SOBG 松本电机

松本电机（宁波）有限公司

SOBG 松本电机

SONGBEN ELECTRIC DRIVE IN THE FUTURE

松本电机 驱动未来

授权代理商

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和谐发展

COMPANY PROFILE

公司简介

松本电机(宁波)有限公司是一家致力于电机减速机研发、生产、销售为一体的传动产品生产企业。公司主导产品有：无刷直流电机、微型交流减速电机、有刷直流减速电机、高性能控制器、精密行星减速机等传动产品。产品广泛应用于机器人、3C设备、精密测量仪器、电子半导体设备、机械手臂、印刷机械、纺织机器、包装机械和自动化生产线等各个领域。

中国生产基地位于宁波市杭州湾新区，在上海、天津、东莞、无锡设立办事处，覆盖环渤海、长三角及珠三角三个重要制造业密集区，并在各省市设立经销商，让客户更近距离体验松本系列产品。

松本电机(SOBG)一直以传承、创新、创造作为企业发展理念，把产品品质和服务作为企业的生存之本。未来松本电机(SOBG)将继续致力于引领全球传动及运动控制产业的发展，提供更加稳定更加高效的传动产品。

Songben Motor (Ningbo) Co., Ltd. is a transmission product manufacturer dedicated to the R&D, production, and sales of motor reducers. The company's leading products include: brushless DC motors, micro AC speed reduction motors, brushless DC speed reduction motors, high-performance controllers, precision planetary gear units, and other transmission products. Products are widely used in various fields such as robots, 3C equipment, precision measuring instruments, electronic semiconductor equipment, robotic arms, printing machinery, textile machinery, packaging machinery, and automated production lines.

China's production base is located in the Hangzhou Bay New Area of Ningbo City. It has established offices in Shanghai, Tianjin, Dongguan, and Wuxi, covering three important manufacturing intensive regions around the Bohai Sea, the Yangtze River Delta, and the Pearl River Delta. It also has established distributors in various provinces and cities to provide customers with a closer experience of Songnben series products.

Songben Electric (SOBG) has always taken inheritance, innovation, and creation as its development philosophy, and regarded product quality and service as its foundation for survival. In the future, SOBG will continue to be committed to leading the development of the global transmission and motion control industry, providing more stable and efficient transmission products.

机器设备 / MACHINERY EQUIPMENT

机械设备
Mechanical equipment

锐意进取，精益求精，制造出一系列可与国内外同类产品相媲美的优质产品，追求品质绝不让步的专业态度，必将赢得您的激赏与信任。

Striving for progress and excellence, we have created a series of high-quality products that are comparable to similar products at home and abroad. Our professional attitude of pursuing quality without compromising will definitely win your appreciation and trust.

SOBG 松本电机

目录 CATALOGUE

安全注意事项 SAFETY CAUTIONS

总体 General

●请不要在齿轮箱及电机铭牌或产品目录的规格以外使用,以免触电,受伤及损坏装置等。
●请不要把手指或物品放入齿轮或电机开口部分,以免触电、受伤、发生火灾及损坏装置等。
●请不要使用带伤的齿轮箱或电机,以免有可能受伤,发生火灾等。
●请不要拆下铭牌。
●若客户对产品私自进行改造的,不属于保修范围,本公司不承担任何责任。

●Please don't use motor out of the range which is clarified in of nameplate of gear box and motor and the specification of product catalogue, avoiding getting an electric shock, hurting or damaging the device.
●Please do not put your fingers into the opening part of gear or motor, in order to prevent getting an electric shock, hurting catching a fire or damaging device etc.
●Please do not use the injured gear head or motor, in order to prevent hurting, catching a fire etc.
●Please do not put off the nameplate.
●If the products are reformed by the customers personally, it no longer belongs to the guarantee scope, and our company doesn ' t undertake any responsibility.

搬动 Moving

●搬动时,若发生脱落或倾倒,是很危险的,请充分注意。
●When you move it, if it shed off or tit to one side it is very dangerous, please pay more attention.

安装 Assembly

●请绝对不要在齿轮箱和电机周围放置可燃物,以免发生火灾。
●请不要在电机周围放置物品,影响电机通风、冷却,甚至因异常多热而烫伤或发生火灾。
●裸手请不要触碰齿轮及电机轴端部、齿轮部的键槽。
●在食品机械等可能发生漏油的装置中,请在安装部分另加一个能盛油的油杯,防止万一漏油对产品有不良的影响。

●Please never put the flammable thing near and motor, for fear of a fire.
●Please don't put the things around motor, otherwise it can effect ventilation and cooling even burning or catching a fire because of too hot.
●Please do not touch the gear, the motor shaft and the key slot of the gear with naked hand or you may be hurt.
●The device may creating the oil leakage, such as food machine, please add an oil cup assembly part, to prevent leaking oil which may have a bad effect.

对主机械的连接 Assemble to the main machine

●在旋转部分,请设安全罩等,防止受伤。
●在与对方机械连接前,请确认旋转方向。若旋转方向不正确,有可能受伤或破坏装置。
●Please set a safe cover above the revolving part, to prevent being hurt.
●Before linking to the other machine, Please confirm the direction of rotation. If the rotation direction is incorrect it may hurt the gear motor or destroy the device

配线 Wiring

●在测试绝缘电阻时,请不要接触端子,以免触电危险。
●Please don't get in touch with terminal, when you measure insulated resistance, preventing danger of getting an electric shock.

运转 Operation

●请按照接线图或使用说明书实施与电源的连接,以免触电或发生火灾。(无端子箱的,请确实加强连接部分的绝缘)。
●对电源电缆和电机引线请不要过分弯曲、拉伸、夹紧,以免触电危险。
●接地端子应牢固接地,以免触电危险。务必使用符合铭牌要求的电源,以免烧毁电机、发生火灾。

●Please link with the electric source according to wire diagram and usage manual, in order to prevent getting an electric shock or catching a fire. (No terminal box, please strengthen the insulation of the connection part surely).
●Referring to the electrical source cable and the motor wire, please do not bend, stretch, and clip tightly excessively, in order to prevent getting an electric shock.
●The terminal box connecting to the ground must be firm, in order to prevent getting an electric shock. Please adopt the electrical source accordingto the nameplate, to avoid burning the motor and catching a fire.

日常检查保养 The daily check and maintain

●在运转中,绝对不要接近或接触旋转物体(轴等)。有卷入或受伤时,请马上切断电源开关,及时处理。
●停电时,请务必切断电源开关,防止来电后伤人或破坏装置。
●请注意:带有热保护的电机,当电机温度异常时会自动切断电源,当电机温度下降到一定值时,电机会自动恢复工作。
(注:电机在没有烧坏的情况下,会自动复原)

●When operating, do not get close to or touch the revolving parts(shaft). If something or somebody engulfs or hurts, Please turn off the electrical power switch right and handle at once.
●Please turn off the electrical source switch when electricity stops, in order to prevent hurting the person and damaging the device.
●Please note, motor with the thermal protector, when temperature of the motor is unusual, it will turn off the electrical source automatically, when the temperature of the motor fall down to a fixed data, the motor can work automatically
(Note: when the motor is not burned-out the motor can work automatically)

●在平常时,保持电机在正常的工作环境工作运转。(特殊型号除外)
●检查时,请绝对不要接触旋转物体(轴等)。有可能被卷入、受伤。
●In daily you should keep the motor operating in the normal work environment. (Except the special model)
●While checking, please do not get close to or touch the revolving parts (shaft). Something or somebody may engulf of hurt.

接受货物时检查 Receiving confirm

●请确认现货是否和订货一样。选择错误的产品,有可能导致电机受损或破坏装置等。
●Please confirm if it is the right one with the order when receiving,Choosing wrong probably leads to damage of motor of damage the device etc.

电动机的一般规格 GENERAL SPECIFICATIONS OF MOTORS

●6W~200W型、2极.高速型6W~150W、2P.High Speed

项目 Item	规格 Specifications
绝缘电阻 Insulation Resistance	于常温·常湿下的电动机额定运行后,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 100MΩ, measured DC 500vinsulation resistance measurer between 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、15KV(三相400V为2KV)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 400V is 2kV)at 50Hz/60Hz between the metal wiring and motor shell for 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℃以下(三相型为70℃以下) The temperature rise of winding are 80℃ or less measured by the resistance change method after rated motor operation under normal ambientemperature and humidity, with connecting a gearhead or equivalent heat radiation plat※
绝缘等级 insulation Class	UL/CSA规格:A种(105℃)、EN规格:B种(130℃) UL/CSA Standards: Class A(105℃) EN Standards: Class B(130℃)
过热保护装置 Overheat Protection	内藏热保护装置(自动复位型) B种(开放:120℃±5℃、75℃±15℃) F种(开放:145℃±5℃、100℃±15℃) Thermal protector inside (automatic return) Class B(opening:120℃±5℃、75℃±15℃) Class F(opening:145℃±5℃、100℃±15℃)
使用环境温度 Ambient Temperature	单相100V、三相200V:-10~+50℃(无结冰)其他电压:-10℃~+40℃(无结冰) Single-phase 100VAC. Three-phase 200VAC: -10℃~+50℃ (Non Freezing) Others: -10℃~+40℃(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 带端子箱型:Terminal box type 单相 Single-phase100V50/60HZ、110/120V60HZ、220/230V50Hz、220230V60Hz 25W~180W Type:IP54(不包括圆轴安装面 Excluing the installation surface of the round shaft type) 三相Three-phase 200V/220V/230v50/60HZ、380/400/415V50/60HZ 25W~180W Type:IP54(不包括圆轴安装面 Excluing the installation surface of the round shaft type)

型号的阅读方法 PRODUCT NUMBER CODE

●电动机 Motor

5	I	K	40	R	GN	——	C	T
①	②	③	④	⑤	⑥		⑦	⑧

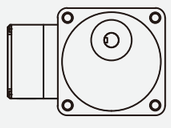
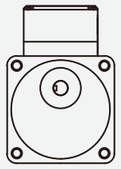
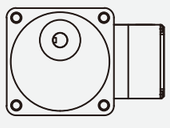
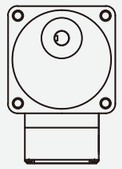
①电动机的尺寸 Motor frame size	2 :60mm 3 :70mm 4 :80mm 5 :90mm 6 :104mm
②类型名称 Motor type	I：感应电机 Induction motor R：可逆电机 Reversible motor T：转矩电机 Turque motor
③系列名称 Series	K：系列 Series
④输出功率 Output（W）	例（Example）40:40W
⑤R:表示带调速电动机,无:表示未带 The suffix"–R" after the output power means speed adjustable motor	
⑥转轴形状 Motor shaft ty	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 A1:键槽型 Keyway
⑦电源电压.极数 Voltage.poles	A: 单相 Single–phase 110V 50Hz/60Hz 4P B: 单相 Single–phase 110V 50Hz/60Hz 2P C: 单相 Single–phase 220V 50Hz/60Hz 4P D: 单相 Single–phase 220V 50Hz/60Hz 2P S: 三相 Three–phase 220V 50Hz/60Hz 4P S3:三相 Three–phase 380V 50Hz/60Hz 4P T: 三相 Three–phase 220V 50Hz/60Hz 2P T3:三相 Three–phase 380V 50Hz/60Hz 2P
⑧	T：带接线盒型 Terminal box type
	F：带自冷风扇 Since the cool fan
	FF:带强制风扇 W/Fan
	M：带无励磁动作型电磁制动电动机 Power off activated electromagnrtic brake motor
	P：带热保器 Thermal protector

●减速器 Reducer

5	GN	——	60	K
①	②		③	④

①减速器的尺寸Reducer frame size	2 :60mm 3 :70mm 4 :80mm 5 :90mm 6 :104mm
②类型type of pinion	GN:GN型齿轮轴 GN type pinion shaft GU:GU型齿轮轴 GU type pinion shaft
③减速比Gear ratio	例（Example）60：1:60
④轴承种类Bearing type	K:滚珠轴承（对5GU方型箱体标注为KB） Bearing（make KB for type GU square case）

●接线盒的选定 Selection of junction box

G–左方向 Left	G1–上方向 Up	G2–右方向 Right	G3–下方向 Down
			

电动机的特性 MOTOR FEATURES

●感应电动机的特性 Induction Motor Features

1、一般来说,微型感应电动机所指的是感应运转型感应电动机。这种电动机不只在启动时,在运转当中也使用电磁线圈和电容器。虽然启动转矩不是很大，但其结构简单,信赖度高,效率也比较高,可连续运转。
2、单相电动机运转时,产生与运转方向逆方向的转矩,因此不可能在短时间内改变方向。请在电动机完全停止以后,再转换其运转方向。
3、三相电动机以三相电源驱动感应电动机,其效率很高,启动力矩也比较大,信赖度高。

1、Generally, micro Induction motor refers to the motor rotated by the induction. Induction motor relies on capacitor and electromagnetism when starting and rotating. Though it's starting torque is not very high, it has a simple structure, high efficiency and can rotate continue.
2、The single –phase motor have a reverse direction with the rotating s when operated Pls change the direction of single–phase motor rotation only after bring the motor to a stop.
3、Three–phase motor relies on three–phase supply. It has a high efficiency and can get a high starting torque.

●可逆电动机的特性 Reversible Motor Features

1、可逆电动机,在电动机后部设有简易制动器,是适用于短时间内频繁正反转用途的电机。简易制动器的构造,带弹簧压力的制动柱作用在转动的制动盘上并保持连续压力。可逆电动机的简易制动器如下作用：
①增加摩擦负荷,提高瞬间可逆特性。
②缩小超程。
③具有某种程度的保持力矩。(额定力矩10%左右)。
2、简易制动器的保持力矩及超程表示在表1,但随运转时间的长短或温度高低,也会有变化,仅供参考。且初期使用,其保持力矩比表1的值低的情况也会发生,请注意。
3、可逆电动机和感应电动机相同,都是电容运转单相电机,转矩力矩特性与感应电机特性相同。但是,为了提高瞬间可逆特性,设计为加大起动力矩。受此影响,加大了输入的损耗,温升比感应电动机高,因此,时间定额为30分钟。特性表中的额定力矩,起动力矩,电流特性等是在电机上装上有制动柱状态下的特性值。

1、Reversible motor has a friction brake at the back of the motor body which is designed for applications where reversal of direction is frequently required.For the friction brake.The damp with spring impacts the rotating brake disk and supplies with continuous press. The functions of the friction brake are as following:
①With friction load, increasing the instant reversal.
②Shorten over–run.
③Keep the torque in some way. (About 10% of the rated torque)
2、The keeping torque or more of the friction brake and over–run are listed in the table 1 It is only for reference. As it will change according to the rotating period as well as thetemperature. Pls also note that the torque may be a little lower than the one listed in the table when being operated initialy.
3、The reversible motor, like induction motor, is started by the capacitor and has a same torque characteristic with the induction motor. But the Reversible Motor is designed with ahigher starting torque to increase the instant reversal features.

●表1：保持力距和超程 Table 1: Keep Torque And Over–run

相数 Phase	尺寸 Size	输出功率 Output	电机型号 Motor Model	保持力距 Keep Torque		超程 Over–run
	mm	W		N.m	Kgf.cm	圈数Cycles
单相 Sing–phase	60	6	2RK6	0.5	0.05	4
	70	15	3RK15	1.3	0.13	5
	80	25	4RK25	1.5	0.15	5
	90	40	5RK40	4	0.4	6
		60	5RK60			
		90	5RK90			
		120	5RK120			

●调速电机特性 The Features Of The Speed Control Motor

1、是控制器和电机组合的单元产品,由于电机和控制器只需一次连接,故不需要单独接线。速度调节由安装在外部的电位器便可简单进行。在控制器上安装了速度控制器回路、电机用的电容,速度设定器等。其中单元式速度控制器无瞬间停止功能。
2、用控制器的速度调节器进行速度调节。可以在50Hz为90~1400的r/min,60H为90~1700/min范围内,调节电机的速度。
3、电机不允许长时间在低转速下运行,以免电机过热。

1、It is a unit of the controller and motor It only needs to connect one time The speed can be easily adjusted by the potentiometer. the controller is fixed with speed–control loopcapacitor, speed enactment and etc. There is no function of instant stop in the unit.
2、The controller can make the speed variable between 90–1400r/min at 50Hz and 90–1700r/min at 60Hz.
3、Please don' t run motor at low speed for long time avoiding overheat.

●无励磁动作型电磁制动电动机的特性 Poewr Off Activatde Type Electromagnryic Brake Motor Features

1、构造及运行原理

本公司生产的电磁制动电动机是无励磁动作型,在线圈上施加电压,则立即吸引被弹簧压着的可动衔铁和制动衬垫之间产生间隙,使电机处于运转状态。一旦线圈电压被切断,在弹簧力的作用下,可动衔铁压向制动衬垫,产生制动力,电机停止。

2、电磁制动器的特点

①该制动器是交流无励磁动作型电磁制动器,与电机直接连接。在切断电源的同时,即瞬间停止,保持负荷。保持力矩0.05-2.0Nm(参照表2)。由于是电源切断时的保持力动作型,故最适合于作为无意间切断电源时的安全制动器使用。电磁可以进行频繁的瞬间正反转。简单的切换,1分钟内可停止6次。但是时间必须确保3秒以上。

②电机和制动器可以使用同一个电源。制动器内设置整流回路,可和电机使用同一个交流电源。

※这个数值是标准的,根据使用条件的不同,以这个频度连续使用不能进行制动器操作的情况也有,实际使用时,必须在电机表面温度为90℃以下的下使用。

3、起动时间,制动时间的特性

电磁制动电机的起动时间是电机自身的起动时间加上电磁制动器的释放时间,制动时间是从电源切断开始至电机完全停止的时间。电磁制动电机的超程、起动时间、制动时间应用场合而不同。

1、 Structure and operation principle

We produce the power off activated type. Exerting the voltage on the winding, it will magnetize the armature pressedby the spring The motor will be in a stage of rotating when there is a backlash between the armature and brake rim. Once the winding voltage is cut down, under the influence of spring, the armature press the brake rim which will create a brake force. then the motor gets to a stop.

2、The characteristics of the electromagnetic brake

①It is an ac power off activated type electromagnetic brake which is connected directly with the motor. It will get to a blink stop and keep load when the supply is power off. It willkeep the torque between 0.05-20Nm. It is especially suitable for the safety brake in the circumstance of unconsciously power off. The electromagnetic can change it's directionfrequently. It can be stopped 6 times in a minute. But be sure that it lasts for 3 seconds or more.

②After we set a commutating loop in the brake, it can share the power supply with the motor.

※The value is standard. It will be change in different condition. When actually used, be sure to make the surface temperature of the motor less than 90℃.

3、The features for the starting time and brake time

The starting time means the time for the motor's starting time plus the electromagnetic brake release time. The brake time means the time from power cut off to the time of motor completely stop. The over-run, starting time and brake time will be different according to the different applications.

●表2：电磁制动部分（无励磁动作型）Table2:ELectromagnrtic Brake（Poewr Off Activatde type）

相数 Phase	尺寸 Size	输出功率 Output W	电压 Voltage V	频率 Frequency Hz	电流 Current A	输入功率 Input W	保持力距 Keep Torque		超程 Over -run
							N. m	Kgf.cm	圈数 Cycles
1Phase	70	15	110 220	50/60	0.091	8.2	0.5	50	3.5
	80	25							
	90	40			0.144	13	2	200	
		60							
		90							
		120							
	100	200							
3Phase	70	15	220 380	50/60	0.091	8.2	0.5	50	
	80	25							
	90	40			0.144	13	2	200	
		60							
		90							
		120							
	100	200							

AC

交流减速电动机

AC GEAR MOTORS

感应电机

INDUCTION MOTOR

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	启动转矩 Starting Torque	额定转矩 Rated Torque	额定转速 Rated Speed	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	mN.m	mN.m	r/min	μF/VAC
2IK6GN-C	2IK6A-C	6	1ph220	50	0.13	65	48	1200	0.8/450
				60	0.12	60	40	1450	
2IK6GN-A	2IK6A-A	6	1ph110	50	0.24	60	48	1200	3/250
				60	0.21	55	40	1450	

●各种安全规格以电动机铭牌上的型号名取得认证。
●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” it means the voltage 110V,the assembly capacitor vaule it is according the labe.

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

减速比 Reduction 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	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	0.12	0.14	0.19	0.23	0.29	0.35	0.39	0.49	0.58	0.70	0.70	0.87	1.05	1.26	1.40	1.75	1.89	2.36	2.83	3	3	3	3	3
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	0.11	0.13	0.18	0.21	0.27	0.32	0.36	0.45	0.53	0.64	0.64	0.80	0.96	1.15	1.28	1.60	1.73	2.17	2.60	2.89	3	3	3	3

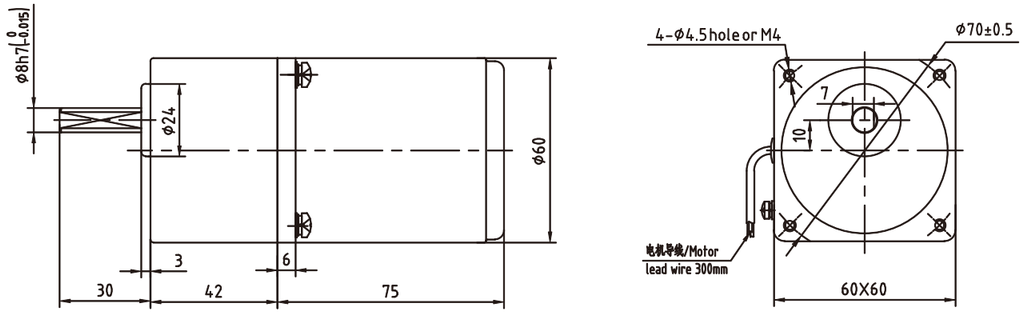
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
●表中 色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。
●减速箱的最大容许转矩为3N·M。

●In the table, the speed is calculated from the base of the 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 that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.
●The maximum allowable torque of the decelerator is 3N·M.

