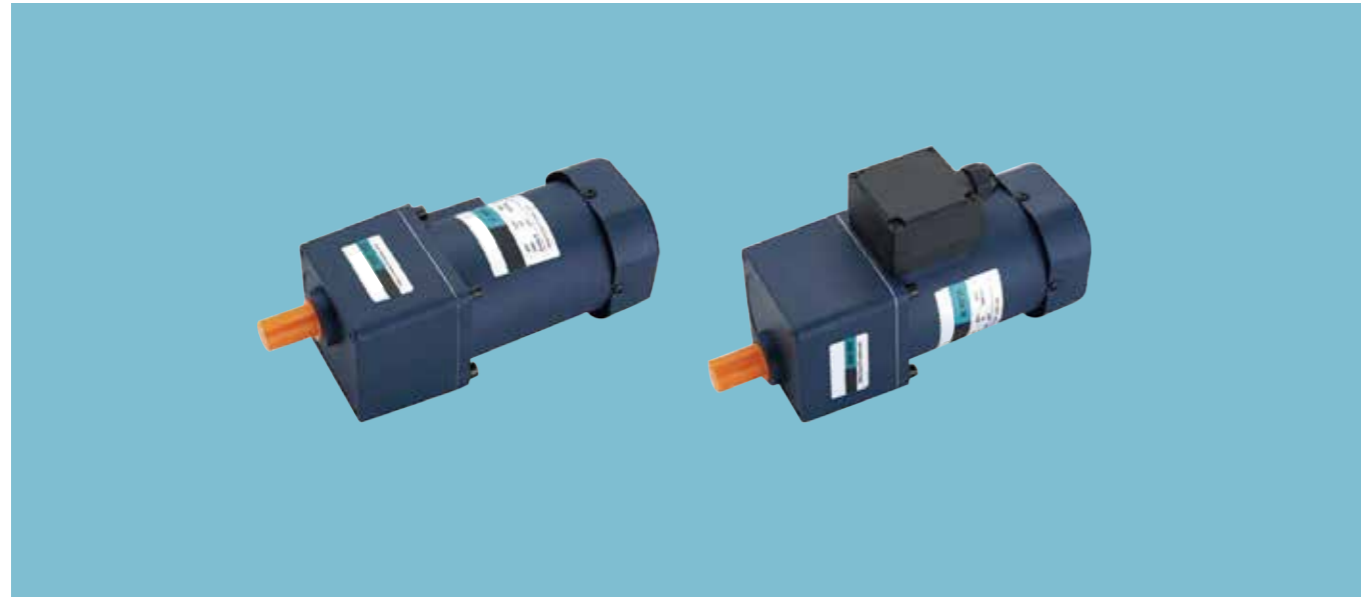
三相电机若对换任意两条电源线顺序, 可实现反向运转。
To change the rotation direction change any two connections among.

● 请注意 Note

- 单相电机运转方向的转换应在电机停止后进行。
- 若在电机运转时转换运转方向, 可能发生无法转换运转方向或须费时较久的情况。
- Change the direction of single-phase motor rotation only after bring the motor to a stop.
- If an attempt is made to change the direction of rotation while the motor is rotating motor may ignore reversing command or change its direction of rotation after some delay.

电磁制动减速电机 BRAKE GEAR MOTORS

90W 90mm



电机型号/性能 List of motor characteristics

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	额定转速 Rated Speed	额定转矩 Rated Torque	启动转矩 Start Torque	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	r/min	mN.m	mN.m	μF/VAC
PABS90C90GU-MF	PABS90C90A-MF	90	1ph220	50	0.83	1350	750	559	5.0/450
PABS90A90GU-MF	PABS90A90A-MF	90	1ph110	50	1.64	1350	750	559	20.0/250
PABS90S90GU-MF	PABS90S90A-MF	90	3ph220	50	0.73	1350	700	2000	/
PABS90SH90GU-MF	PABS90SH90A-MF	90	3ph380	50	0.43	1350	700	2000	/
				60	0.36	1550	560	1550	/

- 各种安全规格以电机铭牌上的型号取得认定。
- 内藏热保护装置(自动复位型)。在电机因某种原因过热时会自行启动使电机停止。
- 电机温度下降后会恢复运行,故在进行检查作业时请务必先切断电源。
- 注:“-A”型号中电压为110v时,配置电容器容量以实际铭牌为准。
- When the motor is approved under various safety standards the model name on the nameplate is the approved model name.
- A thermal protector (automatic reset type) is built-in. If the motor has the problem of overheat for any reason the thermal protector will be effective to stop the motor.
- When the motor temperature drops the motor will automatically resume operation. Be sure to cut off the power supply before inspecting.
- Note: -A means the voltage 110v. The matched capacitor vaule should be consistent with the nameplate.

减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

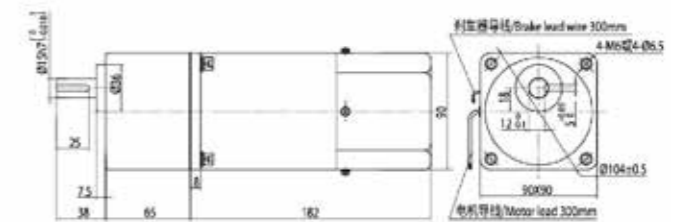
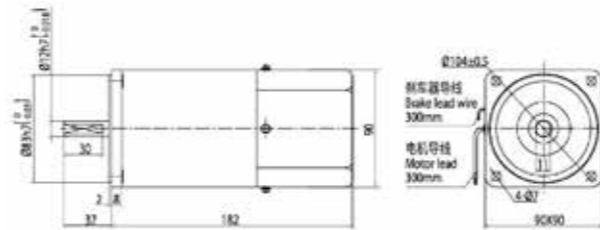
减速比 Gear Ratio		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
50Hz	转速 Speed r/min	450	375	270	225	180	150	135	108	90	75	67.5	54	45	37.5	33.7	27	22.5	18	15	13.5	11	9	7.5	6.75
	转矩 Torque N.m	1.56	1.88	2.60	3.13	3.91	4.69	5.1	5.86	7.03	8.44	8.8	10.55	12.66	15.19	16.88	20	20	20	20	20	20	20	20	20
60Hz	转速 Speed r/min	516	430	310	258	206	172	155	124	103	86	77.5	62	51.6	43	38.75	31	25.8	20.6	17.2	15.5	12.9	10.3	8.6	7.75
	转矩 Torque N.m	1.29	1.55	2.15	2.58	3.22	3.86	4.3	4.83	5.80	6.96	7.3	8.69	10.43	12.52	13.91	17.39	20	20	20	20	20	20	20	20

- 表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化,变化范围2~20%。
- 表中 色框表示输出轴的旋转方向与电机旋转方向相反。
- 表中转矩是以电机额定转矩×减速比×传动效率计算而得。
- 减速箱的最大容许转矩为20N·M。

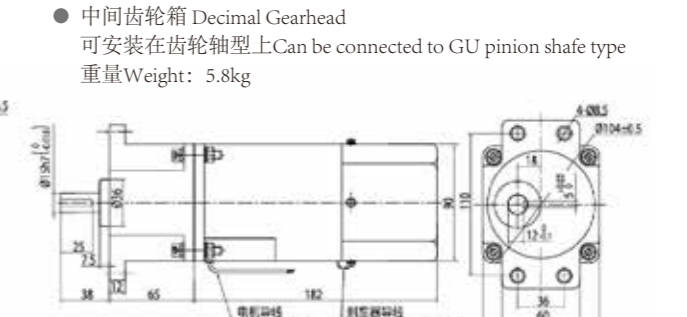
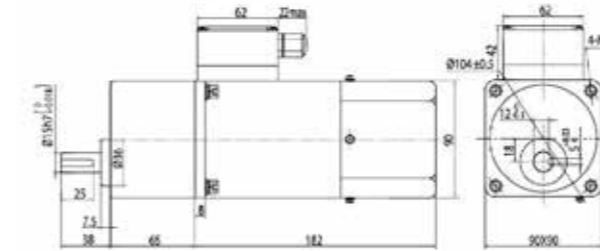
- In the table the speed is calculated from the base of the motors average speed divided by the deceleration ratio. The actual speed will vary with the load ranging from 2% to20%.
- The 色框 box in the table indicates the rotation direction of the gearbox output shaft is opposite to that of the motor.
- Torque in the table is calculated from motor rated torque * reduction ratio * transmission efficiency.
- The maximum allowable torque of the gear box is 20N · m.

外形尺寸 (单位mm) Dimension(Unit:mm)

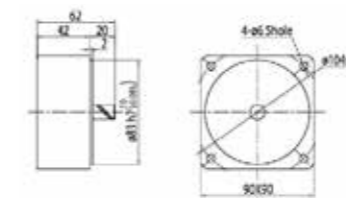
- 圆轴电机
重量Weighr: 4.3kg
- 组合: 接线盒型电机+标准减速箱 (减速比1: 3~200)
重量Weighr: 5.8kg



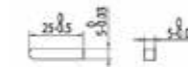
- 组合: 引线型电机+带耳型减速箱 (减速比1: 3~200)
重量Weighr: 5.95kg



- 中间齿轮箱 Decimal Gearhead
可安装在GU齿轮轴型上Can be connected to GU pinion shafe type
重量Weight: 0.7kg



- 键 (减速器附件)
Key (gearbox accessory)

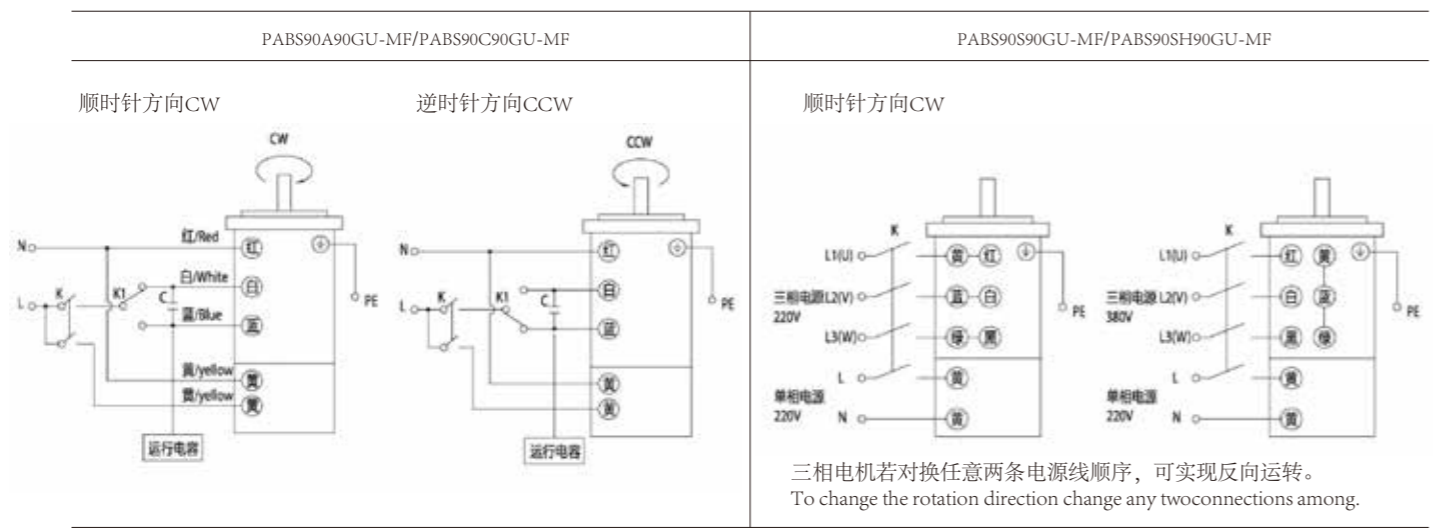


接线图Wiring Diagram

- 运转方向指从电机轴看来的方向。CW表示顺时针方向, CCw表示逆时针方向。
- 表中所记型号为齿轮轴型, 圆轴型亦同。
- B1B2请按图示由联动开关K控制, 请勿直接并联于电机主绕组上, 因为电机停止过程中, 主绕组会短时间发电, 继续供电给B1B2, 造成制动器断电延时, 电机制动时间将延长150毫秒以上。
- 请勿使用固态继电器控制电机和制动器, 因为电机和制动器的工作电流很小, 易造成固态继电器压降过大, 制动器B1B2电压偏低, 制动器无法正常吸合, 造成制动器无法脱开、松闸。
- The direction of motor rotation is viewed from the shaft end of motor. CW represents the clockwise direction while CCW represents the counterclockwise direction.
- Part number indicated in the list is pinion shaft type also valid for the equivalent round shaft type.
- B1B2 please click here is controlled by linkage switch K please do not directly on the main motor windings in parallel in the process of motor stops, the primary winding can short time power continue to power supply for B1B2 knocked out power delay brake motor braking time wllextend more than 150 milliseconds.
- Do not use solid state relay control motor and brake because motor and brake working current is small easy to cause the pressure drop of the solid state relay is too large the brake B1B2voltage on the low side the brake is not normal and, causing brake release loose brake.

说明 INSTRUCTIONS
感应减速电机 INDUCTION GEAR MOTOR
调速减速电机 SPEED CONTROL GEAR MOTOR
阻尼减速电机 REVERSIBLE GEAR MOTOR
电磁制动减速电机 BRAKE GEAR MOTOR
力矩减速电机 TORQUE GEAR MOTOR
直角减速电机 RIGHT ANGLE GEAR MOTOR
控制器 PANEL DRIVE
技术资料 TECHNICAL

说明 INSTRUCTIONS
感应减速电机 INDUCTION GEAR MOTOR
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直角减速电机 RIGHT ANGLE GEAR MOTOR
控制器 PANEL DRIVE
技术资料 TECHNICAL



- 请注意 Note**
- 单相电机运转方向的转换应在电机停止后进行。
 - 若在电机运转时转换运转方向，可能发生无法转换运转方向或须费时较久的情况。
 - Change the direction of single-phase motor rotation only after bring the motor to a stop.
 - If an attempt is made to change the direction of rotation while the motor is rotating motor may ignore reversing command or change its direction of rotation after some delay.

三相电机若对换任意两条电源线顺序，可实现反向运转。
 To change the rotation direction change any two connections among.

电磁制动减速电机 BRAKE GEAR MOTORS

120W 90mm



● 电机型号/性能 List of motor characteristics

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	额定转速 Rated Speed	额定转矩 Rated Torque	启动转矩 Start Torque	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	r/min	mN.m	mN.m	μF/VAC
PABS90C120GU-MF	PABS90C120A-MF	120	1ph220	50	1.03	1350	1000	490	6.0/450
				60	1.23	1550	800	490	
PABS90A120GU-MF	PABS90A120A-MF	120	1ph110	50	2.05	1350	1000	490	25.0/250
				60	2.20	1550	800	490	
PABS90S120GU-MF	PABS90S120A-MF	120	3ph220	50	0.73	1350	930	1400	/
				60	0.62	1550	740	1100	
PABS90SH120GU-MF	PABS90SH120A-MF	120	3ph380	50	0.43	1350	930	1400	/
				60	0.36	1550	740	1100	

- 各种安全规格以电机铭牌上的型号取得认定。
- 内藏热保护装置(自动复位型)。在电机因某种原因过热时会自行启动使电机停止。
- 电机温度下降后会自行恢复运行,故在进行检查作业时请务必事先切断电源。
- 注:“-A”型号中电压为110v时,配置电容器容量以实际铭牌为准。
- When the motor is approved under various safety standards, the model name on the nameplate is the approved model name.
- A thermal protector (automatic reset type) is built-in. If the motor has the problem of overheat for any reason the thermal protector will be effective to stop the motor.
- When the motor temperature drops the motor will automatically resume operation. Be sure to cut off the power supply before inspecting.
- Note: -A means the voltage 110v. The matched capacitor vaule should be consistent with the nameplate.

● 减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

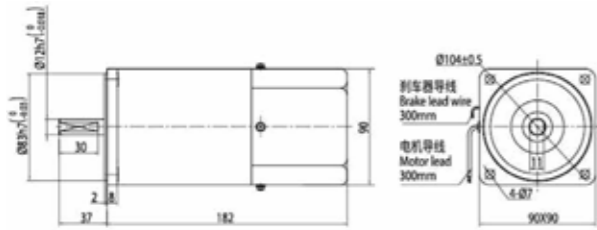
减速比 Gear Ratio		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
50Hz	转速 Speed r/min	450	375	270	225	180	150	135	108	90	75	67.5	54	45	37.5	33.7	27	22.5	18	15	13.5	11	9	7.5	6.75
	转矩 Torque N.m	2.12	2.55	3.54	4.25	5.31	6.37	6.9	7.96	9.56	11.47	12	14.34	17.20	20	20	20	20	20	20	20	20	20	20	20
60Hz	转速 Speed r/min	516	430	310	258	206	172	155	124	103	86	77.5	62	51.6	43	38.75	31	25.8	20.6	17.2	15.5	12.9	10.3	8.6	7.75
	转矩 Torque N.m	1.72	2.07	2.87	3.45	4.31	5.17	5.8	6.46	7.75	9.30	9.9	11.63	13.96	16.75	18.61	20	20	20	20	20	20	20	20	20

- 表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
- 表中 色框表示输出轴的旋转方向与电机旋转方向相反。
- 表中转矩是以电机额定转矩×减速比×传动效率计算而得。
- 减速箱的最大容许转矩为20N·M。

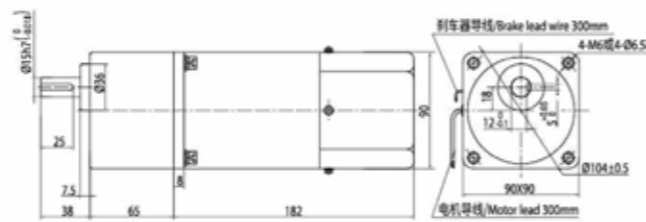
- In the table the speed is calculated from the base of the motors average speed divided by the deceleration ratio. The actual speed will vary with the load ranging from 2% to20%.
- The box in the table indicates the rotation direction of the gearbox output shaft is opposite to that of the motor.
- Torque in the table is calculated from motor rated torque *reduction ratio * transmission efficiency.
- The maximum allowable torque of the gear box is 20N · m.

● 外形尺寸 (单位mm) Dimension(Unit:mm)

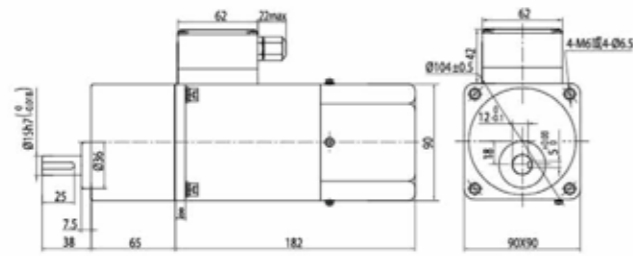
- 圆轴电机
重量Weighr: 4.5kg



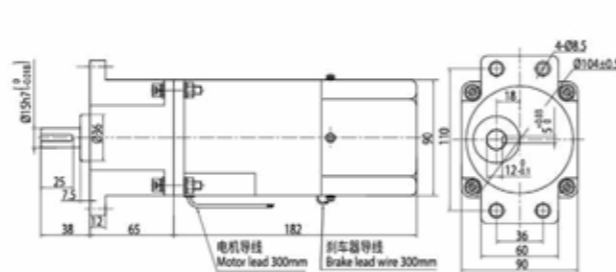
- 组合: 接线盒型电机+标准减速箱 (减速比1: 3~200)
重量Weighr: 6.0kg



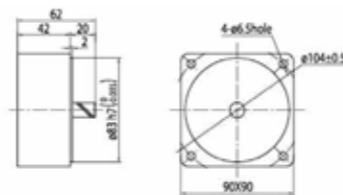
- 组合: 接线盒型电机+标准减速箱 (减速比1: 3~200)
重量Weighr: 6.05kg



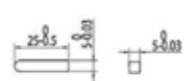
- 组合: 引线型电机+带耳型减速箱 (减速比1: 3~200)
重量Weighr: 6.0kg



- 中间齿轮箱Decimal Gearhead
可安装在GU齿轮轴型上Can be connected to GU pinion shaft type
重量Weighr: 0.7kg



- 键 (减速器附件)
Key (gearbox accessory)

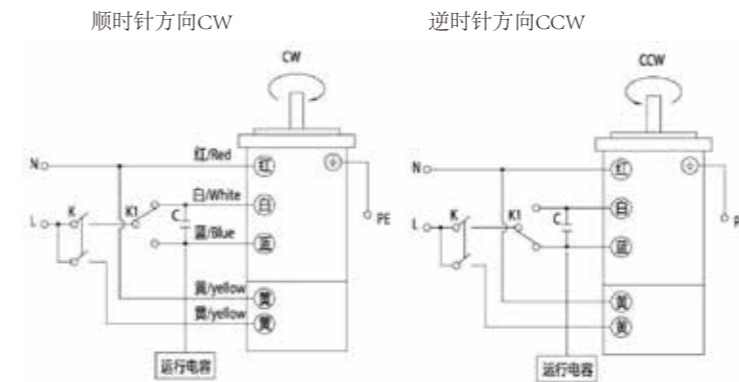


● 接线图Wiring Diagram

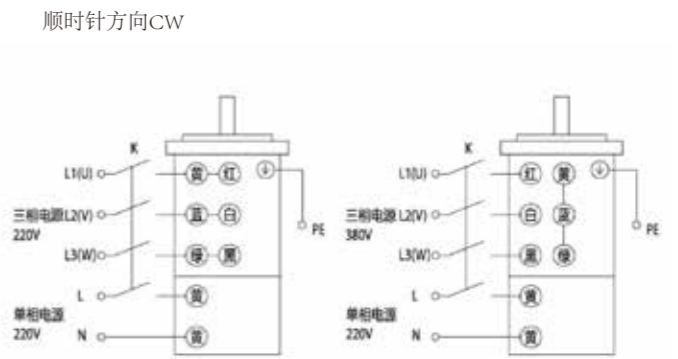
- 运转方向指从电机轴看来的方向。CW表示顺时针方向，CCw表示逆时针方向。
- 表中所记型号为齿轮轴型，圆轴型亦同。
- B1B2请按图示由联动开关K控制，请勿直接并联于电机主绕组上，因为电机停止过程中，主绕组会短时间发电，继续供电给B1B2，造成制动器断电延时，电机制动时间将延长150毫秒以上。
- 请勿使用固态继电器控制电机和制动器，因为电机和制动器的工作电流很小，易造成固态继电器压降过大，制动器B1B2电压偏低，制动器无法正常吸合，造成制动器无法脱开、松闸。

- The direction of motor rotation is viewed from the shaft end of motor. CW represents the clockwise direction while CCw represents the counterclockwise direction.
- Part number indicated in the list is pinion shaft type also valid for the equivalent round shaft type.
- B1B2 please click here is controlled by linkage switch K please do not directly on the main motor windings in parallel in the process of motor stops, the primary winding can short time power continue to power supply for B1B2 knocked out power delay brake motor braking time will extend more than 150 milliseconds.
- Do not use solid state relay control motor and brake because motor and brake working current is small easy to cause the pressure drop of the solid state relay is too large the brake B1B2 voltage on the low side the brake is not normal and, causing brake release loose brake.

PABS90A120GU-MF/PABS90C120GU-MF



PABS90S120GU-MF/PABS90SH120GU-MF



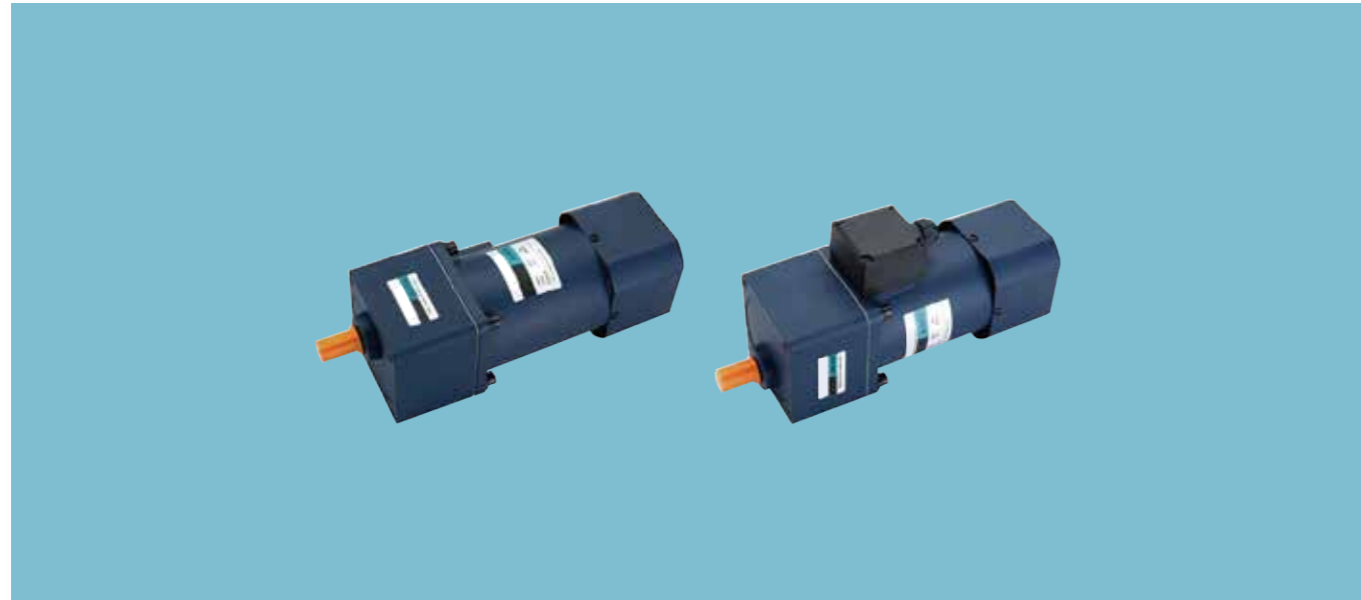
三相电机若对换任意两条电源线顺序，可实现反向运转。
To change the rotation direction change any two connections among.

● 请注意 Note

- 单相电机运转方向的转换应在电机停止后进行。
- 若在电机运转时转换运转方向，可能发生无法转换运转方向或须费时较久的情况。
- Change the direction of single-phase motor rotation only after bring the motor to a stop.
- If an attempt is made to change the direction of rotation while the motor is rotating motor may ignore reversing command or change its direction of rotation after some delay.

电磁制动减速电机 BRAKE GEAR MOTORS

200W 104mm



电机型号/性能 List of motor characteristics

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	额定转速 Rated Speed	额定转矩 Rated Torque	启动转矩 Start Torque	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	r/min	mN.m	mN.m	μF/VAC
PABS104C200GU-MF	PABS104C200A-MF	200	1ph220	50	1.60	1350	1.65	1150	12.0/450
				60	1.65	1550	1.33	1035	
PABS104A200GU-MF	PABS104A200A-MF	200	1ph110	50	3.20	1350	1.65	1150	35.0/250
				60	3.30	1550	1.33	1030	
PABS104S200GU-MF	PABS104S200A-MF	200	3ph220	50	1.10	1350	1.54	4000	/
				60	1.00	1550	1.25	3000	
PABS104SH200GU-MF	PABS104SH200A-MF	200	3ph380	50	0.65	1350	1.54	4000	/
				60	0.60	1550	1.25	3000	

- 各种安全规格以电机铭牌上的型号取得认定。
- 内藏热保护装置(自动复位型)。在电机因某种原因过热时会自行启动使电机停止。
- 电机温度下降后会恢复运行,故在进行检查作业时请务必先切断电源。
- 注:“-A”型号中电压为110v时,配置电容器容量以实际铭牌为准。
- When the motor is approved under various safety standards, the model name on the nameplate is the approved model name.
- A thermal protector (automatic reset type) is built-in. If the motor has the problem of overheat for any reason the thermal protector will be effective to stop the motor.
- When the motor temperature drops the motor will automatically resume operation. Be sure to cut off the power supply before inspecting.
- Note: -A means the voltage 110v. The matched capacitor vaule should be consistent with the nameplate.

减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

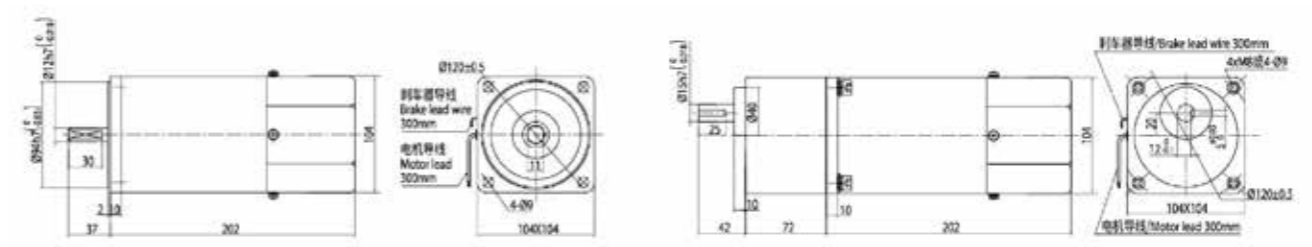
减速比 Gear Ratio		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
50Hz	转速 Speed r/min	450	375	270	225	180	150	135	108	90	75	67.5	54	45	37.5	33.7	27	22.5	18	15	13.5	11	9	7.5	6.75
	转矩 Torque N.m	3.11	3.74	5.19	6.23	7.78	9.34	9.34	11.67	14.01	16.81	16.81	21.01	25.21	30.26	33.62	40	40	40	40	40	40	40	40	40
60Hz	转速 Speed r/min	516	430	310	258	206	172	155	124	103	86	77.5	62	51.6	43	38.75	31	25.8	20.6	17.2	15.5	12.9	10.3	8.6	7.75
	转矩 Torque N.m	2.58	3.09	4.29	5.15	6.44	7.73	7.73	9.66	11.59	13.19	13.19	17.39	20.86	25.04	27.82	34.77	40	40	40	40	40	40	40	40

- 表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化,变化范围2~20%。
- 表中 色框表示输出轴的旋转方向与电机旋转方向相反。
- 表中转矩是以电机额定转矩×减速比×传动效率计算而得。
- 减速箱的最大容许转矩为40N·M。

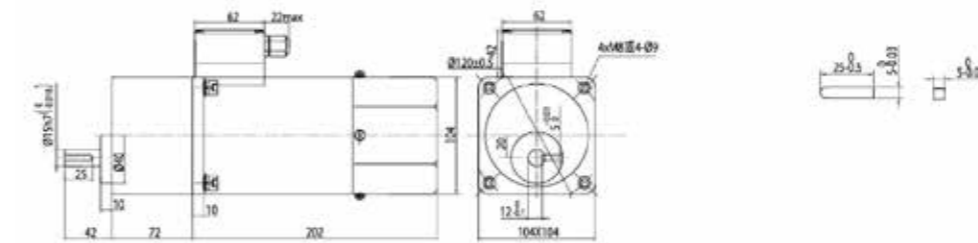
- In the table the speed is calculated from the base of the motors average speed divided by the deceleration ratio. The actual speed will vary with the load ranging from 2% to20%.
- The 色框 box in the table indicates the rotation direction of the gearbox output shaft is opposite to that of the motor.
- Torque in the table is calculated from motor rated torque * reduction ratio * transmission efficiency.
- The maximum allowable torque of the gear box is 40N · m.

外形尺寸 (单位mm) Dimension(Unit:mm)

- 圆轴电机
重量Weighr: 5.9kg
- 组合: 接线盒型电机+标准减速箱 (减速比1: 3~200)
重量Weighr: 13kg



- 组合: 引线型电机+带耳型减速箱 (减速比1: 3~200)
重量Weighr: 13.15kg
- 键 (减速器附件)
Key (gearbox accessory)



接线图Wiring Diagram

- 运转方向指从电机轴看来的方向。CW表示顺时针方向,CCW表示逆时针方向。
- 表中所记型号为齿轮轴型,圆轴型亦同。
- B1B2请按图示由联动开关K控制,请勿直接并联于电机主绕组上,因为电机停止过程中,主绕组会短时间发电,继续供电给B1B2,造成制动器断电延时,电机制动时间将延长150毫秒以上。
- 请勿使用固态继电器控制电机和制动器,因为电机和制动器的工作电流很小,易造成固态继电器压降过大,制动器B1B2电压偏低,制动器无法正常吸合,造成制动器无法脱开、松闸。
- The direction of motor rotation is viewed from the shaft end of motor. CW represents the clockwise direction while CCW represents the counterclockwise direction.
- Part number indicated in the list is pinion shaft type also valid for the equivalent round shaft type.
- B1B2 please click here is controlled by linkage switch K please do not directly on the main motor windings in parallel in the process of motor stops, the primary winding can short time power continue to power supply for B1B2 knocked out power delay brake motor braking time wll extend more than 150 milliseconds.
- Do not use solid state relay control motor and brake because motor and brake working curent is small easy to cause the pressure drop of the solid state relay is too large the brake B1B2voltage on the low side the brake is not normal and causing brake release loose brake.

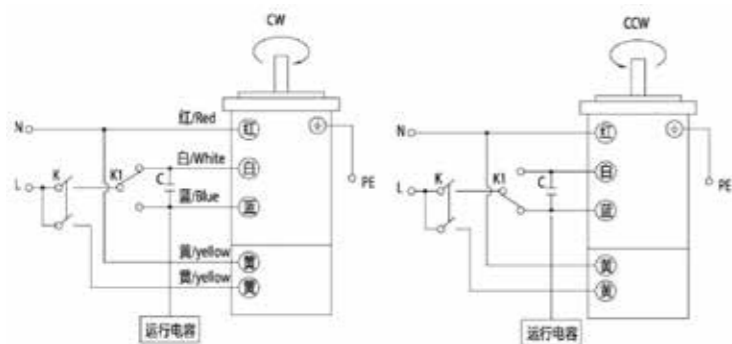
控制器
PANEL DRIVE

技术资料
TECHNICAL

PABS104A200GU-MF/PABS104C200GU-MF

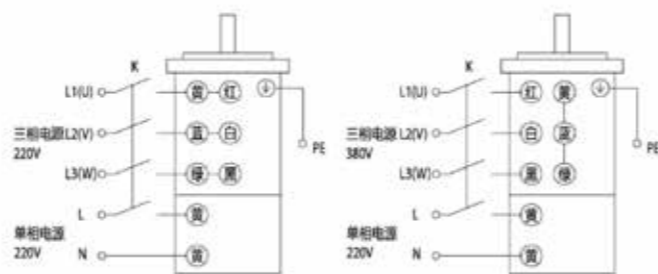
顺时针方向CW

逆时针方向CCW



PABS104S200GU-MF/PABS104SH200GU-MF

顺时针方向CW



三相电机若对换任意两条电源线顺序, 可实现反向运转。
To change the rotation direction change any two connections among.

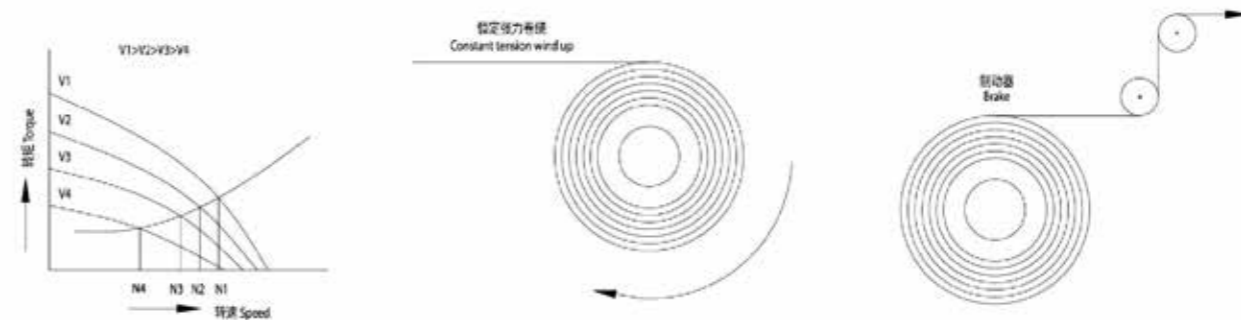
● 请注意 Note

- 单相电机运转方向的转换应在电机停止后进行。
- 若在电机运转时转换运转方向, 可能发生无法转换运转方向或须费时较久的情况。
- Change the direction of single-phase motor rotation only after bring the motor to a stop.
- If an attempt is made to change the direction of rotation while the motor is rotating motor may ignore reversing command or change its direction of rotation after some delay.

力矩减速电机 TORQUE GEAR MOTOR

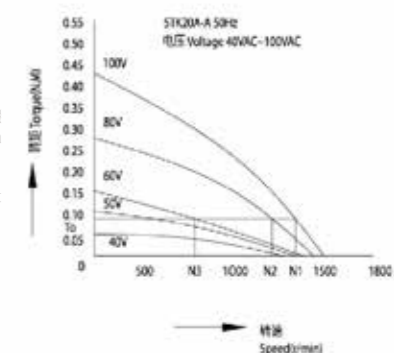
● 特征 Feature

- 具有垂下特征, 可调速范围宽大。
力矩电机由于起动转矩大, 具有垂下的特征, 因此, 能够通过改变电压进行调速。(电机的转矩与电压的平方成正比)
- 适用于卷取作业
以固定的张力连续卷取定速运转的物体时, 若卷轴机直径增大至2倍, 则电动机的输出转矩亦增大至倍, 而电动机转速则减半。作业时须保持这一比例关系。
- 可作为制动使用
电机在转速-转矩特性的制动领域, 可作为制动来使用。此外, 也可以通过直流励磁进行固定张力控制。
- The Speed Can Vary Widely, Depending on the Sloping Characteristics.
Torque motors have a high starting torque and sloping characteristics, allowing easy speed control simply by changing the voltage of the power supply. (The motor torque changes approximately proportion to the square of the voltage)
- Suitable For Winding Applications
In an application where an object is released continuously at a constant speed and wound up with constant tension, the torque must be doubled and the speed must be halved if the diameter of the winding spools doubled.
- Use As A Brake
By using the motor in the braking region of the speed-torque characteristics, it can serve as a brake. Constant tension operation can be achieved by applying a DC voltage.



● 转速—转矩特性图的读方法 How To Read Speed-Torque Characteristics

- 转矩电动机的转矩几乎与电变化。通过改变电动机通电电压, 就能够得到各电压下分别具有垂下性-转矩特性曲线。
- 负载转矩时程压调整为100V、80V、60V的话, 电动机分别以N1、N2、N3转速运转, 通过改变电压, 能够很简单地改变转速。
- 使用转矩电动机时, 请了解必需的转矩和转速, 根据是连续使用还是短时间使用, 参照转速-转矩特性作出选择。在堵转状态下使用时, 选择基准只考虑转矩。
- 用于连续运转等会造成温度上升问题的场合时, 可通过选用较大输出功率的产品以调整电压方式控制转速、转矩。
- The motor torque changes approximately proportion to the square of the voltage. When the voltage supplied to the motors: changed speed-torque curves with a sloping characteristics (torque is highest at zero speed and decreases steadily with increasing speed) shifts to that of the corresponding voltage.
- When the voltage is changed to 100V, 80V and 60V while the load torque is TO, the motor rotates at speeds N1, N2 and N3 respectively. Thus, the speed can be changed easily by varying the voltage.
- When choosing a torque motor, first determine the required torque and speed. Then select a motor using the speed-torque characteristics curves to determine whether the motor should be operated under continuous duty or limited duty. When used under locked rotor conditions, only the torque factor is considered.
- The temperature rise of the motor may cause a problem during continuous operation. In this case, choose a motor with an output power large enough for continuous operation and adjust the voltage to control the torque and speed.



● 力矩电机电压控制方法 Voltage control of torque motors

电压控制的一般方法是，使用双向可控硅中等的相位控制方式。是一种如图所示，通过改变触发双向可控硅的相位角 α ，使输入电压像斜线部分那样变化的控制方法。

The method most commonly used to control voltage is by phase control using a triac. As shown in Fig. 1 by changing the phase angle α at which the triac switches the input voltage is controlled as represented by the phase angle areas of the graph.

● 装有减速器时的输出转矩 Gear motor torque table

由于具有垂下特性，因此，力矩电机可以实现从停止状态到最高转速之间的任一转速。装有减速器中间减速器时的容许转矩，请参照转速转矩特性曲线图，根据所使用的转速和转矩，按照下面的公式算出：

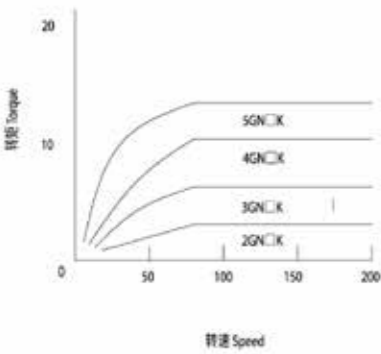
减速器输出轴转速 $NG = \text{电机转速} \times 1 / \text{减速器减速比}$
 减速器输出轴转矩 $TG = \text{电机转矩} \times \text{减速器减速比} \times \text{减速器传动效率}$

Due to the sloping characteristics, torque motors can be operated over a wide speed range from locked rotor condition to the maximum speed. The permissible torque when gearhead and a decimal gearhead are directly connected can be calculated according to the following formula using the speed and torque determined from the speed-torque characteristics

Speed of gearhead output shaft $NG = \text{Motor speed} \times 1 / \text{gearhead gear ratio}$
 Output torque of gearhead $TG = \text{Motor torque} \times \text{gearhead gear ratio} \times \text{gearhead efficiency}$

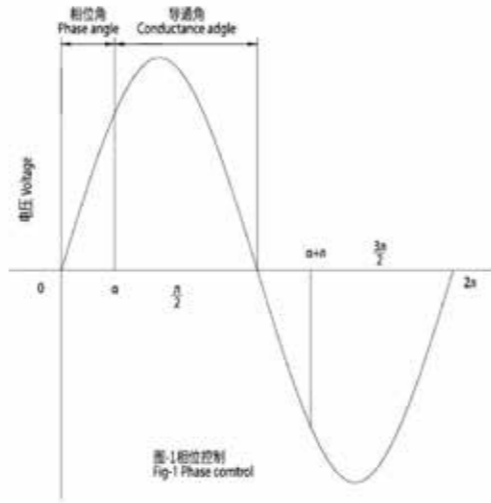
● 请注意，减速器的输出轴转矩不可大于减速器的最大容许转矩

Please note, the output torque of the gearhead must be lower than the maximum permissible torque



减速器型号 Gearhead Model	减速器速比 Gearhead Gear Ratio	减速器传动效率 Gearhead Efficiency
2GN□K	3-18	81%
3GN□K	25-36	73%
4GN□K	50-200	66%

- 减速器、中间减速器另售。
- 减速器型号的口为减速比的数值。
- Gearheads and decimal gearheads are sold separately.
- Enter the gear ratio in the box (□) within the model name.

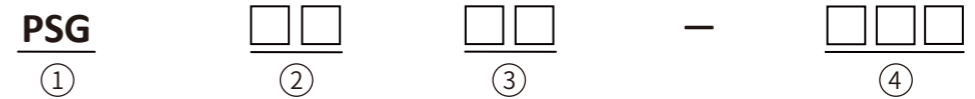


型号的阅读方法 PART NUMBER NAMING RULE

● 电动机 Motor



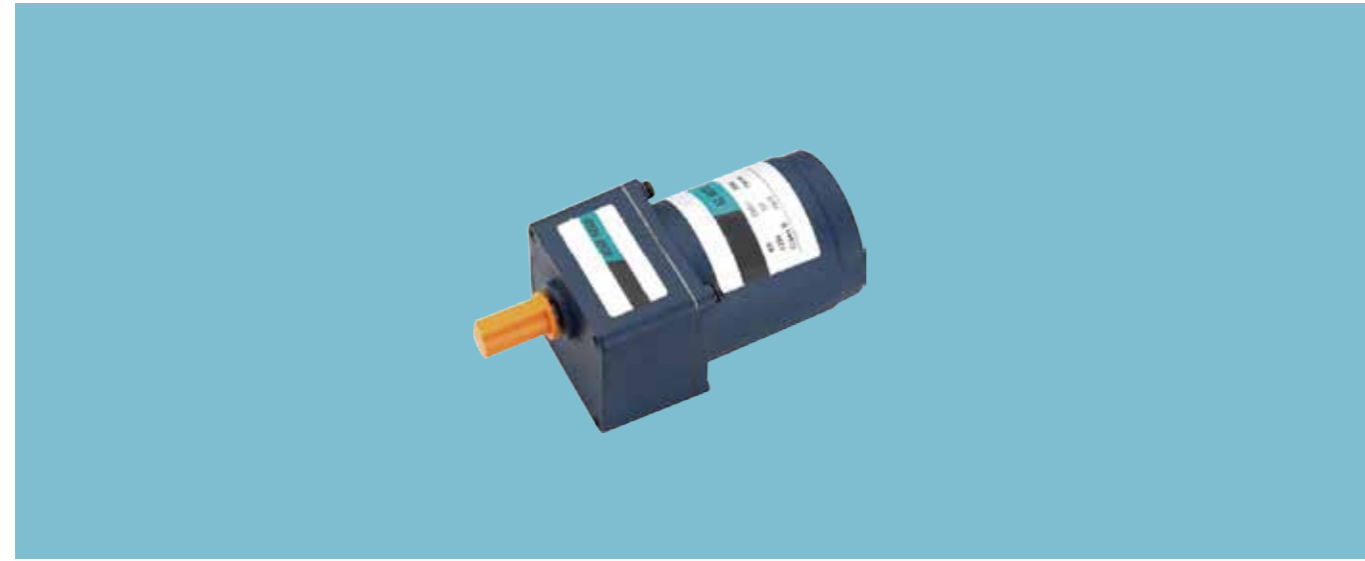
①	PrimoPal Torque Gear Motor Primopal力矩减速电机	PATS: 力矩电机
②	Frame Size 基座尺寸	60:60mm 70:70mm 80:80mm 90:90mm 104:104mm 120:120mm
③	Voltage & Poles 电源电压·极数	A: 单相 Single-phase, 100V, 50/60Hz, 4P C: 单相 Single-phase, 220/230V, 50Hz, 4P
④	Output Power 输出功率	例(Example)20:20W
⑤	Shaft Type 转轴形状	GN: GN型齿轮轴 GN Type Pinion Shaft GU: GU型齿轮轴 GU Type Pinion Shaft A: 圆轴型 Round Shaft K: 键槽型 Keyway SShaft
⑥	Special Type 特殊类型	T: 带接线盒型及方向 Terminal box type: T常规、T1左方向、T2上方向、T3右方向 F: W/Fan 带风扇 FF: W/Forced Fan 强制风扇
⑦	P: 带热保护器 Thermal protector	



①	PrimoPal Spur Gearbox	Primopal 齿轮变速箱
②	Frame Size 尺寸	60:60mm 70:70mm 80:80mm 90:90mm 104:104mm 120:120mm
③	Gear Type 类型	GN: GN型齿轮轴 Ordinary Helical Gear GU: GU型齿轮轴 Enhanced Helical Gear
④	Reduction Ratio 减速比	R30: 1:3 R36: 1:3.6
⑤	Bearing type 轴承种类	K: 滚珠轴承 (对5GU方型箱体标注为KB) Bearing (make KB for type GU square case)
⑥	Mounting hole type 安装孔类型	T: 箱体通孔, 无则表示箱体螺纹孔 If not it represents the threaded hole of box body

力矩减速电机 TORQUE GEAR MOTOR

3W 60mm



电机型号/性能 List of motor characteristics

电机型号 Motor Model		使用额定 (堵转) Rating At Lock Rotor	电压 Voltage	频率 Frequency	启动转矩 Frequency	最大输出功率 Max. Output Power	最大输出功率 时转速 Speed Max. Output Power	最大输出功率 时的转矩 Torque At Aax. Output Power	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	mN.m	mN.m	r/min	mN.m	μF/VAC
PATS60C3GN-P	PATS60C3A-P	5min	220	50	69	3.2	750	41	1.5/450
		CONT	140		25	1.2		16	
PATS60C3GN-P	PATS60C3A-P	5min	220	60	69	3.2	900	34	1.2/250
		CONT	140		25	1.2		13	
PATS60A3GN-P	PATS60A3A-P	5min	110	50	69	3.2	750	41	7.0/450
		CONT	60		25	1.2		16	
PATS60A3GN-P	PATS60A3A-P	5min	110	60	69	3.2	900	34	6.0/250
		CONT	60		25	1.2		13	

- 由于力矩电机设计工作在力矩模式，因此电机工作效率低，若电机连续工作在较高电压下，电机温升较高，甚至触发内部热保护器，造成电机无法正常运转。设计、造型、使用时请注意。
- 力矩电机内部装有自动复位型热保护器，若电机运转过热，热保护器将切断电机电源，电机将停止运转；当电机温度下降后，热保护器讲自动复位供电，电机重新运转。故在进行操作检查时，必须先切断电源，防止发生事故。
- 自动复位型热保护，动作温度：120℃-125℃，复位温度：80-85℃。
- Since the torque motor is designed to work in torque mode the efficiency of the motor is not very high.If the motor is continuously operated at a higher voltage the temperature rise of the motor is higher and even the internal thermal protector is triggered Cause the motor can not run normally.Please pay attention when designing modeling and using.
- The torque motoris equipped vwith an automatic reset type thermal protector.If the motor runs too ho the thermal protector wl cut of the motor powver and the motox will stop.When the temperature of the motor drops the thermal protector will automatically reset the power supply and the motor will run again. Therefore when performing operation inspection the power supply must be cut off to prevent accidents.
- Automatic reset type thermal protection operating temperature: 120℃-125℃, reset temperature: 80-85℃.

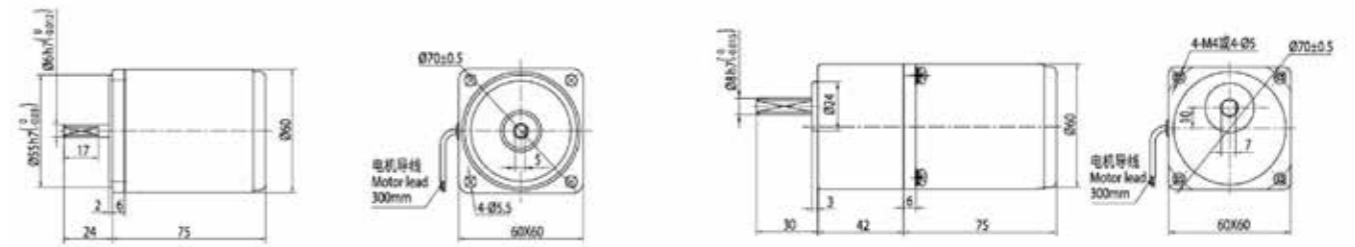
减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

减速比 Gear Ratio		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
50Hz	转速 Speed r/min	250	208	150	125	100	83	75	60	50	42	37.5	30	25	21	18.75	15	12.5	10	8.33	7.5	6.25	5	4.17	3.75
	转矩 Torque N.m	0.10	0.12	0.17	0.20	0.25	0.30	0.33	0.42	0.50	0.60	0.60	0.75	0.90	1.08	1.20	1.49	1.74	2.17	2.60	2.90	3	3	3	3
60Hz	转速 Speed r/min	300	250	180	150	120	100	90	72	60	50	45	36	30	25	22.5	18	15	12	10	9	7.5	6	5	4.5
	转矩 Torque N.m	0.08	0.10	0.14	0.17	0.21	0.25	0.28	0.34	0.41	0.50	0.50	0.62	0.74	0.89	0.99	1.24	1.34	1.67	2.01	2.23	2.68	3	3	3

- 表中转速是以电机的平均转速（50Hz：750r/min、60Hz：900/min）为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
- 表中色框表示输出轴的旋转方向与电机旋转方向相反。
- 表中转矩是以电机额定转矩×减速比×传动效率计算而得。
- 减速箱的最大容许转矩为3NM。
- In the table the speedis calculated from the base ofthe motors average speed（50Hz：750r/min，60Hz：900r/min）divided by the deceleration ratio. The actual speed wil vary withthe load ranging from 2%to 20%.
- The box in the table indicates that the rotation direction of the output axis is opposite to that of the motor.
- Table transfer torque is calculated from motor rated torque*reduction ratio*transmission efficiency.
- The maximum allowable torque of the decelerator is 3NM.

外形尺寸（单位mm） Dimension(Unit:mm)

- 圆轴电机
重量Weighr: 0.7kg
- 组合：引线型电机+标准减速箱（减速比1: 3~200）
重量Weighr: 1.15kg



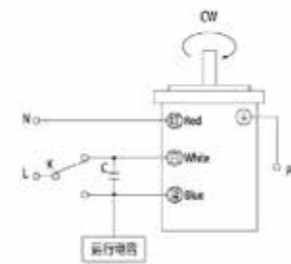
短箱体Short Gear Box

- 其中速比3~18可以做成短型减速箱 高度为32mm。 Gear ratio 3~18 short case is possible Height of32mm。

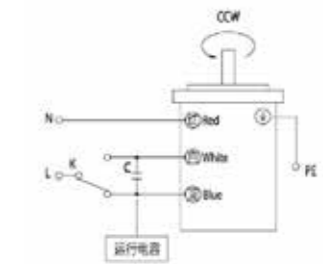
接线图Wiring Diagram

- 运转方向指从电机轴看来的方向。CW表示顺时针方向，cCW表示逆时针方向。
- 表中所记型号为齿轮轴型，圆轴型亦同。
- The direction of motor rotation is as viewed from the shaft end of motoc CW represents the clockwise direction whle CCW represents the counterclockwise direction.
- Part number indicated in the list is pinion shaft we also valid for the equivalent round shaft type

顺时针方向CW



逆时针方向CCW



请注意Note

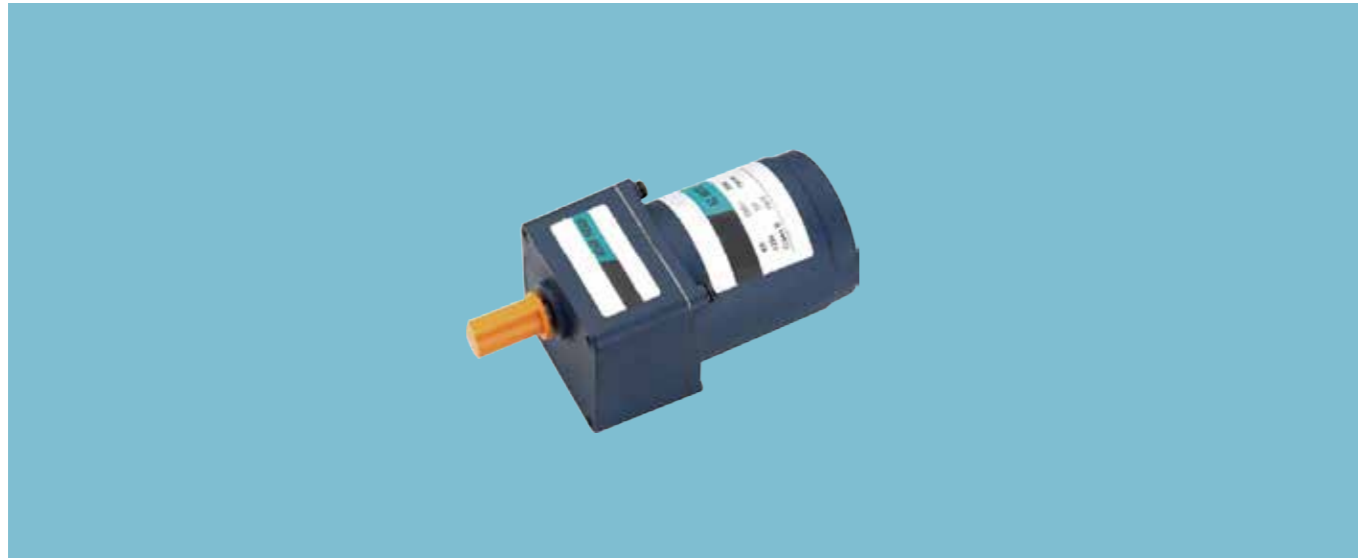
单相电机运转方向的转换应在电机停止后进行。
若在电机运转时转换运转方向，可能发生无法转换运转方向或须费时较久的情况。
Change the direction of single-phase motor rotation only after bring the motor to a stop.
If an attempt is made to change the direction of rotation while the motor is rotating motor may ignore reversing command or change its direction of rotation after some delay.

力矩减速电机

TORQUE GEAR MOTOR

6W

70mm



电机型号/性能 List of motor characteristics

电机型号 Motor Model		使用额定 (堵转) Rating At Lock Rotor	电压 Voltage	频率 Frequency	启动转矩 Frequency	最大输出功率 Max.Output Power	最大输出功率 时转速 Speed Max. Output Power	最大输出功率 时的转矩 Torque At Aax. Output Power	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	mN.m	mN.m	r/min	mN.m	μF/VAC
PATS70C6GN-P	PATS70C6A-P	5min	220	50	134	6	750	76	2.0/450
		CONT	140		68	2.5		32	
PATS70C6GN-P	PATS70C6A-P	5min	220	60	134	6.5	900	69	1.5/250
		CONT	140		68	2.8		30	
PATS70A6GN-P	PATS70A6A-P	5min	110	50	134	6	750	76	8.0/450
		CONT	60		68	2.8		32	
PATS70A6GN-P	PATS70A6A-P	5min	110	60	134	6.5	900	69	7.0/250
		CONT	60		68	2.8		30	

- 由于力矩电机设计工作在力矩模式，因此电机工作效率低，若电机连续工作在较高电压下，电机温升较高，甚至触发内部热保护器，造成电机无法正常运转。设计、造型、使用时请注意。
- 力矩电机内部装有自动复位型热保护器，若电机运转过热，热保护器将切断电机电源，电机将停止运转；当电机温度下降后，热保护器讲自动复位供电，电机重新运转。故在进行操作检查时，必须先切断电源，防止发生事故。
- 自动复位型热保护，动作温度：120℃-125℃，复位温度：80-85℃。
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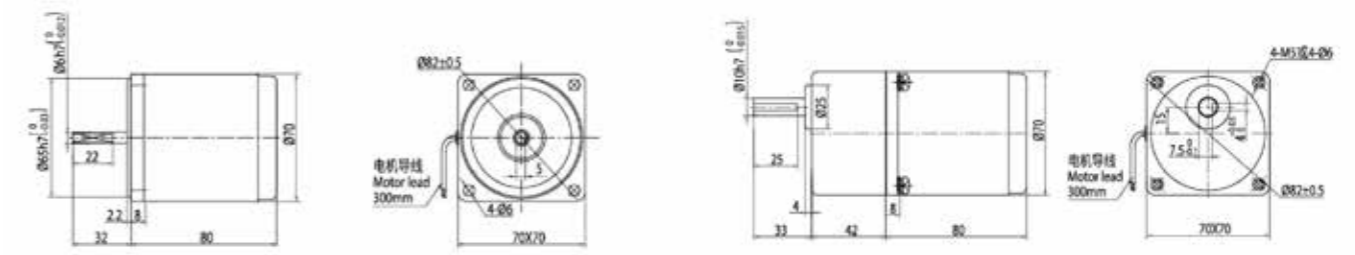
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	转矩 Torque N.m	0.20	0.22	0.31	0.37	0.46	0.55	0.62	0.77	0.92	1.00	1.11	1.39	1.66	1.99	2.22	2.77	2.99	3.74	4.49	5	5	5	5	5
60Hz	转速 Speed r/min	300	250	180	150	120	100	90	72	60	50	45	36	30	25	22.5	18	15	12	10	9	7.5	6	5	4.5
	转矩 Torque N.m	0.17	0.20	0.28	0.34	0.42	0.50	0.56	0.70	0.84	0.91	1.01	1.26	1.51	1.81	2.01	2.52	2.72	3.40	4.07	4.53	5	5	5	5

- 表中转速是以电机的平均转速（50Hz：750r/min、60Hz：900/min）为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
- 表中色框表示输出轴的旋转方向与电机旋转方向相反。
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- The box in the table indicates that the rotation direction of the output axis is opposite to that of the motor.
- Table transfer torque is calculated from motor rated torque*reduction ratio*transmission efficiency.
- The maximum allowable torque of the decelerator is 3NM.

外形尺寸（单位mm） Dimension(Unit:mm)

- 圆轴电机
重量Weighr: 1.1kg
- 组合：引线型电机+标准减速箱（减速比1：3~200）
重量Weighr: 1.6kg



- 键（减速器附件）



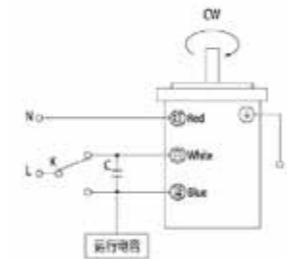
短箱体Short Gear Box

- 其中速比3~18可以做成短型减速箱，高度为32mm。Gear ratio 3~18, short case is possible, Height of 32mm.

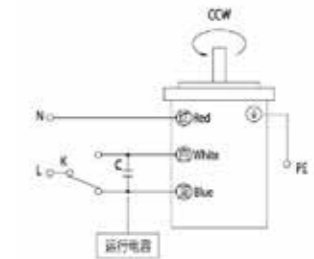
接线图Wiring Diagram

- 运转方向指从电机轴看来的方向。CW表示顺时针方向，cCW表示逆时针方向。
- 表中所记型号为齿轮轴型，圆轴型亦同。
- The direction of motor rotation is as viewed from the shaft end of motoc CW represents the clockwise direction while CCW represents the counterclockwise direction.
- Part number indicated in the list is pinion shaft we also valid for the equivalent round shaft type

顺时针方向CW



逆时针方向CCW



请注意Note

- 单相电机运转方向的转换应在电机停止后进行。
- 若在电机运转时转换运转方向，可能发生无法转换运转方向或须费时较久的情况。
- Change the direction of single-phase motor rotation only after bring the motor to a stop.
- If an attempt is made to change the direction of rotation while the motor is rotating motor may ignore reversing command or change its direction of rotation after some delay.

说明 INSTRUCTIONS
感应减速电机 INDUCTION GEAR MOTOR
调速减速电机 SPEED CONTROL GEAR MOTOR
阻尼减速电机 REVERSIBLE GEAR MOTOR
电磁制动减速电机 BRAKE GEAR MOTOR
力矩减速电机 TORQUE GEAR MOTOR
直角减速电机 RIGHT ANGLE GEAR MOTOR
控制器 PANEL DRIVE
技术资料 TECHNICAL

说明 INSTRUCTIONS
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控制器 PANEL DRIVE
技术资料 TECHNICAL

力矩减速电机 TORQUE GEAR MOTOR

10W 80mm



电机型号/性能 List of motor characteristics

电机型号 Motor Model		使用额定 (堵转) Rating At Lock Rotor	电压 Voltage	频率 Frequency	启动转矩 Frequency	最大输出功率 Max.Output Power	最大输出功率 时转速 Speed Max. Output Power	最大输出功率 时的转矩 Torque At Aax. Output Power	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	mN.m	mN.m	r/min	mN.m	μF/VAC
PATS80C10GN-P	PATS80C10A-P	5min	220	50	265	10	750	127	2.5/450
		CONT	140		98	3.5		46	
PATS80C10GN-P	PATS80C10A-P	5min	220	60	225	10	900	106	2.0/250
		CONT	140		90	3.5		38	
PATS80A10GN-P	PATS80A10A-P	5min	110	50	235	10	750	127	10.0/450
		CONT	60		74	3.5		46	
PATS80A10GN-P	PATS80A10A-P	5min	110	60	200	10	900	106	8.0/250
		CONT	60		80	3.5		38	

- 由于力矩电机设计工作在力矩模式，因此电机工作效率低，若电机连续工作在较高电压下，电机温升较高，甚至触发内部热保护器，造成电机无法正常运转。设计、造型、使用时请注意。
- 力矩电机内部装有自动复位型热保护器，若电机运转过热，热保护器将切断电机电源，电机将停止运转；当电机温度下降后，热保护器讲自动复位供电，电机重新运转。故在进行操作检查时，必须先切断电源，防止发生事故。
- 自动复位型热保护，动作温度：120℃-125℃，复位温度：80-85℃。
- Since the torque motor is designed to work in torque mode the efficiency of the motor is not very high.If the motor is continuously operated at a higher voltage the temperature rise of the motor is higher and even the internal thermal protector is triggered Cause the motor can not run normally.Please pay attention when designing modeling and using.
- The torque motoris equipped vwith an automatic reset type thermal protector.If the motor runs too ho the thermal protector wl cut of the motor powver and the motox will stop.When the temperature of the motor drops the thermal protector will automatically reset the power supply and the motor will run again. Therefore when performing operation inspection the power supply must be cut off to prevent accidents.
- Automatic reset type thermal protection operating temperature: 120℃-125℃ reset temperature: 80-85℃.