外形尺寸（单位mm） Dimension (unit mm)

■导线型 Lead Wring Type

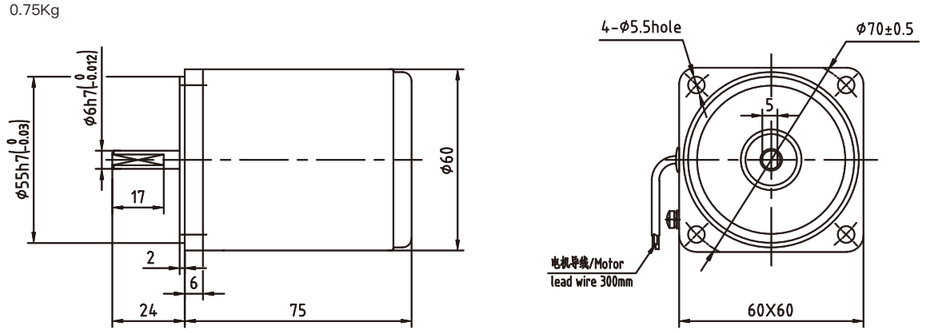
重量 Weight：电机 Motor:0.75Kg　　减速器 Gearhead: 0.4Kg



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 32 mm。

■圆轴电机 Round Shaft Motor

重量 Weight：0.75Kg



接线图 Wiring Diagram

●运转方向指从电动机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
●表中所记品名为齿轮轴型，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 counter clockwise direction.
●Name indicated in the list is pinion shaft type.aslo valid for the equivalent round shaft type.

2IK6GN-A、2IK6GN-C

请注意 Note

●单相电动机运转方向的转换应在电动机停止后进行。
●若在电动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 direcition 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.

感应电机
INDUCTION MOTOR

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	启动转矩 Starting Torque	额定转矩 Rated Torque	额定转速 Rated Speed	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	mN.m	mN.m	r/min	μF/VAC
3IK15GN-C	3IK15A-C	15	1ph220	50	0.18	85	119	1200	1.2/450
				60	0.17	80	99	1450	
3IK15GN-A	3IK15A-A	15	1ph110	50	0.34	90	119	1200	5/250
				60	0.30	85	99	1450	

●各种安全规格以电动机铭牌上的型号名取得认证。
●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" it means the voltage 110V,the assembly capacitor vaule it is according the labe.

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

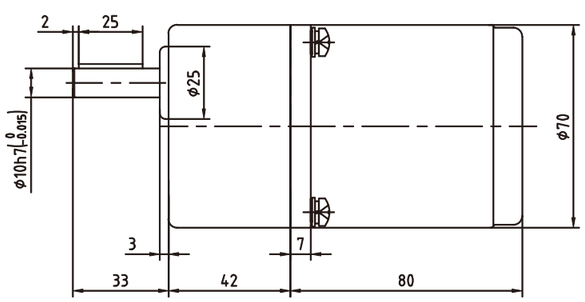
减速比 Reduction ratio		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
50Hz	转速 Speed r/min	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	0.29	0.35	0.48	0.58	0.72	0.87	0.96	1.20	1.45	1.74	1.74	2.17	2.60	3.12	3.47	4.34	4.68	5	5	5	5	5	5	5
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	0.24	0.29	0.40	0.48	0.60	0.72	0.80	1.00	1.20	1.44	1.44	1.80	2.17	2.60	2.89	3.61	3.90	4.87	5	5	5	5	5	5

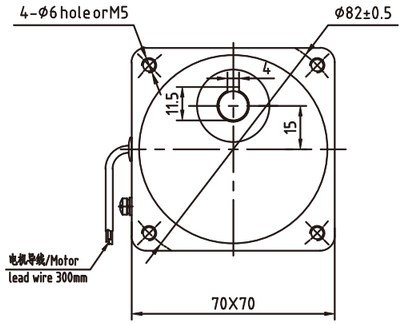
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
●表中 色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。
●减速箱的最大容许转矩为5N·M。

●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 that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.
●The maximum allowable torque of the decelerator is 5N·M.

外形尺寸（单位mm） Dimension (unit mm)

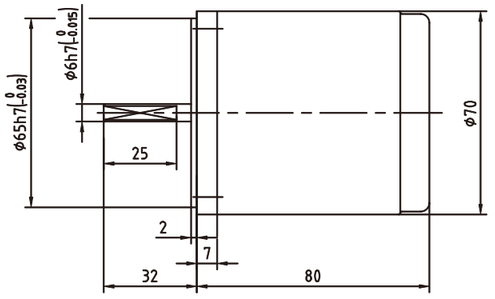
■导线型 Lead Wring Type
重量 Weight: 电机 Motor:1.1Kg　　减速器 Gearhead: 0.5Kg

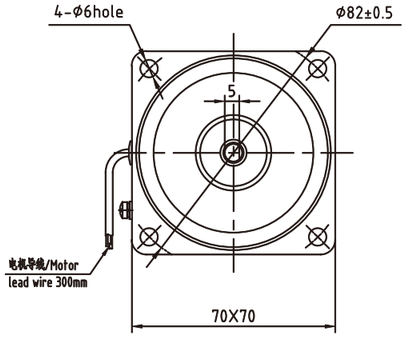




其中速比3~18可以做成短型减速箱,高度为32mm。
Gear ratio 3~18, short case is possible, Height of 32 mm。

■圆轴电机 Round Shaft Motor
重量 Weight:1.1Kg





接线图 Wiring Diagram

●运转方向指从电动机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
●表中所记品名为齿轮轴型，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 counter clockwise direction.
●Name indicated in the list is pinion shaft type.aslo valid for the equivalent round shaft type.

3IK15GN-A、3IK15GN-C

请注意 Note

●单相电动机运转方向的转换应在电动机停止后进行。
●若在电动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 direcition 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.

感应电机

INDUCTION MOTOR

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	启动转矩 Starting Torque	额定转矩 Rated Torque	额定转速 Rated Speed	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	mN.m	mN.m	r/min	μF/VAC
4IK25GN-C	4IK25A-C	25	1ph220	50	0.24	160	190	1250	1.8/450
				60	0.23	160	154	1550	
4IK25GN-A	4IK25A-A	25	1ph110	50	0.55	150	190	1250	7/250
				60	0.50	150	154	1550	
4IK25GN-S	4IK25A-S	25	3ph220	50	0.18	350	190	1250	/
				60	0.17	250	154	1550	
4IK25GN-S3	4IK25A-S3	25	3ph380	50	0.11	350	190	1250	/
				60	0.10	250	154	1550	

●各种安全规格以电动机铭牌上的型号名取得认证。
●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” it means the voltage 110V,the assembly capacitor vaule it is according the labe.

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

减速比 Reduction 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	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	0.46	0.55	0.77	0.92	1.15	1.39	1.54	1.92	2.31	2.77	3.08	3.46	4.16	4.99	5.54	6.93	7.48	8	8	8	8	8	8	8
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	0.37	0.45	0.62	0.75	0.94	1.12	1.25	1.56	1.87	2.25	2.49	2.81	3.37	4.04	4.49	5.61	6.06	7.58	8	8	8	8	8	8

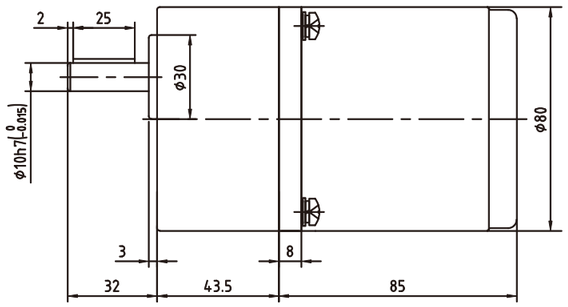
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
●表中 ■ 色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。
●减速箱的最大容许转矩为8N·M。

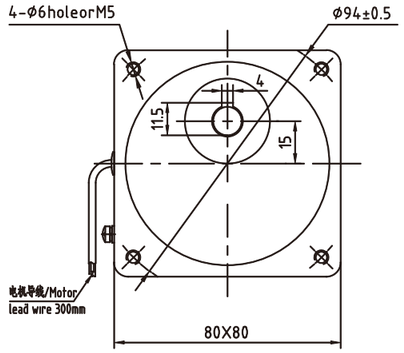
●In the table, the speed is calculated from the base of the motor's average speed divided by the deceleration ratio.The actual speed will vary with the load, ranging from 2 % to 20%.
●The ■ box in the table indicates that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.
●The maximum allowable torque of the decelerator is 8N·M.

外形尺寸（单位mm） Dimension (unit mm)

■导线型 Lead Wring Type

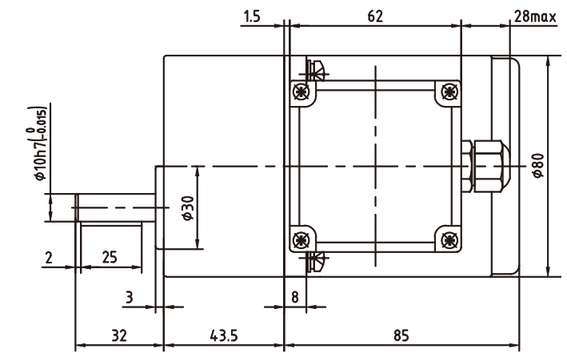
重量 Weight: 电机 Motor:1.6Kg　　减速器 Gearhead: 0.8Kg

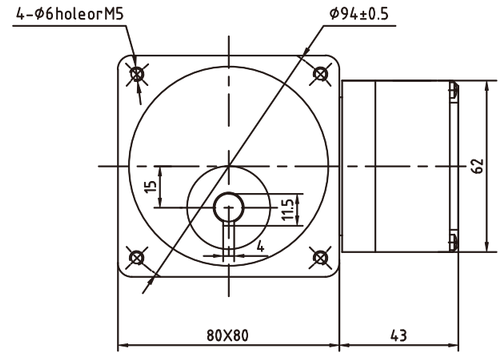




■带端子箱型 Terminal Box TYP

重量 Weight: 电机 Motor:1.75Kg　　减速器 Gearhead: 0.8Kg

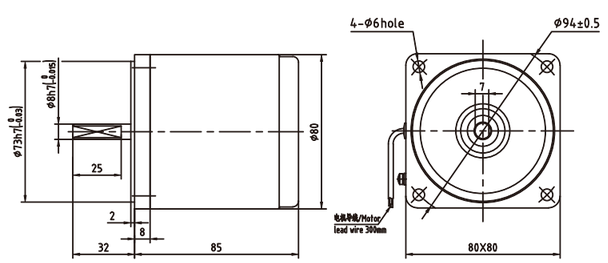




其中速比3~18可以做成短型减速箱,高度为32mm。
Gear ratio 3~18, short case is possible, Height of 32 mm。

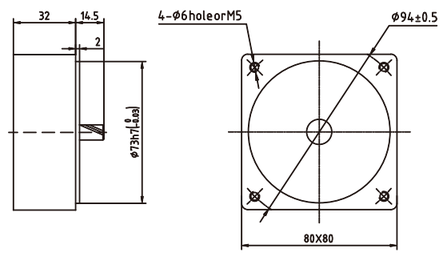
■圆轴电机 Round Shaft Motor

重量 Weight:1.6Kg



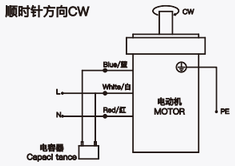
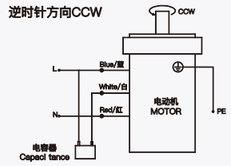
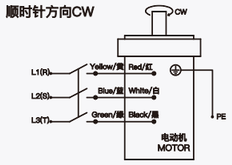
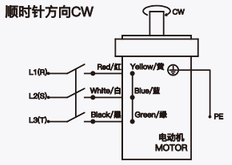
■中间减速器 Mid-gearbox

可安装在GN齿轮轴型上
Can be connected to GN pinion 4GN10XK
重量 Weight:0.41Kg



接线图 Wiring Diagram

●运转方向指从电动机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
●表中所记品名为齿轮轴型，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 counter clockwise direction.
●Name indicated in the list is pinion shaft type.aslo valid for the equivalent round shaft type.

4IK25GN–A、4IK25GN–C		4IK25GN–S、4IK25GN–S3	
顺时针方向CW	逆时针方向CCW	顺时针方向CW	顺时针方向CW
			
		若对换R、S、T中任意二条，电动机会作逆时针方向转动 To change the rotation direction change any two connections between R.S and T.	

请注意 Note

●单相电动机运转方向的转换应在电动机停止后进行。
●若在电动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 direcition 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.

感应电机

INDUCTION MOTOR

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	启动转矩 Starting Torque	额定转矩 Rated Torque	额定转速 Rated Speed	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	mN.m	mN.m	r/min	μF/VAC
5IK40GN-C	5IK40A-C	40	1ph220	50	0.33	190	283	1350	2.5/450
				60	0.34	200	246	1550	
5IK40GN-A	5IK40A-A	40	1ph110	50	0.64	220	283	1350	10/250
				60	0.67	220	246	1550	
5IK40GN-S	5IK40A-S	40	3ph220	50	0.32	800	283	1350	/
				60	0.28	660	246	1550	
5IK40GN-S3	5IK40A-S3	40	3ph380	50	0.18	800	283	1350	/
				60	0.16	660	246	1550	

●各种安全规格以电动机铭牌上的型号名取得认证。
●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” it means the voltage 110V,the assembly capacitor vaule it is according the labe.

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

减速比 Reduction 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	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	0.69	0.83	1.15	1.38	1.72	2.06	2.29	2.87	3.44	4.13	4.13	5.16	6.19	7.43	7.43	9.28	10	10	10	10	10	10	10	10
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	0.60	0.72	1.00	1.20	1.49	1.79	1.99	2.49	2.99	3.59	3.59	4.48	5.38	6.46	6.46	8.07	9.68	10	10	10	10	10	10	10

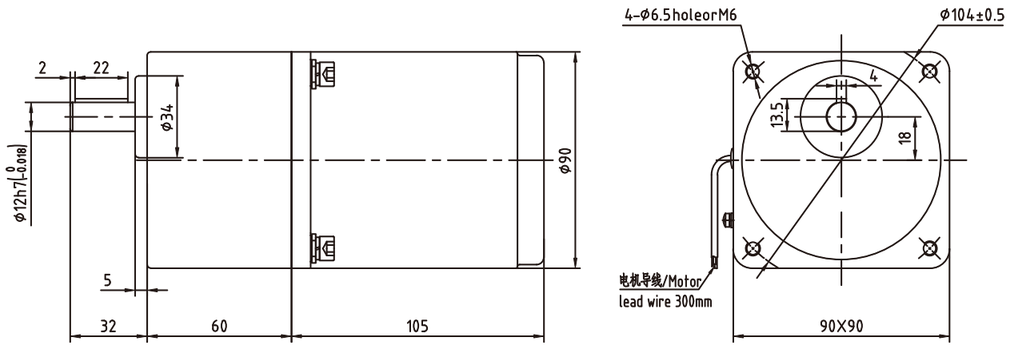
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
●表中 ■ 色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。
●减速箱的最大容许转矩为10N·M。

●In the table, the speed is calculated from the base of the 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 that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.
●The maximum allowable torque of the decelerator is 10N·M.

外形尺寸（单位mm） Dimension (unit mm)

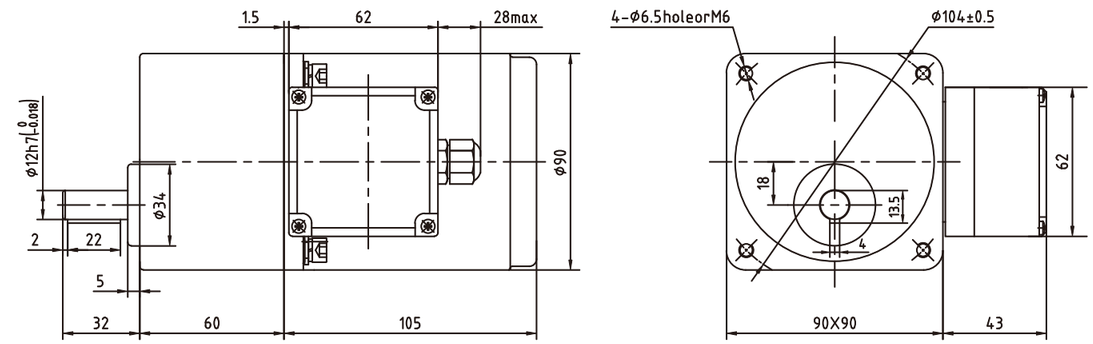
■ 导线型 Lead Wring Type

重量 Weight: 电机 Motor:2.4Kg　　减速器 Gearhead: 1.35Kg



■ 带端子箱型 Terminal Box TYP

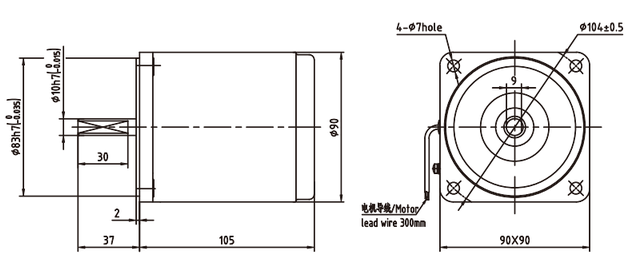
重量 Weight: 电机 Motor:2.55Kg　　减速器 Gearhead: 1.35Kg



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 42 mm。

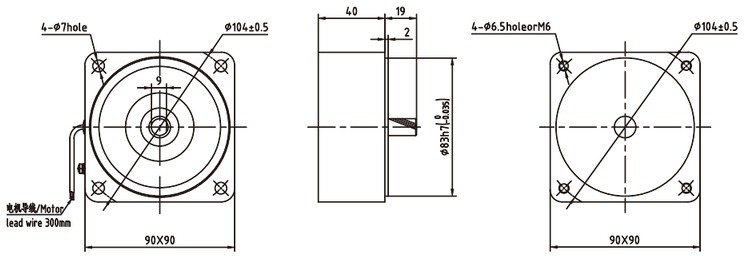
■ 圆轴电机 Round Shaft Motor

重量 Weight:2.4Kg



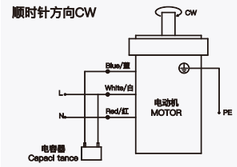
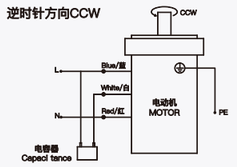
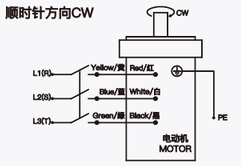
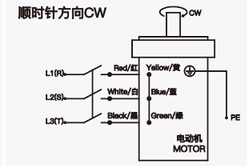
■ 中间减速器 Mid-gearbox

可安装在GN齿轮轴型上
Can be connected to GN pinion 5GN10XK
重量 Weight:0.6Kg



接线图 Wiring Diagram

●运转方向指从电动机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
●表中所记品名为齿轮轴型，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 counter clockwise direction.
●Name indicated in the list is pinion shaft type.aslo valid for the equivalent round shaft type.

5IK40GN-A、5IK40GN-C		5IK40GN-S、5IK40GN-S3	
顺时针方向CW	逆时针方向CCW	顺时针方向CW	顺时针方向CW
			

若对换R、S、T中任意二条，电动机会作逆时针方向转动
To change the rotation direction change any two connections between R.S and T.

请注意 Note

●单相电动机运转方向的转换应在电动机停止后进行。
●若在电动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 direcition 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.

感应电机

INDUCTION MOTOR

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	启动转矩 Starting Torque	额定转矩 Rated Torque	额定转速 Rated Speed	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	mN.m	mN.m	r/min	μF/VAC
5IK60GN-CF	5IK60A-CF	60	1ph220	50	0.48	380	424	1350	4/450
				60	0.55	380	370	1550	
5IK60GN-AF	5IK60A-AF	60	1ph110	50	1.00	350	424	1350	15/250
				60	1.10	350	370	1550	
5IK60GN-SF	5IK60A-SF	60	3ph220	50	0.38	1110	424	1350	/
				60	0.38	830	370	1550	
5IK60GN-S3F	5IK60A-S3F	60	3ph380	50	0.22	1000	424	1350	/
				60	0.20	830	370	1550	

●各种安全规格以电动机铭牌上的型号名取得认证。
●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" it means the voltage 110V,the assembly capacitor vaule it is according the labe.