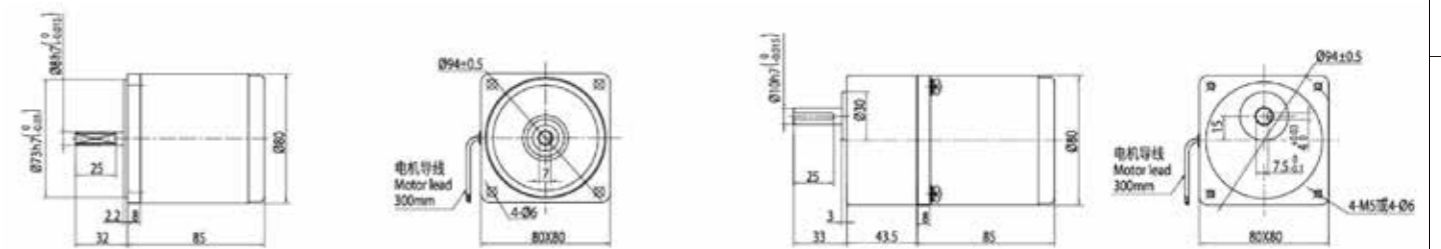
减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

减速比 Gear Ratio		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
50Hz	转速 Speed r/min	250	208	150	125	100	83	75	60	50	42	37.5	30	25	21	18.75	15	12.5	10	8.33	7.5	6.25	5	4.17	3.75
	转矩 Torque N.m	0.31	0.37	0.51	0.62	0.77	0.93	1.03	1.29	1.54	1.85	2.06	2.31	2.78	3.33	3.70	4.63	5.00	6.50	7.50	8	8	8	8	8
60Hz	转速 Speed r/min	300	250	180	150	120	100	90	72	60	50	45	36	30	25	22.5	18	15	12	10	9	7.5	6	5	4.5
	转矩 Torque N.m	0.26	0.31	0.43	0.2	0.64	0.77	0.86	1.07	1.29	1.55	1.72	1.93	2.32	2.78	3.09	3.86	4.17	5.22	6.26	6.95	8	8	8	8

- 表中转速是以电机的平均转速（50Hz：750r/min、60Hz：900r/min）为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
- 表中 色框表示输出轴的旋转方向与电机旋转方向相反。
- 表中转矩是以电机额定转矩×减速比×传动效率计算而得。
- 减速箱的最大容许转矩为3NM。
- In the table the speedis calculated from the base ofthe motors average speed（50Hz：750r/min 60Hz：900r/min）divided by the deceleration ratio. The actual speed wil vary withthe load ranging from 2%to 20%.
- The box in the table indicates that the rotation direction of the output axis is opposite to that of the motor.
- Table transfer torque is calculated from motor rated torque*reduction ratio*transmission efficiency.
- The maximum allowable torque of the decelerator is 3NM.

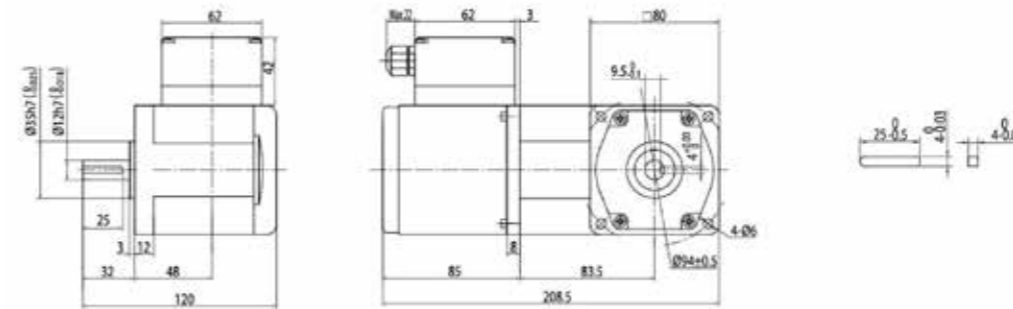
外形尺寸 (单位mm) Dimension(Unit:mm)

- 圆轴电机
重量Weighr: 1.6kg
- 组合: 引线型电机+标准减速箱 (减速比1: 3~200)
重量Weighr: 2.4kg

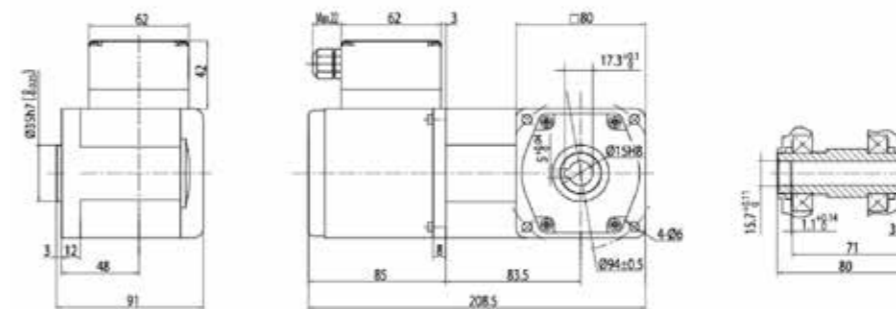


- 弧锥齿实心轴
重量Weighr: 3.5kg

- 键 (减速器附件)



- 弧锥齿空心轴
重量Weighr: 3.3kg



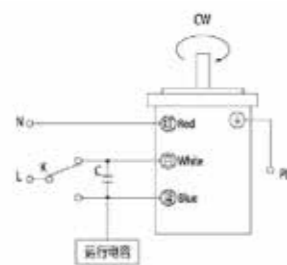
● 短箱体Short Gear Box

- 其中速比3~18可以做成短型减速箱，高度为42mm。Gear ratio 3~18, short case is possible Height of 42mm。

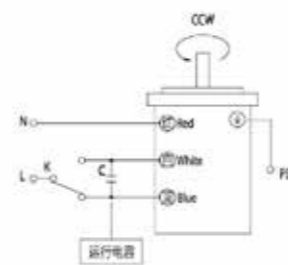
● 接线图Wiring Diagram

- 运转方向指从电机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
- 表中所记型号为齿轮轴型，圆轴型亦同。
- The direction of motor rotation is as viewed from the shaft end of motor CW represents the clockwise direction while CCW represents the counterclockwise direction.
- Part number indicated in the list is pinion shaft we also valid for the equivalent round shaft type

顺时针方向CW



逆时针方向CCW



● 请注意Note

单相电机运转方向的转换应在电机停止后进行。

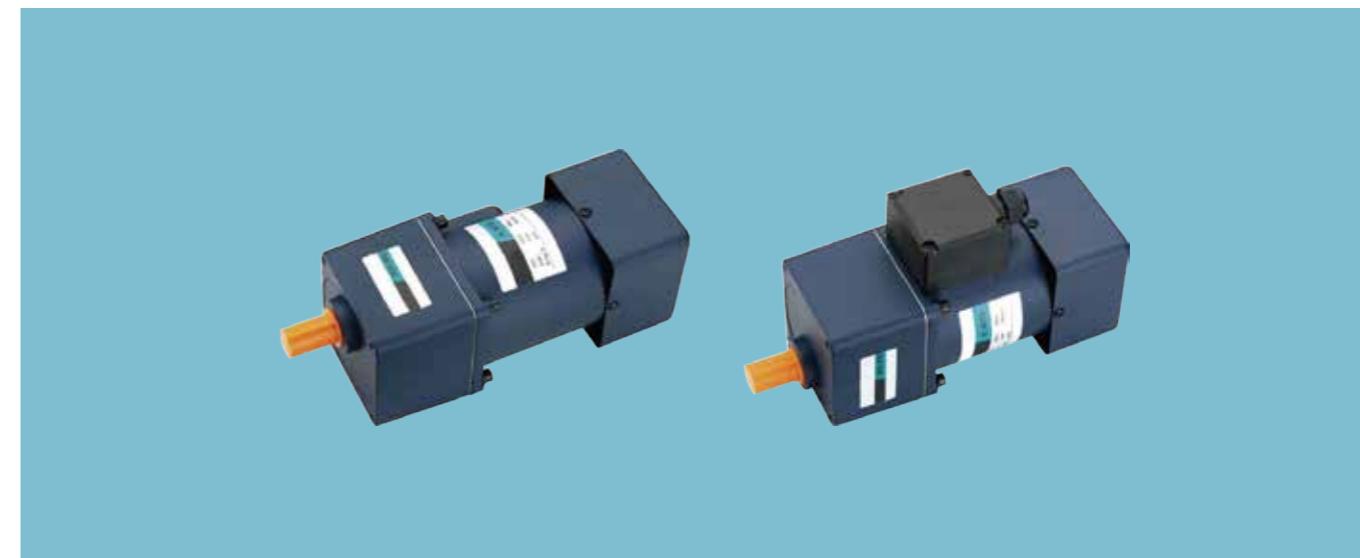
若在电机运转时转换运转方向，可能发生无法转换运转方向或须费时较久的情况。

Change the direction of single-phase motor rotation only after bring the motor to a stop.

If an attempt is made to change the direction of rotation while the motor is rotating motor may ignore reversing command or change its direction of rotation after some delay.

力矩减速电机 TORQUE GEAR MOTOR

20W 90mm



● 电机型号/性能 List of motor characteristics

电机型号 Motor Model		使用额定 (堵转) Rating At Lock Rotor	电压 Voltage	频率 Frequency	启动转矩 Frequency	最大输出功率 Max.Output Power	最大输出功率 时转速 Speed Max. Output Power	最大输出功率 时的转矩 Torque At Aax. Output Power	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	mN.m	mN.m	r/min	mN.m	μF/VAC
PATS90C20GN-P	PATS90C20A-P	5min	220	50	363	20	750	254	3.5/450
		CONT	140		137	6		76	
PATS90C20GN-P	PATS90C20A-P	5min	220	60	294	20	900	216	3.0/250
		CONT	140		108	6		64	
PATS90A20GN-P	PATS90A20A-P	5min	110	50	363	20	750	254	15.0/450
		CONT	60		137	6		76	
PATS90A20GN-P	PATS90A20A-P	5min	110	60	294	20	900	216	12.0/250
		CONT	60		108	6		64	

- 由于力矩电机设计工作在力矩模式，因此电机工作效率低，若电机连续工作在较高电压下，电机温升较高，甚至触发内部热保护器，造成电机无法正常运转。设计、造型、使用时请注意。

- 力矩电机内部装有自动复位型热保护器，若电机运转过热，热保护器将切断电机电源，电机将停止运转；当电机温度下降后，热保护器讲自动复位供电，电机重新运转。故在进行操作检查时，必须先切断电源，防止发生事故。

- 自动复位型热保护，动作温度：120 C -125 C，复位温度：80-85 C。

- Since the torque motor is designed to work in torque mode the efficiency of the motor is not very high.If the motor is continuously operated at a higher voltage the temperature rise of the motor is higher and even the internal thermal protector is triggered Cause the motor can not run normally.Please pay attention when designing modeling and using.

- The torque motoris equipped vwith an automatic reset type thermal protector.If the motor runs too ho the thermal protector wl cut of the motor povwer and the motox will stop.When the temperature of the motor drops the thermal protector will automatically reset the power supply and the motor will run again. Therefore when performing operation inspection the power supply must be cut off to prevent accidents.

- Automatic reset type thermal protection operating temperature： 120 C -125 C reset temperature： 80-85 C.

● 减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

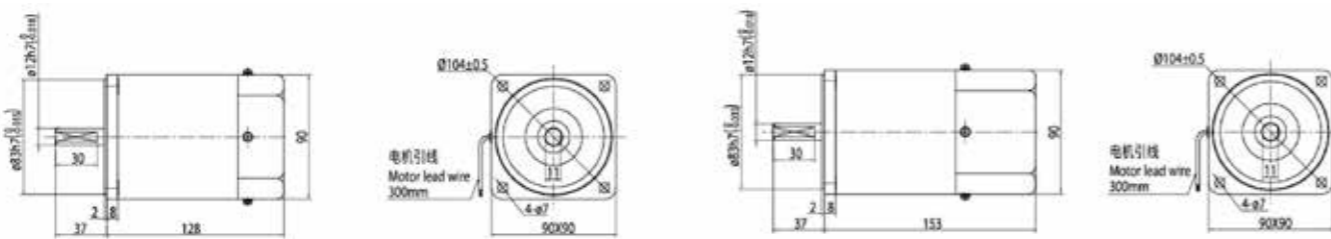
减速比 Gear Ratio		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
50Hz	转速 Speed r/min	250	208	150	125	100	83	75	60	50	42	37.5	30	25	21	18.75	15	12.5	10	8.33	7.5	6.25	5	4.17	3.75
	转矩 Torque N.m	0.62	0.74	1.03	1.23	1.54	1.85	2.06	2.57	3.09	3.33	3.70	4.63	5.55	6.67	6.67	8.33	10	10	10	10	10	10	10	10
60Hz	转速 Speed r/min	300	250	180	150	120	100	90	72	60	50	45	36	30	25	22.5	18	15	12	10	9	7.5	6	5	4.5
	转矩 Torque N.m	0.52	0.63	0.87	1.05	1.31	1.57	1.75	2.19	2.62	2.83	3.15	3.94	4.72	5.67	5.67	7.09	8.50	10	10	10	10	10	10	10

- 表中转速是以电机的平均转速 (50Hz: 750r/min、60Hz: 900/min) 为基数除以减速比而算出的数值。实际转速将随负载大小而变化, 变化范围2~20%。
- 表中色框表示输出轴的旋转方向与电机旋转方向相反。
- 表中转矩是以电机额定转矩×减速比×传动效率计算而得。
- 减速箱的最大容许转矩为3NM。

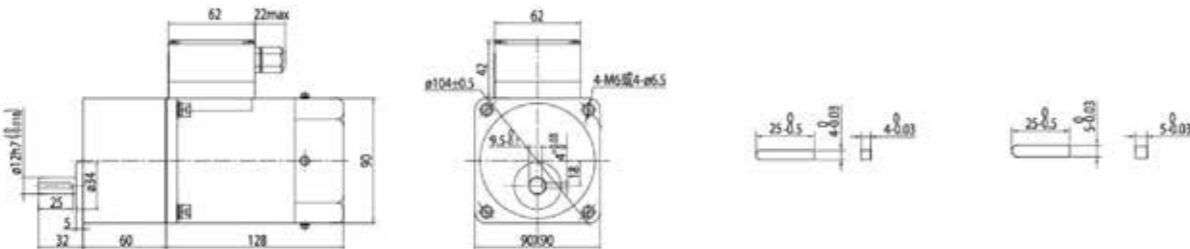
- In the table the speed is calculated from the base of the motors average speed (50Hz: 750r/min, 60Hz: 900r/min) divided by the deceleration ratio. The actual speed will vary with the load, ranging from 2% to 20%.
- The box in the table indicates that the rotation direction of the output axis is opposite to that of the motor.
- Table transfer torque is calculated from motor rated torque*reduction ratio*transmission efficiency.
- The maximum allowable torque of the decelerator is 3NM.

● 外形尺寸 (单位mm) Dimension(Unit:mm)

- 圆轴电机
重量Weighr: 2.7kg

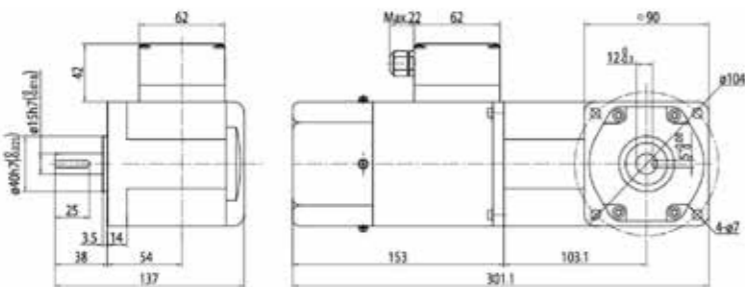


- 组合: 接线盒电机+标准减速箱
重量Weighr: 4.2kg

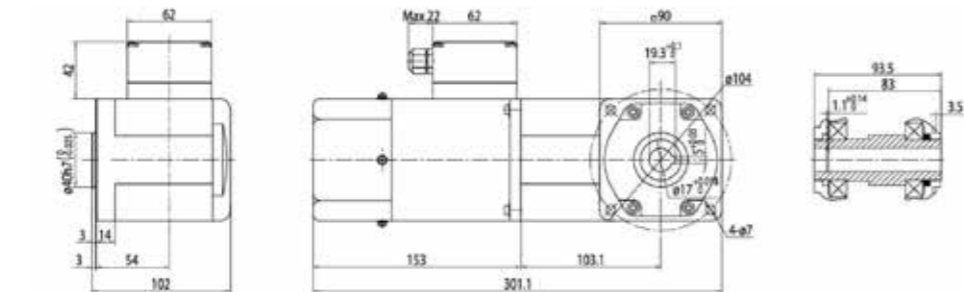


- 键 (减速器附件)

- 弧锥齿空心轴
重量Weighr: 5.7kg



- 弧锥齿空心轴
重量Weighr: 5.35kg



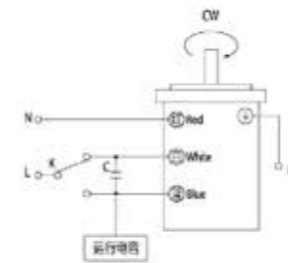
● 短箱体Short Gear Box

- 其中速比3~18可以做成短型减速箱, 高度为42mm。Gear ratio 3~18, short case is possible, Height of 32mm。

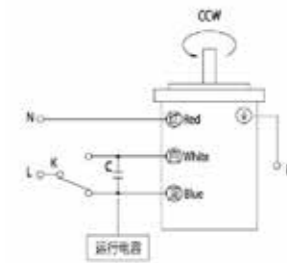
● 接线图Wiring Diagram

- 运转方向指从电机轴看来的方向。CW表示顺时针方向, CCW表示逆时针方向。
- 表中所记型号为齿轮轴型, 圆轴型亦同。
- The direction of motor rotation is as viewed from the shaft end of motor CW represents the clockwise direction while CCW represents the counterclockwise direction.
- Part number indicated in the list is pinion shaft we also valid for the equivalent round shaft type

顺时针方向CW



逆时针方向CCW



● 请注意Note

单相电机运转方向的转换应在电机停止后进行。

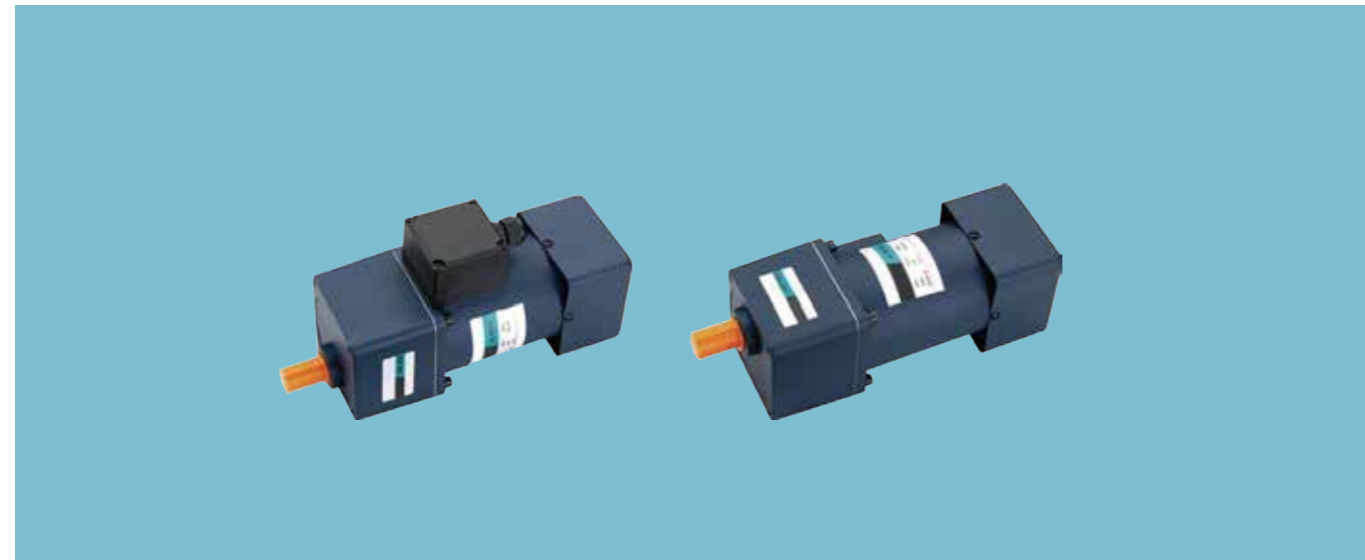
若在电机运转时转换运转方向, 可能发生无法转换运转方向或须费时较久的情况。

Change the direction of single-phase motor rotation only after bring the motor to a stop.

If an attempt is made to change the direction of rotation while the motor is rotating, motor may ignore reversing command or change its direction of rotation after some delay.

力矩减速电机 TORQUE GEAR MOTOR

40W 90mm



电机型号/性能 List of motor characteristics

电机型号 Motor Model		使用额定 (堵转) Rating At Lock Rotor	电压 Voltage	频率 Frequency	启动转矩 Frequency	最大输出功率 Max.Output Power	最大输出功率 时转速 Speed Max. Output Power	最大输出功率 时的转矩 Torque At Aax. Output Power	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	mN.m	mN.m	r/min	mN.m	μF/VAC
PATS90C40GU-FFP	PATS90C10A-FFP	5min	220	50	765	40	750	510	6.0/450
		CONT	140		325	15.5		197	
PATS90C40GN-FFP	PATS90C10A-FFP	5min	220	60	640	40	900	425	5.0/250
		CONT	140		280	15		160	

- 由于力矩电机设计工作在力矩模式，因此电机工作效率低，若电机连续工作在较高电压下，电机温升较高，甚至触发内部热保护器，造成电机无法正常运转。设计、造型、使用时请注意。
- 力矩电机内部装有自动复位型热保护器，若电机运转过热，热保护器将切断电机电源，电机将停止运转；当电机温度下降后，热保护器讲自动复位供电，电机重新运转。故在进行操作检查时，必须先切断电源，防止发生事故。
- 自动复位型热保护，动作温度：120℃-125℃，复位温度：80-85℃。
- Since the torque motor is designed to work in torque mode the efficiency of the motor is not very high.If the motor is continuously operated at a higher voltage the temperature rise of the motor is higher and even the internal thermal protector is triggered Cause the motor can not run normally.Please pay attention when designing modeling and using.
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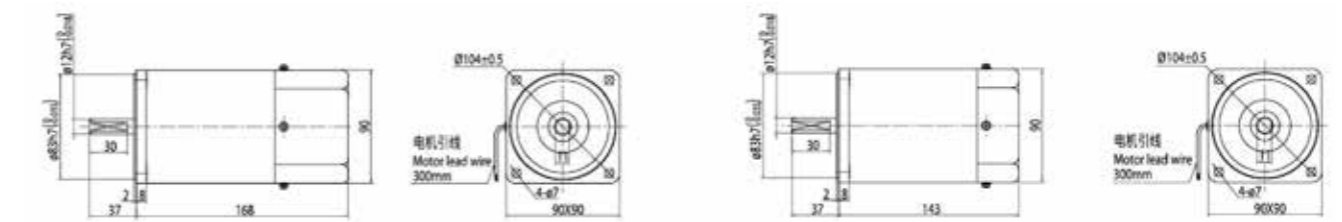
减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

减速比 Gear Ratio		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
50Hz	转速 Speed r/min	250	208	150	125	100	83	75	60	50	42	37.5	30	25	21	18.75	15	12.5	10	8.33	7.5	6.25	5	4.17	3.75
	转矩 Torque N.m	1.25	1.49	2.07	2.48	3.10	3.72	3.72	4.65	5.58	6.69	6.69	8.37	10.04	12.05	13.38	16.73	20	20	20	20	20	20	20	20
60Hz	转速 Speed r/min	300	250	180	150	120	100	90	72	60	50	45	36	30	25	22.5	18	15	12	10	9	7.5	6	5	4.52
	转矩 Torque N.m	1.03	1.24	1.72	2.07	2.58	3.10	3.10	3.87	4.65	5.58	5.58	6.97	8.37	10.04	11.15	13.94	16.73	20	20	20	20	20	20	20

- 表中转速是以电机的平均转速（50Hz：750r/min、60Hz：900r/min）为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
- 表中色框表示输出轴的旋转方向与电机旋转方向相反。
- 表中转矩是以电机额定转矩×减速比×传动效率计算而得。
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- The box in the table indicates that the rotation direction of the output axis is opposite to that of the motor.
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- The maximum allowable torque of the decelerator is 3NM.

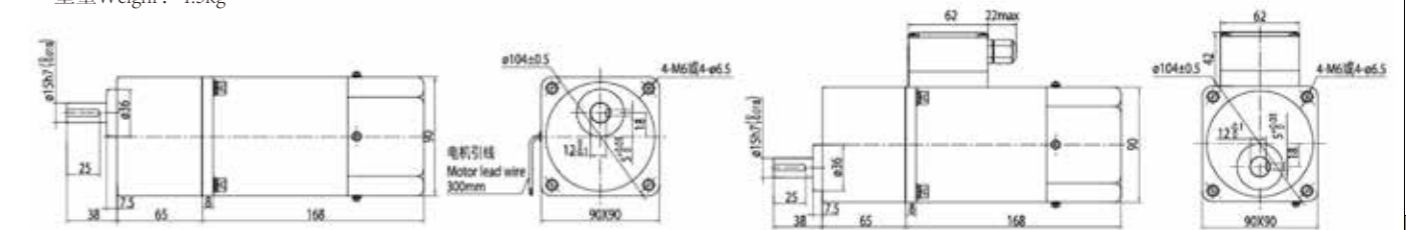
外形尺寸 (单位mm) Dimension(Unit:mm)

- 圆轴电机
重量Weighr: 2.9kg



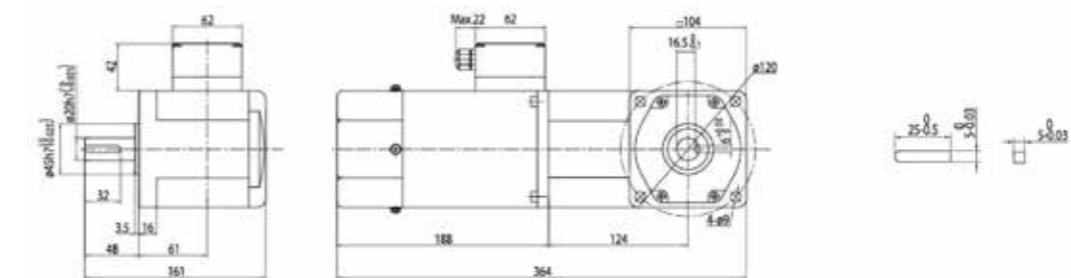
- 弧锥齿实心轴
重量Weighr: 4.3kg

- 组合：接线盒型电机+标准减速箱（减速比1：3~200）

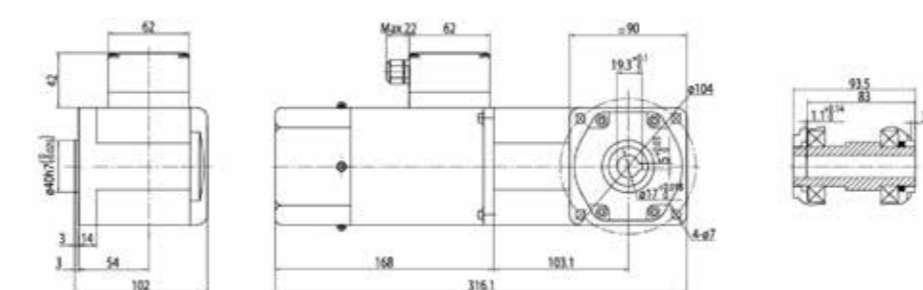


- 弧锥齿实心轴
重量Weighr: 6.0kg

- 键（减速器附件）



- 弧锥齿空心轴
重量Weighr: 5.56kg



说明
感应减速电机
调速减速电机
阻尼减速电机
电磁制动减速电机
力矩减速电机
直角减速电机
控制器
技术资料

说明
感应减速电机
调速减速电机
阻尼减速电机
电磁制动减速电机
力矩减速电机
直角减速电机
控制器
技术资料

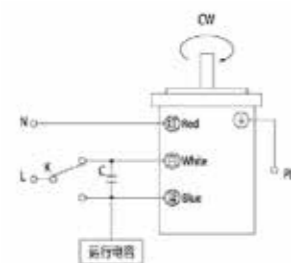
● 短箱体Short Gear Box

● 其中速比3~18可以做成短型减速箱，高度为42mm。 Gear ratio 3~18 short case is possible Height of 42mm.

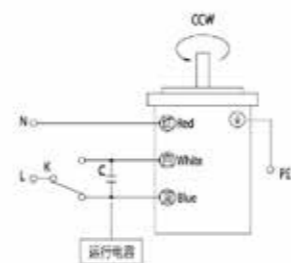
● 接线图Wiring Diagram

- 运转方向指从电机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
- 表中所记型号为齿轮轴型，圆轴型亦同。
- The direction of motor rotation is as viewed from the shaft end of motor CW represents the clockwise direction while CCW represents the counterclockwise direction.
- Part number indicated in the list is pinion shaft we also valid for the equivalent round shaft type

顺时针方向CW



逆时针方向CCW



● 请注意Note

单相电机运转方向的转换应在电机停止后进行。

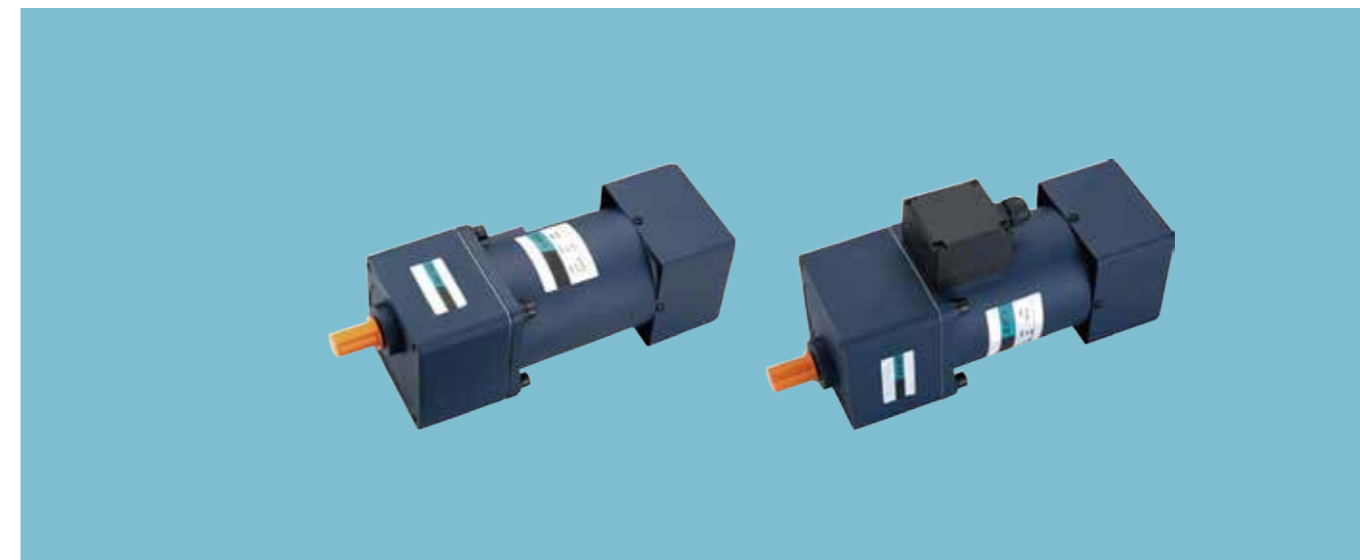
若在电机运转时转换运转方向，可能发生无法转换运转方向或须费时较久的情况。

Change the direction of single-phase motor rotation only after bring the motor to a stop.

If an attempt is made to change the direction of rotation while the motor is rotating motor may ignore reversing command or change its direction of rotation after some delay.