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

减速比 Reduction 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	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	1.03	1.24	1.72	2.06	2.58	3.09	3.43	4.29	5.15	6.18	6.18	7.73	9.27	10	10	10	10	10	10	10	10	10	10	10
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	0.90	1.08	1.50	1.80	2.25	2.70	3.00	3.75	4.50	5.39	5.39	6.74	8.09	9.71	9.71	10	10	10	10	10	10	10	10	10

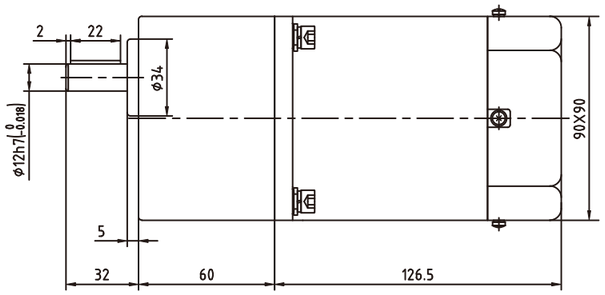
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
●表中 ■ 色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。
●减速箱的最大容许转矩为10N·M。

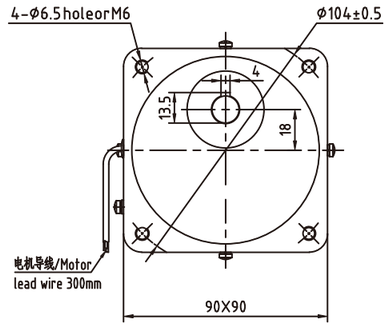
●In the table, the speed is calculated from the base of the motor's average speed divided by the deceleration ratio.The actual speed will vary with the load, ranging from 2 % to 20%.
●The ■ box in the table indicates that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.
●The maximum allowable torque of the decelerator is 10N·M.

外形尺寸（单位mm） Dimension (unit mm)

■导线型 Lead Wring Type

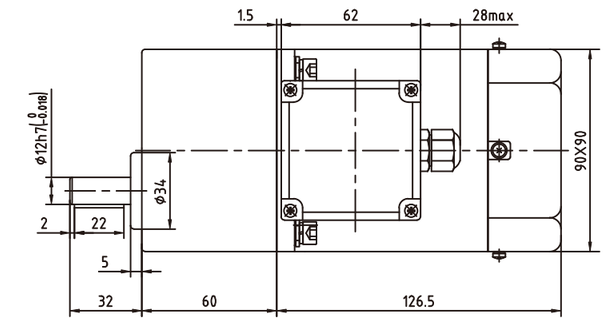
重量 Weight: 电机 Motor:2.7Kg　　减速器 Gearhead: 1.35Kg

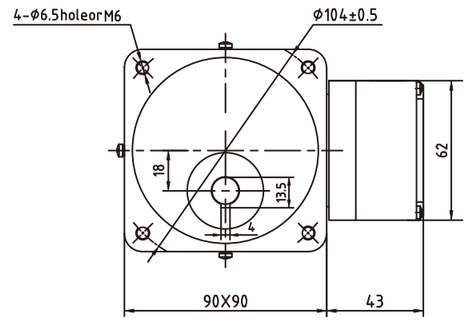




■带端子箱型 Terminal Box TYP

重量 Weight: 电机 Motor:2.85Kg　　减速器 Gearhead: 1.35Kg

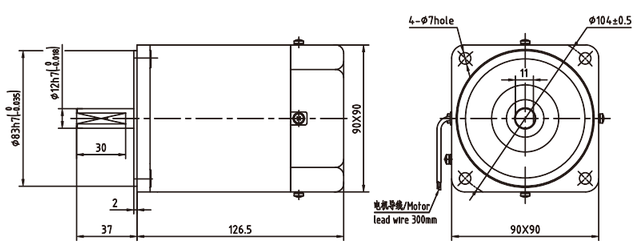




其中速比3~18可以做成短型减速箱,高度为42mm。
Gear ratio 3~18, short case is possible，Height of 42 mm。

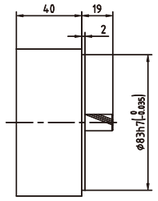
■圆轴电机 Round Shaft Motor

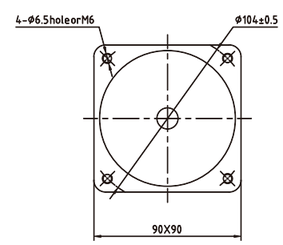
重量 Weight:2.7Kg



■中间减速器 Mid-gearbox

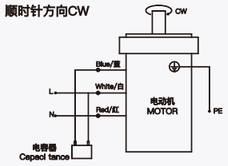
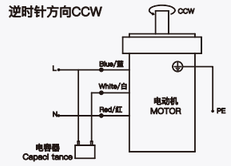
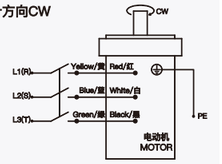
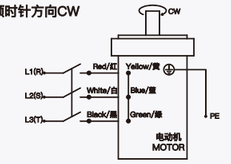
可安装在GN齿轮轴型上
Can be connected to GN pinion 5GN10XK
重量 Weight:0.6Kg





接线图 Wiring Diagram

●运转方向指从电动机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
●表中所记品名为齿轮轴型，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 counter clockwise direction.
●Name indicated in the list is pinion shaft type.aslo valid for the equivalent round shaft type.

5IK60GN–A、5IK60GN–CF		5IK60GN–S、5IK60GN–S3F	
顺时针方向CW	逆时针方向CCW	顺时针方向CW	顺时针方向CW
			
		若对换R、S、T中任意二条，电动机会作逆时针方向转动 To change the rotation direction change any two connections between R.S and T.	

请注意 Note

●单相电动机运转方向的转换应在电动机停止后进行。
●若在电动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 direcition 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	启动转矩 Starting Torque	额定转矩 Rated Torque	额定转速 Rated Speed	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	mN.m	mN.m	r/min	μF/VAC
5IK60GU-CF	5IK60A-CF	60	1ph220	50	0.48	380	424	1350	4/450
				60	0.55	380	370	1550	
5IK60GU-AF	5IK60A-AF	60	1ph110	50	1.00	350	424	1350	15/250
				60	1.10	350	370	1550	
5IK60GU-SF	5IK60A-SF	60	3ph220	50	0.38	1110	424	1350	/
				60	0.38	830	370	1550	
5IK60GU-S3F	5IK60A-S3F	60	3ph380	50	0.22	1000	424	1350	/
				60	0.20	830	370	1550	

●各种安全规格以电动机铭牌上的型号名取得认证。
●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” it means the voltage 110V,the assembly capacitor vaule it is according the labe.

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

减速比 Reduction 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	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	1.03	1.24	1.72	2.06	2.58	3.09	3.43	4.29	5.15	6.18	6.18	7.73	9.27	11.13	11.13	13.91	16.69	20	20	20	20	20	20	20
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	0.90	1.08	1.50	1.80	2.25	2.70	3.00	3.75	4.50	5.39	5.39	6.74	8.09	9.71	9.71	12.14	14.57	18.21	20	20	20	20	20	20

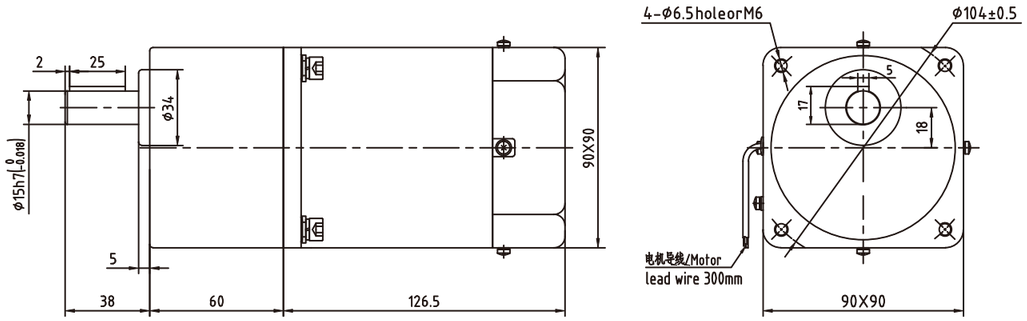
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
●表中 ■ 色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。
●减速箱的最大容许转矩为20N·M。

●In the table, the speed is calculated from the base of the 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 that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.
●The maximum allowable torque of the decelerator is 20N·M.

外形尺寸（单位mm） Dimension (unit mm)

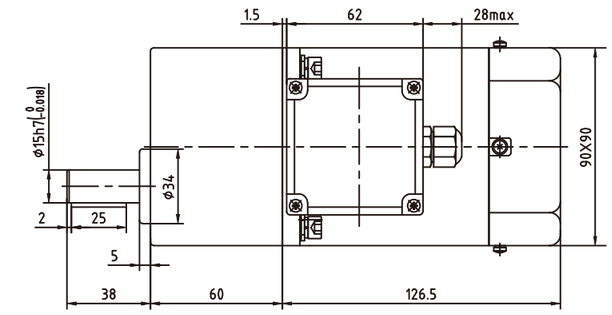
■ 导线型 Lead Wring Type

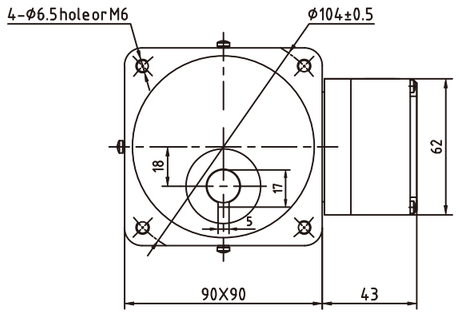
重量 Weight: 电机 Motor:2.7Kg　　减速器 Gearhead: 1.35Kg



■ 带端子箱型 Terminal Box TYP

重量 Weight: 电机 Motor:2.85Kg　　减速器 Gearhead: 1.35Kg

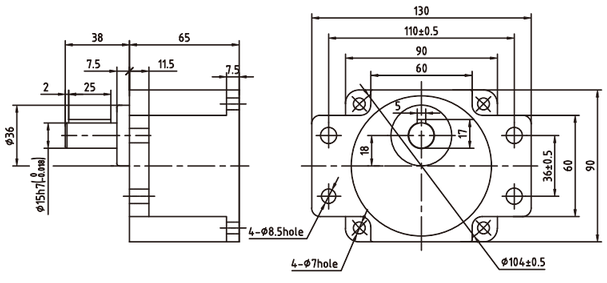




其中速比3~18可以做成短型减速箱,高度为42mm。
Gear ratio 3~18, short case is possible，Height of 42 mm。

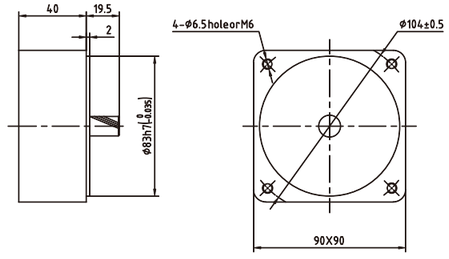
■ 凸缘安装型减速器 Flange Mounting Reducer

可安装在GU齿轮轴型上
Can be Mounted on GU type gear shaft 5GU□K
重量 Weight:1.5Kg



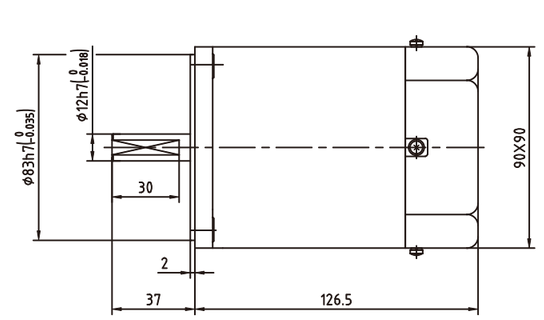
■ 中间减速器 Mid-gearbox

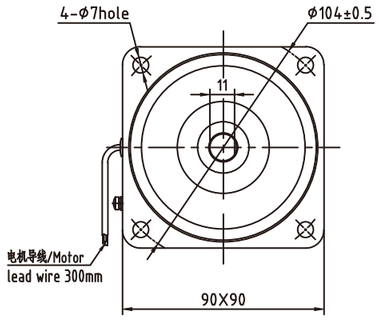
可安装在GU齿轮轴型上
Can be connected to GU pinion 5GU10XK
重量 Weight:0.65Kg



■ 圆轴电机 Round Shaft Motor

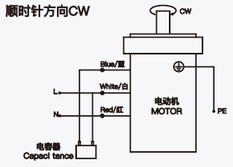
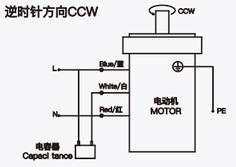
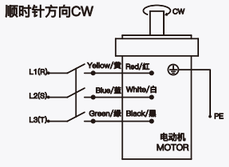
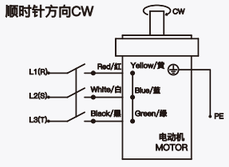
重量 Weight: 电机 Motor:2.7Kg





接线图 Wiring Diagram

●运转方向指从电动机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
●表中所记品名为齿轮轴型，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 counter clockwise direction.
●Name indicated in the list is pinion shaft type.aslo valid for the equivalent round shaft type.

5IK60GU-AF、5IK60GU-CF		5IK60GU-SF、5IK60GU-S3F	
顺时针方向CW	逆时针方向CCW	顺时针方向CW	顺时针方向CW
			
若对换R、S、T中任意二条，电动机会作逆时针方向转动 To change the rotation direction change any two connections between R.S and T.			

请注意 Note

●单相电动机运转方向的转换应在电动机停止后进行。
●若在电动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 direcition 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.

感应电机
INDUCTION MOTOR

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	启动转矩 Starting Torque	额定转矩 Rated Torque	额定转速 Rated Speed	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	mN.m	mN.m	r/min	μF/VAC
5IK90GU-CF	5IK90A-CF	90	1ph220	50	0.69	450	637	1350	5/450
				60	0.71	450	555	1550	
5IK90GU-AF	5IK90A-AF	90	1ph110	50	1.35	470	637	1350	20/250
				60	1.50	470	555	1550	
5IK90GU-SF	5IK90A-SF	90	3ph220	50	0.60	1350	637	1350	/
				60	0.55	1100	555	1550	
5IK90GU-S3F	5IK90A-S3F	90	3ph380	50	0.35	1350	637	1350	/
				60	0.32	1100	555	1550	

●各种安全规格以电动机铭牌上的型号名取得认证。
●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" it means the voltage 110V,the assembly capacitor vaule it is according the labe.

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

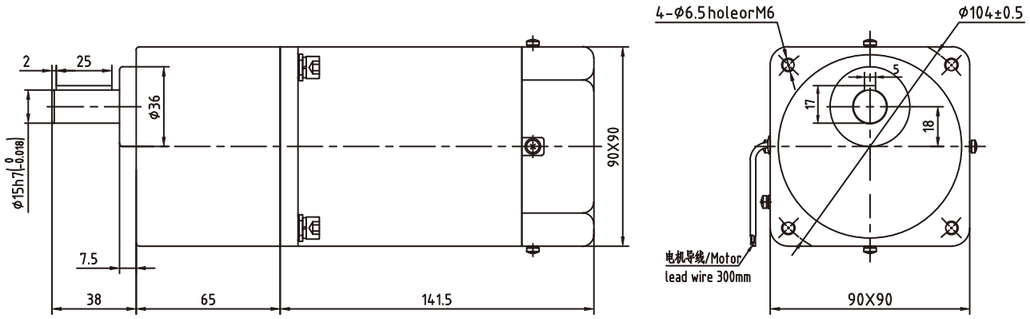
减速比 Reduction ratio		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
50Hz	转速 Speed r/min	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	1.55	1.86	1.72	3.10	3.87	4.64	4.64	5.80	6.97	8.36	8.36	10.45	12.54	15.05	16.72	20	20	20	20	20	20	20	20	20
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	1.35	1.62	1.50	2.70	3.37	4.05	4.05	5.06	6.07	7.28	7.28	9.10	10.92	13.11	14.57	18.21	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。

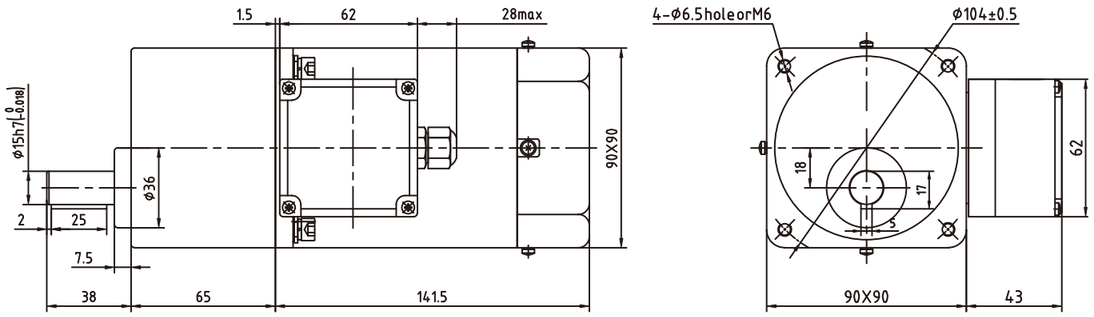
●In the table, the speed is calculated from the base of the motor's average speed divided by the deceleration ratio.The actual speed will vary with the load, ranging from 2 % to 20%.
●The ■ box in the table indicates that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.
●The maximum allowable torque of the decelerator is 20N·M.

外形尺寸（单位mm） Dimension (unit mm)

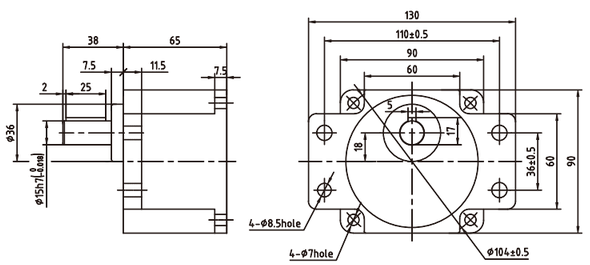
■导线型 Lead Wring Type
重量 Weight: 电机 Motor:3.2Kg　　减速器 Gearhead: 1.5Kg



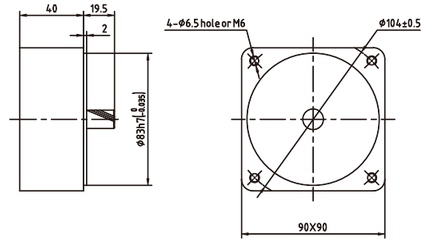
■带端子箱型 Terminal Box TYP
重量 Weight: 电机 Motor:3.35Kg　　减速器 Gearhead: 1.5Kg



■凸缘安装型减速器Flange Mounting Reducer
可安装在GU齿轮轴型上
Can be Mounted on GU Type gear shaft 5GU□K
重量 Weight:1.5Kg

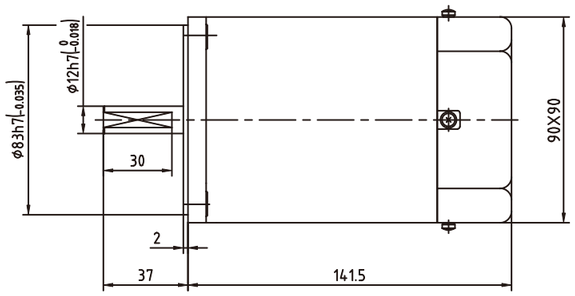


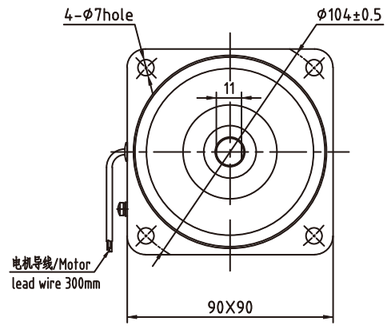
■中间减速器 Mid-gearbox
可安装在GU齿轮轴型上
Can be connected to GU pinion 5GU10XK
重量 Weight:0.65Kg



■ 圆轴电机 Round Shaft Motor

重量 Weight: 电机 Motor:3.2Kg





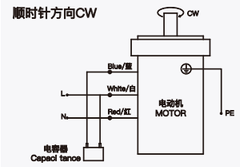
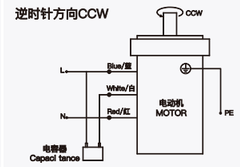
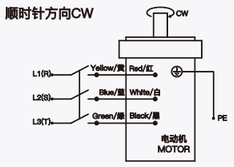
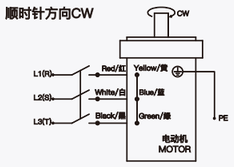
接线图 Wiring Diagram

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

●表中所记品名为齿轮轴型，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 counter clockwise direction.

●Name indicated in the list is pinion shaft type.aslo valid for the equivalent round shaft type.

5IK90GU-AF、5IK90GU-CF		5IK90GU-SF、5IK90GU-S3F	
顺时针方向CW	逆时针方向CCW	顺时针方向CW	顺时针方向CW
			
		若对换R、S、T中任意二条，电动机会作逆时针方向转动 To change the rotation direction change any two connections between R.S and T.	

请注意 Note

●单相电动机运转方向的转换应在电动机停止后进行。

●若在电动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 direcition 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.

电机型号/性能 List of motor characteristics

齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	mN.m	mN.m	r/min	μF/VAC
5IK120GU-CF	5IK120A-CF	120	1ph220	50	0.86	650	849	1350	6/450
				60	1.00	650	739	1550	
5IK120GU-AF	5IK120A-AF	120	1ph110	50	1.85	600	849	1350	25/250
				60	1.65	600	739	1550	
5IK120GU-SF	5IK120A-SF	120	3ph220	50	0.70	1850	849	1350	/
				60	0.60	1600	739	1550	
5IK120GU-S3F	5IK120A-S3F	120	3ph380	50	0.40	1850	849	1350	/
				60	0.35	1600	739	1550	

●各种安全规格以电动机铭牌上的型号名取得认证。

●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” it means the voltage 110V,the assembly capacitor vaule it is according the labe.

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

减速比 Reduction 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	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	2.06	2.48	3.44	4.13	5.16	6.19	6.19	7.74	9.28	11.14	11.14	13.93	16.71	20	20	20	20	20	20	20	20	20	20	20
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	1.80	2.15	2.99	3.59	4.49	5.39	5.39	6.73	8.08	9.70	9.70	12.12	14.55	17.45	19.39	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 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 that the rotation direction of the output axis is opposite to that of the motor.

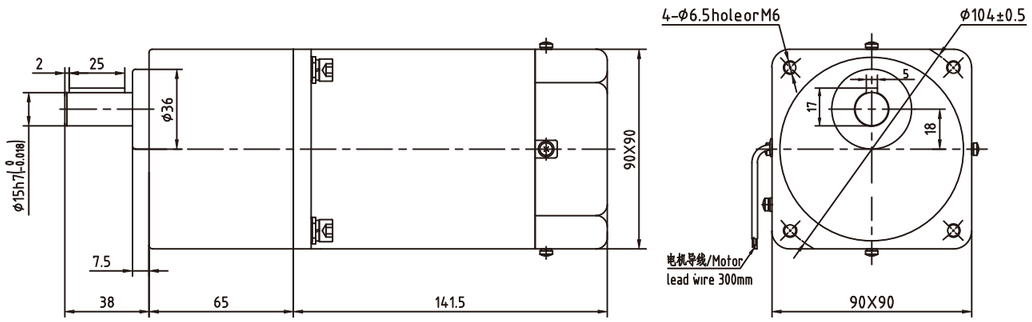
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.

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

外形尺寸（单位mm） Dimension (unit mm)

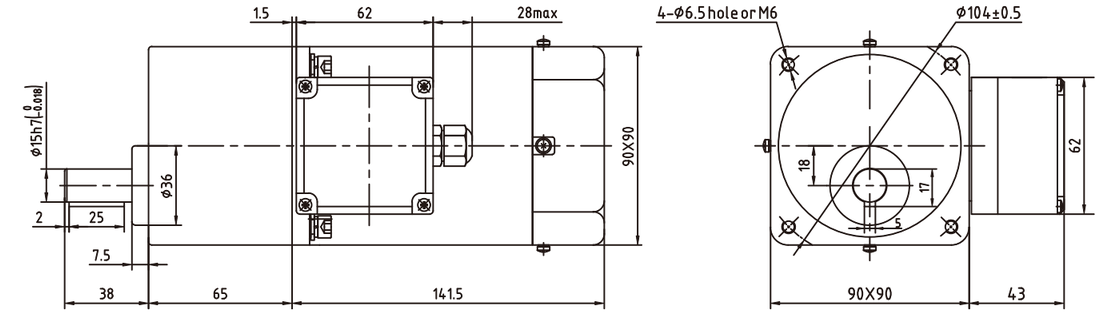
■ 导线型 Lead Wring Type

重量 Weight: 电机 Motor:3.4Kg 减速器 Gearhead: 1.5Kg



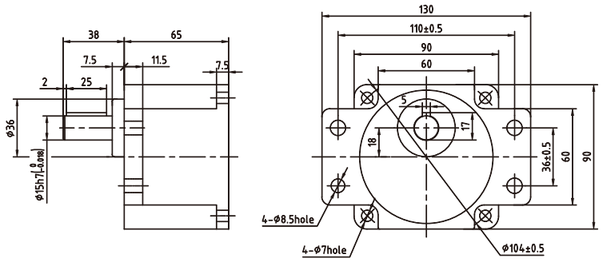
■ 带端子箱型 Terminal Box TYP

重量 Weight: 电机 Motor:3.55Kg 减速器 Gearhead: 1.5Kg



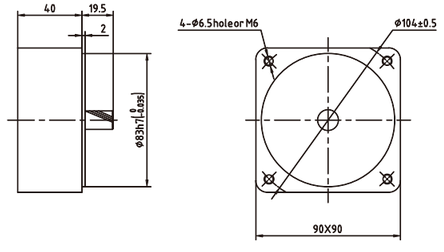
■ 凸缘安装型减速器 Flange Mounting Reducer

可安装在GU齿轮轴型上
Can be Mounted on GU Type gear shaft 5GU□K
重量 Weight:1.5Kg



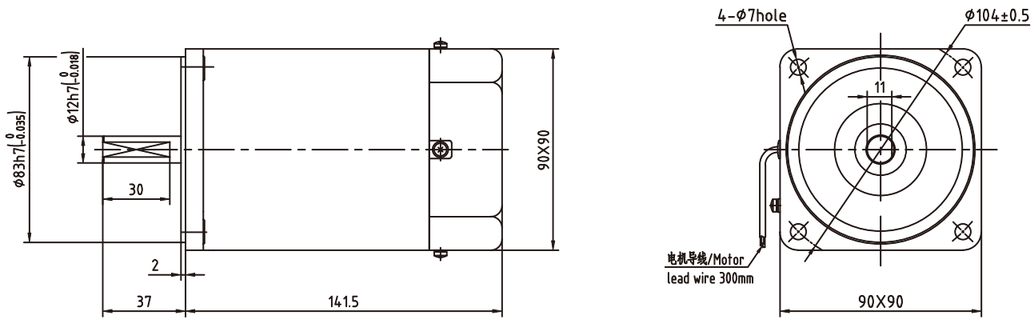
■ 中间减速器 Mid-gearbox

可安装在GU齿轮轴型上
Can be connected to GU pinion 5GU10XK
重量 Weight:0.65Kg



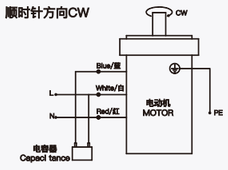
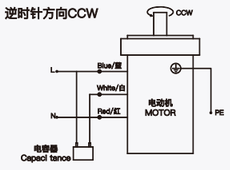
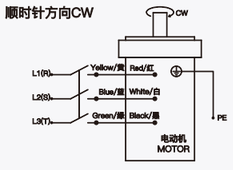
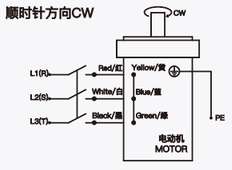
■ 圆轴电机 Round Shaft Motor

重量 Weight: 电机 Motor:3.4Kg



接线图 Wiring Diagram

●运转方向指从电动机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
●表中所记品名为齿轮轴型，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 counter clockwise direction.
●Name indicated in the list is pinion shaft type.aslo valid for the equivalent round shaft type.

5IK120GU-AF、5IK120GU-CF		5IK120GU-SF、5IK120GU-S3F	
顺时针方向CW	逆时针方向CCW	顺时针方向CW	顺时针方向CW
			
		若对换R、S、T中任意二条，电动机会作逆时针方向转动 To change the rotation direction change any two connections between R.S and T.	

请注意 Note

●单相电动机运转方向的转换应在电动机停止后进行。
●若在电动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 direcition 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.

感应电机

INDUCTION MOTOR

120W

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	启动转矩 Starting Torque	额定转矩 Rated Torque	额定转速 Rated Speed	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	mN.m	mN.m	r/min	μF/VAC
6IK120GU-CF	6IK120A-CF	120	1ph220	50	0.90	800	849	1350	7/450
				60	0.95	750	739	1550	
6IK120GU-AF	6IK120A-AF	120	1ph110	50	2.10	650	849	1350	30/250
				60	2.50	650	739	1550	
6IK120GU-SF	6IK120A-SF	120	3ph220	50	0.75	2200	849	1350	/
				60	0.70	2000	739	1550	
6IK120GU-S3F	6IK120A-S3F	120	3ph380	50	0.43	2200	849	1350	/
				60	0.40	2000	739	1550	

●各种安全规格以电动机铭牌上的型号名取得认证。
●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” it means the voltage 110V,the assembly capacitor vaule it is according the labe.

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

减速比 Reduction 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	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	2.06	2.48	3.44	4.13	5.16	6.19	6.88	7.74	9.28	11.14	12.38	15.47	18.57	22.28	24.76	27.85	33.42	40	40	40	40	40	40	40
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	1.80	2.15	2.99	3.59	4.49	5.39	5.99	6.73	8.08	9.70	10.77	13.47	16.16	19.39	21.55	24.24	29.09	36.36	40	40	40	40	40	40

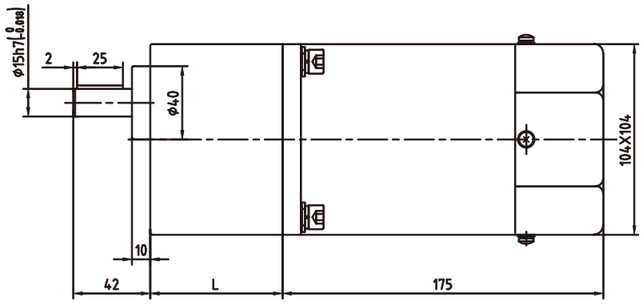
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
●表中 色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。
●减速箱的最大容许转矩为40N·M。

●In the table, the speed is calculated from the base of the 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 that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.
●The maximum allowable torque of the decelerator is 40N·M.

外形尺寸（单位mm） Dimension (unit mm)

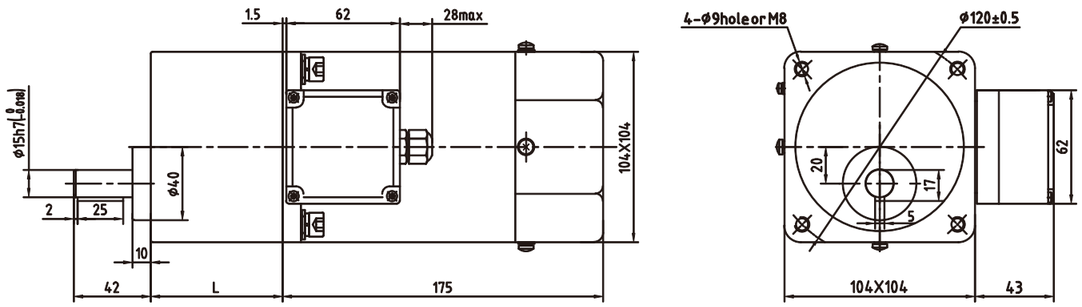
■导线型 Lead Wring Type

重量 Weight: 电机 Motor:4.8Kg　　减速器 Gearhead:2.1Kg



■带端子箱型 Terminal Box TYP

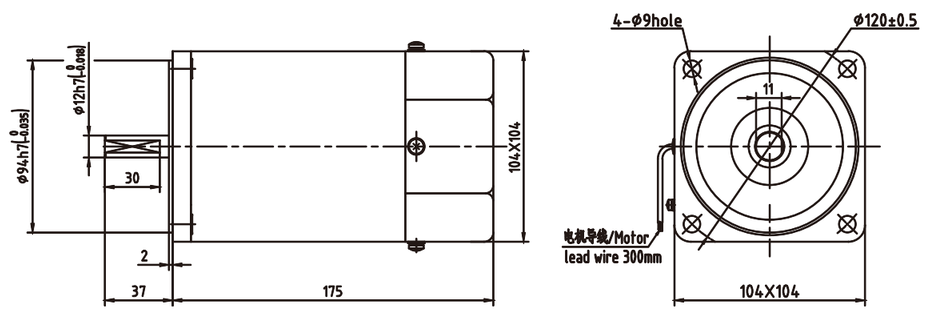
重量 Weight: 电机 Motor:4.95Kg　　减速器 Gearhead:2.1Kg



其中，速比3~40，减速箱高度为L=65mm；速比50~200，减速器高度为L=72mm。
Among them,Gear ratio 3~40, The gearbox height is L=65 mm;Gear ratio 50~200, The gearbox height is L=72 mm.

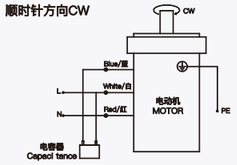
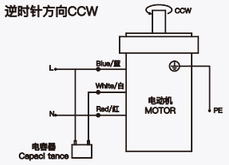
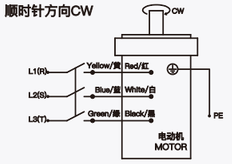
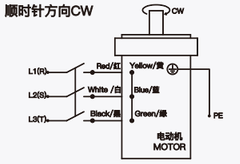
■圆轴电机 Round Shaft Motor

重量 Weight:4.8Kg



接线图 Wiring Diagram

●运转方向指从电动机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
●表中所记品名为齿轮轴型，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 counter clockwise direction.
●Name indicated in the list is pinion shaft type.aslo valid for the equivalent round shaft type.

6IK120GU–AF、6IK120GU–CF		6IK120GU–SF、6IK120GU–S3F	
顺时针方向CW	逆时针方向CCW	顺时针方向CW	顺时针方向CW
			
		若对换R、S、T中任意二条，电动机会作逆时针方向转动 To change the rotation direction change any two connections between R.S and T.	

请注意 Note

●单相电动机运转方向的转换应在电动机停止后进行。
●若在电动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 direcition 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	启动转矩 Starting Torque	额定转矩 Rated Torque	额定转速 Rated Speed	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	mN.m	mN.m	r/min	μF/VAC
6IK140GU-CF	6IK140A-CF	140	1ph220	50	1.05	900	990	1350	8/450
				60	1.10	850	863	1550	
6IK140GU-AF	6IK140A-AF	140	1ph110	50	2.70	700	990	1350	35/250
				60	3.00	700	863	1550	
6IK140GU-SF	6IK140A-SF	140	3ph220	50	0.85	2700	990	1350	/
				60	0.75	2200	863	1550	
6IK140GU-S3F	6IK140A-S3F	140	3ph380	50	0.49	2700	990	1350	/
				60	0.43	2200	863	1550	

●各种安全规格以电动机铭牌上的型号名取得认证。
●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” it means the voltage 110V,the assembly capacitor vaule it is according the labe.

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

减速比 Reduction 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	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	2.41	2.89	4.01	4.81	6.01	7.22	8.02	9.02	10.83	12.99	14.43	18.04	21.65	25.98	28.87	32.48	38.97	40	40	40	40	40	40	40
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	2.10	2.52	3.50	4.19	5.24	6.29	6.99	7.86	9.44	11.32	12.58	15.73	18.87	22.65	25.17	28.31	33.97	40	40	40	40	40	40	40

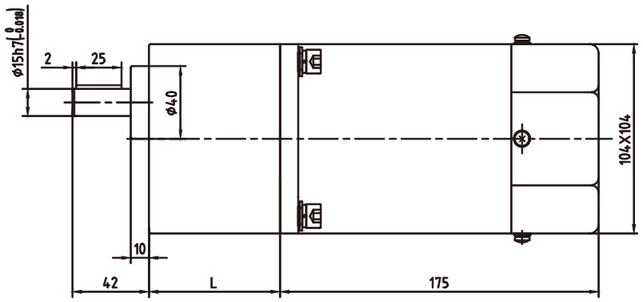
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
●表中 ■ 色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。
●减速箱的最大容许转矩为40N·M。

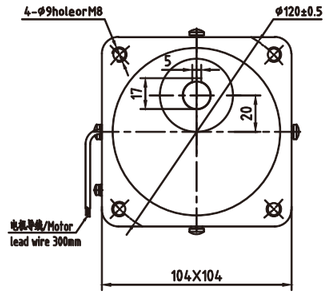
●In the table, the speed is calculated from the base of the motor's average speed divided by the deceleration ratio.The actual speed will vary with the load, ranging from 2 % to 20%.
●The ■ box in the table indicates that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.
●The maximum allowable torque of the decelerator is 40N·M.

外形尺寸（单位mm） Dimension (unit mm)

■ 导线型 Lead Wring Type

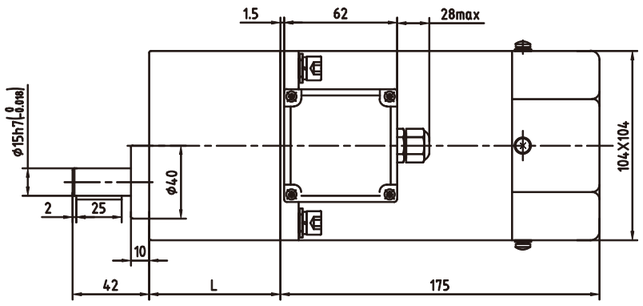
重量 Weight: 电机 Motor:5.0Kg　　减速器 Gearhead:2.1Kg

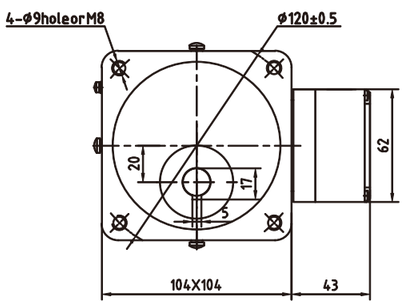




■ 带端子箱型 Terminal Box TYP

重量 Weight: 电机 Motor:5.15Kg　　减速器 Gearhead:2.1Kg

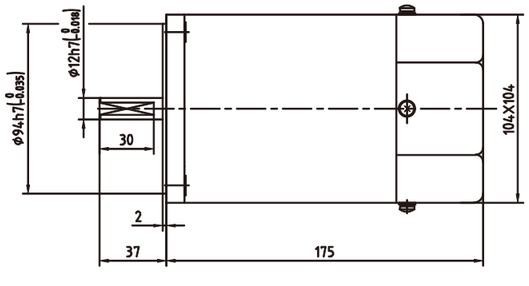


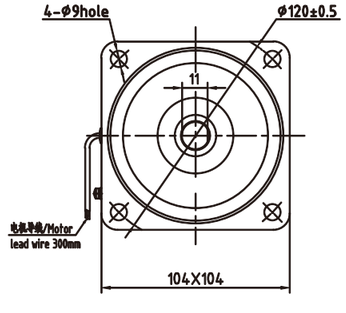


其中，速比3~40，减速箱高度为L=65mm；速比50~200，减速器高度为L=72mm。
Among them,Gear ratio 3~40, The gearbox height is L=65 mm;Gear ratio 50~200, The gearbox height is L=72 mm.

■ 圆轴电机 Round Shaft Motor

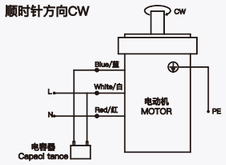
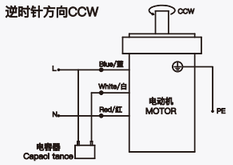
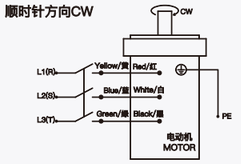
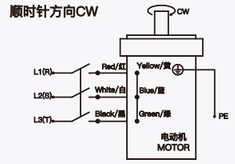
重量 Weight:5.0Kg





接线图 Wiring Diagram

●运转方向指从电动机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
●表中所记品名为齿轮轴型，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 counter clockwise direction.
●Name indicated in the list is pinion shaft type.aslo valid for the equivalent round shaft type.

6IK140GU–AF、6IK140GU–CF		6IK140GU–SF、6IK140GU–S3F	
顺时针方向CW	逆时针方向CCW	顺时针方向CW	顺时针方向CW
			

若对换R、S、T中任意二条，电动机会作逆时针方向转动
To change the rotation direction change any two connections between R.S and T.

请注意 Note

●单相电动机运转方向的转换应在电动机停止后进行。
●若在电动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 direcition 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.

感应电机

INDUCTION MOTOR

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	启动转矩 Starting Torque	额定转矩 Rated Torque	额定转速 Rated Speed	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	mN.m	mN.m	r/min	μF/VAC
6IK200GU-CF	6IK200A-CF	200	1ph220	50	1.30	1000	1415	1350	10/450
				60	1.40	900	1232	1550	
6IK200GU-AF	6IK200A-AF	200	1ph110	50	3.20	900	1415	1350	45/250
				60	3.50	850	1232	1550	
6IK200GU-SF	6IK200A-SF	200	3ph220	50	1.20	3400	1415	1350	/
				60	1.00	2700	1232	1550	
6IK200GU-S3F	6IK200A-S3F	200	3ph380	50	0.69	3400	1415	1350	/
				60	0.58	2700	1232	1550	

●各种安全规格以电动机铭牌上的型号名取得认证。
●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" it means the voltage 110V,the assembly capacitor vaule it is according the labe.

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

减速比 Reduction 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	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	3.44	4.13	5.73	6.88	8.60	10.32	11.46	12.89	15.47	18.57	20.63	25.79	30.95	37.14	40	40	40	40	40	40	40	40	40	40
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	2.99	3.59	4.99	5.99	7.48	8.98	9.98	11.23	13.47	16.17	17.96	22.45	26.94	32.33	35.93	40	40	40	40	40	40	40	40	40

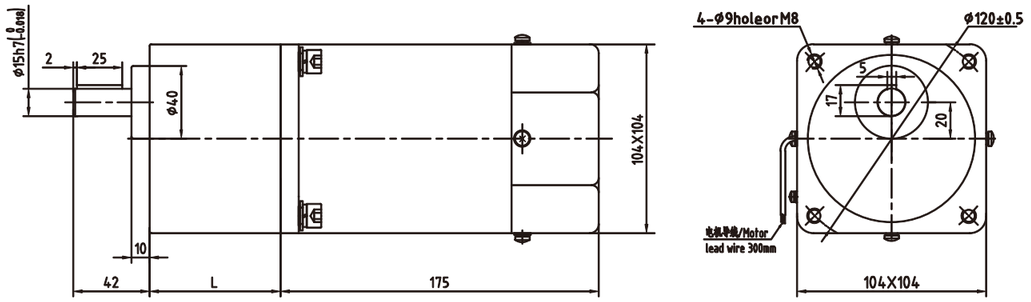
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
●表中 ■ 色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。
●减速箱的最大容许转矩为40N·M。

●In the table, the speed is calculated from the base of the 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 that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.
●The maximum allowable torque of the decelerator is 40N·M.