力矩减速电机 TORQUE GEAR MOTOR

40W 104mm



● 电机型号/性能 List of motor characteristics

电机型号 Motor Model		使用额定 (堵转) Rating At Lock Rotor	电压 Voltage	频率 Frequency	启动转矩 Frequency	最大输出功率 Max.Output Power	最大输出功率 时转速 Speed Max. Output Power	最大输出功率 时的转矩 Torque At Aax. Output Power	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	mN.m	mN.m	r/min	mN.m	μF/VAC
PATS104C40GN-FFP	PATS104C20A-FFP	5min	220	50	1056	63	750	800	8.0/450
		CONT	140		522	27		350	
PATS104C40GN-FFP	PATS104C20A-FFP	5min	220	60	980	70	900	750	7.0/250
		CONT	140		490	31		331	

- 由于力矩电机设计工作在力矩模式，因此电机工作效率低，若电机连续工作在较高电压下，电机温升较高，甚至触发内部热保护器，造成电机无法正常运转。设计、造型、使用时请注意。
- 力矩电机内部装有自动复位型热保护器，若电机运转过热，热保护器将切断电机电源，电机将停止运转；当电机温度下降后，热保护器讲自动复位供电，电机重新运转。故在进行操作检查时，必须先切断电源，防止发生事故。
- 自动复位型热保护，动作温度：120℃-125℃，复位温度：80-85℃。
- Since the torque motor is designed to work in torque mode the efficiency of the motor is not very high.If the motor is continuously operated at a higher voltage the temperature rise of the motor is higher and even the internal thermal protector is triggered Cause the motor can not run normally.Please pay attention when designing modeling and using.
- The torque motoris equipped vwith an automatic reset type thermal protector.If the motor runs too ho the thermal protector wl cut of the motor povwer and the motox will stop.When the temperature of the motor drops the thermal protector will automatically reset the power supply and the motor will run again. Therefore when performing operation inspection the power supply must be cut off to prevent accidents.
- Automatic reset type thermal protection operating temperature: 120℃-125℃ reset temperature: 80-85℃.

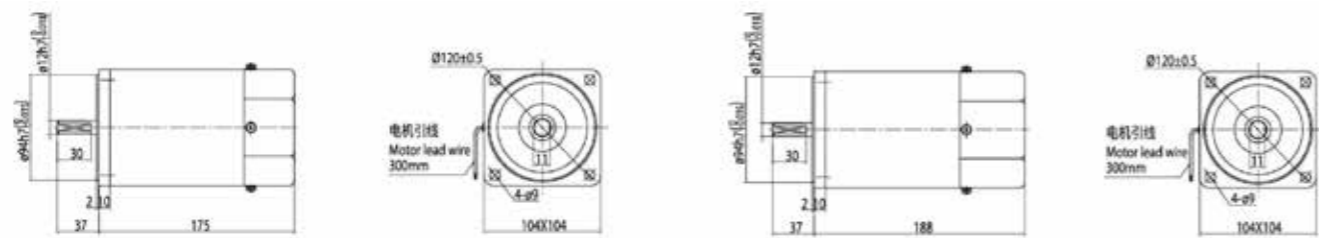
● 减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

减速比 Gear Ratio		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
50Hz	转速 Speed r/min	250	208	150	125	100	83	75	60	50	42	37.5	30	25	21	18.75	15	12.5	10	8.33	7.5	6.25	5	4.17	3.75
	转矩 Torque N.m	1.94	2.33	3.24	3.89	4.86	5.83	5.83	7.29	8.75	9.45	10.5	13.12	15.75	18.9	21	26.24	31.49	40	40	40	40	40	40	40
60Hz	转速 Speed r/min	300	250	180	150	120	100	90	72	60	50	45	36	30	25	22.5	18	15	12	10	9	7.5	6	5	4.5
	转矩 Torque N.m	1.82	2.19	3.04	3.65	4.56	5.47	5.47	6.83	8.20	8.86	10.94	13.67	16.40	19.68	21.87	27.34	32.81	40	40	40	40	40	40	40

- 表中转速是以电机的平均转速（50Hz: 750r/min、60Hz: 900r/min）为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
- 表中色框表示输出轴的旋转方向与电机旋转方向相反。
- 表中转矩是以电机额定转矩×减速比×传动效率计算而得。
- 减速箱的最大容许转矩为3NM。
- In the table the speed is calculated from the base of the motors average speed (50Hz: 750r/min, 60Hz: 900r/min) divided by the deceleration ratio. The actual speed will vary with the load ranging from 2% to 20%.
- The box in the table indicates that the rotation direction of the output axis is opposite to that of the motor.
- Table transfer torque is calculated from motor rated torque*reduction ratio*transmission efficiency.
- The maximum allowable torque of the decelerator is 3NM.

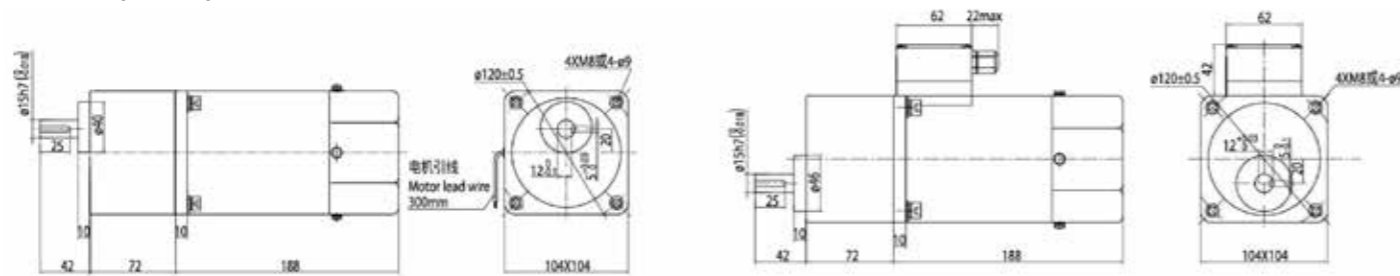
● 外形尺寸 (单位mm) Dimension(Unit:mm)

- 圆轴电机
重量Weighr: 5.0kg



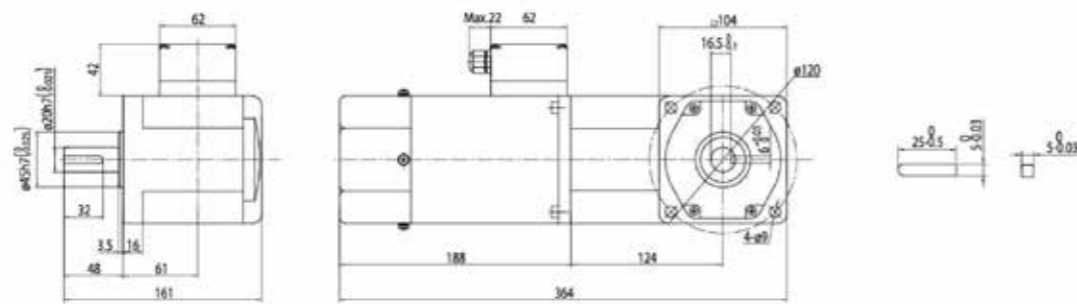
- 组合: 引线型电机+标准减速箱
重量Weighr: 7.1kg

- 组合: 接线盒型电机+标准减速箱 (减速比1: 3~200)

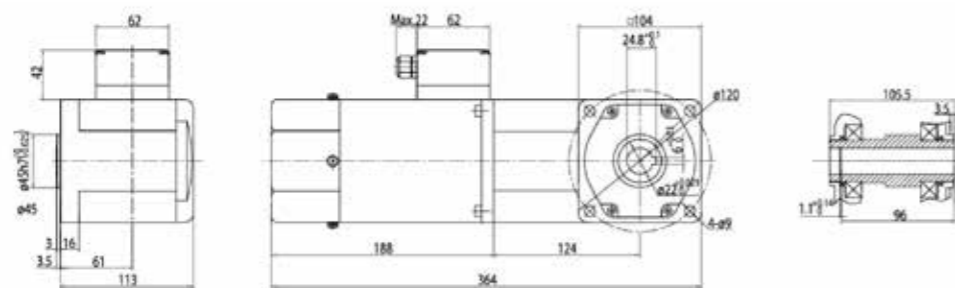


- 弧锥齿实心轴
重量Weighr: 9.5kg

- 键 (减速器附件)



- 弧锥齿空心轴
重量Weighr: 9.25kg



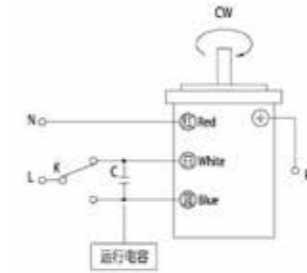
● 短箱体Short Gear Box

- 其中速比3~18可以做成短型减速箱，高度为42mm。Gear ratio 3~18, short case is possible, Height of 42mm.

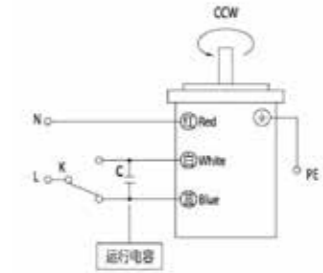
● 接线图Wiring Diagram

- 运转方向指从电机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
- 表中所记型号为齿轮轴型，圆轴型亦同。
- The direction of motor rotation is as viewed from the shaft end of motor CW represents the clockwise direction while CCW represents the counterclockwise direction.
- Part number indicated in the list is pinion shaft we also valid for the equivalent round shaft type

顺时针方向CW



逆时针方向CCW



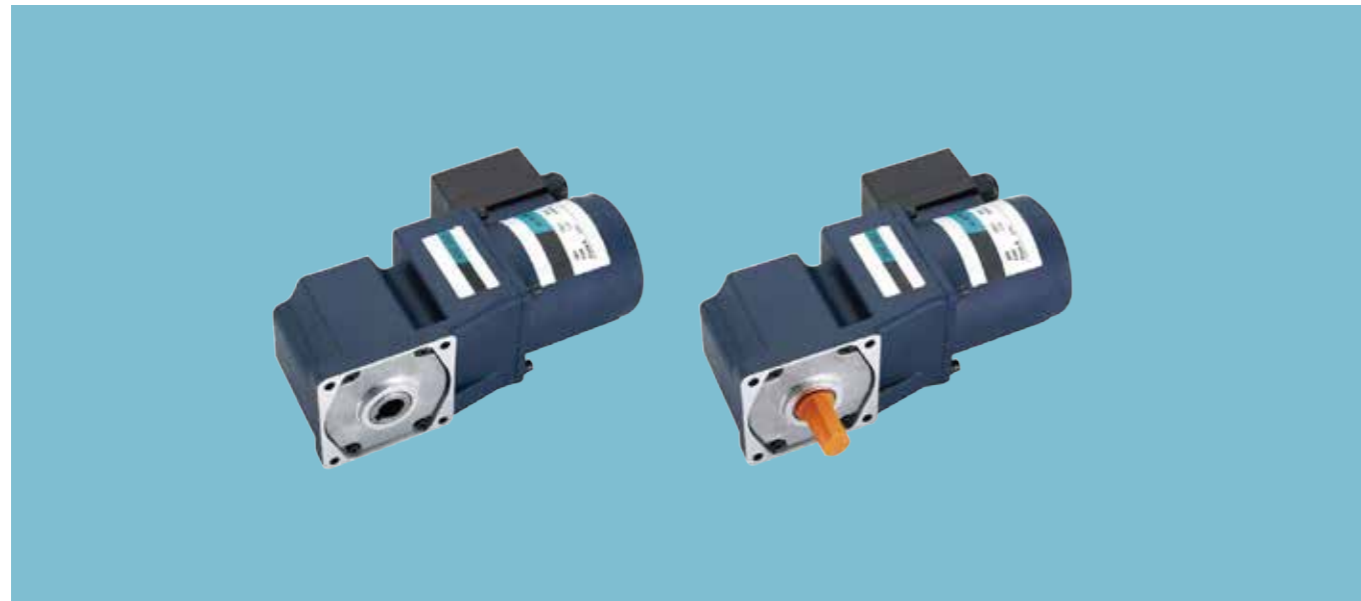
● 请注意Note

单相电机运转方向的转换应在电机停止后进行。
若在电机运转时转换运转方向，可能发生无法转换运转方向或须费时较久的情况。
Change the direction of single-phase motor rotation only after bring the motor to a stop.
If an attempt is made to change the direction of rotation while the motor is rotating motor may ignore reversing command or change its direction of rotation after some delay.

说明 INSTRUCTIONS
 感应减速电机 INDUCTION GEAR MOTOR
 调速减速电机 SPEED CONTROL GEAR MOTOR
 阻尼减速电机 REVERSIBLE GEAR MOTOR
 电磁制动减速电机 BRAKE GEAR MOTOR
 力矩减速电机 TORQUE GEAR MOTOR
 直角减速电机 RIGHT ANGLE GEAR MOTOR
 控制器 PANEL DRIVE
 技术资料 TECHNICAL

直角减速电机 RIGHT ANGLE GEAR MOTORS

25W 80mm



电机型号/性能 List of motor characteristics

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	额定转速 Rated Speed	额定转矩 Rated Torque	启动转矩 Start Torque	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	r/min	mN.m	mN.m	μF/VAC
PAAS80C25GN	PAAS80C25A	25	1ph220	50	0.24	1250	184	165	1.8/450
				60	0.24	1550	149	168	
PAAS80A25GN	PAAS80A25A	25	1ph110	50	0.54	1250	201	144	7.0/250
				60	0.50	1550	152	154	
PAAS80S25GN	PAAS80S25A	25	3ph220	50	0.26	1250	181	543	/
				60	0.21	1550	150	389	
PAAS80SH25GN	PAAS80SH25A	25	3ph380	50	0.15	1250	182	556	/
				60	0.12	1550	149	400	

- 各种安全规格以电机铭牌上的型号名取的认证。
- 注：“-A”型号中电压为110V时，配置电容器容量以实际铭牌为准。
- When the motor is approved under various safety standards the model name on the nameplate is the approved model name.
- Note: -A means the voltage 110v. The matched capacitor vaule should be consistent with the nameplate.

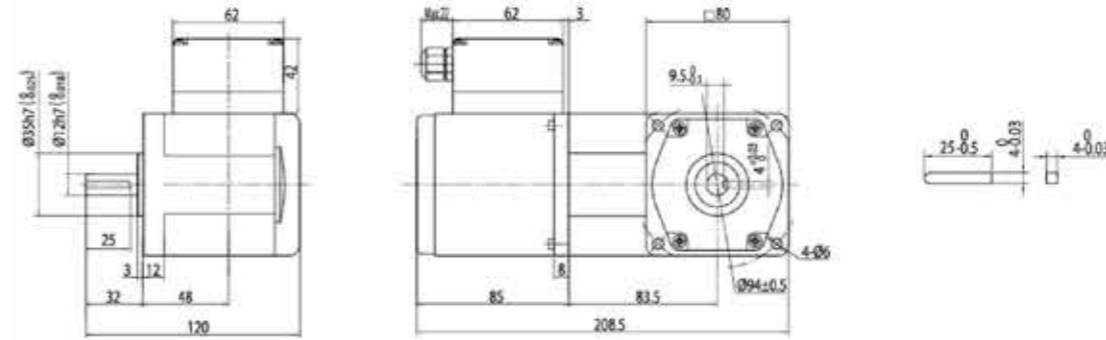
减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

减速比 Gear Ratio		3	3.6	6	7.55	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	
50Hz	转速 Speed r/min	450	375	270	225	180	150	135	108	90	75	67.5	54	37.5	33.7	22.5	18	15	13.5	11.3	9	7.5	
	转矩 Torque N.m	0.36	0.43	0.6	0.72	1.0	1.21	1.34	1.68	2.01	2.41	2.68	3.35	4.02	4.83	6.71	7.24	8	8	8	8	8	
60Hz	转速 Speed r/min	516	430	310	258	206	172	155	124	103	86	77.5	62	51.6	43.1	31	25.8	20.6	17.2	15.5	12.9	10.3	8.61
	转矩 Torque N.m	0.29	0.35	0.49	0.73	0.81	0.98	1.08	1.36	1.63	1.95	2.17	2.72	3.26	3.91	5.43	5.87	7.33	8	8	8	8	

- 表中转速是以电机的平均转速(50Hz:1350r/min,60Hz:1550r/min)为基数除以减速比而算出的数值。实际转速将随负载大小而变化,变化范围2~20%。
- 表中 色框表示输出轴的旋转方向与电机旋转方向相反。
- 表中转矩是以电机额定转矩×减速比×传动效率计算而得。
- 减速箱的最大容许转矩为8N·M。
- In the table the speed is calculated from the base of the motors average speed (50Hz:1350r/min, 60Hz:1550r/min)divided by the deceleration ratio. The actual speed will vary with the load ranging from 2% to 20%.
- The box in the table indicates the rotation direction of the gearbox output shaft is opposite to that of the motor.
- Torque in the table is calculated from motor rated torque * reduction ratio * transmission efficiency.
- The maximum allowable torque of the gear box is 8N·M.

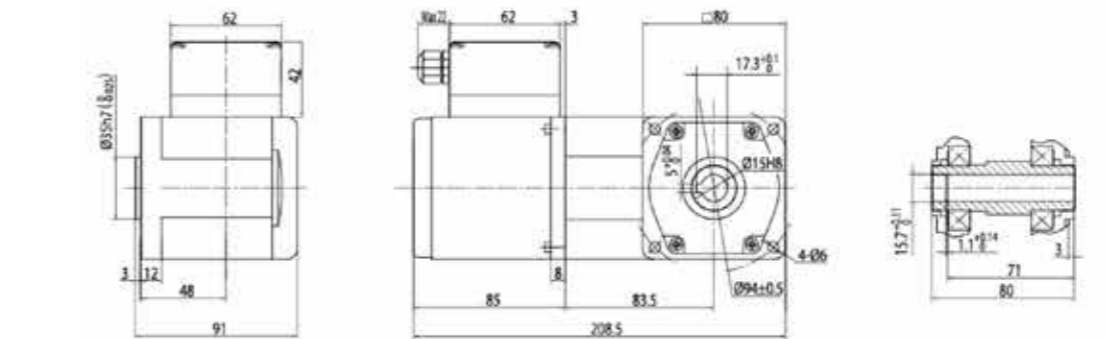
外形尺寸(单位mm) Dimension (unti: mm) 感应、阻尼尺寸图 INDUCTION、REVERSIBLE TYPE DRAWING

弧锥齿实心轴 Solid cone shaft PAAS80C25GN
重量Weight:3.5kg



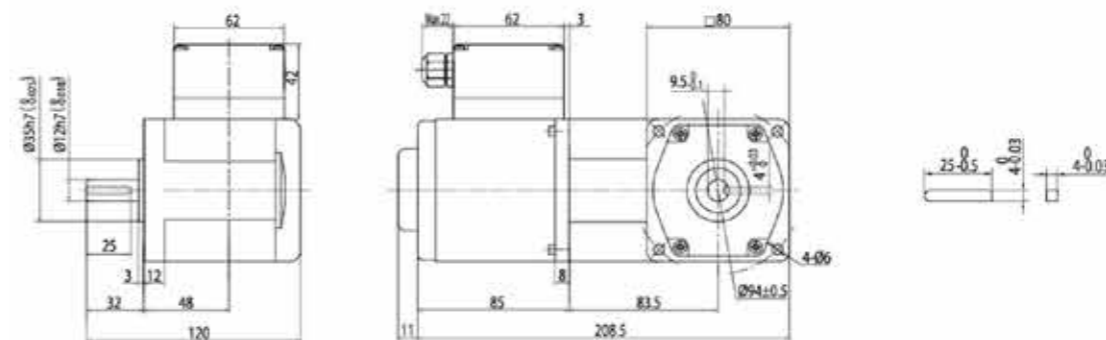
● 键(减速器附件)
Key (gearbox accessory)

弧锥齿空心轴 Arc cone tooth hollow shaft PAAS80C25GN 重量Weight:3.3kg



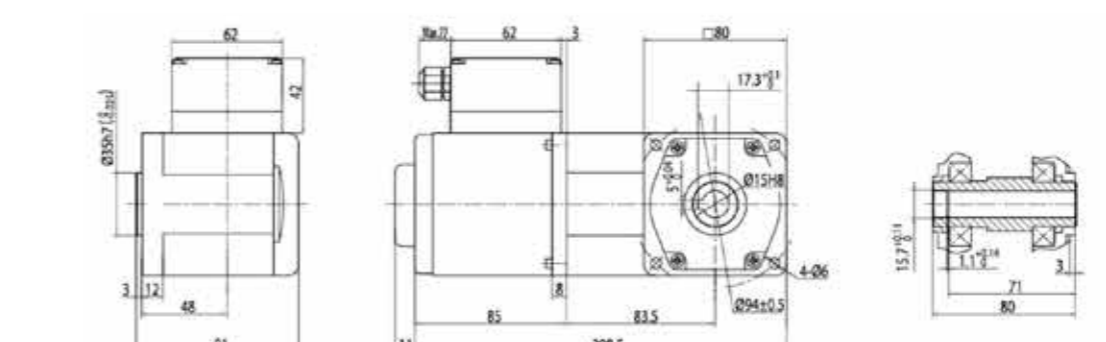
调速尺寸图 SPEED CONTROL TYPE DRAWING

● 弧锥齿实心轴 Solid cone shaft PAAS80A25GN
重量Weight:3.8kg



● 键(减速器附件)
Key (gearbox accessory)

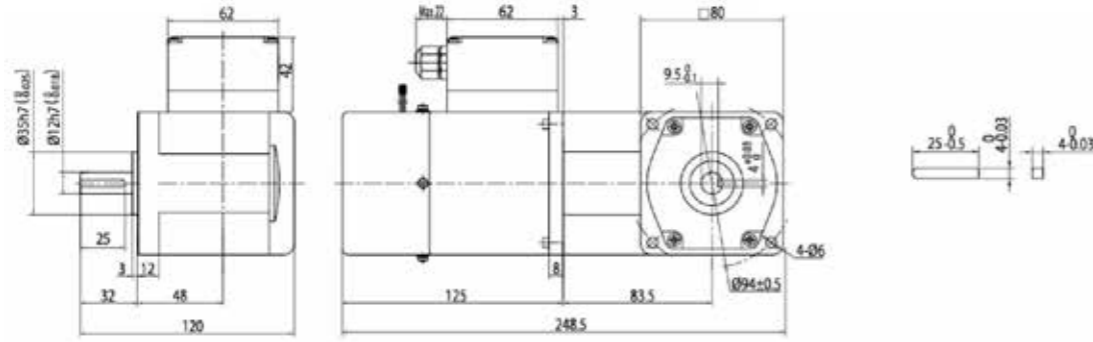
弧锥齿空心轴 Arc cone tooth hollow shaft PAAS80A25GN 重量Weight:3.6kg



说明 INSTRUCTIONS
 感应减速电机 INDUCTION GEAR MOTOR
 调速减速电机 SPEED CONTROL GEAR MOTOR
 阻尼减速电机 REVERSIBLE GEAR MOTOR
 电磁制动减速电机 BRAKE GEAR MOTOR
 力矩减速电机 TORQUE GEAR MOTOR
 直角减速电机 RIGHT ANGLE GEAR MOTOR
 控制器 PANEL DRIVE
 技术资料 TECHNICAL

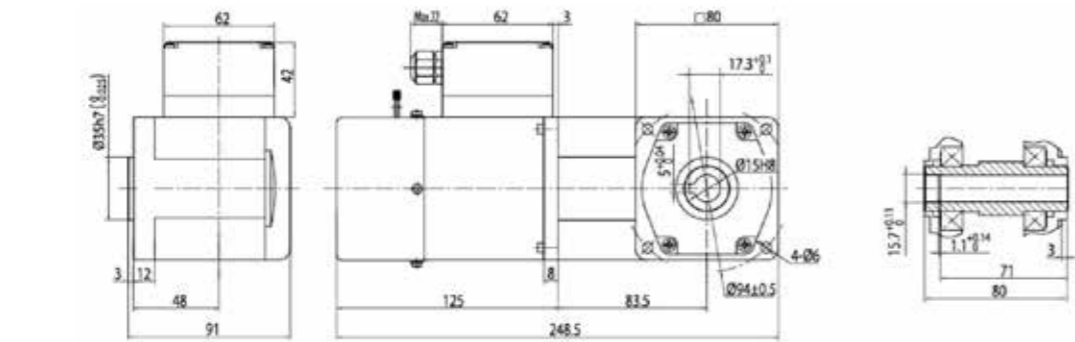
电磁制动尺寸图 Electromagnetic brake dimensional drawing

- 弧锥齿实心轴 Solid cone shaft PAAS80S25GN
重量Weight:4kg



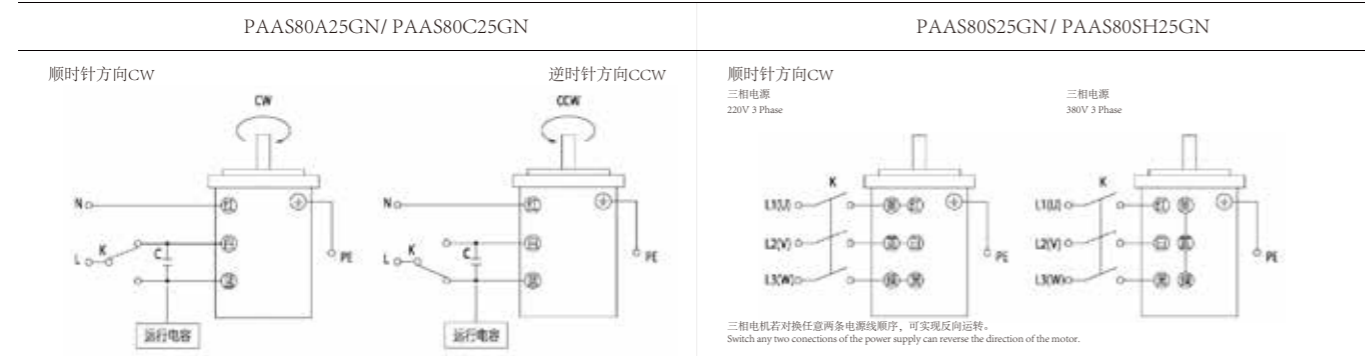
- 键(减速器附件)
Key (gearbox accessory)

- 弧锥齿空心轴 Arc cone tooth hollow shaft PAAS80S25GN
重量Weight:3.8kg



● 接线图Wiring Diagram

- 运转方向指从电机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
- 表中所记型号为齿轮轴型，圆轴型亦同。
- The direction of motor rotation is viewed from the shaft end of motor. CW represents the clockwise direction while CCW represents the counterclockwise direction.
- Part number indicated in the list is pinion shaft type also valid for the equivalent round shaft type.

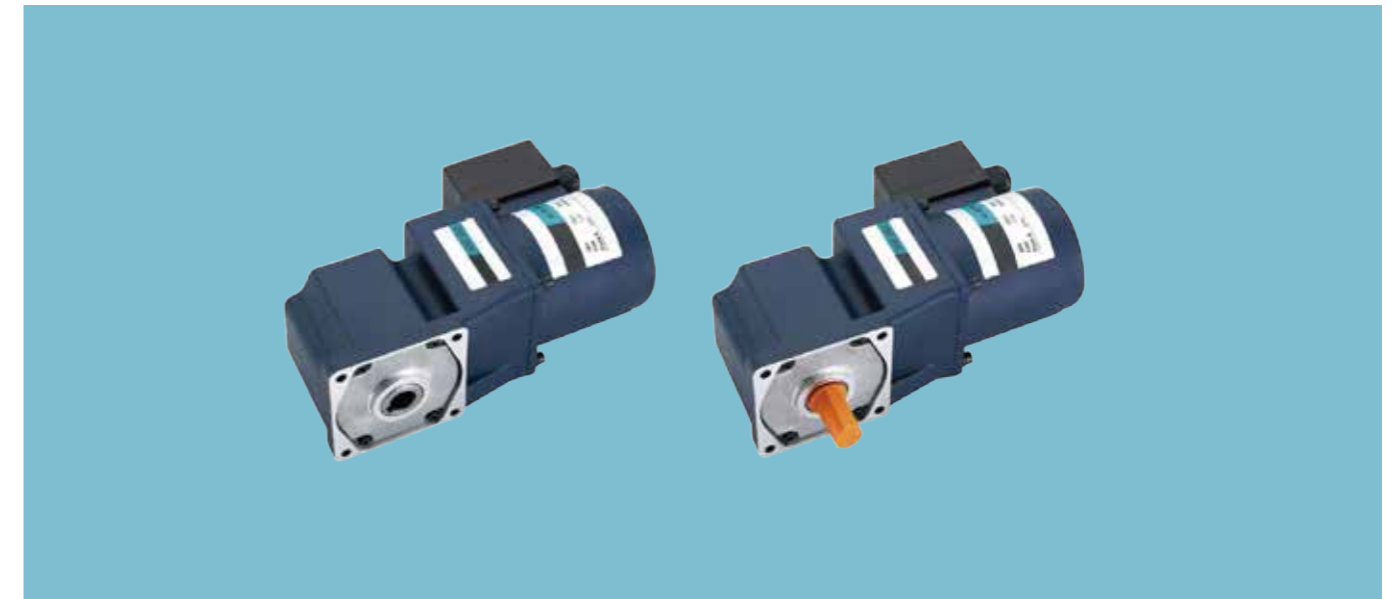


● 注意Note

- 单相电机运转方向的转换应在电机停止后进行。
- 若在电机运转时转换运转方向，可能发生无法转换运转方向或须费时较久的情况。
- Change the rotation direction of single-phase motor only after the motor is stopped.
- If an attempt is made to change the direction of rotation while the motor is running motor may ignore reversing command or the direction of rotation is reversed with some delay.

直角减速电机
RIGHT ANGLE GEAR MOTORS

40W
90mm



● 电机型号/性能 List of motor characteristics

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	额定转速 Rated Speed	额定转矩 Rated Torque	启动转矩 Start Torque	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	r/min	mN.m	mN.m	μF/VAC
PAAS90C40GU	PAAS90C40A	40	1ph220	50	0.35	1350	294	194	2.5/450
				60	0.35	1550	232	199	
PAAS90A40GU	PAAS90A40A	40	1ph110	50	0.64	1350	286	226	10.0/250
				60	0.66	1550	234	231	
PAAS90S40GU	PAAS90S40A	40	3ph220	50	0.32	1350	284	1130	/
				60	0.28	1550	241	846	
PAAS90SH40GU	PAAS90SH40A	40	3ph380	50	0.18	1350	284	1086	/
				60	0.16	1550	241	837	

- 各种安全规格以电机铭牌上的型号名取的认证。

- 注：“-A”型号中电压为110V时，配置电容器容量以实际铭牌为准。

- When the motor is approved under various safety standards the model name on the nameplate is the approved model name.

- Note: -A means the voltage 110v. The matched capacitor value should be consistent with the nameplate.

● 减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

50Hz	转速 Speed r/min	减速比 Gear Ratio																					
		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180
60Hz	转速 Speed r/min	450	375	270	225	180	150	135	108	90	75	67.5	54	45	37.5	33.7	22.5	18	15	13.5	11.3	9	7.5
	转矩 Torque N.m	0.58	0.7	0.96	1.16	1.61	1.92	2.14	2.68	3.21	3.86	4.29	5.36	6.43	6.95	9.65	11.6	14.5	17.4	19.3	20	20	20
50Hz	转速 Speed r/min	516	430	310	258	206	172	155	124	103	86	77.5	62	51.6	43	38.75	31	25.8	20.6	17.2	15.5	12.9	8.61
	转矩 Torque N.m	0.45	0.55	0.76	0.92	1.27	1.52	1.69	2.12	2.54	3.04	3.38	4.23	5.07	5.48	7.61	9.13	11.4	13.7	15.2	18.2	20	20

- 表中转速是以电机的平均转速(50Hz:1350r/min,60Hz:1550r/min)为基数除以减速比而算出的数值。实际转速将随负载大小而变化,变化范围2~20%。

- 表中 色框表示输出轴的旋转方向与电机旋转方向相反。

- 表中转矩是以电机额定转矩×减速比×传动效率计算而得。

- 减速箱的最大容许转矩为20N·M。

- In the table, the speed is calculated from the base of the motors average speed (50Hz:1350r/min, 60Hz:1550r/min)divided by the deceleration ratio. The actual speed will vary with the load,ranging from 2% to 20%.

- The 色 box in the table indicates the rotation direction of the gearbox output shaft is opposite to that of the motor.