外形尺寸（单位mm） Dimension (unit mm)

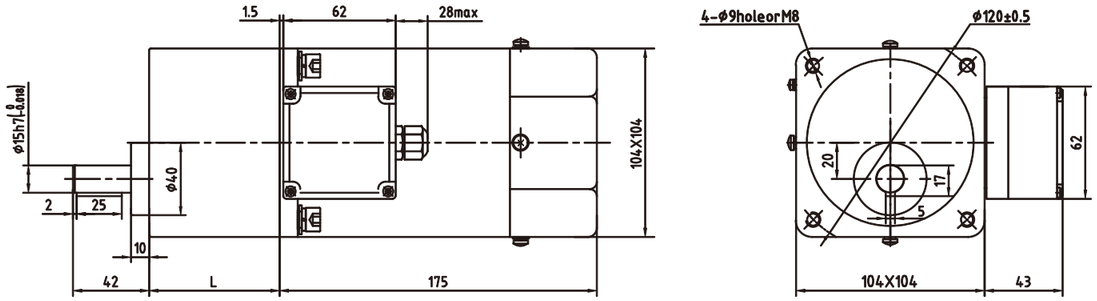
■导线型 Lead Wring Type

重量 Weight: 电机 Motor:5.0Kg　　减速器 Gearhead:2.1Kg



■带端子箱型 Terminal Box TYP

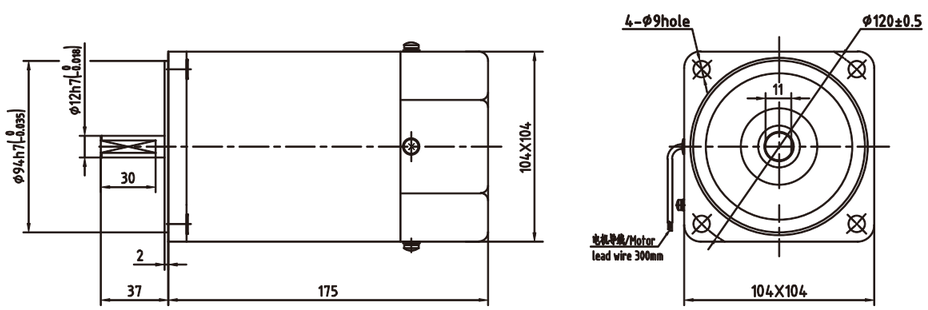
重量 Weight: 电机 Motor:5.15Kg　　减速器 Gearhead:2.1Kg



其中，速比3~40，减速箱高度为L=65mm；速比50~200，减速器高度为L=72mm。
Among them,Gear ratio 3~40, The gearbox height is L=65 mm;Gear ratio 50~200, The gearbox height is L=72 mm.

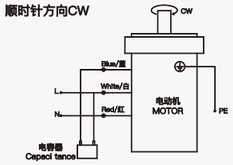
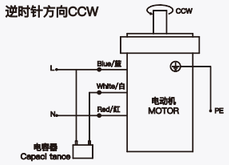
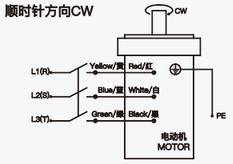
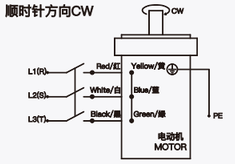
■圆轴电机 Round Shaft Motor

重量 Weight:5.0Kg



接线图 Wiring Diagram

●运转方向指从电动机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
●表中所记品名为齿轮轴型，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 counter clockwise direction.
●Name indicated in the list is pinion shaft type.aslo valid for the equivalent round shaft type.

6IK200GU–AF、6IK200GU–CF		6IK200GU–SF、6IK200GU–S3F	
顺时针方向CW	逆时针方向CCW	顺时针方向CW	顺时针方向CW
			
		若对换R、S、T中任意二条，电动机会作逆时针方向转动 To change the rotation direction change any two connections between R.S and T.	

请注意 Note

●单相电动机运转方向的转换应在电动机停止后进行。
●若在电动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 direcition 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.

可逆电机
REVERSIBLE MOTOR

6W
60MM

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

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	启动转矩 Starting Torque	额定转矩 Rated Torque	额定转速 Rated Speed	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	mN.m	mN.m	r/min	μF/VAC
2RK6GN-C	2RK6A-C	6	1ph220	50	0.14	70	48	1200	1/450
				60	0.13	65	40	1450	
2RK6GN-A	2RK6A-A	6	1ph110	50	0.31	65	48	1200	3.5/250
				60	0.26	60	40	1450	

●可逆电动机的额定转矩、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名取得认证。
●内藏热保护装置（自动复位型）。在电机因某种原因过热会自动启动使电动机停止。
●电动机温度下降后恢复运行，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.
●Contaions a built–in thermal protector(automatic return).if a motor overheats for any reason,the thermal protector is opened and the motors 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 labe.

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

减速比 Reduction 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	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	0.12	0.14	0.19	0.23	0.29	0.35	0.39	0.49	0.58	0.70	0.70	0.87	1.05	1.26	1.40	1.75	1.89	2.36	2.83	3	3	3	3	3
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	0.11	0.13	0.18	0.21	0.27	0.32	0.36	0.45	0.53	0.64	0.64	0.80	0.96	1.15	1.28	1.60	1.73	2.17	2.60	2.89	3	3	3	3

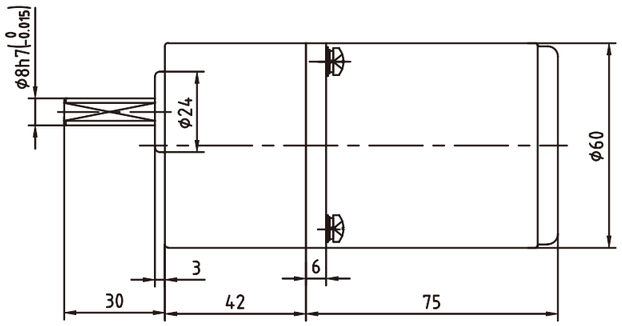
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
●表中 ■ 色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。
●减速箱的最大容许转矩为3N·M。

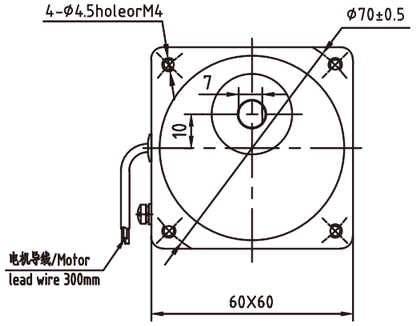
●In the table, the speed is calculated from the base of the motor's average speed divided by the deceleration ratio.The actual speed will vary with the load, ranging from 2 % to 20%.
●The ■ box in the table indicates that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.
●The maximum allowable torque of the decelerator is 3N·M.

外形尺寸（单位mm） Dimension (unit mm)

■ 导线型 Lead Wring Type

重量 Weight：电机 Motor:0.8Kg　　减速器 Gearhead:0.4Kg

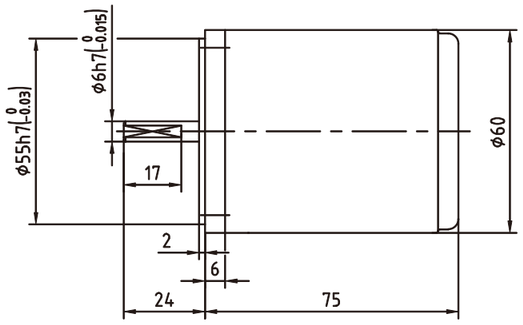


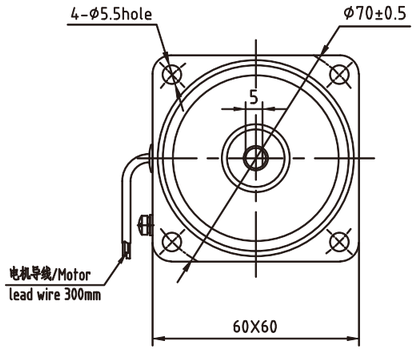


其中速比3~18可以做成短型减速箱,高度为32mm。
Gear ratio 3~18, short case is possible，Height of 32 mm。

■ 圆轴电机 Round Shaft Motor

重量 Weight:0.8Kg

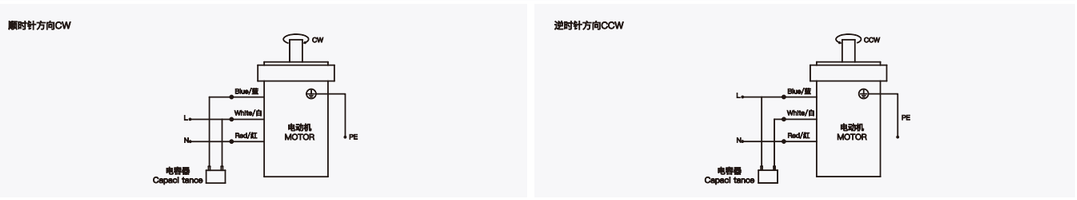




接线图 Wiring Diagram

●运转方向指从电动机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
●表中所记品名为齿轮轴型，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 counter clockwise direction.
●Name indicated in the list is pinion shaft type.aslo valid for the equivalent round shaft type.

2RK6GN-A、2RK6GN-C



请注意 Note

●单相电动机运转方向的转换应在电动机停止后进行。
●若在电动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 direcition 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.

可逆电机
REVERSIBLE MOTOR

15W　70MM

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

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	启动转矩 Starting Torque	额定转矩 Rated Torque	额定转速 Rated Speed	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	mN.m	mN.m	r/min	μF/VAC
3RK15GN-C	3RK15A-C	15	1ph220	50	0.21	90	119	1200	1.5/450
				60	0.19	85	99	1450	
3RK15GN-A	3RK15A-A	15	1ph110	50	0.42	95	119	1200	6/250
				60	0.36	90	99	1450	

●可逆电动机的额定转矩、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名取得认证。
●内藏热保护装置（自动复位型）。在电机因某种原因过热会自动启动使电动机停止。
●电动机温度下降后恢复运行，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.
●Contaions a built-in thermal protector(automatic return).if a motor overheats for any reason,the thermal protector is opened and the motors 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 labe.

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

减速比 Reduction 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	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	0.29	0.35	0.48	0.58	0.72	0.87	0.96	1.20	1.45	1.74	1.74	2.17	2.60	3.12	3.47	4.34	4.68	5	5	5	5	5	5	5
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	0.24	0.29	0.40	0.48	0.60	0.72	0.80	1.00	1.20	1.44	1.44	1.80	2.17	2.60	2.89	3.61	3.90	4.87	5	5	5	5	5	5

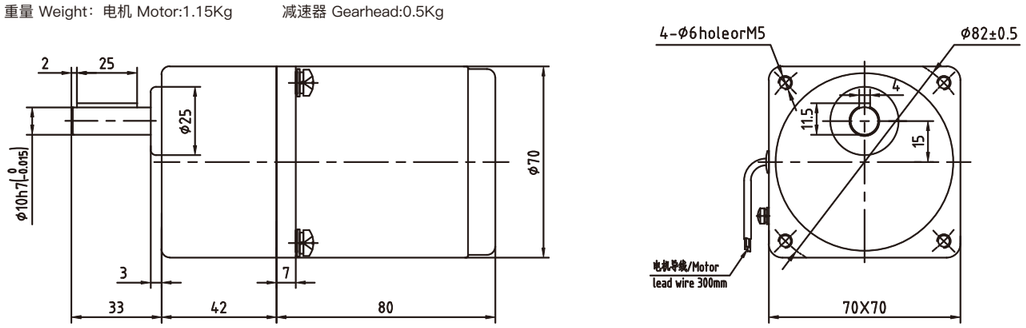
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
●表中 ■ 色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。
●减速箱的最大容许转矩为5N·M。

●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 that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.
●The maximum allowable torque of the decelerator is 5N·M.

外形尺寸（单位mm） Dimension (unit mm)

■ 导线型 Lead Wring Type

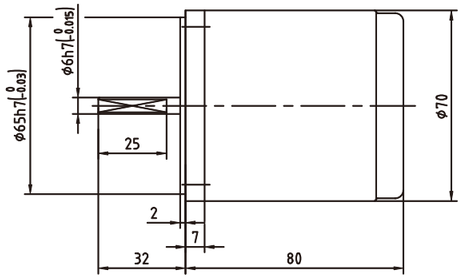
重量 Weight：电机 Motor:1.15Kg　　减速器 Gearhead:0.5Kg

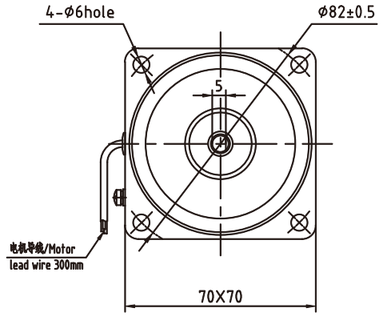


其中速比3~18可以做成短型减速箱,高度为32mm。
Gear ratio 3~18, short case is possible，Height of 32 mm。

■ 圆轴电机 Round Shaft Motor

重量 Weight:1.15Kg





接线图 Wiring Diagram

●运转方向指从电动机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
●表中所记品名为齿轮轴型，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 counter clockwise direction.
●Name indicated in the list is pinion shaft type.aslo valid for the equivalent round shaft type.

3RK15GN-A、3RK15GN-C

请注意 Note

●单相电动机运转方向的转换应在电动机停止后进行。
●若在电动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 direcition 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.

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

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	启动转矩 Starting Torque	额定转矩 Rated Torque	额定转速 Rated Speed	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	mN.m	mN.m	r/min	μF/VAC
4RK25GN-C	4RK25A-C	25	1ph220	50	0.30	170	190	1250	2/450
				60	0.30	170	154	1550	
4RK25GN-A	4RK25A-A	25	1ph110	50	0.57	160	190	1250	8/250
				60	0.54	160	154	1550	

●可逆电动机的额定转矩、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名取得认证。
●内藏热保护装置（自动复位型）。在电机因某种原因过热会自动启动使电动机停止。
●电动机温度下降后恢复运行，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.
●Contaions a built-in thermal protector(automatic return).if a motor overheats for any reason,the thermal protector is opened and the motors 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 labe.

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

减速比 Reduction 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	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	0.46	0.55	0.77	0.92	1.15	1.39	1.54	1.92	2.31	2.77	3.08	3.46	4.16	4.99	5.54	6.93	7.48	8	8	8	8	8	8	8
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	0.37	0.45	0.62	0.75	0.94	1.12	1.25	1.56	1.87	2.25	2.49	2.81	3.37	4.04	4.49	5.61	6.06	7.58	8	8	8	8	8	8

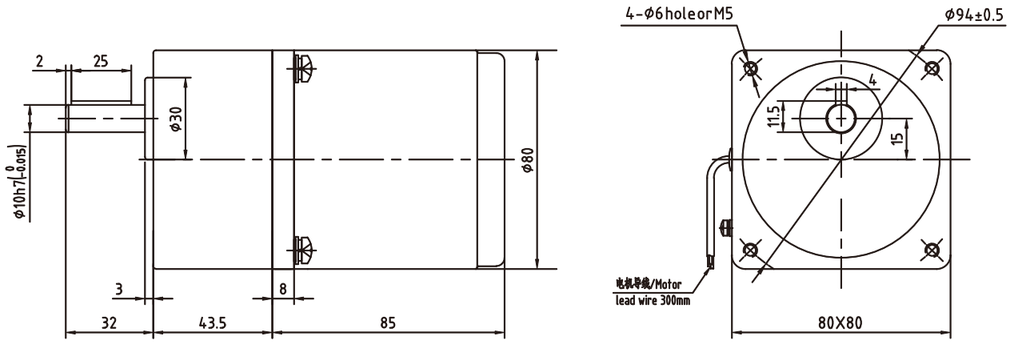
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
●表中 ■ 色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。
●减速箱的最大容许转矩为8N·M。

●In the table, the speed is calculated from the base of the 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 that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.
●The maximum allowable torque of the decelerator is 8N·M.

外形尺寸（单位mm） Dimension (unit mm)

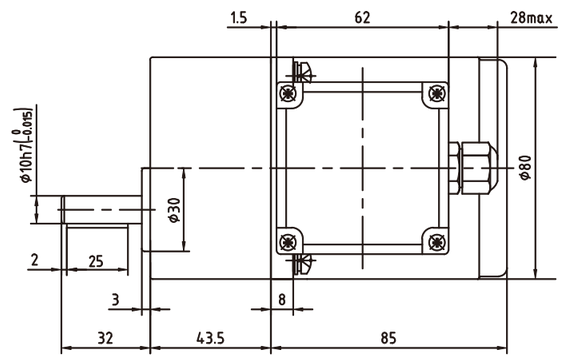
■ 导线型 Lead Wring Type

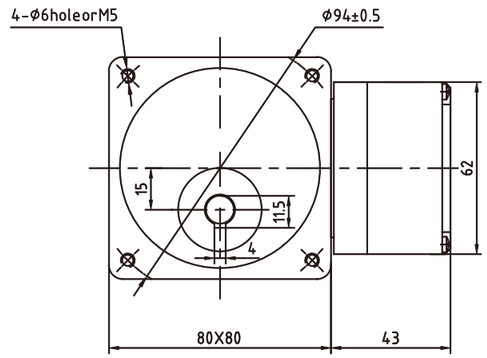
重量 Weight: 电机 Motor:1.65Kg　　减速器 Gearhead:0.8Kg



■ 带端子箱型 Terminal Box TYP

重量 Weight: 电机 Motor:1.8Kg　　减速器 Gearhead:0.8Kg

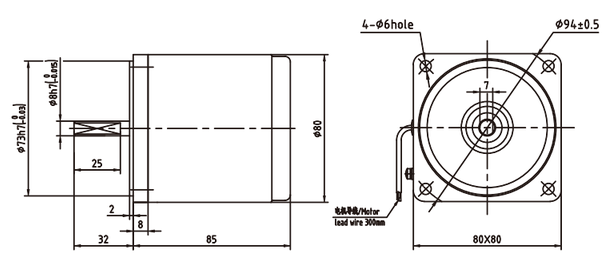




其中速比3~18可以做成短型减速箱,高度为32mm。
Gear ratio 3~18, short case is possible, Height of 32 mm。

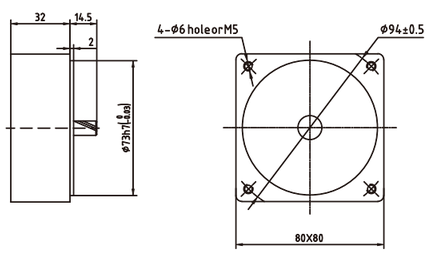
■ 圆轴电机 Round Shaft Motor

重量 Weight:1.65Kg



■ 中间减速器 Mid-gearbox

可安装在GN齿轮轴型上
Can be connected to GN pinion 4GN10XK
重量 Weight:0.41Kg

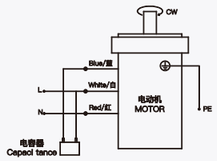


接线图 Wiring Diagram

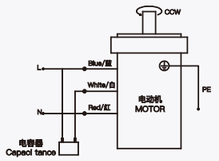
●运转方向指从电动机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
●表中所记品名为齿轮轴型，圆轴型亦同。
●The direction of motor rotation is as viewed from the shaft end of motor.CW represents the clockwise direction.while CCW represents the counter clockwise direction.
●Name indicated in the list is pinion shaft type.aslo valid for the equivalent round shaft type.

4RK25GN-A、4RK25GN-C

顺时针方向CW



逆时针方向CCW



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●若在电动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 direcition of single-phase motor rotation only after bring the motor to a stop.
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可逆电机

REVERSIBLE MOTOR

40W

90MM

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

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	启动转矩 Starting Torque	额定转矩 Rated Torque	额定转速 Rated Speed	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	mN.m	mN.m	r/min	μF/VAC
5RK40GN-C	5RK40A-C	40	1ph220	50	0.43	200	283	1350	3/450
				60	0.52	210	246	1550	
5RK40GN-A	5RK40A-A	40	1ph110	50	0.92	230	283	1350	12/250
				60	0.92	230	246	1550	

●可逆电动机的额定转矩、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名取得认证。
●内藏热保护装置（自动复位型）。在电机因某种原因过热会自动启动使电动机停止。
●电动机温度下降后恢复运行，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.
●Contaions a built-in thermal protector(automatic return).if a motor overheats for any reason,the thermal protector is opened and the motors stops.
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●Note:“-A” it means the voltage 110V,the assembly capacitor vaule it is according the labe.