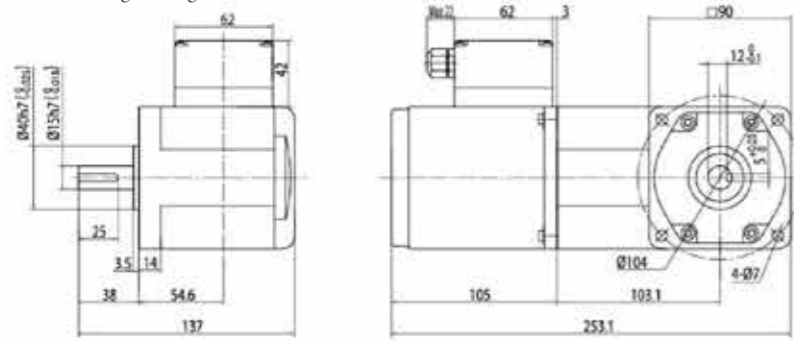
- Torque in the table is calculated from motor rated torque * reduction ratio * transmission efficiency.

- The maximum allowable torque of the gear box is 20N·M.

●外形尺寸(单位mm) Dimension (unit: mm)

感应、阻尼尺寸图 INDUCTION, REVERSIBLE TYPE DRAWING

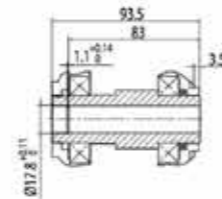
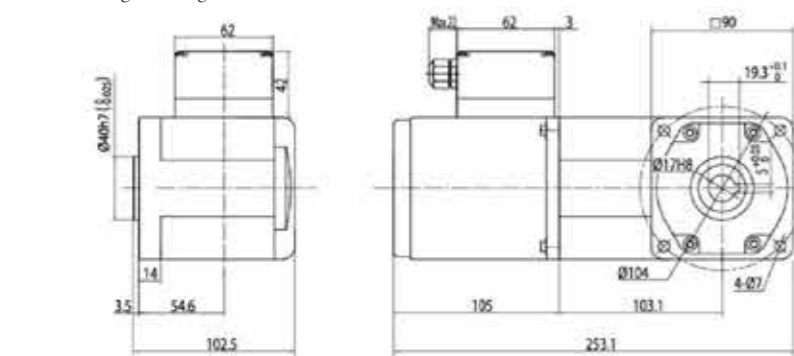
- 弧锥齿实心轴 Solid cone shaft PAAS90C40GU
重量Weight:5.4kg



- 键(减速器附件)
Key (gearbox accessory)

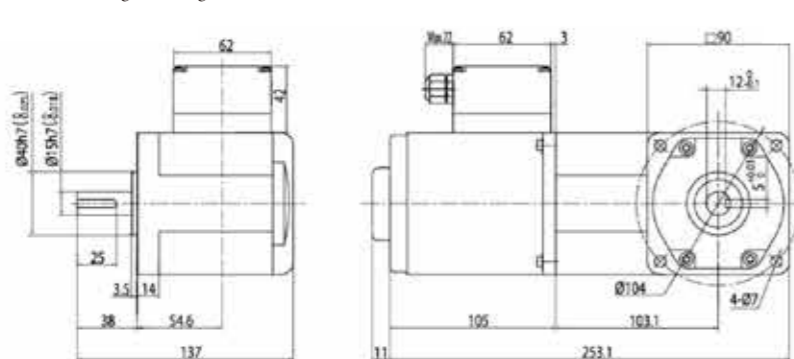


- 弧锥齿空心轴 Arc cone tooth hollow shaft PAAS90C40GU
重量Weight:5.05kg



调速尺寸图 SPEED CONTROL TYPE DRAWING

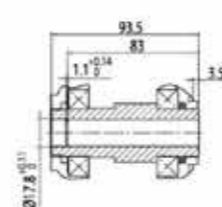
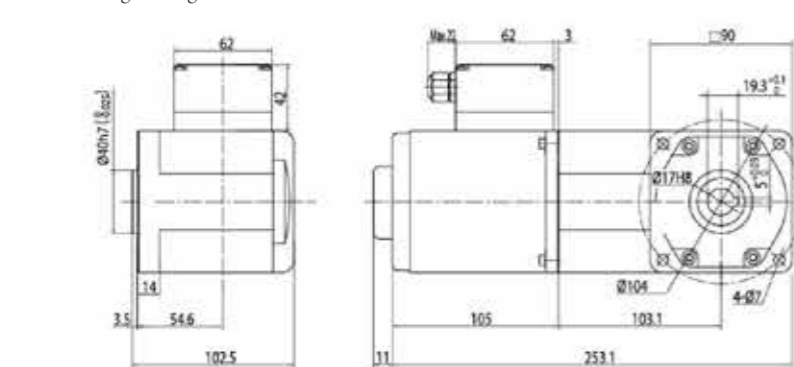
- 弧锥齿实心轴 Solid cone shaft PAAS90C40GU
重量Weight:5.15kg



- 键(减速器附件)
Key (gearbox accessory)

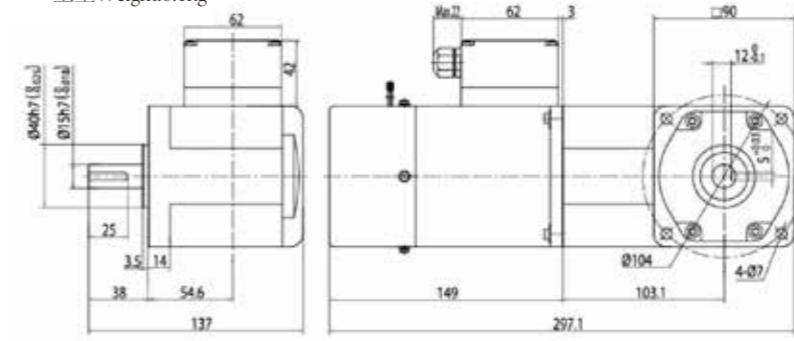


- 弧锥齿空心轴 Arc cone tooth hollow shaft PAAS90C40GU
重量Weight:4.8kg

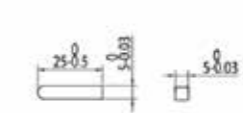


电磁制动尺寸图 Electromagnetic brake dimensional drawing

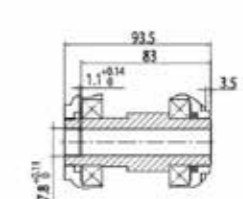
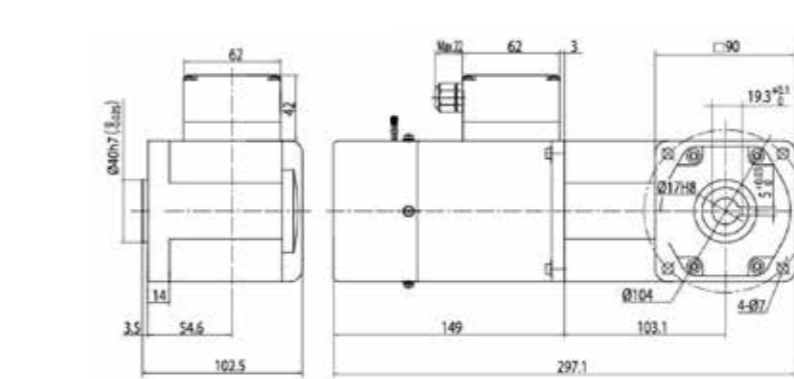
- 弧锥齿实心轴 Solid cone shaft PAAS90C40GU
重量Weight:6.1kg



- 键(减速器附件)
Key (gearbox accessory)

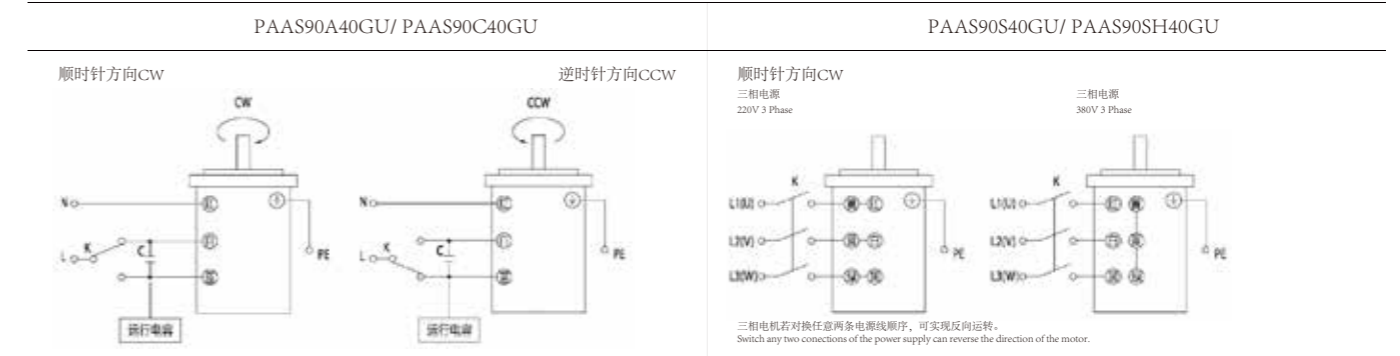


- 弧锥齿空心轴 Arc cone tooth hollow shaft PAAS90C40GU
重量Weight:5.75kg



● 接线图 Wiring Diagram

- 运转方向指从电机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
- 表中所记型号为齿轮轴型，圆轴型亦同。
- The direction of motor rotation is viewed from the shaft end of motor. CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- Part number indicated in the list is pinion shaft type also valid for the equivalent round shaft type.



● 注意 Note

- 单相电机运转方向的转换应在电机停止后进行。
- 若在电机运转时转换运转方向, 可能发生无法转换运转方向或须费时较久的情况。
- Change the rotation direction of single-phase motor only after the motor is stopped.
- If an attempt is made to change the direction of rotation while the motor is rotating, the motor may ignore reversing command or the direction of rotation is reversed with some delay.

直角减速电机 RIGHT ANGLE GEAR MOTORS

60W 90mm



电机型号/性能 List of motor characteristics

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	额定转速 Rated Speed	额定转矩 Rated Torque	启动转矩 Start Torque	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	r/min	mN.m	mN.m	μF/VAC
PAAS90C60GU-F	PAAS90C60A-F	60	1ph220	50	0.50	1350	427	384	4.0/450
				60	0.54	1550	353	384	
PAAS90A60GU-F	PAAS90A60A-F	60	1ph110	50	0.91	1350	431	349	15.0/250
				60	1.01	1550	355	360	
PAAS90S60GU-F	PAAS90S60A-F	60	3ph220	50	0.38	1350	465	1110	/
				60	0.35	1550	390	840	
PAAS90SH60GU-F	PAAS90SH60A-F	60	3ph380	50	0.22	1350	464	1080	/
				60	0.20	1550	390	837	

●各种安全规格以电机铭牌上的型号名取的认证。

●注：“-A”型号中电压为110V时，配置电容器容量以实际铭牌为准。

●When the motor is approved under various safety standards, the model name on the nameplate is the approved model name.

●Note: -A means the voltage 110v. The matched capacitor vaule should be consistent with the nameplate.

减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

减速比 Gear Ratio		3	3.6	6	7.55	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	
50Hz	转速 Speed r/min	450	375	270	225	180	150	135	108	90	75	67.5	54	45	37.5	33.7	22.5	18	15	13.5	11.3	9	7.5
	转矩 Torque N.m	0.82	0.96	1.33	1.6	2.22	2.66	2.96	3.7	4.44	5.33	5.92	7.40	8.88	10.1	14	16.8	20	20	20	20	20	20
60Hz	转速 Speed r/min	516	430	310	258	206	172	155	124	103	86	77.5	62	51.6	43	38.75	31	25.8	20.6	17.2	15.5	12.9	8.61
	转矩 Torque N.m	0.7	0.83	1.16	1.39	1.97	2.31	2.57	3.21	3.86	4.63	5.15	6.43	7.72	8.33	11.6	13.9	17.4	20	20	20	20	20

●表中转速是以电机的平均转速(50Hz:1350r/min,60Hz:1550r/min)为基数除以减速比而算出的数值。实际转速将随负载大小而变化,变化范围2~20%。

●表中 色框表示输出轴的旋转方向与电机旋转方向相反。

●表中转矩是以电机额定转矩×减速比×传动效率计算而得。

●减速箱的最大容许转矩为20N·M。

●In the table, the speed is calculated from the base of the motors average speed (50Hz:1350r/min, 60Hz:1550r/min)divided by the deceleration ratio. The actual speed will vary with the load,ranging from 2% to 20%.

●The box in the table indicates the gearbox rotation direction of the output shaft is opposite to that of the motor.

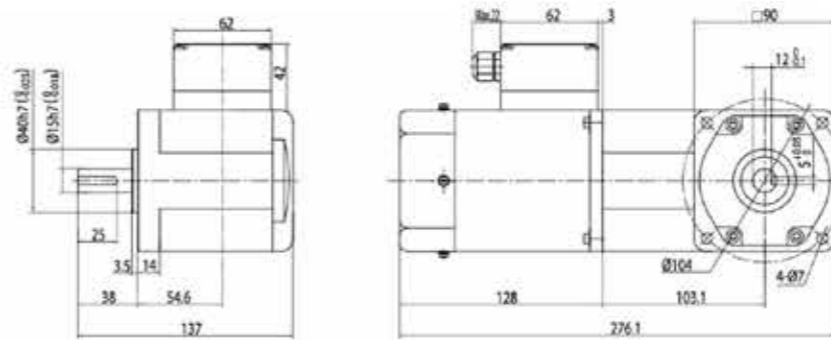
●Torque in the table is calculated from motor rated torque * reduction ratio * transmission efficiency.

●The maximum allowable torque of the gear box is 20N·M.

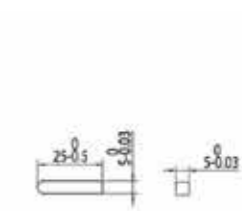
外形尺寸(单位mm) Dimension (unti: mm)

感应、阻尼尺寸图 INDUCTION、REVERSIBLE TYPE DRAWING

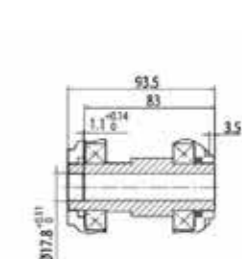
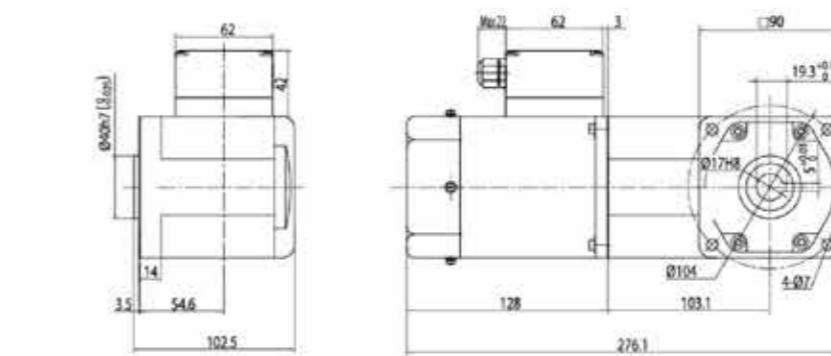
- 弧锥齿实心轴 Solid cone shaft PAAS90C60GU-F
重量Weight:5.7kg



- 键(减速器附件)
Key (gearbox accessory)

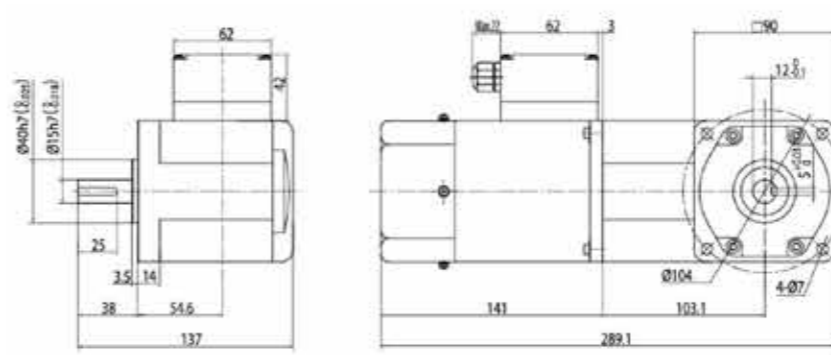


- 弧锥齿空心轴 Arc cone tooth hollow shaft PAAS90C60GU-F
重量Weight:5.35kg

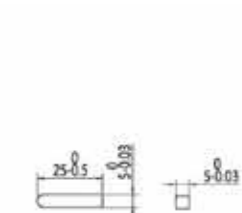


调速尺寸图 SPEED CONTROL TYPE DRAWING

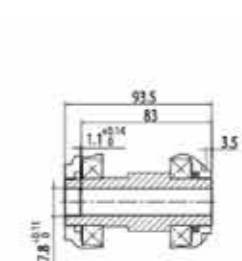
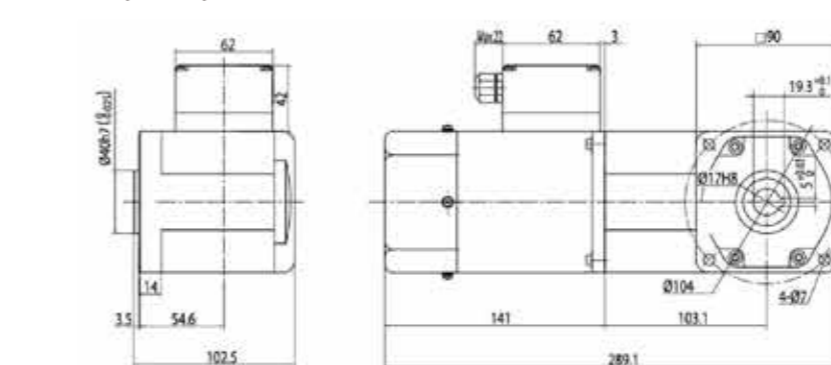
- 弧锥齿实心轴 Solid cone shaft PAAS90C60GU-F
重量Weight:5.8kg



- 键(减速器附件)
Key (gearbox accessory)



- 弧锥齿空心轴 Arc cone tooth hollow shaft PAAS90C60GU-F
重量Weight:5.45kg



说明
INSTRUCTIONS

感应减速电机
INDUCTION GEAR MOTOR

调速减速电机
SPEED CONTROL GEAR MOTOR

阻尼减速电机
REVERSIBLE GEAR MOTOR

电磁制动减速电机
BRAKE GEAR MOTOR

力矩减速电机
TORQUE GEAR MOTOR

直角减速电机
RIGHT ANGLE GEAR MOTOR

控制器
PANEL DRIVE

技术资料
TECHNICAL

说明
INSTRUCTIONS

感应减速电机
INDUCTION GEAR MOTOR

调速减速电机
SPEED CONTROL GEAR MOTOR

阻尼减速电机
REVERSIBLE GEAR MOTOR

电磁制动减速电机
BRAKE GEAR MOTOR

力矩减速电机
TORQUE GEAR MOTOR

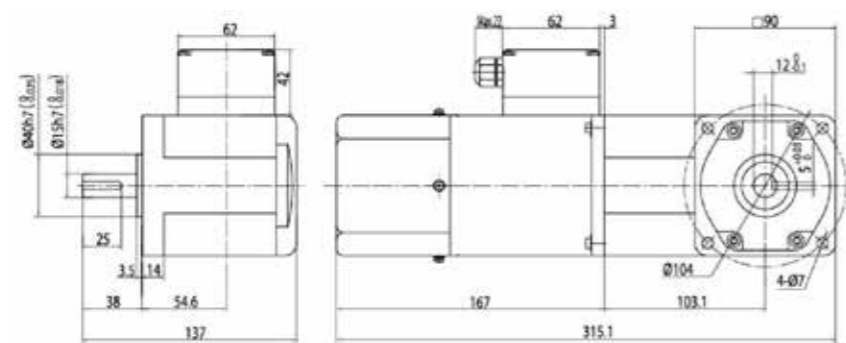
直角减速电机
RIGHT ANGLE GEAR MOTOR

控制器
PANEL DRIVE

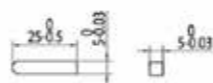
技术资料
TECHNICAL

电磁制动尺寸图 Electromagnetic brake dimensional drawing

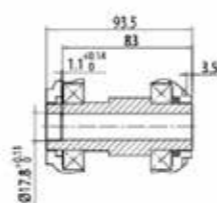
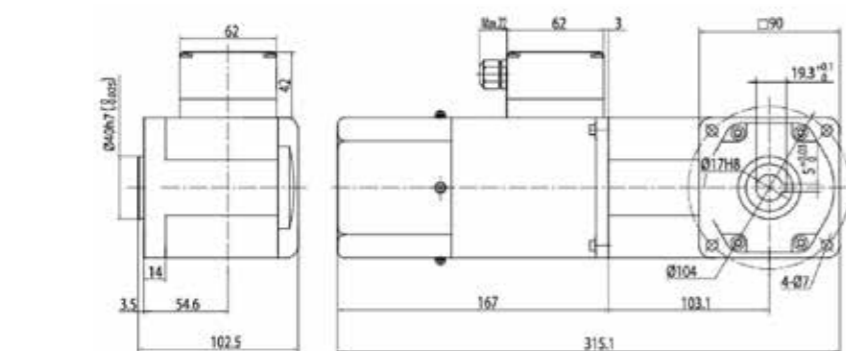
- 弧锥齿实心轴 Solid cone shaft PAAS90C60GU-F
重量Weight:6.35kg



- 键(减速器附件)
Key (gearbox accessory)

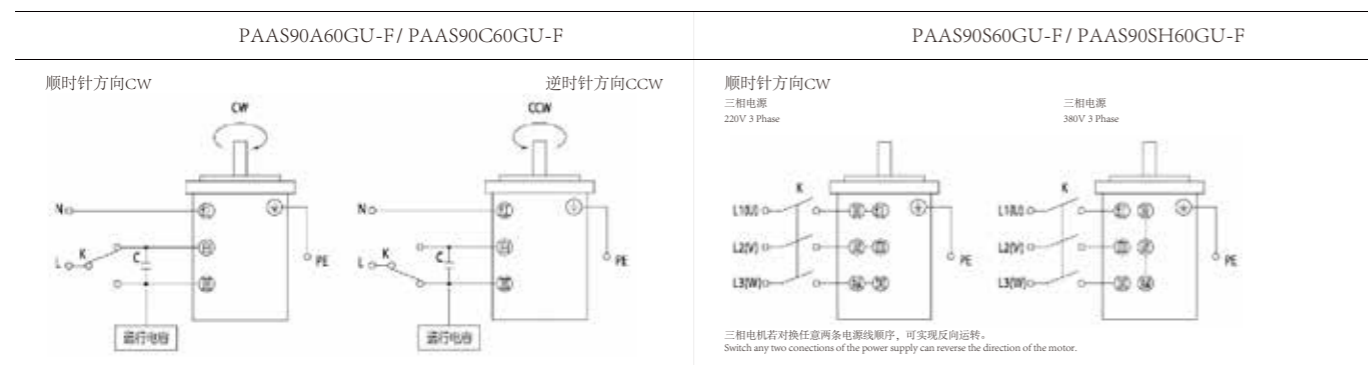


- 弧锥齿空心轴 Arc cone tooth hollow shaft PAAS90C60GU-F
重量Weight:6kg



● 接线图Wiring Diagram

- 运转方向指从电机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
- 表中所记型号为齿轮轴型，圆轴型亦同。
- The direction of motor rotation is viewed from the shaft end of motor. CW represents the clockwise direction while CCW represents the counterclockwise direction.
- Part number indicated in the list is pinion shaft type also valid for the equivalent round shaft type.

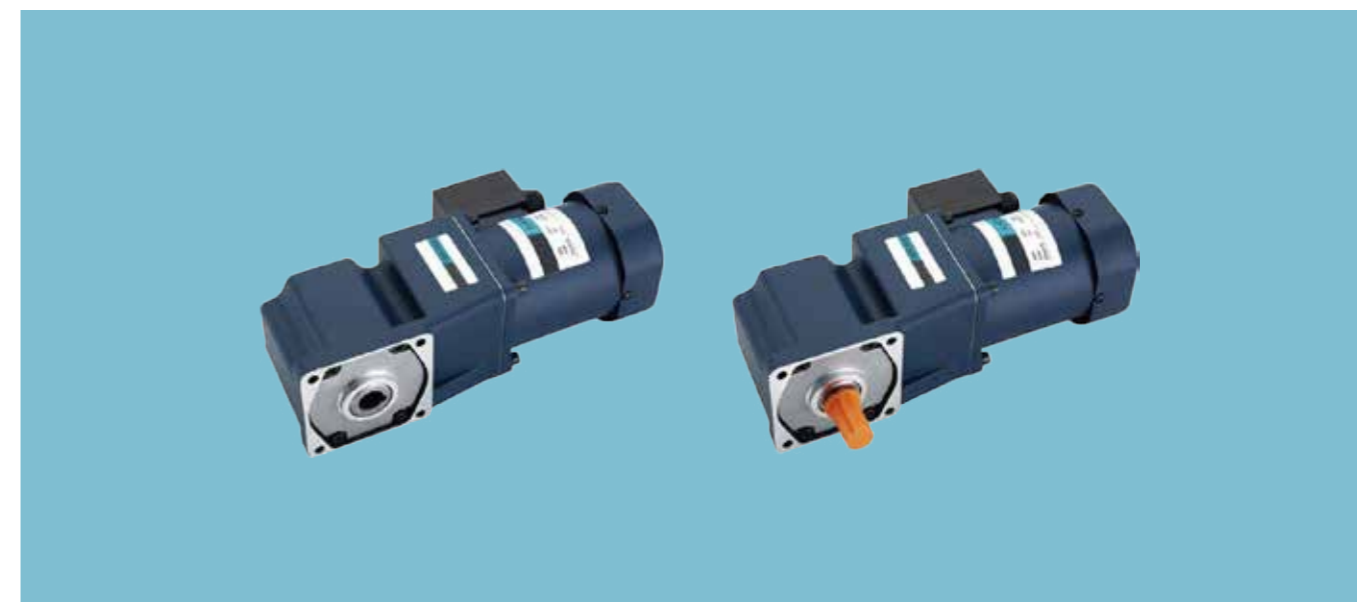


● 注意Note

- 单相电机运转方向的转换应在电机停止后进行。
- 若在电机运转时转换运转方向，可能发生无法转换运转方向或须费时较久的情况。
- Change the rotation direction of single-phase motor only after the motor is stopped.
- If an attempt is made to change the direction of rotation while the motor is running motor may ignore reversing command or the direction of rotation is reversed with some delay.

直角减速电机
RIGHT ANGLE GEAR MOTORS

90W
90mm



● 电机型号/性能 List of motor characteristics

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	额定转速 Rated Speed	额定转矩 Rated Torque	启动转矩 Start Torque	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	r/min	mN.m	mN.m	µF/VAC
PAAS90C90GU-F	PAAS90C90A-F	90	1ph220	50	0.64	1350	643	459	5.0/450
				60	0.71	1550	530	450	
PAAS90A90GU-F	PAAS90A90A-F	90	1ph110	50	1.26	1350	646	475	20.0/250
				60	1.40	1550	525	489	
PAAS90S90GU-F	PAAS90S90A-F	90	3ph220	50	0.74	1350	625	2800	/
				60	0.61	1550	527	2150	
PAAS90SH90GU-F	PAAS90SH90A-F	90	3ph380	50	0.42	1350	625	2660	/
				60	0.35	1550	519	2030	

- 各种安全规格以电机铭牌上的型号名取的认证。

- 注：“-A”型号中电压为110V时，配置电容器容量以实际铭牌为准。

- When the motor is approved under various safety standards, the model name on the nameplate is the approved model name.

- Note: -A means the voltage 110v. The matched capacitor vaule should be consistent with the nameplate.

● 减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

50Hz	转速 Speed r/min	减速比 Gear Ratio																					
		3	3.6	6	7.55	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	
	450	375	270	225	180	150	135	108	90	75	67.5	54	45	37.5	33.7	22.5	18	15	13.5	11.3	9	7.5	
	1.26	1.51	2.11	2.53	3.52	4.21	4.68	5.86	7.03	8.44	9.37	11.7	14.1	15.2	20	20	20	20	20	20	20	20	20
60Hz	转速 Speed r/min	516	430	310	258	206	172	155	124	103	86	77.5	62	51.6	43.1	31	25.8	20.6	17.2	15.5	12.9	10.3	8.61
	转矩 Torque N.m	1.04	1.26	1.74	2.09	2.9	3.47	3.87	4.35	5.22	6.96	7.7	9.66	11.6	12.5	17.39	20	20	20	20	20	20	20

- 表中转速是以电机的平均转速(50Hz:1350r/min,60Hz:1550r/min)为基数除以减速比而算出的数值。实际转速将随负载大小而变化,变化范围2~20%。

- 表中 色框表示输出轴的旋转方向与电机旋转方向相反。

- 表中转矩是以电机额定转矩×减速比×传动效率计算而得。

- 减速箱的最大容许转矩为20N·M。

- In the table the speed is calculated from the base of the motors average speed (50Hz:1350r/min, 60Hz:1550r/min)divided by the deceleration ratio. The actual speed will vary with the load ranging from 2% to 20%.

- The 色 box in the table indicates the rotation direction of the gearbox output shaft is opposite to that of the motor.

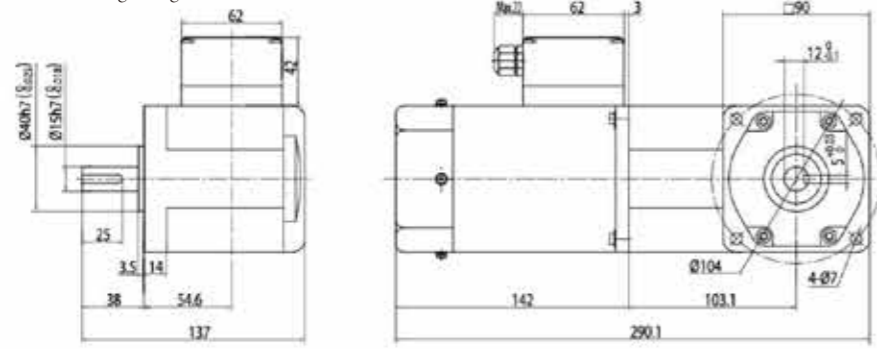
- Torque in the table is calculated from motor rated torque * reduction ratio * transmission efficiency.

- The maximum allowable torque of the gear box is 20N·M.