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

减速比 Reduction 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	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	0.69	0.83	1.15	1.38	1.72	2.06	2.29	2.87	3.44	4.13	4.13	5.16	6.19	7.43	7.43	9.28	10	10	10	10	10	10	10	10
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	0.60	0.72	1.00	1.20	1.49	1.79	1.99	2.49	2.99	3.59	3.59	4.48	5.38	6.46	6.46	8.07	9.68	10	10	10	10	10	10	10

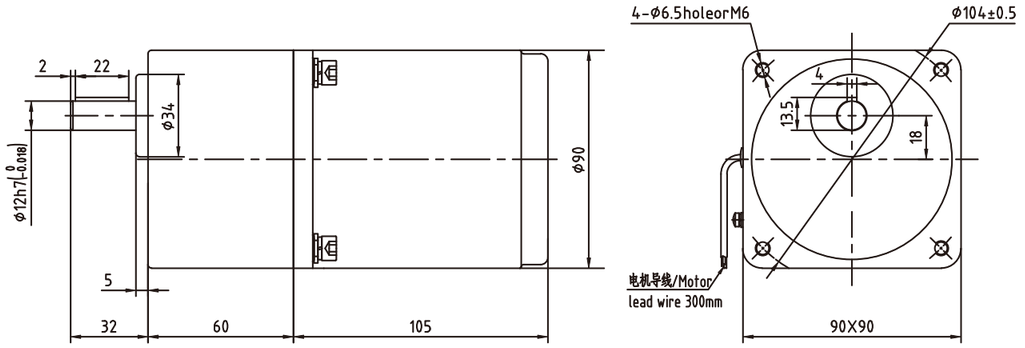
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
●表中 色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。
●减速箱的最大容许转矩为10N·M。

●In the table, the speed is calculated from the base of the 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 that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.
●The maximum allowable torque of the decelerator is 10N·M.

外形尺寸（单位mm） Dimension (unit mm)

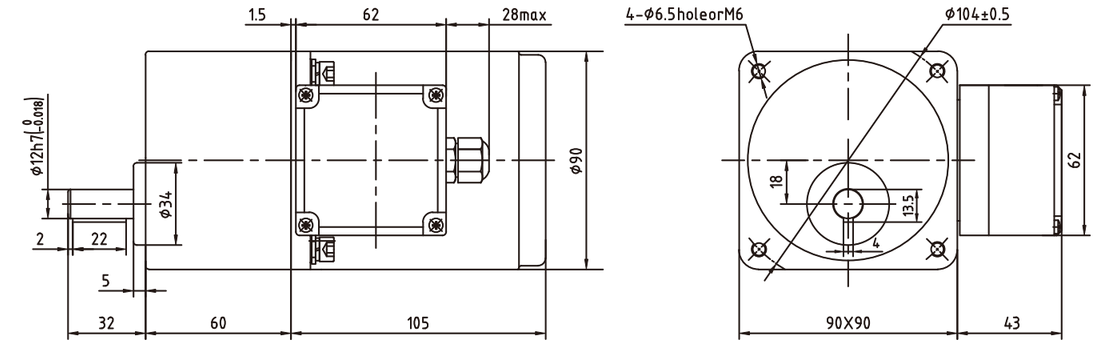
■ 导线型 Lead Wring Type

重量 Weight: 电机 Motor:2.45Kg　　减速器 Gearhead:1.35Kg



■ 带端子箱型 Terminal Box TYP

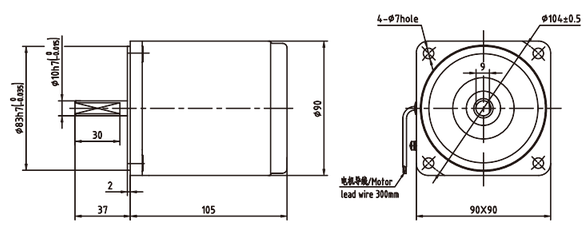
重量 Weight: 电机 Motor:2.6Kg　　减速器 Gearhead:1.35Kg



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 42 mm。

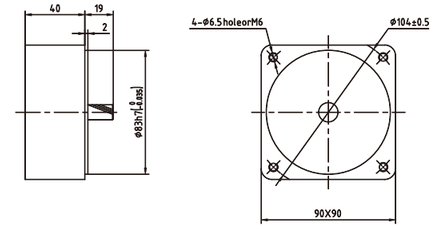
■ 圆轴电机 Round Shaft Motor

重量 Weight:2.45Kg



■ 中间减速器 Mid-gearbox

可安装在GN齿轮轴型上
Can be connected to GN pinion 5GN10XK
重量 Weight:0.6Kg

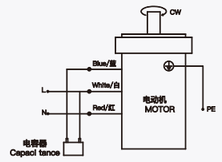


接线图 Wiring Diagram

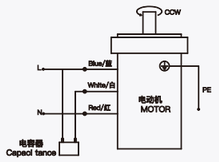
●运转方向指从电动机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
●表中所记品名为齿轮轴型，圆轴型亦同。
●The direction of motor rotation is as viewed from the shaft end of motor.CW represents the clockwise direction.while CCW represents the counter clockwise direction.
●Name indicated in the list is pinion shaft type.aslo valid for the equivalent round shaft type.

5RK40GN–A、5RK40GN–C

顺时针方向CW



逆时针方向CCW



请注意 Note

●单相电动机运转方向的转换应在电动机停止后进行。
●若在电动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 direcition 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.

可逆电机

REVERSIBLE MOTOR

60W　90MM

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

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	启动转矩 Starting Torque	额定转矩 Rated Torque	额定转速 Rated Speed	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	mN.m	mN.m	r/min	μF/VAC
5RK60GN-CF	5RK60A-CF	60	1ph220	50	0.62	420	424	1350	4/450
				60	0.66	420	370	1550	
5RK60GN-AF	5RK60A-AF	60	1ph110	50	1.22	470	424	1350	18/250
				60	1.24	470	370	1550	

●可逆电动机的额定转矩、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名取得认证。
●内藏热保护装置（自动复位型）。在电机因某种原因过热会自动启动使电动机停止。
●电动机温度下降后恢复运行，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.
●Contaions a built–in thermal protector(automatic return).if a motor overheats for any reason,the thermal protector is opened and the motors 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 labe.

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

减速比 Reduction 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	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	1.03	1.24	1.72	2.06	2.58	3.09	3.43	4.29	5.15	6.18	6.18	7.73	9.27	10	10	10	10	10	10	10	10	10	10	10
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	0.90	1.08	1.50	1.80	2.25	2.70	3.00	3.75	4.50	5.39	5.39	6.74	8.09	9.71	9.71	10	10	10	10	10	10	10	10	10

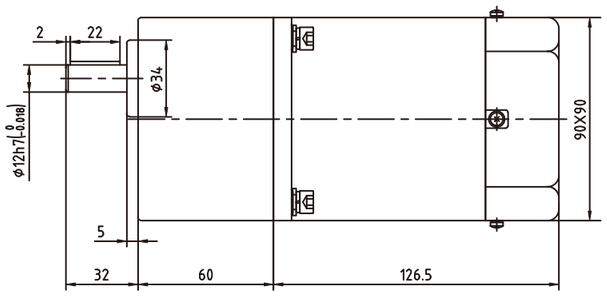
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
●表中 ■ 色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。
●减速箱的最大容许转矩为10N·M。

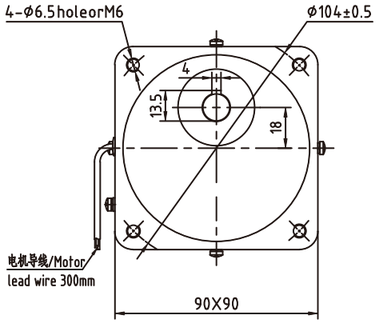
●In the table, the speed is calculated from the base of the motor's average speed divided by the deceleration ratio.The actual speed will vary with the load, ranging from 2 % to 20%.
●The ■ box in the table indicates that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.
●The maximum allowable torque of the decelerator is 10N·M.

外形尺寸（单位mm） Dimension (unit mm)

■ 导线型 Lead Wring Type

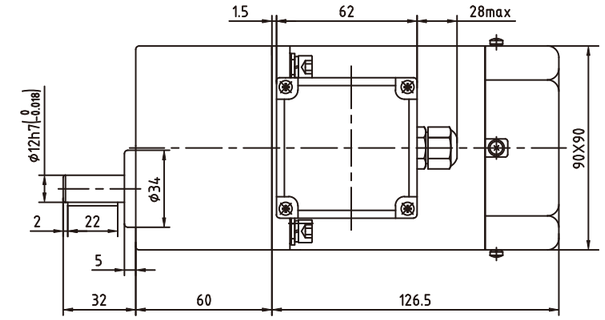
重量 Weight: 电机 Motor:2.75Kg　　减速器 Gearhead:1.35Kg

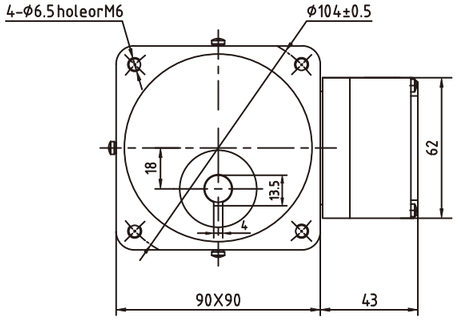




■ 带端子箱型 Terminal Box TYP

重量 Weight: 电机 Motor:2.9Kg　　减速器 Gearhead:1.35Kg

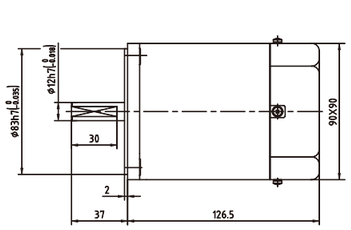


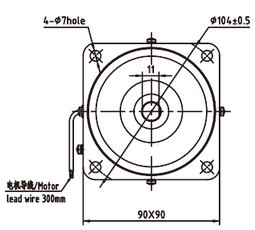


其中速比3~18可以做成短型减速箱,高度为42mm。
Gear ratio 3~18, short case is possible，Height of 42 mm。

■ 圆轴电机 Round Shaft Motor

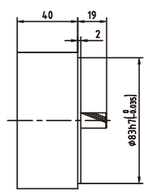
重量 Weight:2.75Kg

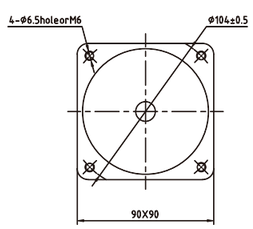




■ 中间减速器 Mid-gearbox

可安装在GN齿轮轴型上
Can be connected to GN pinion 5GN10XK
重量 Weight:0.6Kg



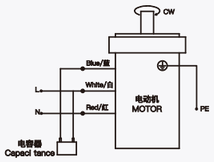


接线图 Wiring Diagram

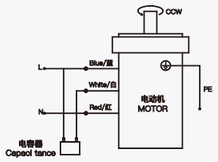
●运转方向指从电动机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
●表中所记品名为齿轮轴型，圆轴型亦同。
●The direction of motor rotation is as viewed from the shaft end of motor.CW represents the clockwise direction.while CCW represents the counter clockwise direction.
●Name indicated in the list is pinion shaft type.aslo valid for the equivalent round shaft type.

5RK60GN-AF、5RK60GN-CF

顺时针方向CW



逆时针方向CCW



请注意 Note

●单相电动机运转方向的转换应在电动机停止后进行。
●若在电动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 direcition 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.

可逆电机

REVERSIBLE MOTOR

60W

90MM

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

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	启动转矩 Starting Torque	额定转矩 Rated Torque	额定转速 Rated Speed	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	mN.m	mN.m	r/min	μF/VAC
5RK60GU-CF	5RK60A-CF	60	1ph220	50	0.62	420	424	1350	4.5/450
				60	0.66	420	370	1550	
5RK60GU-AF	5RK60A-AF	60	1ph110	50	1.22	470	424	1350	18/250
				60	1.24	470	370	1550	

●可逆电动机的额定转矩、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名取得认证。
●内藏热保护装置（自动复位型）。在电机因某种原因过热会自动启动使电动机停止。
●电动机温度下降后恢复运行，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.
●Contaions a built-in thermal protector(automatic return).if a motor overheats for any reason,the thermal protector is opened and the motors 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 labe.

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

减速比 Reduction 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	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	1.03	1.24	1.72	2.06	2.58	3.09	3.43	4.29	5.15	6.18	6.18	7.73	9.27	11.13	11.13	13.91	16.69	20	20	20	20	200	20	20
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	0.90	1.08	1.50	1.80	2.25	2.70	3.00	3.75	4.50	5.39	5.39	6.74	8.09	9.71	9.71	12.14	14.57	18.21	20	20	20	20	20	20

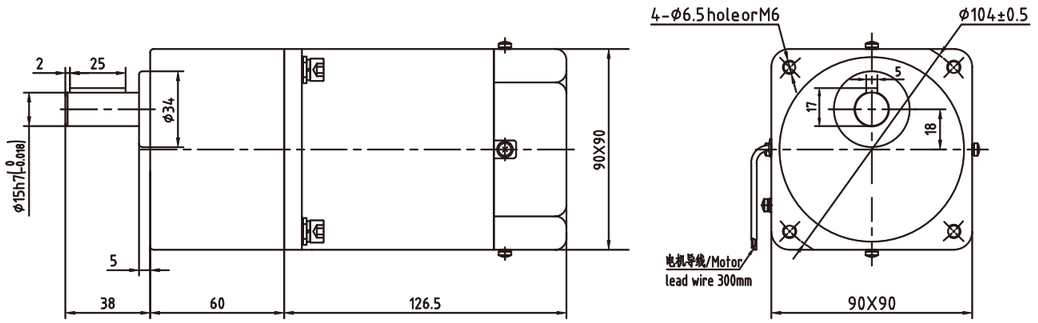
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
●表中 ■ 色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。
●减速箱的最大容许转矩为20N·M。

●In the table, the speed is calculated from the base of the 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 that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.
●The maximum allowable torque of the decelerator is 20N·M.

外形尺寸（单位mm） Dimension (unit mm)

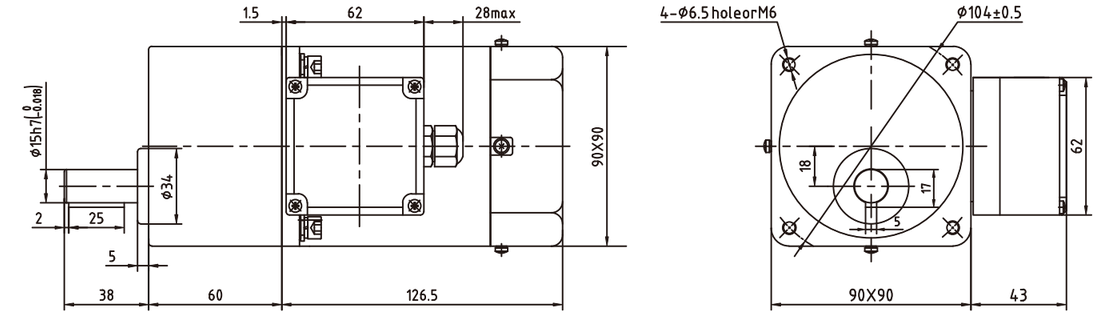
■导线型 Lead Wring Type

重量 Weight: 电机 Motor:2.75Kg 减速器 Gearhead:1.35Kg



■带端子箱型 Terminal Box TYP

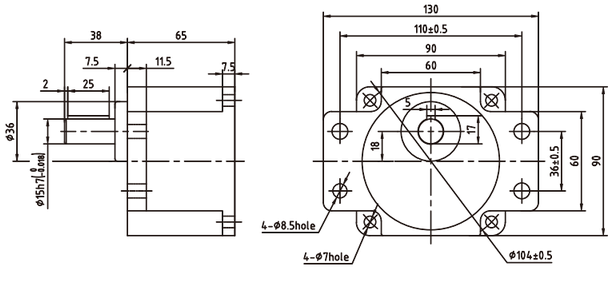
重量 Weight: 电机 Motor:2.9Kg 减速器 Gearhead:1.35Kg



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 42 mm。

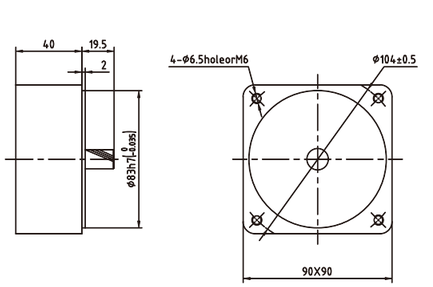
■凸缘安装型减速器 Flange Mounting Reducer

可安装在GU齿轮轴型上
Can be Mounted on GU Type gear shaft 5GU□K
重量 Weight:1.5Kg



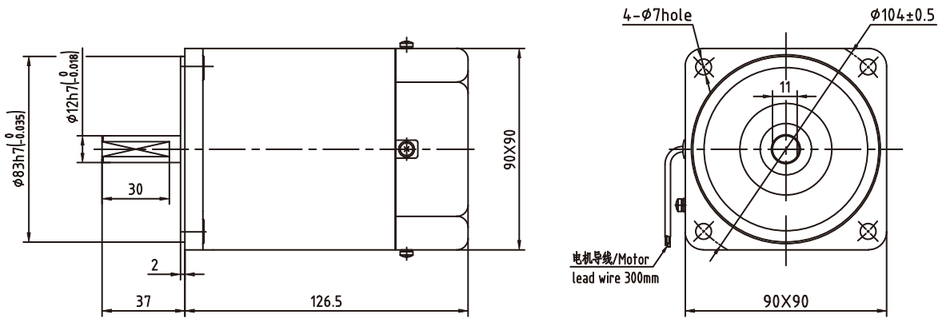
■中间减速器 Mid-gearbox

可安装在GU齿轮轴型上
Can be connected to GU pinion 5GU10XK
重量 Weight:0.65Kg



■ 圆轴电机 Round Shaft Motor

重量 Weight: 电机 Motor:2.75Kg

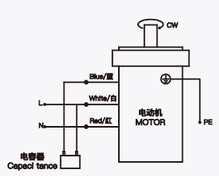


接线图 Wiring Diagram

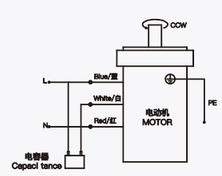
●运转方向指从电动机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
●表中所记品名为齿轮轴型，圆轴型亦同。
●The direction of motor rotation is as viewed from the shaft end of motor.CW represents the clockwise direction.while CCW represents the counter clockwise direction.
●Name indicated in the list is pinion shaft type.aslo valid for the equivalent round shaft type.

5RK60GU–AF、5RK60GU–CF

顺时针方向CW

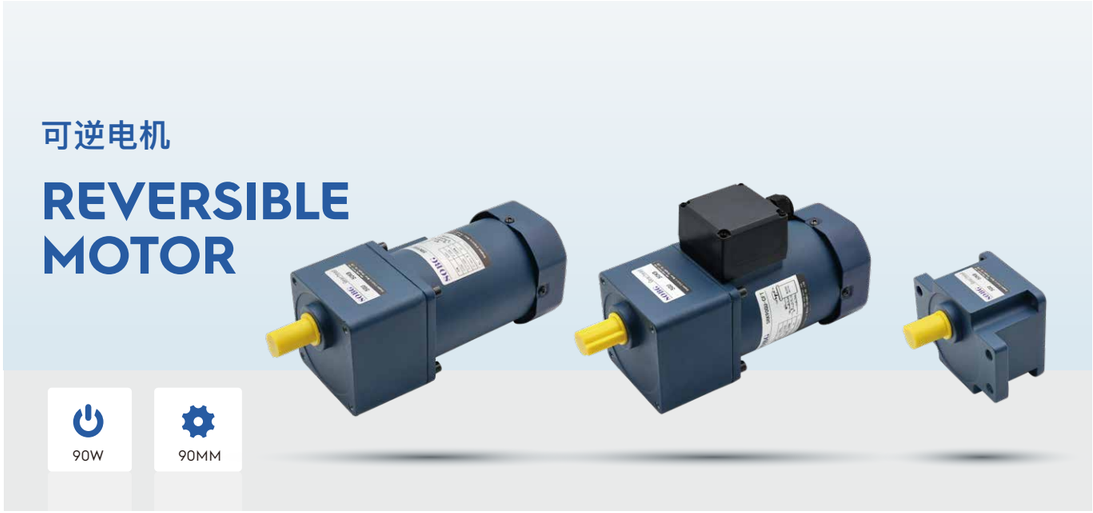


逆时针方向CCW



请注意 Note

●单相电动机运转方向的转换应在电动机停止后进行。
●若在电动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 direcition 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.



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

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	启动转矩 Starting Torque	额定转矩 Rated Torque	额定转速 Rated Speed	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	mN.m	mN.m	r/min	μF/VAC
5RK90GU-CF	5RK90A-CF	90	1ph220	50	0.83	560	637	1350	6/450
				60	0.99	560	555	1550	
5RK90GU-AF	5RK90A-AF	90	1ph110	50	1.64	530	637	1350	25/250
				60	1.77	530	555	1550	

●可逆电动机的额定转矩、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名取得认证。
●内藏热保护装置（自动复位型）。在电机因某种原因过热会自动启动使电动机停止。
●电动机温度下降后恢复运行，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.
●Contaions a built–in thermal protector(automatic return).if a motor overheats for any reason,the thermal protector is opened and the motors 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 labe.

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

减速比 Reduction 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	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	1.55	1.86	2.58	3.10	3.87	4.64	4.64	5.80	6.97	8.36	8.36	10.45	12.54	15.05	16.72	20	20	20	20	20	20	20	20	20
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	1.35	1.62	2.25	2.70	3.37	4.05	4.05	5.06	6.07	7.28	7.28	9.10	10.92	13.11	14.57	18.21	20	20	20	20	20	20	20	20

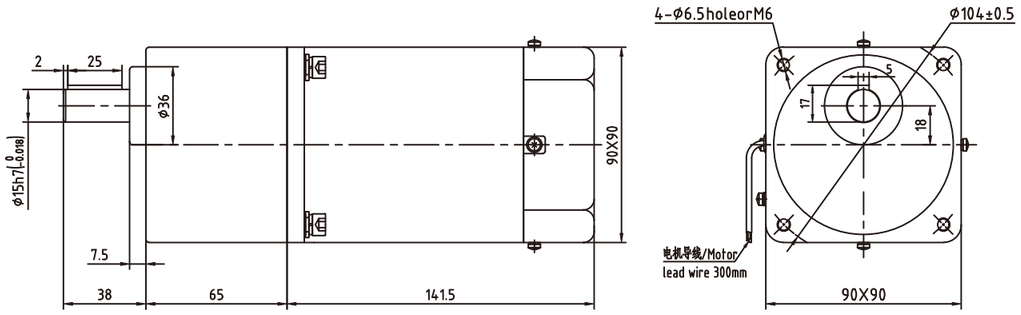
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
●表中 色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。
●减速箱的最大容许转矩为20N·M。

●In the table, the speed is calculated from the base of the 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 that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.
●The maximum allowable torque of the decelerator is 20N·M.

外形尺寸（单位mm） Dimension (unit mm)

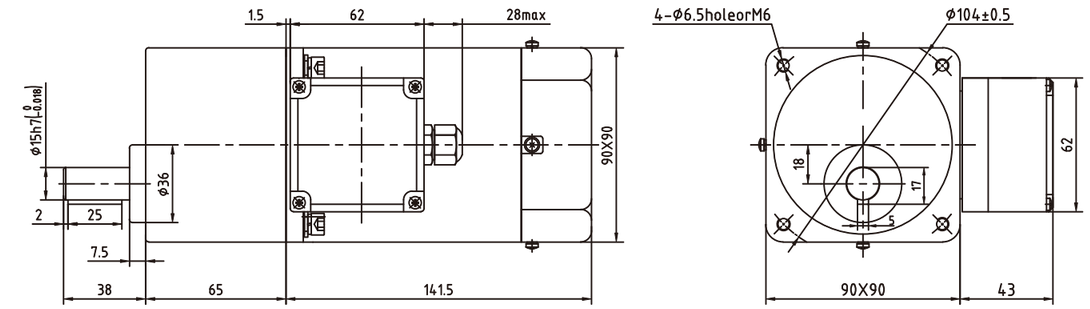
■ 导线型 Lead Wring Type

重量 Weight: 电机 Motor:3.25Kg　　减速器 Gearhead:1.5Kg



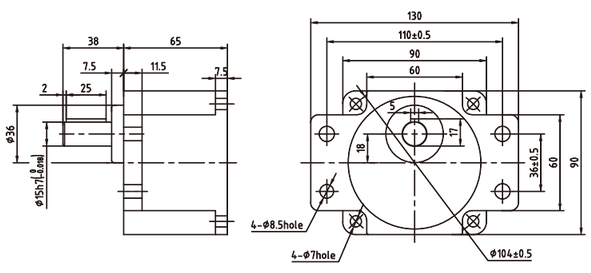
■ 带端子箱型 Terminal Box TYP

重量 Weight: 电机 Motor:3.4Kg　　减速器 Gearhead:1.5Kg



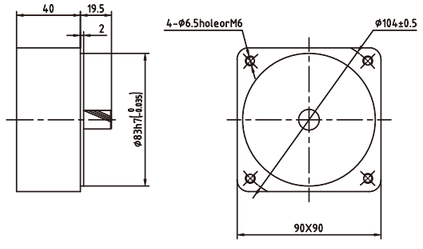
■ 凸缘安装型减速器Flange Mounting Reducer

可安装在GU齿轮轴型上
Can be Mounted on GU Type gear shaft 5GU□K
重量 Weight:1.5Kg



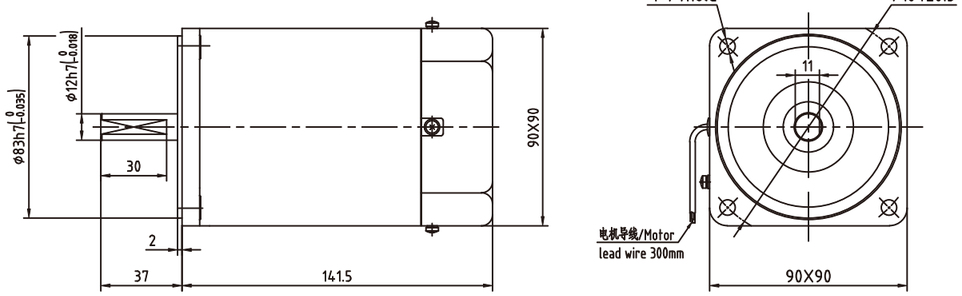
■ 中间减速器 Mid-gearbox

可安装在GU齿轮轴型上
Can be connected to GU pinion 5GU10XK
重量 Weight:0.65Kg



■ 圆轴电机 Round Shaft Motor

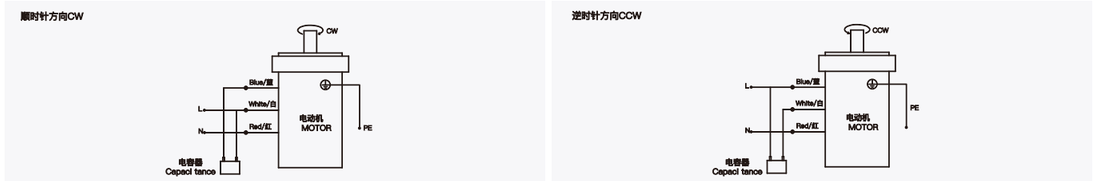
重量 Weight: 电机 Motor:3.25Kg



接线图 Wiring Diagram

●运转方向指从电动机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
●表中所记品名为齿轮轴型，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 counter clockwise direction.
●Name indicated in the list is pinion shaft type.aslo valid for the equivalent round shaft type.

5RK90GU-AF、5RK90GU-CF



请注意 Note

●单相电动机运转方向的转换应在电动机停止后进行。
●若在电动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 direcition 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.

可逆电机

REVERSIBLE MOTOR

120W

90MM

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

电机型号 Motor Model		输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	启动转矩 Starting Torque	额定转矩 Rated Torque	额定转速 Rated Speed	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	mN.m	mN.m	r/min	μF/VAC
5RK120GU-CF	5RK120A-CF	120	1ph220	50	1.03	720	849	1350	7/450
				60	1.23	720	739	1550	
5RK120GU-AF	5RK120A-AF	120	1ph110	50	2.05	680	849	1350	30/250
				60	2.20	680	739	1550	

●可逆电动机的额定转矩、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名取得认证。
●内藏热保护装置（自动复位型）。在电机因某种原因过热会自动启动使电动机停止。
●电动机温度下降后恢复运行，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.
●Contaions a built-in thermal protector(automatic return).If a motor overheats for any reason,the thermal protector is opened and the motors 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 labe.

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

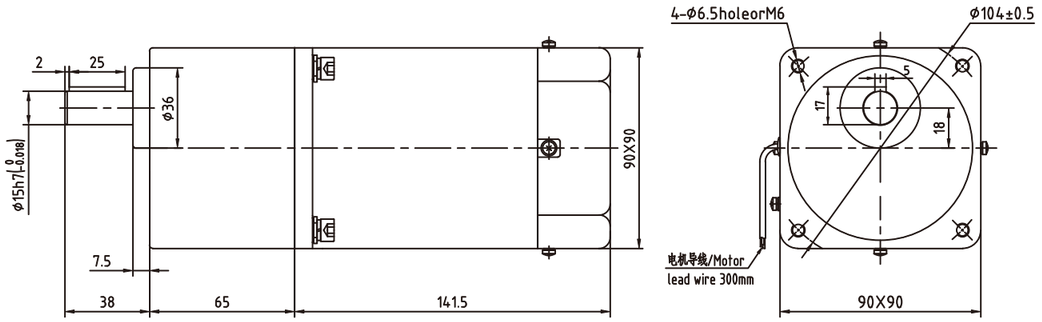
减速比 Reduction ratio		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
50Hz	转速 Speed r/min	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	2.06	2.48	3.44	4.13	5.16	6.19	6.19	7.74	9.28	11.14	11.14	13.93	16.71	20	20	20	20	20	20	20	20	200	20	20
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	1.80	2.15	2.99	3.59	4.49	5.39	5.39	6.73	8.08	9.70	9.70	12.12	14.55	17.45	19.39	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。

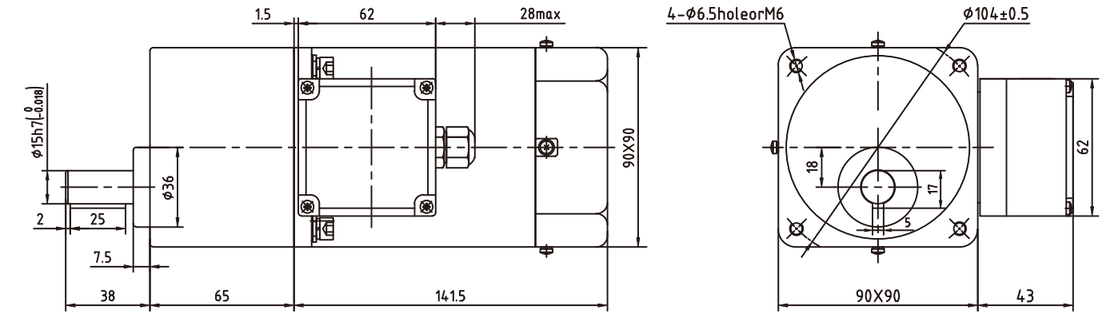
●In the table, the speed is calculated from the base of the motor's average speed divided by the deceleration ratio.The actual speed will vary with the load, ranging from 2 % to 20%.
●The box in the table indicates that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.
●The maximum allowable torque of the decelerator is 20N·M.

外形尺寸（单位mm） Dimension (unit mm)

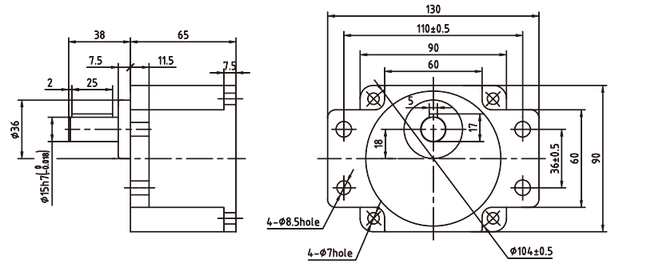
■导线型 Lead Wring Type
重量 Weight: 电机 Motor:3.45Kg 减速器 Gearhead:1.5Kg



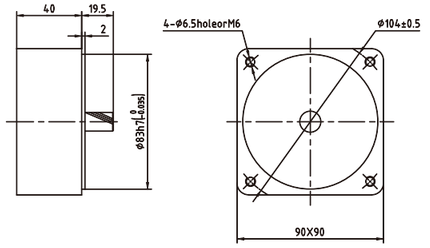
■带端子箱型 Terminal Box TYP
重量 Weight: 电机 Motor:3.6Kg 减速器 Gearhead:1.5Kg



■凸缘安装型减速器 Flange Mounting Reducer
可安装在GU齿轮轴型上
Can be Mounted on GU Type gear shaft 5GU□K
重量 Weight:1.5Kg

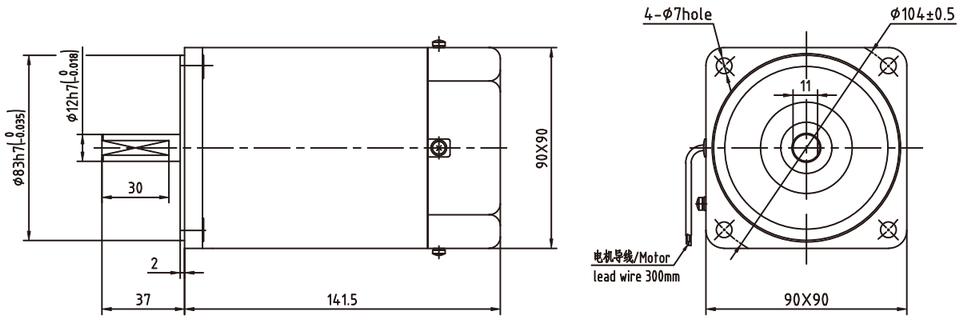


■中间减速器 Mid-gearbox
可安装在GU齿轮轴型上
Can be connected to GU pinion 5GU10XK
重量 Weight:0.65Kg



■ 圆轴电机 Round Shaft Motor

重量 Weight: 电机 Motor:3.45Kg



接线图 Wiring Diagram

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

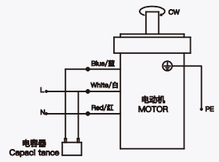
●表中所记品名为齿轮轴型，圆轴型亦同。

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

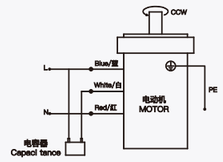
●Name indicated in the list is pinion shaft type.aslo valid for the equivalent round shaft type.

5RK120GU-AF、5RK120GU-CF

顺时针方向CW



逆时针方向CCW



请注意 Note

●单相电动机运转方向的转换应在电动机停止后进行。

●若在电动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 direcition 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.

调速电机

SPEED CONTROL MOTOR

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	调速范围 Speed control range	额定转矩 Rated Torque		启动转矩 Starting Torque	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	mN.m	90r/min mN.m	1200r/min mN.m	r/min	μF/VAC
2IK6RGN-C	2IK6RA-C	6	1ph220	50	0.13	90~1350	29	55	35	0.8/450
				60	0.12	90~1550	29	55	35	
2IK6RGN-A	2IK6RA-A	6	1ph110	50	0.26	90~1350	29	50	35	3.5/250
				60	0..28	90~1550	29	50	35	

●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。

●各种安全规格以电动机铭牌上的型号名取得认证。

●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; 60 hz: 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; 60 hz: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” it means the voltage 110V,the assembly capacitor vaule it is according the labe.

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

减速比 Reduction 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	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	0.12	0.14	0.19	0.23	0.29	0.35	0.39	0.49	0.58	0.70	0.70	0.87	1.05	1.26	1.40	1.75	1.89	2.36	2.83	3	3	3	3	3
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	0.11	0.13	0.18	0.21	0.27	0.32	0.36	0.45	0.53	0.64	0.64	0.80	0.96	1.15	1.28	1.60	1.73	2.17	2.60	2.89	3	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 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 that the rotation direction of the output axis is opposite to that of the motor.

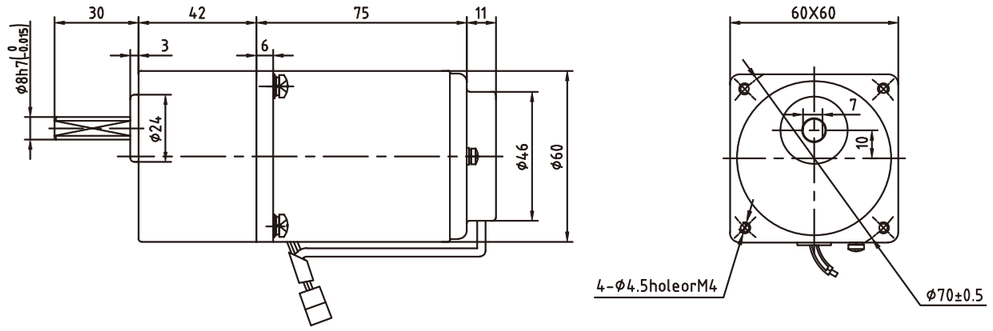
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.

●The maximum allowable torque of the decelerator is 3N·M.

外形尺寸（单位mm） Dimension (unit mm)

■ 导线型 Lead Wring Type

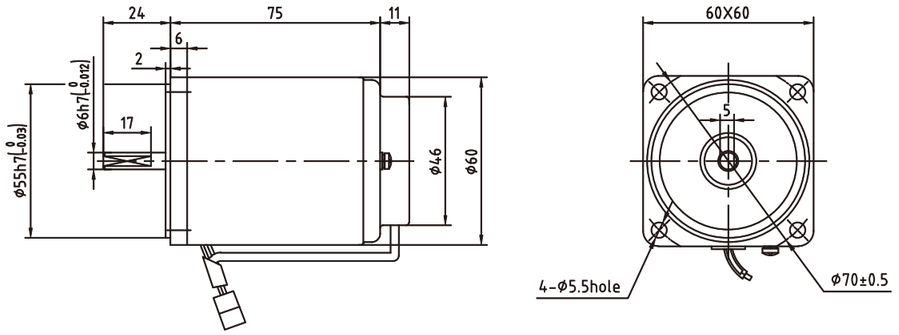
重量 Weight：电机 Motor:0.85Kg　　减速器 Gearhead:0.4Kg



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 32 mm。

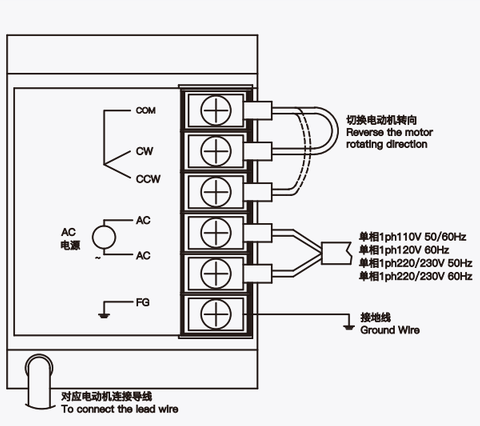
■ 圆轴电机 Round Shaft Motor

重量 Weight:0.85Kg

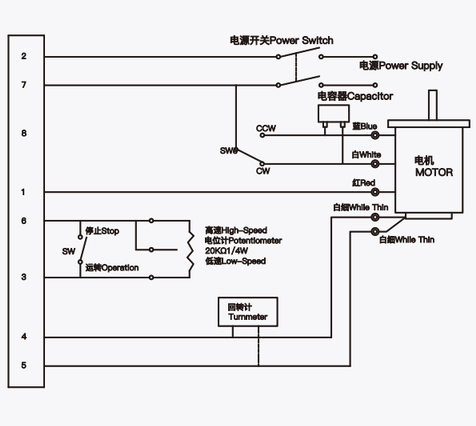


连接图 Connection Diagram

US型/US Type



SS型/SS Type



调速电机

SPEED CONTROL MOTOR

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	调速范围 Speed control range	额定转矩 Rated Torque		启动转矩 Starting Torque	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	mN.m	90r/min mN.m	1200r/min mN.m	r/min	μF/VAC
3IK15RGN-C	3IK15RA-C	15	1ph220	50	0.18	90~1350	35	120	55	1.2/450
				60	0.17	90~1550	35	120	55	
3IK15RGN-A	3IK15RA-A	15	1ph110	50	0.34	90~1350	35	120	54	5/250
				60	0.30	90~1550	35	120	54	

●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。
●各种安全规格以电动机铭牌上的型号名取得认证。
●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; 60 hz: 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; 60 hz: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” it means the voltage 110V,the assembly capacitor vaule it is according the labe.

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

减速比 Reduction 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	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	0.29	0.35	0.48	0.58	0.72	0.87	0.96	1.20	1.45	1.74	1.74	2.17	2.60	3.12	3.47	4.34	4.68	5	5	5	5	5	5	5
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	0.24	0.29	0.40	0.48	0.60	0.72	0.80	1.00	1.20	1.44	1.44	1.80	2.17	2.60	2.89	3.61	3.90	4.87	5	5	5	5	5	5

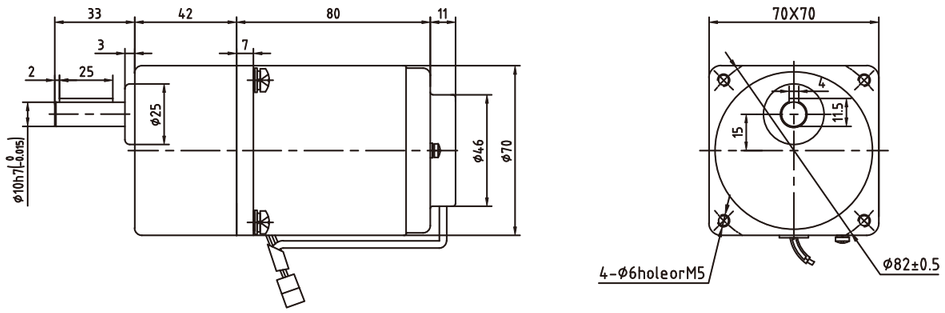
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
●表中 色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。
●减速箱的最大容许转矩为5N·M。

●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 that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.
●The maximum allowable torque of the decelerator is 5N·M.