●外形尺寸(单位mm) Dimension (unit: mm)

感应、阻尼尺寸图 INDUCTION、REVERSIBLE TYPE DRAWING

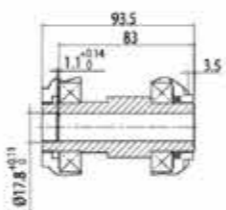
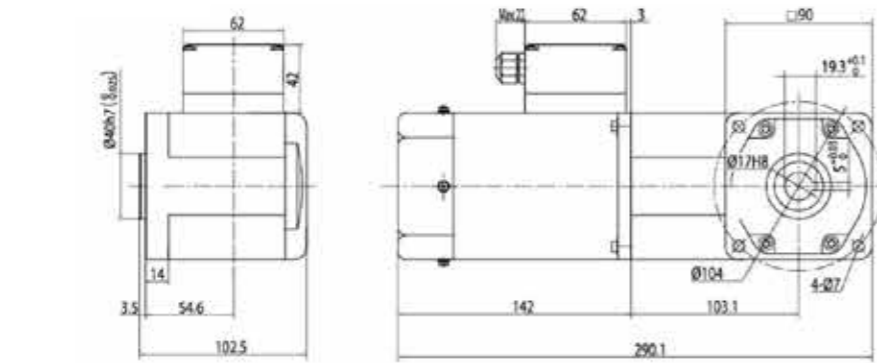
- 弧锥齿实心轴 Solid cone shaft PAAS90C90GU-F
重量Weight:6kg



- 键(减速器附件)
Key (gearbox accessory)

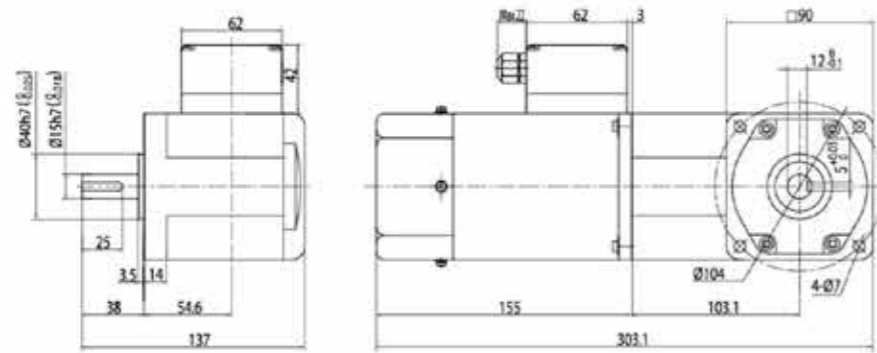


- 弧锥齿空心轴 Arc cone tooth hollow shaft PAAS90C90GU-F
重量Weight:5.65kg

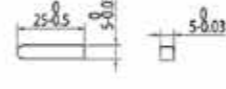


调速尺寸图 SPEED CONTROL TYPE DRAWING

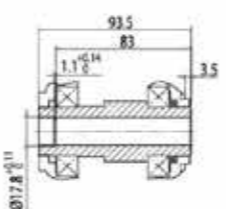
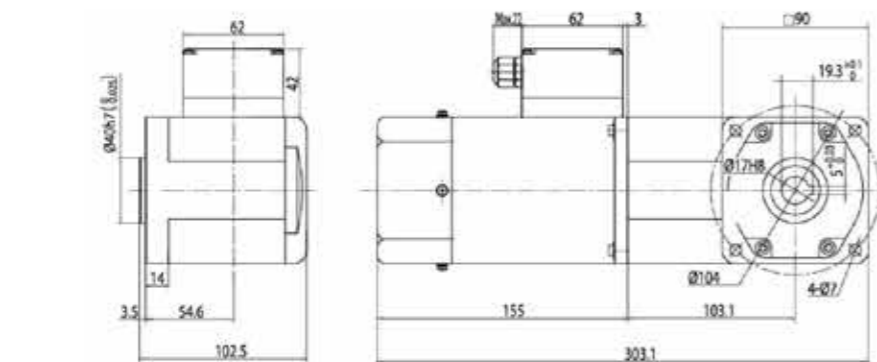
- 弧锥齿实心轴 Solid cone shaft PAAS90C90GU-F
重量Weight:6.5kg



- 键(减速器附件)
Key (gearbox accessory)

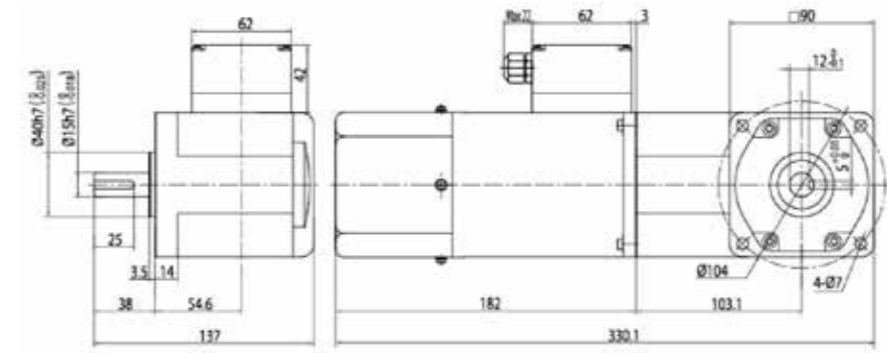


- 弧锥齿空心轴 Arc cone tooth hollow shaft PAAS90C90GU-F
重量Weight:6.15kg



电磁制动尺寸图 Electromagnetic brake dimensional drawing

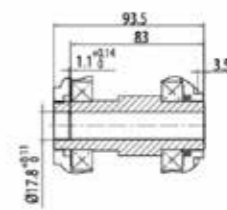
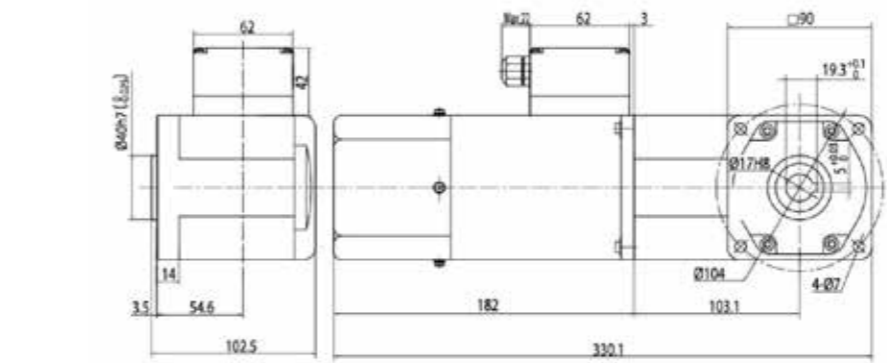
- 弧锥齿实心轴 Solid cone shaft PAAS90C90GU-F
重量Weight:7.3kg



- 键(减速器附件)
Key (gearbox accessory)

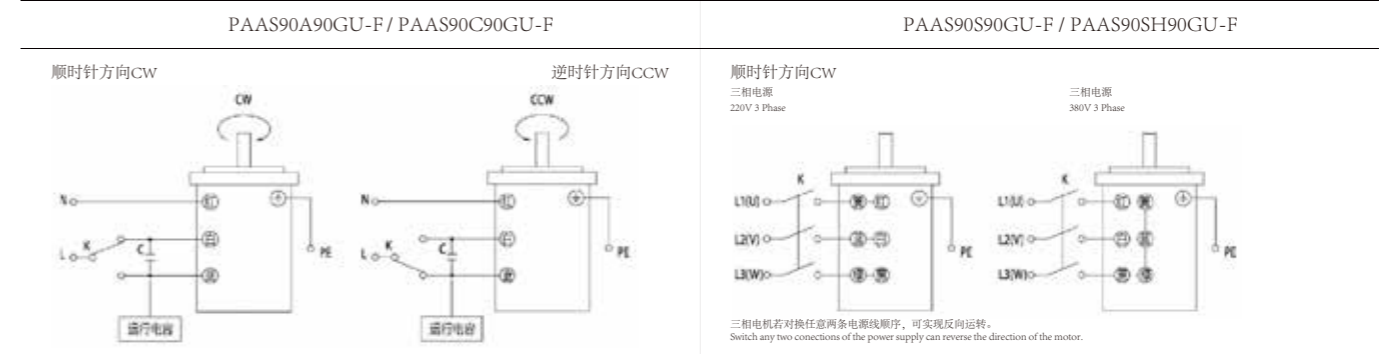


- 弧锥齿空心轴 Arc cone tooth hollow shaft PAAS90C90GU-F
重量Weight:6.95kg



● 接线图 Wiring Diagram

- 运转方向指从电机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
- 表中所记型号为齿轮轴型，圆轴型亦同。
- The direction of motor rotation is viewed from the shaft end of motor. CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- Part number indicated in the list is pinion shaft type also valid for the equivalent round shaft type.

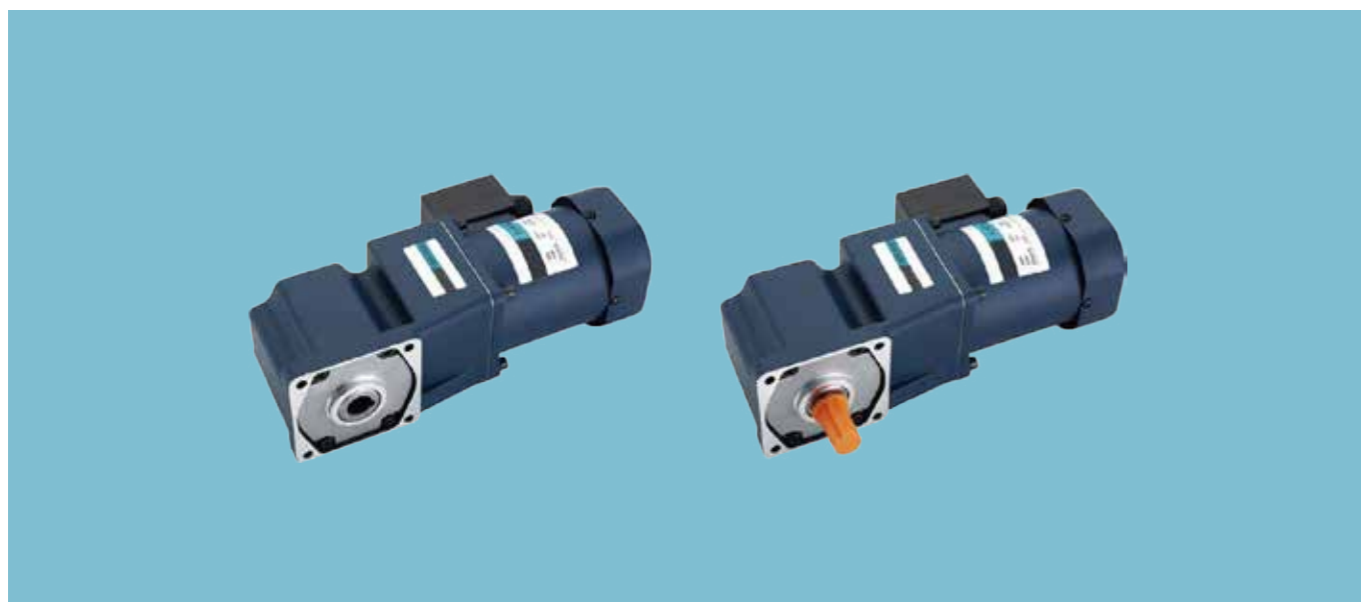


● 注意 Note

- 单相电机运转方向的转换应在电机停止后进行。
- 若在电机运转时转换运转方向，可能发生无法转换运转方向或须费时较久的情况。
- Change the rotation direction of single-phase motor only after the motor is stopped.
- If an attempt is made to change the direction of rotation while the motor is rotating motor may ignore reversing command or the direction of rotation is reversed with some delay.

直角减速电机 RIGHT ANGLE GEAR MOTORS

120W 90mm



电机型号/性能 List of motor characteristics

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	额定转速 Rated Speed	额定转矩 Rated Torque	启动转矩 Start Torque	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	r/min	mN.m	mN.m	μF/VAC
PAAS90C120GU-F	PAAS90C120A-F	120	1ph220	50	0.87	1350	874	663	6.0/450
				60	0.90	1550	709	655	
PAAS90A120GU-F	PAAS90A120A-F	120	1ph110	50	1.79	1350	919	500	25.0/250
				60	1.65	1550	740	524	
PAAS90S120GU-F	PAAS90S120A-F	120	3ph220	50	0.81	1350	879	2800	/
				60	0.70	1550	735	2150	
PAAS90SH120GU-F	PAAS90SH120A-F	120	3ph380	50	0.46	1350	879	2660	/
				60	0.40	1550	731	2030	

●各种安全规格以电机铭牌上的型号名取的认证。

●注：“-A”型号中电压为110V时，配置电容器容量以实际铭牌为准。

●When the motor is approved under various safety standards the model name on the nameplate is the approved model name.

●Note: -A means the voltage 110v. The matched capacitor vaule should be consistent with the nameplate.

减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

减速比 Gear Ratio		3	3.6	6	7.55	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	
50Hz	转速 Speed r/min	450	375	270	225	180	150	135	108	90	75	67.5	54	45	37.5	33.7	22.5	18	15	13.5	11.3	9	7.5
	转矩 Torque N.m	1.72	2.07	2.87	3.44	4.78	5.73	6.37	7.96	9.56	11.4	12.7	15.9	19.1	20	20	20	20	20	20	20	20	20
60Hz	转速 Speed r/min	516	430	310	258	206	172	155	124	103	86	77.5	62	51.6	43	38.75	31	25.8	20.6	17.2	15.5	12.9	8.61
	转矩 Torque N.m	1.39	1.67	2.32	2.79	3.88	4.65	5.17	6.46	7.75	9.3	10.3	12.9	15.5	16.7	20	20	20	20	20	20	20	20

●表中转速是以电机的平均转速(50Hz:1350r/min,60Hz:1550r/min)为基数除以减速比而算出的数值。实际转速将随负载大小而变化,变化范围2~20%。

●表中 色框表示输出轴的旋转方向与电机旋转方向相反。

●表中转矩是以电机额定转矩×减速比×传动效率计算而得。

●减速箱的最大容许转矩为20N·M。

●In the table, the speed is calculated from the base of the motor s average speed (50Hz:1350r/min,60Hz:1550r/min)divided by the deceleration ratio. The actual speed will vary with the load ranging from 2% to 20%.

●The box in the table indicates the rotation direction of the gearbox output shaft is opposite to that of the motor.

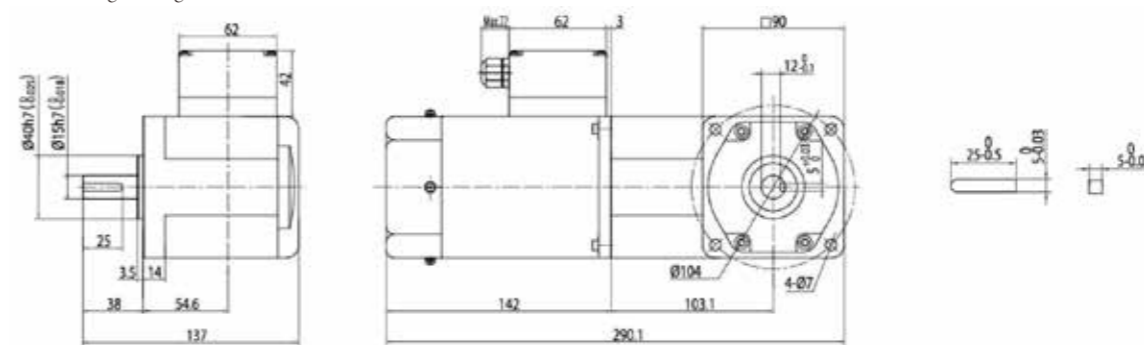
●Torque in the table is calculated from motor rated torque * reduction ratio * transmission efficiency.

●The maximum allowable torque of the gear box is 20N·M.

外形尺寸(单位mm) Dimension (unti: mm)

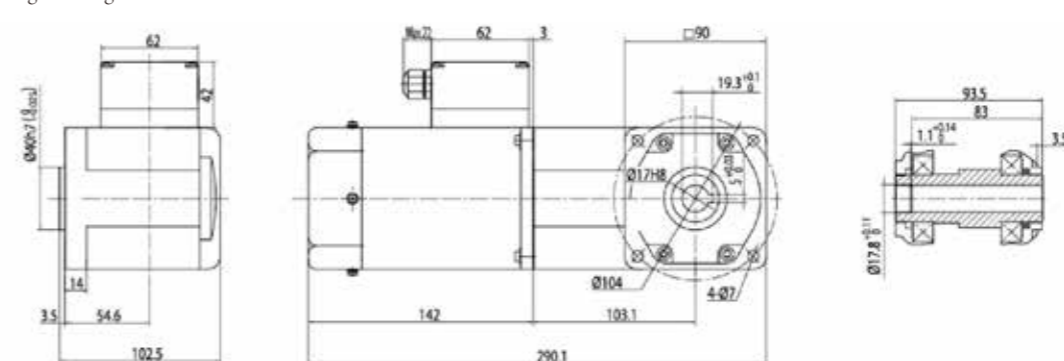
感应、阻尼尺寸图 INDUCTION、REVERSIBLE TYPE DRAWING

- 弧锥齿实心轴 Solid cone shaft PAAS90C120GU-F
重量Weight:6.4kg



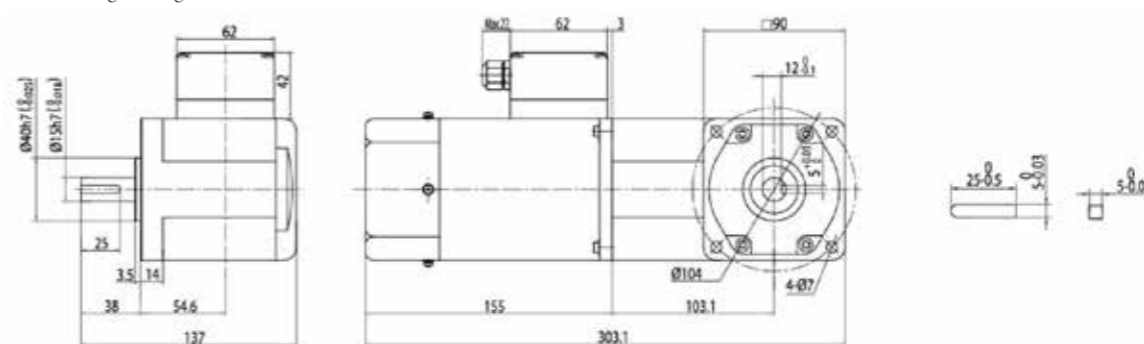
- 键(减速器附件)
Key (gearbox accessory)

- 弧锥齿空心轴 Arc cone tooth hollow shaft PAAS90C120GU-F
重量Weight:6.05kg



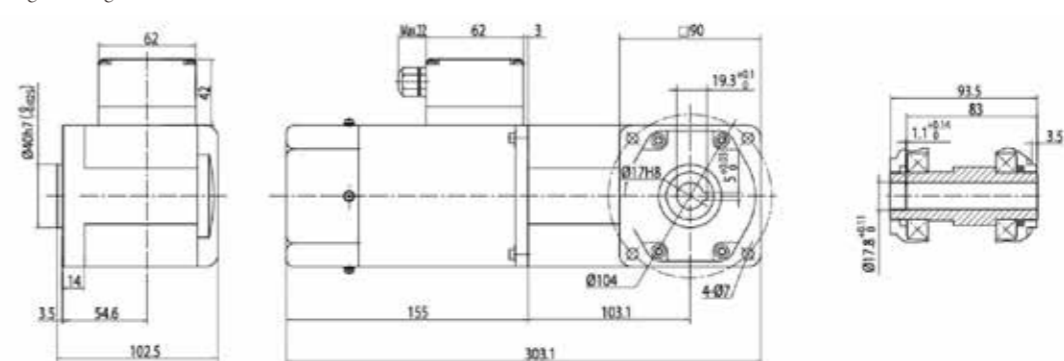
调速尺寸图 SPEED CONTROL TYPE DRAWING

- 弧锥齿实心轴 Solid cone shaft PAAS90C120GU-F
重量Weight:6.5kg



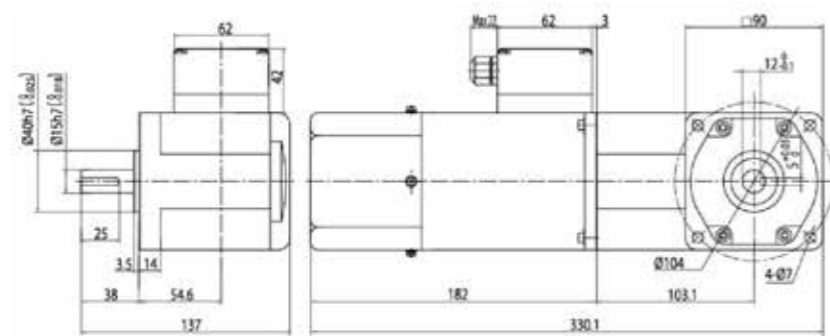
- 键(减速器附件)
Key (gearbox accessory)

- 弧锥齿空心轴 Arc cone tooth hollow shaft PAAS90C120GU-F
重量Weight:6.15kg

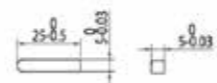


电磁制动尺寸图 Electromagnetic brake dimensional drawing

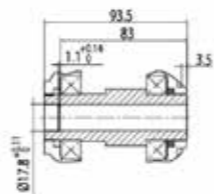
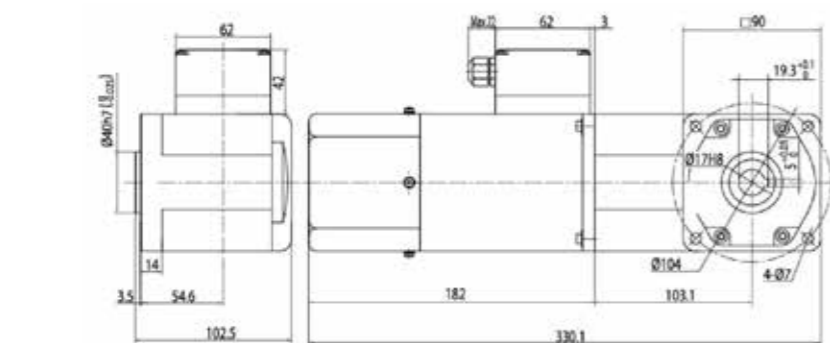
- 弧锥齿实心轴 Solid cone shaft PAAS5C120GU-F
重量Weight:7.5kg



- 键(减速器附件)
Key (gearbox accessory)

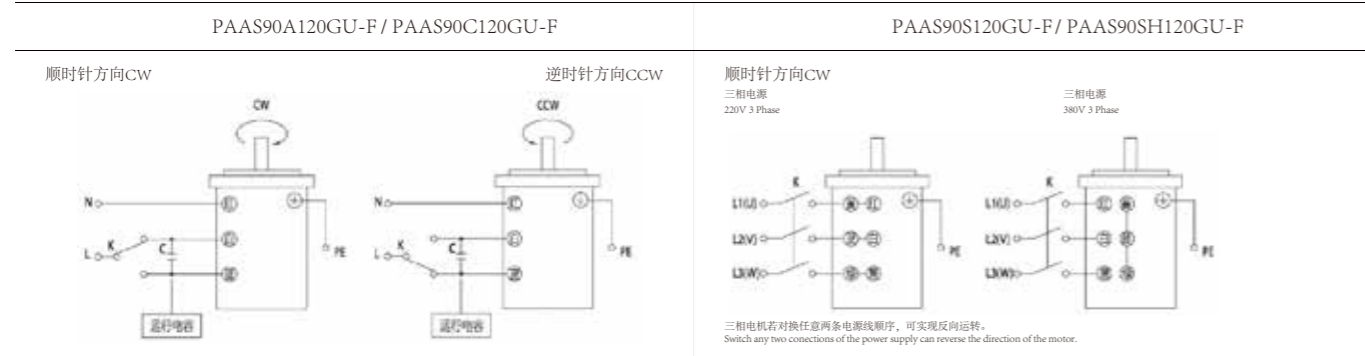


- 弧锥齿空心轴 Arc cone tooth hollow shaft PAAS5C120GU-F
重量Weight:7.15kg



● 接线图Wiring Diagram

- 运转方向指从电机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
- 表中所记型号为齿轮轴型，圆轴型亦同。
- The direction of motor rotation is viewed from the shaft end of motor. CW represents the clockwise direction while CCW represents the counterclockwise direction.
- Part number indicated in the list is pinion shaft type also valid for the equivalent round shaft type.

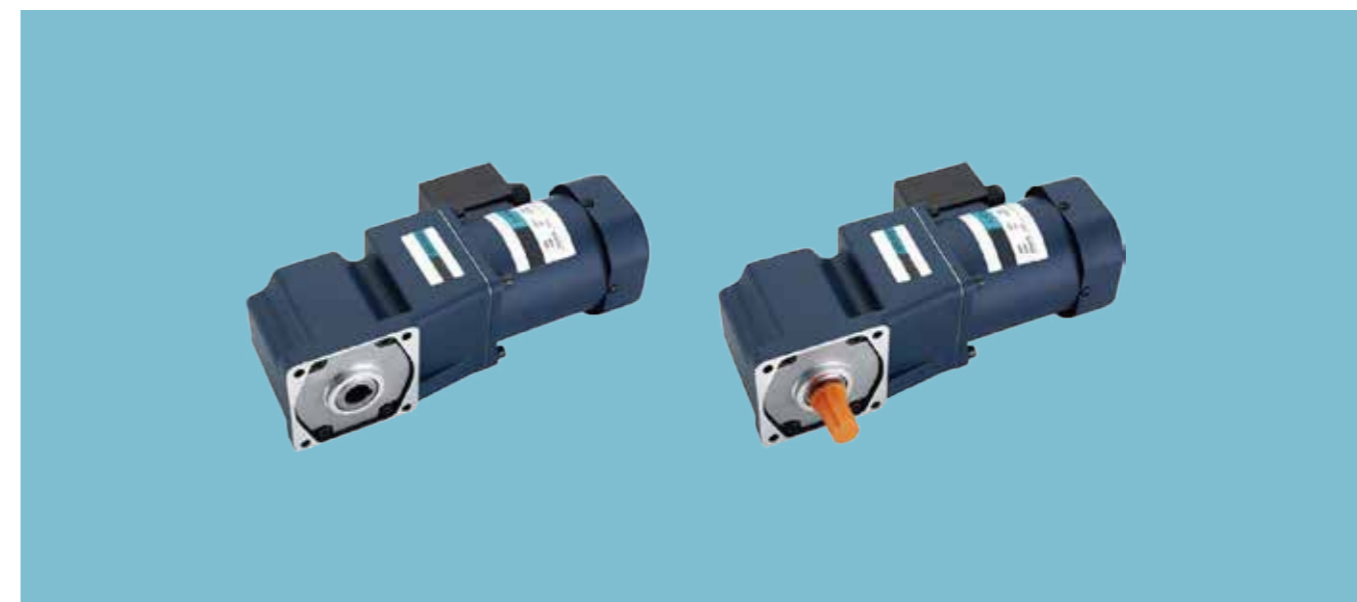


● 注意Note

- 单相电机运转方向的转换应在电机停止后进行。
- 若在电机运转时转换运转方向，可能发生无法转换运转方向或须费时较久的情况。
- Change the rotation direction of single-phase motor only after the motor is stopped.
- If an attempt is made to change the direction of rotation while the motor is running motor may ignore reversing command or the direction of rotation is reversed with some delay.

直角减速电机
RIGHT ANGLE GEAR MOTORS

200W
104mm



● 电机型号/性能 List of motor characteristics

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	额定转速 Rated Speed	额定转矩 Rated Torque	启动转矩 Start Torque	运行电容 Capacitor
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	r/min	mN.m	mN.m	µF/VAC
PAAS104C200GU-F	PAAS104C200A-F	200	1ph220	50	1.31	1350	1281	1290	12.0/450
				60	1.73	1550	1060	1220	
PAAS104A200GU-F	PAAS104A200A-F	200	1ph110	50	2.36	1350	1310	890	20.0/250
				60	2.57	1550	1090	880	
PAAS104S200GU-F	PAAS104S200A-F	200	3ph220	50	1.17	1350	1460	4620	/
				60	0.98	1550	1060	3420	
PAAS104SH200GU-F	PAAS104SH200A-F	200	3ph380	50	0.66	1350	1550	4500	/
				60	0.57	1550	1350	3500	

- 各种安全规格以电机铭牌上的型号名取的认证。

- 注：“-A”型号中电压为110V时，配置电容器容量以实际铭牌为准。

- When the motor is approved under various safety standards the model name on the nameplate is the approved model name.

- Note: -A means the voltage 110v. The matched capacitor vaule should be consistent with the nameplate.

● 减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

减速比 Gear Ratio		3	3.6	6	7.55	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	
50Hz	转速 Speed r/min	450	375	270	225	180	150	135	108	90	75	67.5	54	45	37.5	33.7	22.5	18	15	13.5	11.3	9	7.5
	转矩 Torque N.m	2.52	3.03	4.2	5.04	7	8.4	9.34	11.7	14	16.8	18.7	23.3	28	33.6	40	40	40	40	40	40	40	40
60Hz	转速 Speed r/min	516	430	310	258	206	172	155	124	103	86.1	77.5	62	51.6	43.1	31	25.8	20.6	17.2	15.5	12.9	10.3	8.61
	转矩 Torque N.m	2.09	2.5	3.48	4.17	5.8	6.95	7.73	9.66	11.6	13.9	15.5	19.3	23.2	27.8	37.8	40	40	40	40	40	40	40

- 表中转速是以电机的平均转速(50Hz:1350r/min,60Hz:1550r/min)为基数除以减速比而算出的数值。实际转速将随负载大小而变化,变化范围2~20%。

- 表中 色框表示输出轴的旋转方向与电机旋转方向相反。

- 表中转矩是以电机额定转矩×减速比×传动效率计算而得。

- 减速箱的最大容许转矩为40N·M。

- In the table, the speed is calculated from the base of the motors average speed (50Hz:1350r/min, 60Hz:1550r/min)divided by the deceleration ratio. The actual speed will vary with the load ranging from 2% to 20%.

- The 色框 in the table indicates the rotation direction of the gearbox output shaft is opposite to that of the motor.

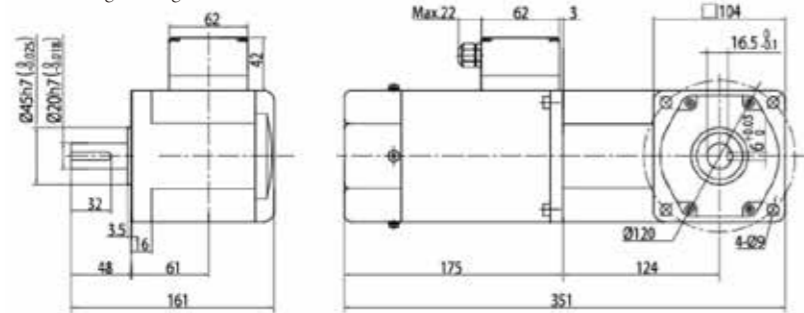
- Torque in the table is calculated from motor rated torque * reduction ratio * transmission efficiency.

- The maximum allowable torque of the gear box is 40N·M.

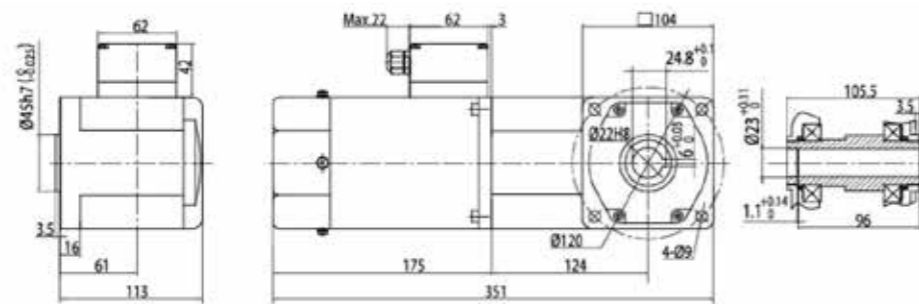
●外形尺寸(单位mm) Dimension (unit: mm)

感应、阻尼、调速尺寸图 INDUCTION、REVERSIBLE、SPEED CONTROL TYPE DRAWING

- 弧锥齿实心轴 Solid cone shaft PAAS104C200GU-F
重量Weight:9.5kg

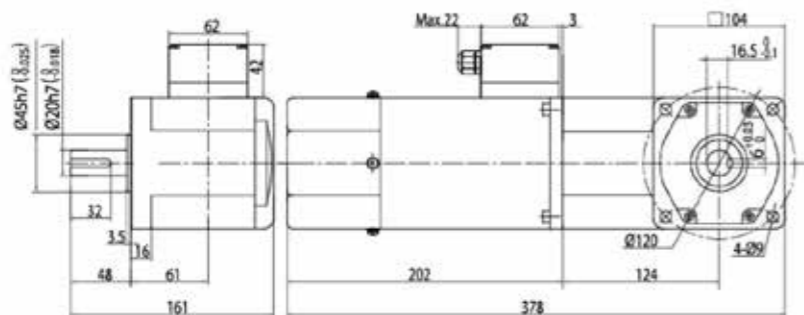


- 弧锥齿空心轴 Arc cone tooth hollow shaft PAAS104C200GU-F
重量Weight:9.25kg

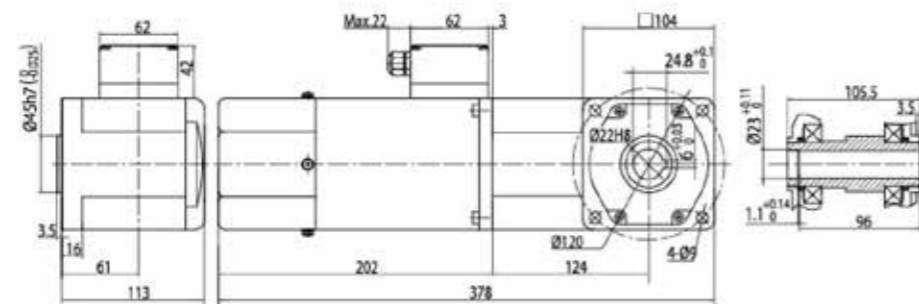


电磁制动尺寸图 BRAKE TYPE DRAWING

- 弧锥齿实心轴 Solid cone shaft PAAS104C200GU-F
重量Weight:10.4kg



- 弧锥齿空心轴 Arc cone tooth hollow shaft PAAS104C200GU-FT
重量Weight:10.15kg



●接线图Wiring Diagram

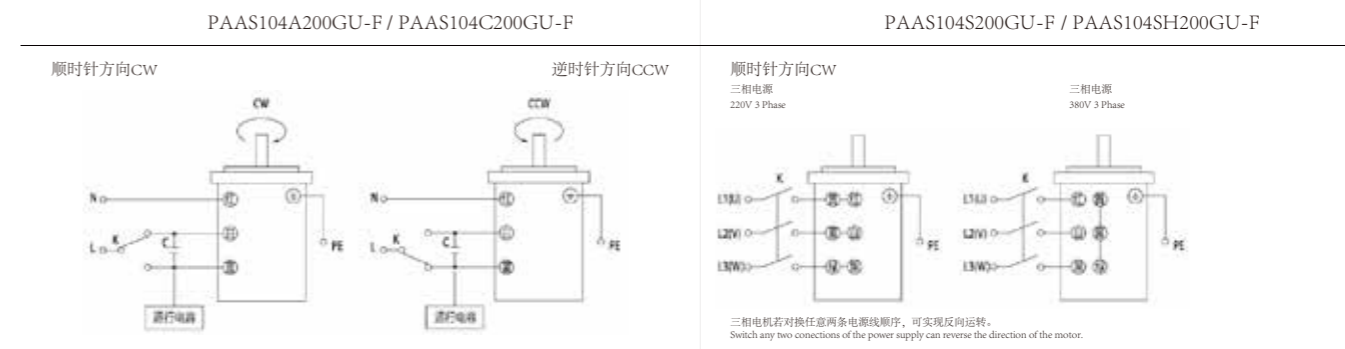
- 运转方向指从电机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。

表中所记型号为齿轮轴型，圆轴型亦同。

The direction of motor rotation is viewed from the shaft end of motor.

CW represents the clockwise direction, while CCW represents the counterclockwise direction.

Part number indicated in the list is pinion shaft type also valid for the equivalent round shaft type.



●注意Note

- 单相电机运转方向的转换应在电机停止后进行。
- 若在电机运转时转换运转方向，可能发生无法转换运转方向或须费时较久的情况。
- Change the rotation direction of single-phase motor only after the motor is stopped.
- If an attempt is made to change the direction of rotation while the motor is rotating motor may ignore running command or the direction of rotation is reversed with some delay.

SF系列面板式调速器

SK SERIES PANEL DRIVE



●特点Characteristics

- 采用MCU数字控制技术,功能丰富,性能优异。
- 采用数显菜单式选项,修改设定方便快捷。
- 可根据用户显示需要设定显示倍率,自动换算显示目标值。
- 可实现缓慢加速、缓慢减速、快速停止、4段速等复杂运动控制。
- 可外接开关控制、0~10V模拟量控制。
- 模拟量控制可自动匹配最高转速,调节控制方便、安全。
- 内置运行电容。
- 堵转保护功能,防止电机、调速器因堵转烧坏。(此功能可保护堵转过载,但无法保护非堵转过载)

- With MCU digital control technology it has rich functions and excellent performance.
- Easy to change settings with digital menu options.
- The display magnification can be set according to the users requirement and the display target value can be automatically converted.
- Realize complex motion control such as slow acceleration, slow deceleration fast stop and 4-speed.
- External switch control 0~10V analog control.
- The analog control can automatically match the maximum speed, and the control is convenient and safe.
- The stall protection function prevents the motor and drive from being burnt out due to blockage.(This function can protect the blocked overload, but cannot protect the non-blocked overload)

●型号列表Model array table

类别 Category	SF系列面板式调速器SF series panel drive		SK系列内置式调速器SK Series built-in drive		
	电源电压 Voltage	220V	110V	220V	110V
电机功率 Power					
6W	SF06E	SF06A	SK200E	SK200A	
15W	SF15E	SF15A			
25W	SF25E	SF25A			
40W	SF40E	SF40A			
60W	SF60E	SF60A			
90W	SF90E	SF90A			
120W	SF120E	SF120A			
200W	SF200E	SF200A			

●型号列表Model array table

●面板式Panel type

SF □□ E □
① ② ③ ④

①	名称代号 Name code	面板式调速 Panel drive
②	适用调速电机功率代号 Applicable speed motor Power code	6W~200W
③	电源电压 Voltage	E(单相single phase 220V) A(单相single phase 110V)
④	派升代号 Promotion code	

●内置式 Built-in

SK 200 E □
① ② ③ ④

①	名称代号 Name code	面板式调速 Panel drive
②	适用调速电机功率代号 Applicable speed motor Power code	6W~200W
③	电源电压 Voltage	E(单相single phase 220V) A(单相single phase 110V)
④	派升代号 Promotion code	

●性能参数表 Performance parameter table

型号 Model	SF□□E	SF□□A	SK200E	SK200A
安装方式 Install method	面板式 Panel type		内置式 Built-in	
电源电压 Voltage	单相single phase 220V	单相Single phase 220V	单相Single phase 220V	单相Single phase 220V
电源频率 Power frequency	50/60HZ			
适用电机类型 Motor type	YT系列调速电机 YT Series speed motor			
运行电容 Capacitor	内置式(内置于调速器内) Built-in		外置(放置于调速电机包装内,需用户自行连接) External (placed in the speed motor package, users need to connect it)	
运动控制功能 Motion control function	面板或外接开关运转控制, 调速,缓慢加速, 缓慢减速 Panel or external switch operation control, speed control, Slow acceleration, slow deceleration		外接开关运转控制,调速, 缓慢加速, 缓慢减速,快速停止,4段速 External switch operation control, speed control, Slow acceleration, slow deceleration, fast stop, 4 speed stage	
速度调节方式 Speed adjustment method	面板“▲”“▼”键; panel key面板旋钮panel knob		面板“▲”“▼”键; panel key面板旋钮panel knob; 0~10v 模拟量 Analog quantity	
调速范围 Speed range	90-3000r/min。(用户可根据电机极数、电源频率、使用需要设定) Users can set according to the number of motor poles, power frequency, and usage requirements			
适用环境 Applicable environment	环境温度 Ambient temperature: -10° C ~ +45C (无结冰No icing) 环境湿度 Ambient humidity: 85%以下 (无结露) No condensation			

●SF系列面板式驱动器接线图 SF series panel governor diagram

●操作面板按钮控制电机运转

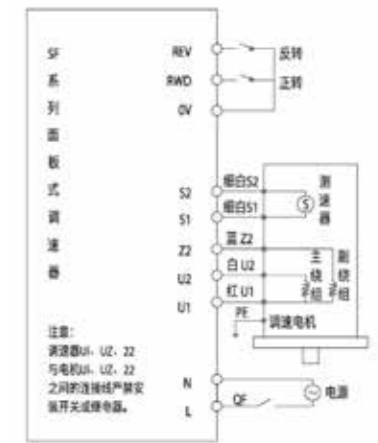
- 1) 无需安装K1、K2开关。
- 2) 菜单设置: 运转控制方式F-03选择“1”或“4”操作面板按钮控制。调速电机的功率必须与调速器适用电机功率一致。电源电压必须与调速器电源电压规格一致。OF为断路器, 在发生短路时保护调速器和调速电机。

Operator panel buttons control motor operation

- 1) no need to install the K1 and K2 switches.
- 2) Menu Settings: Operation control mode F-03 select "1" or "4" operator panel button control. The power of the adjustable speed motor must be the same as motor power of the drive. The power supply volage must match the drive supply voltage specifications. OF is a circuit breaker that protects the drive and the speed control motor in the event of a short circuit.

●外接开关K1、K2控制电机运转

- 1) 必须安装K1、K2开关。
 - 2) 菜单设置: 运转控制方式F-03选择“2”或“3”外接开关控制。请注意核对调速器型号标签功率是否与电机功率一致。External switches K1, K2 control motor operation
- 1) install the K1 and K2 switches
2) Menu Settings: Operation control mode F-03 select "2" or "3" external switch control. Please check that the drive model label power is consistent with the motor power.



●QF 断路器电流规格表 QF breaker current specification table:

电源电压 Voltage	电机功率 Power	QF电流规格 QF current specification
220V	6~90W	1A
220V	120~200W	2A
110V	6~90W	2A
110V	120~200W	4A

电源电压必须与调速器电源电压规格一致。QF为断路器在发生短路时保护调速器和调速电机

The power voltage must match the speed controller's voltage specifications. QF is the circuit breaker which protect the speed controller and motor when a short circuit occurs.

●运行电容C规格表 Operating capacitor C specification sheet

电机功率 Power	电源电压 Voltage	
	220V	110V
6W	0.7μF/500V	2.5μF/250V
15W	1μF/500V	4μF/250V
25W	1.5μF/500V	6μF/250V
40W	2.5μF/500V	10μF/250V
60W	3μF/500V	14μF/250V
90W	5μF/500V	20μF/250V
120W	6μF/500V	24μF/250V
200W	10μF/500V	40μF/250V

注:运行电容按电机型号配, 放置于调速电机包装内。

Note: The running capacitor is matched to the motor model and placed in the motor package.

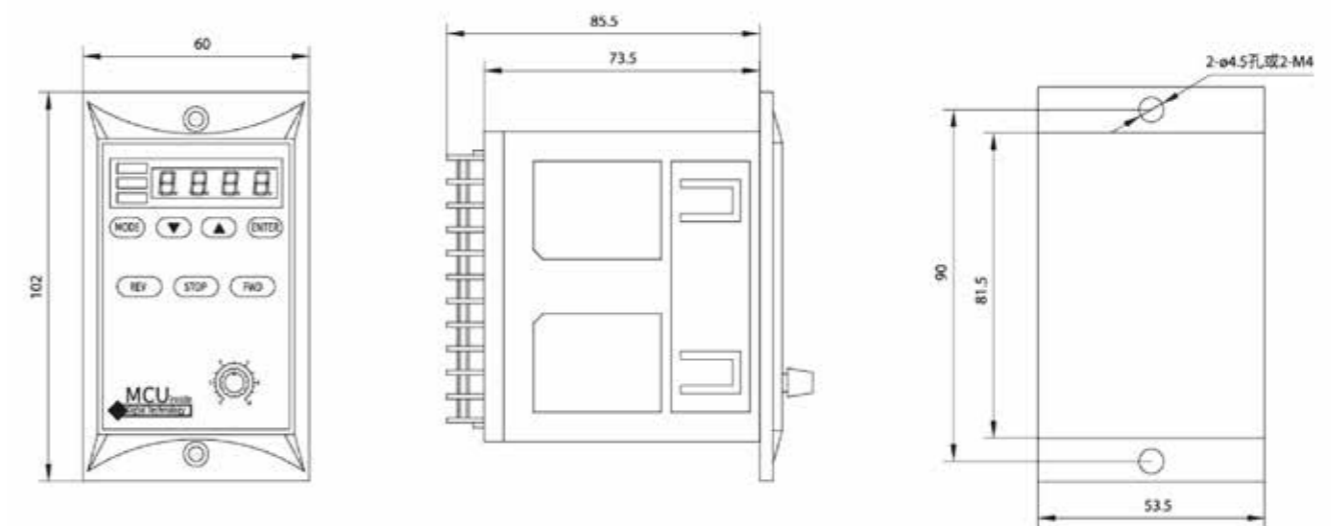
参数码 Parameter code	参数功能 Parameter function	设定范围 Setting area	功能说明 Function Description	出厂设定值 Factory setting	用户设定值 User setting
F-06	速度调整方式 Speed adjustment method	1.面板▲▼按键 Panel▲▼button	按▼▲按钮在最低至最高转速范围内,调整电机转速面板旋钮自动匹配0~最高转速。 Press the ▼▲button to the lowest to maximum speed range. Adjust the motor speed panel knob to automatically match 0 to the maximum speed.	1	
F-07	最高转速 Maximum speed	500~3000	限制电机最高转速,可防止超速,发生损坏或事故。50Hz电源最高转速1400,60Hz电源最高转速1600。若最高转速超过以上值,电机将发热、振动。 Limit the maximum speed of the motor to prevent overspeed. Damage or accident has occurred. The maximum speed of the 50Hz power supply is 1400, and the maximum speed of the 60Hz power supply is 1600. If the maximum speed exceeds the above value. The motor will generate heat and vibration.	1400	
F-08	最低转速 Minimum speed	90~1000	限制电机最低转速,可防止电机由于运行于低速导致速度不稳定,过热、过载。 Limiting the minimum motor speed can prevent the motor from being unstable due to running at low speed and overheating, overload.	90	
F-09	正转启动是解除失电电磁制动器后电机延迟启动时间 Forward rotation start is the motor delay start time after the de-energized electromagnetic brake is released.	0.0~2.0秒 seconds	若电机启动时速度过冲,可微调加大至0.1秒 If the speed is overshooted when the motor starts, the fine adjustment can be increased to 0.1 second.	0.0	
F-10	正转启动加速时间 Forward rotation acceleration time	0.1~10.0秒 seconds	时间长,电机启动平缓,启动时间长。 时间短,电机启动快猛,启动时间短。 Long time, motor starting level, long starting time. The time is short, the motor starts fast and the starting time is short.	1.0	
F-11	正转停止方式 Forward rotation acceleration time	1.自由减速停止 2.缓慢减速停止 1.Free deceleration stop 2.Slowly slow down and stop	当选择失电电磁制动停止时,电机将迅速停止并制动。若选择自由减速停止时,电机停止太快,可选择缓慢减速停止。 When the de-energized electromagnetic brake is selected to stop, the motor will quickly stop and brake. If you choose free deceleration stop the motor stops too fast, you can choose slow deceleration stop.	1	
F-12	正转停止时失电电磁制动器制动延时时间 De-powered electromagnetic braker delay time when forward rotation stops.	0.1~10.0秒 seconds	F-11选择1时,菜单有效,电机停止时,在此设定时间内,先以自由减速方式减速后再制动。 When F-11 selects 3, the menu is valid. When the motor stops, within the setting time be decelerated in free deceleration mode then brake.	0.0	
F-13	反转停止方式 Reverse stop mode	1.自由减速停止 2.缓慢减速停止 1.Free deceleration stop 2.Slowly slow down and stop	当选择自由减速停止时,若电机停止较快,可选择缓慢减速停止,改变F-14设定值,可改变缓慢减速停止的快慢。 无需改变电机接线,轻而易举改变电机转向,使之与习惯成要求一致。 easy to change the motor steering without changing the motor wiring. Make it consistent with the customary requirements.	1.0	
F-14	正转启动时解除失电电磁制动器后电机延迟启动时间 Relieve de-powered electromagnetic braker delay time when forward rotation start	0.0~2.0秒 seconds	若电机启动时速度过冲,可微调加大至0.1秒 If the speed is overshooted when the motor starts the fine adjustment can be increased to 0.1 second.	0.0	
F-15	反转启动加速时间 Forward rotation acceleration time	0.1~10.0秒 seconds	时间长,电机启动平缓,启动时间长。 时间短,电机启动快猛,启动时间短。 Long time motor starting level, long starting time. The time is short the motor starts fast and the starting time is short.	1.0	
F-16	正转停止方式 Forward rotation acceleration time	1.自由减速停止 2.缓慢减速停止 1.Free deceleration stop 2.Slowly slow down and stop	当选择失电电磁制动停止时,电机将迅速停止并制动。若选择自由减速停止时,电机停止太快,可选择缓慢减速停止。 When the de-energized electromagnetic brake is selected to stop, the motor will quickly stop and brake. If you choose free deceleration stop the motor stops too fast you can choose slow deceleration stop.	1	
F-17	正转停止时失电电磁制动器制动延时时间 De-powered electromagnetic braker delay time when forward rotation stops.	0.1~10.0秒 seconds	F-11选择1时,菜单有效,电机停止时,在此设定时间内,先以自由减速方式减速后再制动。 When F-11 selects 3 the menu is valid. When the motor stops within the setting time be decelerated in free deceleration mode then brake.	0.0	

参数码 Parameter code	参数功能 Parameter function	设定范围 Setting area	功能说明 Function Description	出厂设定值 Factory setting	用户设定值 User setting
F-18	反转停止时缓慢减速时间 Reverse stop Slow deceleration time	0.1~10.0秒 seconds	F-16选择3时,菜单有效。 When F-16 selects 3 the menu is valid.	1	
F-29	恢复出厂设定 Restore factory settings	1.不恢复 2.恢复出厂设置 1.Not recovering 2.Restore factory settings		1	
F-30	程序版本 Program Version	代码+版本 Code + version		0.3**	

故障报警Er-1: 1) 过载堵转。
2) 调速器与电机或运行电容的连接异常。
故障处理方式: 1) 检查、排除故障。
2) 重新上电解除报警。

Fault alarm Er-1: 1) Overload blocked.
2) The connection between the governor and the motor or running capacitor is abnormal.
Troubleshooting: 1) Check and troubleshoot.
2) Re-power on to cancel the alarm.

● SF系列面板式调速器外形及安装图 SF series panel governor shape and installation diagram



● 使用须知 Terms and Conditions

- 请勿在爆炸性环境、易燃性气体环境、腐蚀性环境以及容易沾上水的场所或可烘物周围使用。
- 避免连续振动,过度冲击。
- 电机在正常运转状态下,有时电机外壳表面的温度可能会超过70°C,因此在可能触及电机的使用环境下请加贴右圈所示的警告标志。
- 请务必将接地端子接地。
- 安装、连接、检查等作业须由专业技术人员进行。
- Do not use in a fragile environment an easy-to-existing gas environment, a corrosive environment or a place where it is easy to get water or a bakeable object.
- Avoid continuous vibration. Excessive impact.
- When the motor is in normal operation sometimes the temperature of the motor casing surface may exceed 70°C. Therefore, please put the general sign shown on the right crddle in the envirmment where the motor may be touched.
- Be sure to ground the ground terminal.
- Isalltion connectin inspetion, etc. must be crried out by pressional technicians.

SFB系列面板式驱动器

SFB SERIES PANEL DRIVE



●特点Characteristics

- 采用MCU数字控制技术,功能丰富,性能优异。
- 采用数显菜单式选项,修改设定方便快捷。
- 可根据用户显示需要设定显示倍率,自动换算显示目标值。
- 可实现缓慢加速、缓慢减速、快速停止、4段速等复杂运动控制。
- 可外接开关控制、0~10V模拟量控制。
- 模拟量控制可自动匹配最高转速,调节控制方便、安全。
- 内置运行电容。
- 堵转保护功能,防止电机、调速器因堵转烧坏。(此功能可保护堵转过载,但无法保护非堵转过载)

- With MCU digital control technology it has rich functions and excellent performance.
- Easy to change settings with digital menu options.
- The display magnification can be set according to the users requirement and the display target value can be automatically converted.
- Realize complex motion control such as slow acceleration slow deceleration, fast stop, and 4-speed.
- External switch control 0~10V analog control.
- The analog control can automatically match the maximum speed, and the control is convenient and safe.
- The stall protection function prevents the motor and drive from being burnt out due to blockage.(This function can protect the blocked overload but cannot protect the non-blocked overload)

●型号列表Model array table

类别 Category	SF系列面板式调速器SF series panel drive		SK系列内置式调速器SK Series built-in drive	
	220V	110V	220V	110V
15W	SF15E	SF15A	SK200E	SK200A
25W	SF25E	SF25A		
40W	SF40E	SF40A		
60W	SF60E	SF60A		
90W	SF90E	SF90A		
120W	SF120E	SF120A		
200W	SF200E	SF200A		

●型号列表Model array table

●面板式Panel type

SFB □□ E □

① ② ③ ④

①	名称代号 Name code	面板式调速 Panel drive
②	适用调速电机功率代号 Applicable speed motor Power code	6W~200W
③	电源电压 Voltage	E(单相single phase 220V) A(单相single phase 110V)
④	派升代号 Promotion code	

●内置式 Built-in

SFB 200 E □

① ② ③ ④

①	名称代号 Name code	面板式调速 Panel drive
②	适用调速电机功率代号 Applicable speed motor Power code	6W~200W
③	电源电压 Voltage	E(单相single phase 220V) A(单相single phase 110V)
④	派升代号 Promotion code	

●性能参数表 Performance parameter table

型号 Model	SF□□E	SF□□A	SK200E	SK200A
安装方式 Install method	面板式 Panel type		内置式 Built-in	
电源电压 Voltage	单相single phase 220V	单相Single phase 220V	单相Single phase 220V	单相Single phase 220V
电源频率 Power frequency	50/60HZ			
适用电机类型 Motor type	YT系列调速电机 YT Series speed motor			
运行电容 Capacitor	内置式(内置于调速器内) Built-in		外置(放置于调速电机包装内,需用户自行连接) External (placed in the speed motor package, users need to connect it)	
运动控制功能 Motion control function	面板或外接开关运转控制, 调速,缓慢加速, 缓慢减速 Panel or external switch operation control speed control Slow acceleration slow deceleration		外接开关运转控制,调速, 缓慢加速, 缓慢减速,快速停止,4段速 External switch operation control, speed control, Slow acceleration, slow deceleration fast stop 4 speed stage	
速度调节方式 Speed adjustment method	面板“▲”“▼”键; panel key面板旋钮panel knob		面板“▲”“▼”键; panel key面板旋钮panel knob; 0~10v 模拟量 Analog quantity	
调速范围 Speed range	90-3000r/min。(用户可根据电机极数、电源频率、使用需要设定) Users can set according to the number of motor poles, power frequency, and usage requirements			
适用环境 Applicable environment	环境温度 Ambient temperature: -10° C ~ +45C (无结冰No icing) 环境湿度 Ambient humidity: 85%以下 (无结露) No condensation			

●SF系列面板式驱动器接线图 SF series panel governor diagram

●操作面板按钮控制电机运转

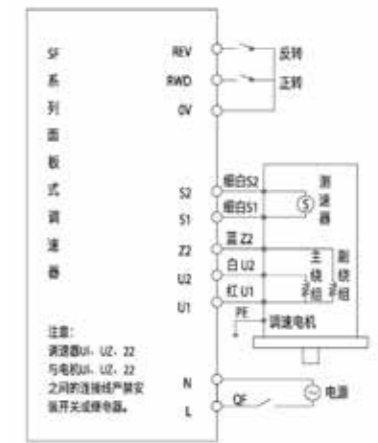
- 1) 无需安装K1、K2开关。
- 2) 菜单设置: 运转控制方式F-03选择“1”或“4”操作面板按钮控制。调速电机的功率必须与调速器适用电机功率一致。电源电压必须与调速器电源电压规格一致。OF为断路器, 在发生短路时保护调速器和调速电机。

Operator panel buttons control motor operation

- 1) no need to install the K1 and K2 switches.
- 2) Menu Settings: Operation control mode F-03 select "1" or "4" operator panel button control. The power of the adjustable speed motor must be the same as motor power of the drive. The power supply volage must match the drive supply voltage specifications. OF is a circuit breaker that protects the drive and the speed control motor in the event of a short circuit.

●外接开关K1、K2控制电机运转

- 1) 必须安装K1、K2开关。
 - 2) 菜单设置: 运转控制方式F-03选择“2”或“3”外接开关控制。请注意核对调速器型号标签功率是否与电机功率一致。
- External switches K1, K2 control motor operation
- 1) install the K1 and K2 switches
 - 2) Menu Settings: Operation control mode F-03 select "2" or "3" external switch control. Please check that the drive model label power is consistent with the motor power.



●QF 断路器电流规格表 QF breaker current specification table:

电源电压 Voltage	电机功率 Power	QF电流规格 QF current specification
220V	6~90W	1A
220V	120~200W	2A
110V	6~90W	2A
110V	120~200W	4A

电源电压必须与调速器电源电压规格一致。QF为断路器在发生短路时保护调速器和调速电机

The power voltage must match the speed controllers voltage specifications. QF is the circuit breaker which protect the speed controller and motor when a short circuit occurs.

●运行电容C规格表 Operating capacitor C specification sheet

电机功率 Power	电源电压 Voltage	
	220V	110V
6W	0.7μF/500V	2.5μF/250V
15W	1μF/500V	4μF/250V
25W	1.5μF/500V	6μF/250V
40W	2.5μF/500V	10μF/250V
60W	3μF/500V	14μF/250V
90W	5μF/500V	20μF/250V
120W	6μF/500V	24μF/250V
200W	10μF/500V	40μF/250V

注:运行电容按电机型号配, 放置于调速电机包装内。

Note: The running capacitor is matched to the motor model and placed in the motor package.

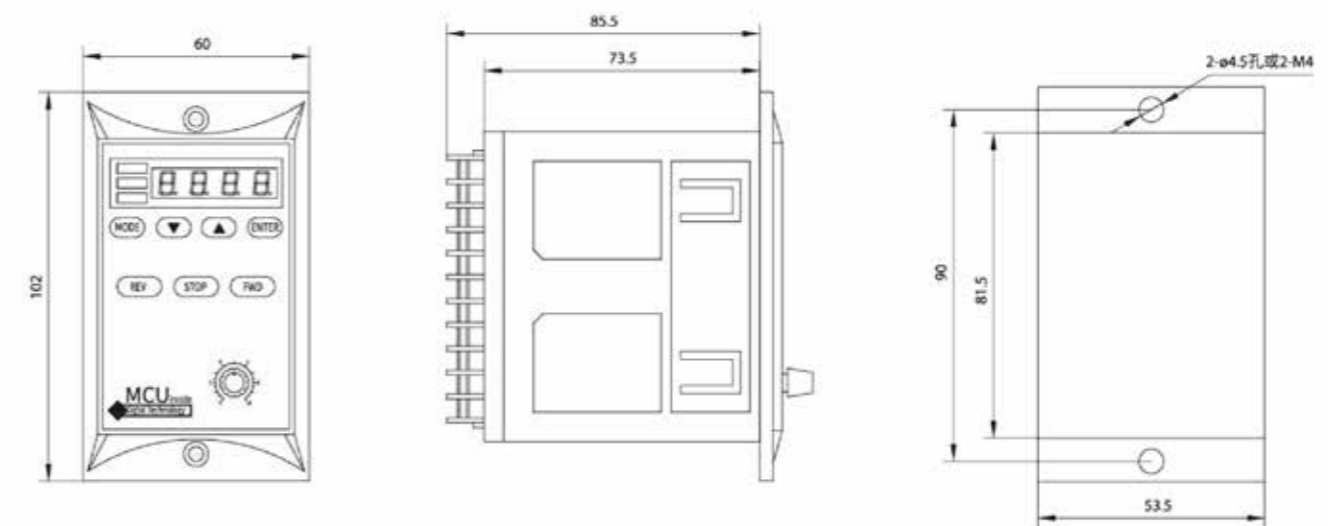
参数码 Parameter code	参数功能 Parameter function	设定范围 Setting area	功能说明 Function Description	出厂设定值 Factory setting	用户设定值 User setting
F-06	速度调整方式 Speed adjustment method	1.面板▲▼按键 Panel▲▼button	按▼▲按钮在最低至最高转速范围内,调整电机转速面板旋钮自动匹配0~最高转速。 Press the ▼▲button to the lowest to maximum speed range. Adjust the motor speed panel knob to automatically match 0 to the maximum speed.	1	
F-07	最高转速 Maximum speed	500~3000	限制电机最高转速,可防止超速,发生损坏或事故。50Hz电源最高转速1400,60Hz电源最高转速1600。若最高转速超过以上值,电机将发热、振动。 Limit the maximum speed of the motor to prevent overspeed. Damage or accident has occurred. The maximum speed of the 50Hz power supply is 1400, and the maximum speed of the 60Hz power supply is 1600. If the maximum speed exceeds the above value. The motor will generate heat and vibration.	1400	
F-08	最低转速 Minimum speed	90~1000	限制电机最低转速,可防止电机由于运行于低速导致速度不稳定,过热、过载。 Limiting the minimum motor speed can prevent the motor from being unstable due to running at low speed and overheating, overload.	90	
F-09	正转启动是解除失电电磁制动器后电机延迟启动时间 Forward rotation start is the motor delay start time after the de-energized electromagnetic brake is released.	0.0~2.0秒 seconds	若电机启动时速度过冲,可微调加大至0.1秒 If the speed is overshooted when the motor starts, the fine adjustment can be increased to 0.1 second.	0.0	
F-10	正转启动加速时间 Forward rotation acceleration time	0.1~10.0秒 seconds	时间长,电机启动平缓,启动时间长。 时间短,电机启动快猛,启动时间短。 Long time motor starting level long starting time. The time is short the motor starts fast and the starting time is short.	1.0	
F-11	正转停止方式 Forward rotation acceleration time	1.自由减速停止 2.缓慢减速停止 1.Free deceleration stop 2.Slowly slow down and stop	当选择失电电磁制动停止时,电机将迅速停止并制动。若选择自由减速停止时,电机停止太快,可选择缓慢减速停止。 When the de-energized electromagnetic brake is selected to stop the motor will quickly stop and brake. If you choose free deceleration stop the motor stops too fast you can choose slow deceleration stop.	1	
F-12	正转停止时失电电磁制动器制动延迟时间 De-powered electromagnetic braker delay time when forward rotation stops.	0.1~10.0秒 seconds	F-11选择1时,菜单有效,电机停止时,在此设定时间内,先以自由减速方式减速后再制动。 When F-11 selects 3 the menu is valid. When the motor stops within the setting time be decelerated in free deceleration mode then brake.	0.0	
F-13	反转停止方式 Reverse stop mode	1.自由减速停止 2.缓慢减速停止 1.Free deceleration stop 2.Slowly slow down and stop	当选择自由减速停止时,若电机停止较快,可选择缓慢减速停止,改变F-14设定值,可改变缓慢减速停止的快慢。 无需改变电机接线,轻而易举改变电机转向,使之与习惯成要求一致。 easy to change the motor steering without changing the motor wiring. Make it consistent with the customary requirements.	1.0	
F-14	正转启动时解除失电电磁制动器后电机延迟启动时间 Relieve de-powered electromagnetic braker delay time when forward rotation start	0.0~2.0秒 seconds	若电机启动时速度过冲,可微调加大至0.1秒 If the speed is overshooted when the motor starts the fine adjustment can be increased to 0.1 second.	0.0	
F-15	反转启动加速时间 Forward rotation acceleration time	0.1~10.0秒 seconds	时间长,电机启动平缓,启动时间长。 时间短,电机启动快猛,启动时间短。 Long time motor starting level long starting time. The time is short, the motor starts fast and the starting time is short.	1.0	
F-16	正转停止方式 Forward rotation acceleration time	1.自由减速停止 2.缓慢减速停止 1.Free deceleration stop 2.Slowly slow down and stop	当选择失电电磁制动停止时,电机将迅速停止并制动。若选择自由减速停止时,电机停止太快,可选择缓慢减速停止。 When the de-energized electromagnetic brake is selected to stop the motor will quickly stop and brake. If you choose free deceleration stop the motor stops too fast you can choose slow deceleration stop.	1	
F-17	正转停止时失电电磁制动器制动延迟时间 De-powered electromagnetic braker delay time when forward rotation stops.	0.1~10.0秒 seconds	F-11选择1时,菜单有效,电机停止时,在此设定时间内,先以自由减速方式减速后再制动。 When F-11 selects 3 the menu is valid When the motor stops within the setting time be decelerated in free deceleration mode then brake.	0.0	

参数码 Parameter code	参数功能 Parameter function	设定范围 Setting area	功能说明 Function Description	出厂设定值 Factory setting	用户设定值 User setting
F-18	反转停止时缓慢减速时间 Reverse stop Slow deceleration time	0.1~10.0秒 seconds	F-16选择3时,菜单有效。 When F-16 selects 3 the menu is valid.	1	
F-29	恢复出厂设定 Restore factory settings	1.不恢复 2.恢复出厂设置 1.Not recovering 2.Restore factory settings		1	
F-30	程序版本 Program Version	代码+版本 Code + version		0.3**	

故障报警Er-1: 1) 过载堵转。
2) 调速器与电机或运行电容的连接异常。
故障处理方式: 1) 检查、排除故障。
2) 重新上电解除报警。

Fault alarm Er-1: 1) Overload blocked.
2) The connection between the governor and the motor or running capacitor is abnormal.
Troubleshooting: 1) Check and troubleshoot.
2) Re-power on to cancel the alarm.

● SFB 系列面板式调速器外形及安装图 SFB series panel governor shape and installation diagram



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- 避免连续振动,过度冲击。
- 电机在正常运转状态下,有时电机外壳表面的温度可能会超过70°C,因此在可能触及电机的使用环境下请加贴右圈所示的警告标志。
- 请务必将接地端子接地。
- 安装、连接、检查等作业须由专业技术人员进行。
- Do not use in a fragile environment, an easy-to-existing gas environment a corrosive environment or a place where it is easy to get water or a bakeable object.
- Avoid continuous vibration. Excessive impact.
- When the motor is in normal operation, sometimes the temperature of the motor casing surface may exceed 70°C. Therefore please put the general sign shown on the right cradle in the environment where the motor may be touched.
- Be sure to ground the ground terminal.
- Installation connection inspection etc. must be carried out by professional technicians.

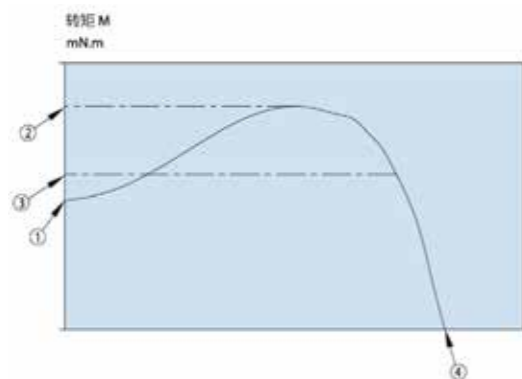
名词解释

GLOSSARY

● 电机 motor

- 启动转矩。电机启动瞬间产生的转矩,通常、单相电机启动转矩为额定转矩60~70%，三相电机启动转矩为额定转矩2~3倍。
- 额定转矩。电机在额定电压、额定频率下可连续输出的转矩。
- 额定转速。电机在额定电压、额定频率、额定输出功率下的转速。
- 空载转速。电机在额定电压、额定频率、无负载下的转速。
- 停止过转量。电机转子轴从切断电源的瞬间到完全停止时，因惯性继续旋转的圈数。
- 制动力。为使电机输出轴快速减速、停止制动、或使电机输出轴保持原状态所施加于电机转子轴的力。电磁制动电机的制动力等于额定转矩。电机的制动力约等于10%的额定转矩。
- 齿轮轴。电机转子轴形状为齿轮状，用于配套、连接减速箱用。
- 圆轴。电机转子轴形状为圆柱状，用于电机单独使用，无法配套减速箱。
- Starting torque. The torque generated at the moment of starting the motor usually the single-phase motor starting torque is 60~70% of the rated torque and 2 to 3 times the rated torque of the three-phase motor.
- Rated torque. The torque that the motor can output continuously at rated voltage and rated frequency.
- Rated speed. The speed of the motor at rated voltage frequency and output power.
- No-load speed. The speed of the motor at rated voltage frequency and no-load.
- Stop overturning. The number of turns of the motor rotor shaft that continues to rotate due to inertia from the moment the power is turned off to when it completely stops.
- Braking force for making the output shaft of the motor rapid deceleration stop braking or keep the motor output shaft in its original state as the force that apply to the motor rotor shaft. The braking force of the electromagnetic brake motor is equal to the rated torque. The braking force of the motor is approximately equal to 10% of the rated torque.
- Gear shaft. The shape of the rotor shaft of the motor is gear-shaped which is used for supporting and connecting the gear box.
- Round shaft. The motor uses a cylindrical rotor shaft alone. It cannot be equipped with a gearbox.

● 电机转矩-转速曲线 Motor torque-speed curve



图中：
①启动转矩
②最大转矩
③额定转矩
④空载转矩

● 减速箱 gearbox

- 容许转矩。电机经减速箱减速,电机端输出转矩比减速箱放大减速比的倍数,当减速比较大时,如1:180,电机输出转矩放大180倍后,若此时减速箱负载很大时,理论上电机可以驱动负载,但由于减速箱机械强度无法承受此负载,减速箱将损坏,保证减速箱不损坏的最大负载转矩,即为减速箱容许转矩。
- 格雷森弧齿轮。该齿轮为90度传动,具有传动效率高,无自锁,寿命长,主要用于汽车后桥传动,为最先进的90度传动结构。
- Allowable torque. The motor is decelerated by the gearbox and the output torque of the motor end is a multiple of the reduction ratio of the gearbox. In theory the motor is able to drive the load but as the mechanical strength of the gearbox cannot withstand this load the gearbox will be damaged. So the gearbox allowable torque means the maximum load torque that ensure the gearbox not damaged.
- Grayson arc gear. The transmission degree of this gear is 90-degree its with high transmission efficiency no self-locking and long service life. It is mainly used for automobile rear axle transmission also its the most advanced 90 degree transmission structure.

技术参数表

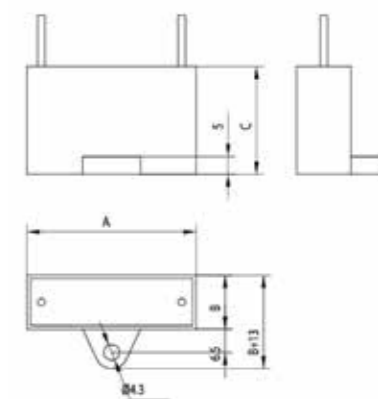
TECHNICAL DATA SHEET

● 电机通用技术标准 General technical standards for motors

项目 Project	规格 Specification
绝缘电阻 Insulation resistance	100MΩ 以上 above 100MΩ
绝缘电压 Insulation voltage	额定电压220V以下 1500V/S 额定电压380V 1800V/S Rated voltage 220V below 1500V/S rated voltage 380V 1800V/S
温升 Temperature rise	6~200W 电机75K以下。 6~200W motor below 75K.
绝缘等级 Insulation class	6~200w电机E级 (120℃) 6~200w motor class E (120℃)
工作模式 Operating mode	除TP力矩电机为短时工作制外,其余电机均为连续工作制(S1) Except for TP torque motor for short-time working the other motors are continuous working mode(S1)
防护等级 Protection level	IP44
使用环境温度 Ambient temperature	-10℃ ~ +40℃ (无冻结 No freeze)
使用环境湿度 Ambient humidity	85%以下(无结露) 85% or less (no condensation)

● 运行电容尺寸 Operating capacitor size

型号 Model	外形尺寸 Size			型号 Model	外形尺寸 Size		
	A	B	C		A	B	C
0.8μF/500V	37	11	23	2μF/250V	37	11	23
1.0μF/500V	37	11	23	3μF/250V	37	13	23
1.2μF/500V	37	11	23	3.5μF/250V	37	13	23
1.5μF/500V	37	15	27	4μF/250V	37	15	27
1.8μF/500V	37	15	27	5μF/250V	37	17	27
2.5μF/500V	37	17	27	6μF/250V	37	17	27
3.0μF/500V	47	15	30	7μF/250V	37	22	32
4μF/500V	47	18	32	8μF/250V	47	22	34
5μF/500V	47	23	36	10μF/250V	47	22	36
7μF/500V	47	23	36	12μF/250V	47	23	36
8μF/500V	47	26	39	15μF/250V	47	26	39
10μF/500V	58	25	45	20μF/250V	58	25	45
12μF/500V	58	25	45	30μF/250V	58	32	45



● 6~200W微型圆轴电机最大容许径向和轴向负载

6~200W miniature round shaft motor for maximum allowable radial and axial loads

机座号 Seat no	输出轴直径 Output shaft diameter (mm)	最大容许径向负载(N) Maximum allowable radial load (N)		容许轴向负载 Allowable axial load
		自输出轴前端起距离 Distance from the front end of the output shaft		
		10mm	20mm	
60	6(6W)	90	100	10
70	8(15W)	120	130	20
80	10(25W)	120	130	20
90	12(40)	250	270	40
	12(60)	260	280	40
100	12(90W、120W)	270	290	40
	12(200W)	450	480	70



● 6~200W微型标准减速箱最大容许径向和轴向负载

6~200W miniature standard gearbox for maximum allowable radial and load

机座号 Seat no	输出轴直径 Output shaft diameter (mm)	最大容许径向负载(N) Maximum allowable radial load (N)		容许轴向负载 Allowable axial load
		自输出轴前端起距离 Distance from the front end of the output shaft		
		10mm	20mm	
70	中实	950	1050	800
80	中空	1200	1100	800
90	中实	1200	1350	1100
	中空	1600	1450	1100
	中实	1550	1450	1400
100	中实	1550	1450	1400
	中空	1650	1500	1400



常见机械设计安装问题

COMMON MECHANICAL DESIGN INSTALLATION PROBLEMS

● 我司6~200W微型系列产品与其他品牌在尺寸、外观互换的区别点如下,其他安装尺寸均相同可互换。

The difference between the size and appearance of our 6~200W micro series products and other brands is as follows. Other installation dimensions are the same and interchangeable.

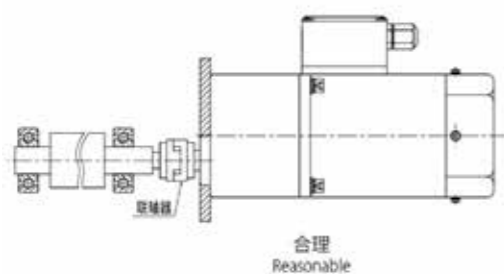
区别点Difference point	砺锋机电·PRIMOPAL	其他品牌Other brands	解决方法Solution
标准减速箱安装孔形式 Standard gearbox mounting hole form	标配为螺纹孔 优点:①安装方便;②强度等级高,螺纹不易损坏 Standard threaded hole Advantages: ①easy to install, ②high strength level, the thread is not easy to damage.	通孔 Through hole	定制通孔型 Customized through hole type
接线盒 Terminal box	标配带接线盒 优点:①IP54防护,符合安规标准②美观、接线方便 Standard with terminal box Advantages: ①IP54 protection, in compliance with safety standards ②beautiful, convenient wiring.	引线式 Leaded	定制引线式 Custom lead type

● 6~200W微型电机与减速箱安装The installation of 6-200w micro motor and gearbox

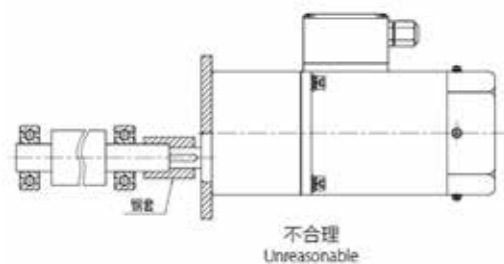
任意旋转电机或减速箱,请勿碰伤电机齿轮轴,勿损坏O形密封圈,法兰上的四个螺钉对角依次紧固,确保电机与减速器箱体紧密结合,防止漏油,防止电机噪音。

Please don't damage the motor gear shaft or O style seal ring of any rotating motor or gearbox. Ensure that the motor and reducer box are tightly combined to prevent oil leakage and motor noise.

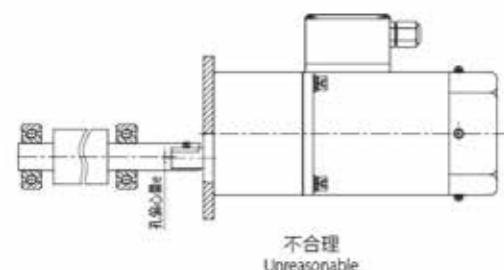
● 负载轴与电机轴出轴的联接方式Connection type of load shaft and motor output shaft



采用联轴器连接可补偿负载轴与电机输出轴之间的同心度与角度偏差,防止过定位,确保电机正常工作。
Coupling connection can compensate for the concentricity and angular deviation between the load shaft and the motor output shaft to prevent over determination to ensure the normal operation of the motor.



采用钢套连接无法补偿负载轴与电机输出轴之间的同心度与角度偏差,导致负载变大,严重时电机输出轴折断。
The steel sleeve connection cannot compensate for the concentricity and angular deviation between the load shaft and the motor output shaft resulting in a large load. In severe cases the motor output shaft is broken.



采用负载轴中心钻孔/锉孔难以达到较高的同心度,存在偏心量e,当螺钉锁紧后,输出轴将过定位,导致负载变大,严重时电机输出轴折断。
It is difficult to achieve high concentricity by using the center hole/boring of the load shaft. There is an eccentricity e. When the screw is locked tightly the output shaft will be over positioned resulting in a large load. In severe cases the output shaft of the motor is broken.

● 链轮安装方式sprocket installation

(链轮直径尽可能大,以减少径向载荷。The sprocket diameter is as large as possible to reduce radial load)



● 选用大速比(1:50)以上减速器或加装中间减速器时注意事项

Precautions when using a gearbox with a large ratio (1:50) or more or installing an intermediate reducer

● 我司6-200W 多功能减速电机,是按国际标准尺寸设计,该系列减速电机由于大速比(1:50)以上与小速比减速箱均共用同一尺寸减速箱,其设计应用场合为:仅需要低转速,不需要减速器、电机全功率输出。

因此,当选用大速比(1:50)以上减速箱或加装中间减速器时,减速箱最大容许转矩将小于电机额定输出转矩x减速比乘积值,若减速箱输出轴卡死或严重过载,减速箱将损坏,请设计选用时特别注意。

● 特别是三相电机过载能力强,其启动转矩可达额定转矩的3倍,若减速箱输出轴有卡死或严重过载的可能,请选用启动转矩小于额定转矩的三相电机。

● 90机座号系列电机,有40W、60W小功率电机可选,因此90机座选用大速比(1:50)以上减速箱或加装中间减速器时,若减速箱输出轴有卡死或严重过载的可能,请选用40W、60W功率小的电机,勿选用90W、20W功率大的电机。

若设计中无法避免减速箱输出轴卡死或严重过载,应安装转矩限制装置过载打滑或在容易更换维修的位置安装安全销损坏后方便维修。

● Our 6-200W multifunctional geared motor is designed according to international standard size. Due to the geared motor of the large reduction gear ratio (1:50) and small reduction gear ratio are used the same size of gearbox, the application of the design is: only low speed is required. No need for gear unit or motor full power output.

Therefore, when a gearbox with a large reduction ratio (1:50) or more or an immediate gearbox is installed, the value of the maximum allowable torque of the gearbox will be less than the value of the motor rated output torque x reduction ratio product value, if the output shaft of the gearbox is stuck or Serious overload, the gearbox will be damaged, please pay special attention when designing.

● Especially the three phase motor has strong overload capability and its starting torque can reach 3 times of the rated torque. If the output shaft of the gearbox is stuck or severely overloaded, please select a single-phase motor with a starting torque less than a rated torque.

● 90 frame size series motor 40W, 60W low power motor is optional. Therefore when the 90 base is selected with a gear above a large reduction ratio (1:50) or an intermediate gear box is installed and the output shaft of the reduction gear box is stuck or severely overrun, please choose a motor with a small power of 40W and 60W, and do not use a motor with a large power of 90W and 20W.

If the output shaft of the gearbox cannot be avoided in the design: when it is stuck or severely overloaded the torque should be installed to limit the overload and the slip of the device or the safety pin should be stalled in the location where it is easy to replace and repair so as to be maintained easily at a position that is easy to replace and repair.

● 设计举例Design example

● 客户原设计

选用:电磁制动电机5IK90GU-S3MF+5GU120RT

电磁制动电机的输出转矩经减速箱减速将被放大120倍,90机座减速箱最大容许转矩为40N.m,电机输出转矩放大120倍,并过载3倍的转矩为:0.7N.m \times 120 \times 3=252Nm,远远超过最大容许转矩40N~m,因此,若减速箱输出轴卡死或严重过载,减速箱将损坏。

● 优化设计

应减小电机功率,电机功率选用90机座号40W电机,同时不要用过载能力特强的三相电机,改用启动转矩小于额定转矩的三相电机5IK90GU-CMF按此配置最大输出转矩为:0.3N.m \times 120=36Nm,小于最大容许转矩40N.m,满足要求。

● 客户新设计

改用:电磁制动电机5IK90GU-CF+5GU120RT,既可满足要求又节约成本。

● Customer original design

Optional: electromagnetic brake motor 5IK90GU-S3MF+5GU120RT

The output torque of the electromagnetic brake motor will be amplified by 120 times through the reduction of the reduction gearbox. The maximum allowable torque of the 90-frame reduction gearbox is 40N.m. The output torque of the motor is amplified by 120 times and the overload torque is 3 times: 0.7 N.m \times 120 \times 3 = 252Nm It far exceeds the maximum allowable torque of 40N~m. Therefore, if the gearbox output shaft is stuck or severely overloaded, the gearbox will be damaged.

INSTRUCTIONS 说明	<ul style="list-style-type: none"> ●Optimized design <p>The motor power should be reduced. The motor power should be selected from the 90-frame size 40W motor. At the same time please do not use a three-phase motor with particularly strong overload capacity. Instead a single-phase motor with a starting torque less than the rated torque. 5IK90GU-CMF The large output torque is: 0.3Nm\times120=36Nm, which is less than the maximum allowable torque of 40N.m which meets the requirements.</p> <ul style="list-style-type: none"> ●Customers new design <p>Instead: electromagnetic brake motor 5IK90GU-CF+5GU12ORT which can meet the requirements and save costs.</p>	INSTRCTIONS 说明
INDUCTION GEAR MOTOR 感应减速电机	<ul style="list-style-type: none"> ●直角中空减速箱应用优点Application advantages of right-angle hollow gearbox <p>采用直角中空减速箱，无需链轮、链条、链条防护罩，同时可节省一端轴承座，简化设计、降低成本同时还可减少轴向尺寸，节省安装空间。With a right-angle hollow gearbox there is no need for sprockets chains, and chain guards. At the same time it can save one end bearing seat simplify the design reduce costs and also reduce the axial size and save installation space.</p>	INDUCTION GEAR MOTOR 感应减速电机
SPEED CONTROL GEAR MOTOR 调速减速电机	<ul style="list-style-type: none"> ●直角中空电机安装法兰面与负载轴不垂直Right angle hollow motor mounting flange surface is not perpendicular to load shaft <ul style="list-style-type: none"> ●现象:电机无力或憋死，运转时振动、摆动明显，严重时造成电机输出轴断。 ●原因:电机安装法兰面与负载轴不垂直，电机锁紧后,强拉扭曲过定位。 ●故障诊断与排除: <ol style="list-style-type: none"> 1) 电机锁紧螺钉稍微拧松时，输出力矩、振动和摆动有改善，便可以初步确定是此原因。 2) 松开安装螺钉，观察电机安装面与设备安装面的四周间隙是否相等、平行，若相差较大即可初判此原因，也可进一步拆下电机，将百分表架在负载轴上,负载轴转-周打安装法兰面的跳动，若跳动值大于0.1mm便可最终确定此原因。 3) 修正电机安装法兰面与输出轴的垂直度，直至故障排除。 	SPEED CONTROL GEAR MOTOR 调速减速电机
REVERSIBLE GEAR MOTOR 阻尼减速电机	<ul style="list-style-type: none"> ●Phenomenon: The motor is dead or weak, vibration or strongly swing during operation. In severe cases the output shaft of the motor is broken. ●Reason: The motor mounting flange surface is not perpendicular to the load shaft. When the motor is locked it is strongly pulled over positioned. ●Trouble diagnosing and troubleshooting: <ol style="list-style-type: none"> 1) When the motor lock screw is loosened slightly the output torque vibration and oscillation are improved, which can be initially confirmed the reason. 2) Loosen the mounting screws and observe whether the gap between the motor mounting surface and the mounting surface of the equipment is equal parallel. If there is too much difference the cause can be judged. The motor can be further removed place the dial indicator on the load shaft Load shaft rotation-the beating of the mounting flange surface if the beating number is greater than 0.1mm then the problem can be finally determined. 3) Correct the verticality of the motor mounting flange surface and the output shaft until the fault is eliminated. 	REVERSIBLE GEAR MOTOR 阻尼减速电机
BRAKE GEAR MOTOR 电磁制动减速电机	<ul style="list-style-type: none"> ●减速箱齿轮崩齿Gearbox's gear collapse <ul style="list-style-type: none"> ●齿轮受力分析齿轮箱崩齿从理论上讲，是由于齿轮所承受负载超过齿轮抗弯强度，导致齿断。齿轮所承受的负载由静负载和冲击负载组成，静负载-一般为负载转矩，冲击负载-一般为零件惯量加减速产生的冲击力。 ●实例说明:铁锤钉钉子 <p>我们手拿铁锤钉钉子至木头，我们先用静负载力钉钉子，静力为锤子重量和手可施加的压力，可想而知，这钉子是钉不进木头的.这时候我们用冲击负载力来钉钉子，钉子即可轻松钉入木头，由此例子，我们可以知道冲击力是很大的，那冲击力是怎么来的呢?当锤头接近钉子时，其速度为v1，当接触钉子瞬间，其速度迅速降为V2，由于V1远大于V2，因此产生了很大的加速度a，根据牛顿定律，冲击力F = ma,m为锤头质量，锤头质量越大，冲击力越大，同尺寸的锤子，采用比重大的材料制造，其质量就大，因此同尺寸锤头，铁锤比铝锤有力.因为铁比铝比重大。</p>	BRAKE GEAR MOTOR 电磁制动减速电机
TORQUE GEAR MOTOR 力矩减速电机	<ul style="list-style-type: none"> ●解决措施 <ol style="list-style-type: none"> 1. 静负载由于为负载转矩，较难优化。 2. 动负载为冲击力，参考铁锤钉钉子实例说明，根据F=ma.我们可以采用以下办法优化，减小冲击力，防止齿轮崩齿。 <ol style="list-style-type: none"> 1) 零件采用轻材料代替重材料，减小m。 2) 减少零件尺寸，优化形状，减少转矩惯量。 3)采用变频器控制电机启动，停止加减速时间，减小a，实现缓加速缓减速。 	TORQUE GEAR MOTOR 力矩减速电机
RIGHT ANGLE GEAR MOTOR 直角减速电机	<ul style="list-style-type: none"> ●Gear force analyse is Gearboxes gear collapse is theoretically due to the fact that the load on the gear exceeds the bending strength of the gear, resulting in tooth breakage. The load on the gear is composed of static load and impact load. The static load is generally the load torque. The impact load is generally the impact force generated by the acceleration and deceleration of the part inertia. ●Example Description: Hammer nails <p>We hit the nail with a hammer and make it enter the wood. Firstly,we hit the nail with a static load. The static force is the weight of the hammer and the pressure that can be applied by the hand. It is conceivable that the nail cannot be nailed into the wood. When we use the impact load force to hit the nail, the nail can be easily nailed into the wood. By this example it explains that the impact force is powerful. When the hammer is close to the nail its speed is v1. The speed drops rapidly to V2. Because the value of V1 is much larger than V2 a large acceleration A is generated. According to Newtons law, the impact force F = ma m is the mass of the hammer. The greater the mass of the hammer the greater the impact force. Different hammers of the same size the one made of iron is more powerful than the one which is made of aluminum because iron has bigger proportion than aluminum.</p>	RIGHT ANGLE GEAR MOTOR 直角减速电机
PANEL DRIVE 控制器	<ul style="list-style-type: none"> ● Solutions <ol style="list-style-type: none"> 1. Static load is difficult to optimize due to load torque. 2.The dynamic load is the impact force, referring to the example of the hammer and nail according to F=ma we can use the following methods to do some optimize reduce the impact force and prevent the gear from collapsing. <ol style="list-style-type: none"> 1) Instead of heavy materials parts are made of light materials to reduce m. 2) Reduce the size of parts and optimize its shape to reduce torque inertia. 3)Start the motor with inverter stop the acceleration and deceleration time reduce a and realize slowly acceleration and slowly deceleration. 	PANEL DRIVE 控制器
TECHNICAL 技术资料	<ul style="list-style-type: none"> ●电磁制动电机刹车片磨损大,寿命短Electromagnetic brake motor brake pads have large damage and short life <ol style="list-style-type: none"> 1. 电磁制动电机采用继电器或接触器直接控制启动、停止，当电机停止时，电机因刹车片刹车迅速由高速降至停止，若电机频繁启停，刹车片将很快磨损，就好比汽车，在100km/h急刹车，不断反复。 2. 若采用三相电磁制动电机配我司变频器控制.变频器具有在电机停止时,先将电机由高速降为低速直至接近停止状态，此时刹车片才抱闸，因此刹车片磨损小、寿命长，就好比汽车在100km/h高速先减速不断降档至低速时才踩刹车。 3. 当然这样的控制方法,电机停止时间会延长，但只要提前停止，即可改善停止时间，又避免刹车片磨损。 <ol style="list-style-type: none"> 1.The electromagnetic brake motor adopts relay or contactor to directly control the start and stop. When the motor stops the motor will quickly drop and stop due to the brake pad. If the motor starts and stops frequently the brake pad will wear out quickly just like a car repetitively brake at 100km/ h repeated. 2. If a three phase electromagnetic brake motor is used with our inverter control the inverter has to reduce the motor from high speed to low speed until the motor stops. The brake pads have low wear and long life just like a car driving on a highway at a speed of 100km/h decelerating first and then depressing the brake when downshifting to a low speed. 3. This control method will prolong the stopping time of the motor but as long as we stop in advance we can improve the stopping time and avoid brake pad wear. 	TECHNICAL 技术资料
I-5		I-6

常见电气控制技术问题

Common electrical control technology issues

● 单相电机与三相电机特点对比 Specific comparison between single-phase motors and the-phase motors

电机类型 Motor type	电源要求 Power requirement	温升 Temperature rise	振动 Vibration	起动转矩 Starting torque	低速转矩性能 Low speed torque performance	调速方法 Speed control method	调速成本 Speed control cost	频繁正、反转 Frequent positive and negative
单相电机 single phase motor	单相 single phase	一般 general	一般 general	0.6~0.7倍 0.6~0.7 times	一般 general	调速器 drive	低 low	可以 ok
三相电机 three phase motor	三相 three phase	低 low	小 little	2~3倍 2~3times	好 good	变频器 frequency converter	高 high	可以 ok

● 单相电机所配的运行电容可否加大或减小 Can the operating capacitance of a single-phase motor be increased or decreased

单相电机所配的运行电容的容量是经过精确计算,兼顾电机各种特性配备的最佳容量,加大电容容量可增大起动转矩,起动更有劲,但同时电机温升会升高、效率下降,反之则相反。
The capacity of the running capacitor of the single phase motor is accurately calculated taking into account the optimal capacity of the various characteristics of the motor. Increasing the capacity of the capacitor can increase the starting torque, and the starting is more powerful but at the same time the temperature rise of the motor will increase and efficient declines vice versa.

● 单相电机开关从正转切换至反转,但电机仍正转没反转 The single-phase motor switches from forward to reverse, but the motor still rotates forward without inversion.

单相电机从正转切换至反转过程中,若电机负载惯量较大,此时正反切换易失败,须待电机减速一定时间后切换才会成功。 阻尼电机是在单相电机基础上加装阻尼装置,可使电机减速时间变短,实现快速正反转切换。
When the single-phase motor is switched from forward rotation to reverse rotation if the load inertia of the motor is large the forward and reverse switching will be easy to fail at this time and the switch will be successful after the motor decelerates for a certain time.
Damping motor is equipped with a damping device on the basis of single -phase motor which can shorten the time of motor deceleration and realize fast forward and reverse switching.

● 单相电机可否用变频器调速 Can single-phase motor use frequency converter speed regulation

不可以,必须使用调速电机并配套调速器调速。
No you must use a speed -regulated motor and a speed governor.

● 1台调速器、驱动器是否可以控制多台调速电机? Can one governor or the actuator control multiple motors?

不可以,因调速器、驱动器均为闭环控制。
No because the governor or diver are dosed l0 control.

● 如何防止调速电机过载,速度不稳定? How to prevent the speed control motor from over-reliance or unstable speed?

调速电机调速原理为类似汽车油门控制,因此对于相同的负载,调速电机的功率应比定速电机大使其平均工作在50%功率状态,当负载变大,立即加大油门,避免速度下降。
The speed regulation principle of the speed regulating motor is similar to that of automobile throttle control. Therefore for the same load the power of the speed-regulated motor should be greater than that of the fixed-speed motor to make it work at an average of 50% power. When the load becomes larger the throttle should be increased immediately to avoid a speed drop.

● 三相电机可否调速? Can the three phase motor be adjusted?

三相电机可以调速,但必须使用变频器调速,不可用调速器调速。
The three phase can be adjusted but the frequency converter must be used for speed regulation.

● 电机“漏电”现象分析 Analysis of the "leakage" phenomenon of the motor

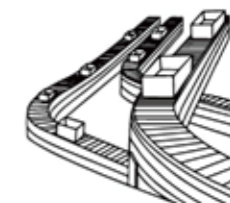
- 现象:在电机使用中,若电机不接地线,会发现电机有“漏电”现象产生,用电笔测,电机外壳带电。 用电压表测量有时会测到100V以上的电压,以致让人误认为电机“漏电”了。
- 分析:由于电机绕组线圈与电机金属外壳之间等效于一个电容,当电机通工频交流电时,交流电可以通过电容流至外壳,导致外壳带电,此电流暂称为漏电流,由于等效电容C容量很小,仅几千皮法,对于50Hz交流电其容抗很大,因此漏电流|很小,即使人触摸到也仅有麻电感觉,不会伤人。
- 解决方法:将电机PE接地端子接地,使漏电流I通过接地线释放至大地,就无“漏电”感觉。同时按照安规标准,为确保安全防止因电机缺坏或绝缘故障导致电机外壳带电伤人,电机PE接地端子必须接地。
- Phenomenon: In the use of the motor if the motor is not grounded it will be found that the motor has a "leakage" phenomenon. The electric pen is used to measure and the motor casing is charged. When measuring with a voltmeter a voltage above 100V is sometimes measured which makes people mistakenly think that the motor is "leakage".
- Analysis: Since the motor winding coil and the motor metal shell are equivalent to a capacitor when the motor is powered by AC power, the AC power can flow to the shell through the capacitor, which causes the shell to be charged. This current is temporarily called the leakage current| The capacity is very small only a few thousand picofarads and its capacitive reactance is very large for 50Hz alternating current, so the leakage current| is very small even if it is touched by people it will only feel numb.
- Solution: Ground the PE ground terminal of the motor to release the leakage current I to the ground through the ground wire so there is no "leakage" feeling. At the same time in accordance with safety standards in order to ensure safety and prevent the motor case from being damaged due to acetylene damage or insulation failure the PE ground terminal of the motor must be grounded.

应用案例 Application case

● 自动传送系统 Automatic Transport System

于简易定位需求场合,可利用无刷马达缓慢加速,缓慢减速及刹车功能,做出相当顺畅的动作。

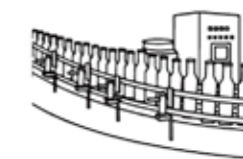
In the situation of simple positioning requirements can use brushless motor slow acceleration slow deceleration and braking function make a very smooth action.



● 食品生产线 Food Production Line

需要马达体积小,出力大,高寿命,无污染高速及低速随时转换,需要响应速度快的生产线上。

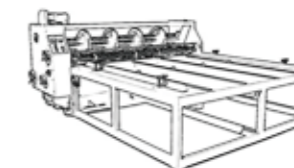
Need small motor volume large output, high life pollution-free high-speed and low-speed conversion at any time the need to respond to the rapid production line.



● 印刷设备 Printing equipment

需要马达体积小,速度快,节能,运行平稳,出力大,经济等需求

Motor needs small volume high speed energy-saving smooth operation large output economic and other needs.



● 半导体生产线 Semiconductor Production Line

使用无刷马达,可以大量减少配线,同时并降低机械设备所占用的空间,进而降低厂房使用面积,达到整体费用降低的目的。

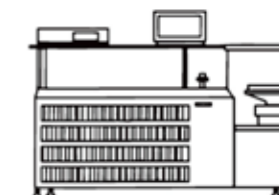
The use of brushless motor can greatly reduce wiring, and reduce the space occupied by mechanical equipment thus reducing the use of plant area to reduce the overall cost.



● LED制造设备 LED Manufacturing Process Equipment

需要马达体积小,高速高稳定特性,低温升,高响应。

The Motor needs small volume high speed and high stability low temperature rise and high response.



● 自动贩卖机 Vending machine

需要马达体积小,节能,寿命高,低噪音,环保及刹车功能

Small Motor volume energy saving high life low noise environmental protection and braking function are needed.



● 包装机械 Packaging machinery

需要马达低频运行性良好,全方位保护功能,运转平稳,强度高,停机响应速度快等需求。

Low-frequency operation of the motor needs good, all-round protection function smooth operation high strength fast shutdown response speed and other needs.