外形尺寸（单位mm） Dimension (unit mm)

■ 导线型 Lead Wring Type

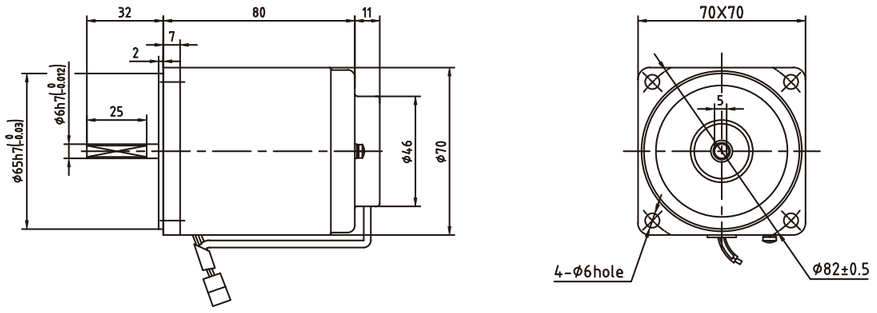
重量 Weight：电机 Motor:1.2Kg　　减速器 Gearhead:0.5Kg



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 32 mm。

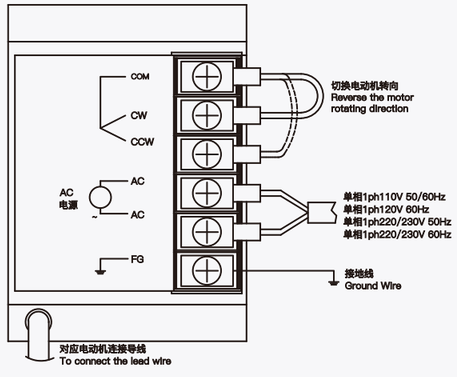
■ 圆轴电机 Round Shaft Motor

重量 Weight:1.2Kg

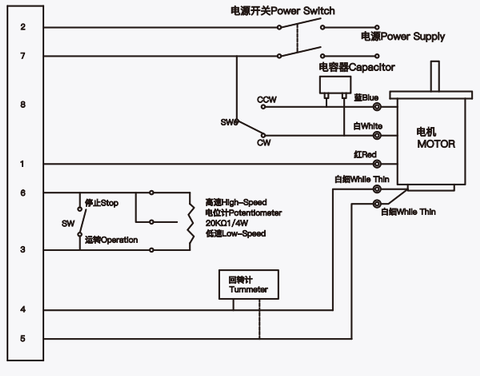


连接图 Connection Diagram

US型/US Type

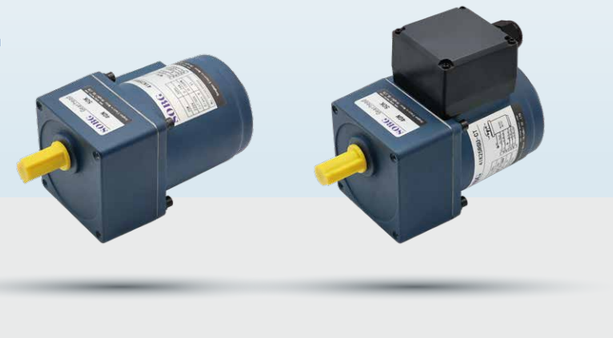


SS型/SS Type



调速电机

SPEED CONTROL MOTOR



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	调速范围 Speed control range	额定转矩 Rated Torque		启动转矩 Starting Torque	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	mN.m	90r/min mN.m	1200r/min mN.m	r/min	μF/VAC
4IK25RGN-C	4IK25RA-C	25	1ph220	50	0.24	90~1350	47	190	110	1.8/450
				60	0.23	90~1550	47	190	100	
4IK25RGN-A	4IK25RA-A	25	1ph110	50	0.55	90~1350	47	190	110	7/250
				60	0.50	90~1550	47	190	100	

●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。

●各种安全规格以电动机铭牌上的型号名取得认证。

●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; 60 hz: 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; 60 hz: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” it means the voltage 110V,the assembly capacitor vaule it is according the labe.

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

减速比 Reduction 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	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	0.46	0.55	0.77	0.92	1.15	1.39	1.54	1.92	2.31	2.77	3.08	3.46	4.16	4.99	5.54	6.93	7.48	8	8	8	8	8	8	8
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	0.37	0.45	0.62	0.75	0.94	1.12	1.25	1.56	1.87	2.25	2.49	2.81	3.37	4.04	4.49	5.61	6.06	7.58	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 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 that the rotation direction of the output axis is opposite to that of the motor.

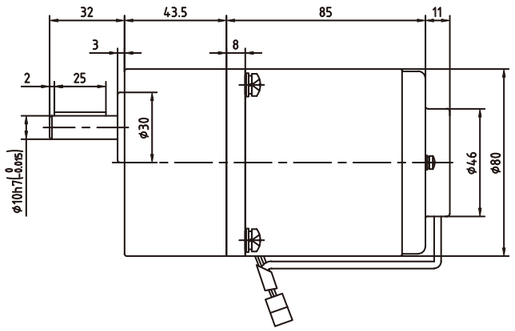
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.

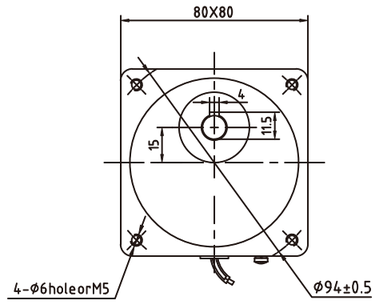
●The maximum allowable torque of the decelerator is 8N·M.

外形尺寸（单位mm） Dimension (unit mm)

■ 导线型 Lead Wring Type

重量 Weight：电机 Motor:1.7Kg　　减速器 Gearhead:0.8Kg

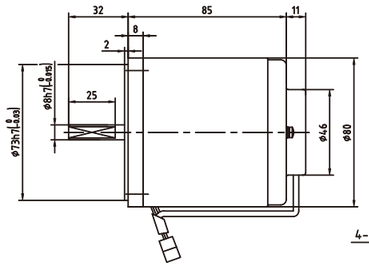


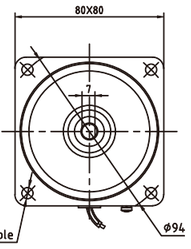


其中速比3~18可以做成短型减速箱,高度为32mm。
Gear ratio 3~18, short case is possible，Height of 32 mm。

■ 圆轴电机 Round Shaft Motor

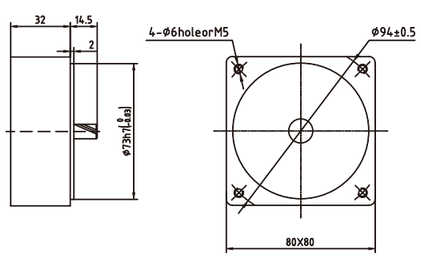
重量 Weight:1.7Kg





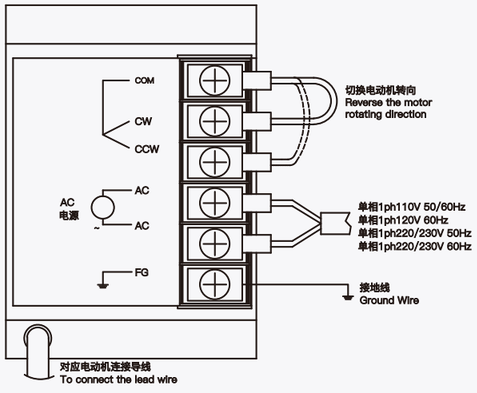
■ 中间减速器 Mid-gearbox

可安装在GN齿轮轴型上
Can be connected to GN pinion 4GN10XK
重量 Weight:0.41Kg

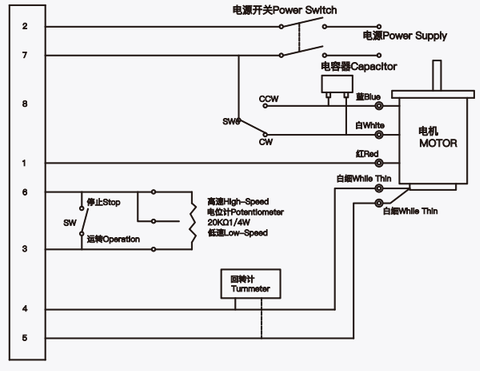


连接图 Connection Diagram

US型/US Type



SS型/SS Type



调速电机

SPEED CONTROL MOTOR

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	调速范围 Speed control range	额定转矩 Rated Torque		启动转矩 Starting Torque	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	mN.m	90r/min mN.m	1200r/min mN.m	r/min	μF/VAC
5IK40RGN-C	5IK40RA-C	40	1ph220	50	0.33	90~1350	75	300	180	2.5/450
				60	0.34	90~1550	70	230	180	
5IK40RGN-A	5IK40RA-C	40	1ph110	50	0.64	90~1350	70	260	180	10/250
				60	0.67	90~1550	65	260	180	

●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。
●各种安全规格以电动机铭牌上的型号名取得认证。
●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; 60 hz: 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; 60 hz: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” it means the voltage 110V,the assembly capacitor vaule it is according the labe.

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

减速比 Reduction 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	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	0.69	0.83	1.15	1.38	1.72	2.06	2.29	2.87	3.44	4.13	4.13	5.16	6.19	7.43	7.43	9.28	10	10	10	10	10	10	10	10
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	0.60	0.72	1.00	1.20	1.49	1.79	1.99	2.49	2.99	3.59	3.59	4.48	5.38	6.46	6.46	8.07	9.68	10	10	10	10	10	10	10

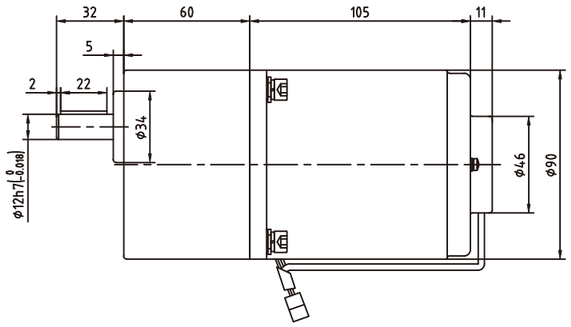
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
●表中 色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。
●减速箱的最大容许转矩为10N·M。

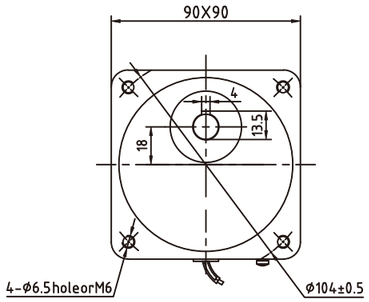
●In the table, the speed is calculated from the base of the motor's average speed divided by the deceleration ratio.The actual speed will vary with the load, ranging from 2 % to 20%.
●The box in the table indicates that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.
●The maximum allowable torque of the decelerator is 10N·M.

外形尺寸（单位mm） Dimension (unit mm)

■ 导线型 Lead Wring Type

重量 Weight：电机 Motor:2.5Kg　　减速器 Gearhead:1.35Kg

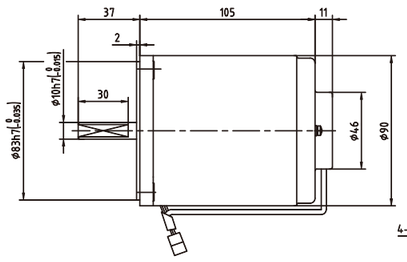


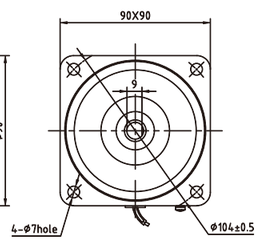


其中速比3~18可以做成短型减速箱,高度为42mm。
Gear ratio 3~18, short case is possible，Height of 42 mm。

■ 圆轴电机 Round Shaft Motor

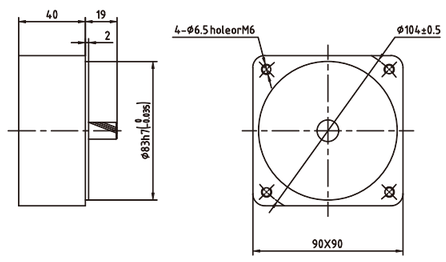
重量 Weight:2.5Kg





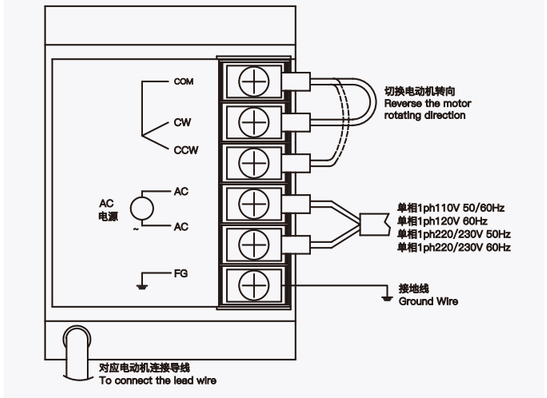
■ 中间减速器 Mid-gearbox

可安装在GN齿轮轴型上
Can be connected to GN pinion 5GN10XK
重量 Weight:0.6Kg

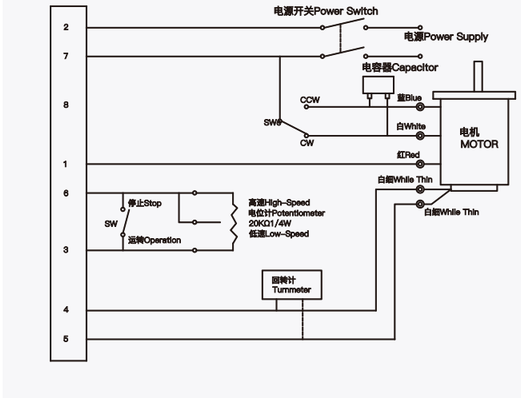


连接图 Connection Diagram

US型/US Type



SS型/SS Type



调速电机

SPEED CONTROL MOTOR

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	调速范围 Speed control range	额定转矩 Rated Torque		启动转矩 Starting Torque	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	mN.m	90r/min mN.m	1200r/min mN.m	r/min	μF/VAC
5IK60RGN-CF	5IK60RA-CF	60	1ph220	50	0.48	90~1350	140	490	265	4/450
				60	0.55	90~1550	160	490	265	
5IK60RGN-AF	5IK60RA-AF	60	1ph110	50	1.00	90~1350	140	490	265	15/250
				60	1.10	90~1550	160	490	265	

●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。
●各种安全规格以电动机铭牌上的型号名取得认证。
●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; 60 hz: 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; 60 hz: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” it means the voltage 110V,the assembly capacitor vaule it is according the labe.

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

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50Hz	转速 Speed r/min	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	1.03	1.24	1.72	2.06	2.58	3.09	3.43	4.29	5.15	6.18	6.18	7.73	9.27	10	10	10	10	10	10	10	10	10	10	10
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	0.90	1.08	1.50	1.80	2.25	2.70	3.00	3.75	4.50	5.39	5.39	6.74	8.09	9.71	9.71	10	10	10	10	10	10	10	10	10

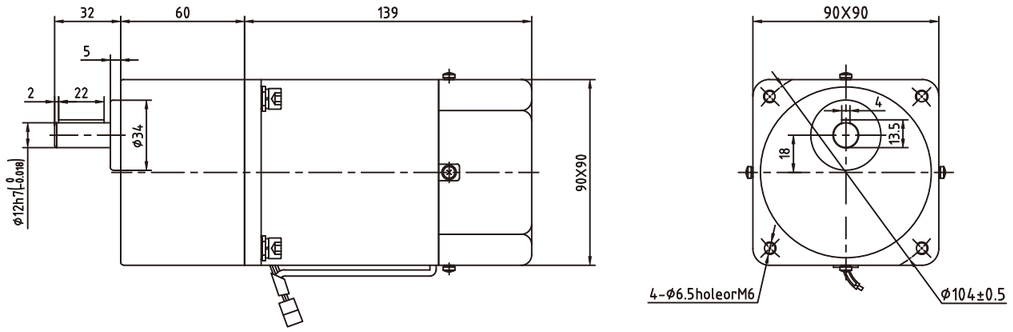
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
●表中 ■ 色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。
●减速箱的最大容许转矩为10N·M。

●In the table, the speed is calculated from the base of the 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 that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.
●The maximum allowable torque of the decelerator is 10N·M.

外形尺寸（单位mm） Dimension (unit mm)

■ 导线型 Lead Wring Type

重量 Weight：电机 Motor:2.8Kg　　减速器 Gearhead:1.35Kg



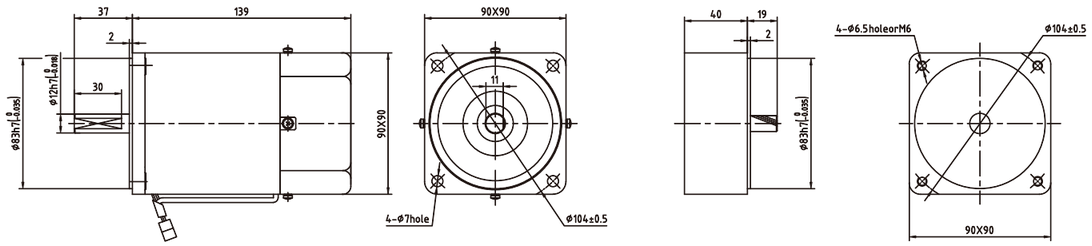
其中速比3~18可以做成短型减速箱,高度为42mm。
Gear ratio 3~18, short case is possible，Height of 42 mm。

■ 圆轴电机 Round Shaft Motor

重量 Weight:2.8Kg

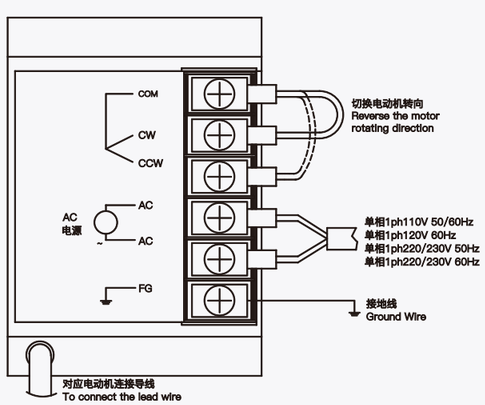
■ 中间减速器 Mid-gearbox

可安装在GN齿轮轴型上
Can be connected to GN pinion 5GN10XK
重量 Weight:0.6Kg

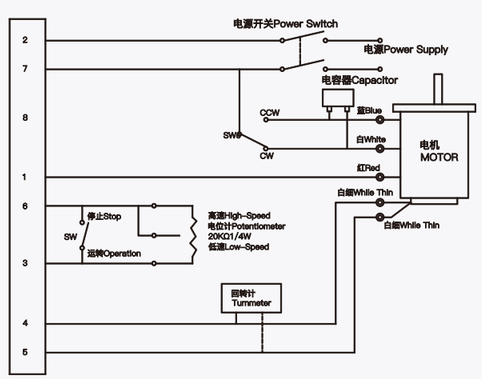


连接图 Connection Diagram

US型/US Type



SS型/SS Type



AC 交流减速电动机 AC REDUCTION MOTOR
感应电机 Induction motor
可逆电机 Reversible motor
调速电机 Speed control motor
电磁制动电机 Electromagnetic brake motor
力矩电机 Torque motor

调速电机

SPEED CONTROL MOTOR

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	调速范围 Speed control range	额定转矩 Rated Torque		启动转矩 Starting Torque	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	mN.m	90r/min mN.m	1200r/min mN.m	r/min	μF/VAC
5IK60RGU-CF	5IK60RA-CF	60	1ph220	50	0.48	90~1350	140	490	265	4/450
				60	0.55	90~1550	160	490	265	
5IK60RGU-AF	5IK60RA-AF	60	1ph110	50	1.00	90~1350	140	490	265	15/250
				60	1.10	90~1550	160	490	265	

●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。
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●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; 60 hz: 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; 60 hz:900~1550 RPM.
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●Note:“-A” it means the voltage 110V,the assembly capacitor vaule it is according the labe.

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

减速比 Reduction 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	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	1.03	1.24	1.72	2.06	2.58	3.09	3.43	4.29	5.15	6.18	6.18	7.73	9.27	11.13	11.13	13.91	16.69	20	20	20	20	20	20	20
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	0.90	1.08	1.50	1.80	2.25	2.70	3.00	3.75	4.50	5.39	5.39	6.74	8.09	9.71	9.71	12.14	14.57	18.21	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。
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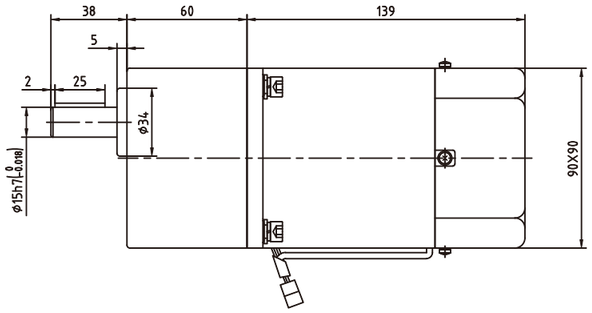
●减速箱的最大容许转矩为20N·M。

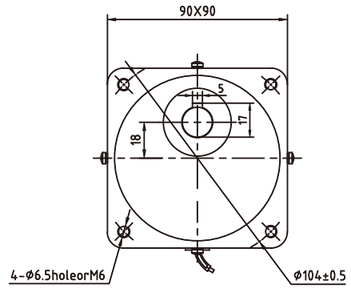
●In the table, the speed is calculated from the base of the motor's average speed divided by the deceleration ratio.The actual speed will vary with the load, ranging from 2 % to 20%.
●The ■ box in the table indicates that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.
●The maximum allowable torque of the decelerator is 20N·M.

外形尺寸（单位mm） Dimension (unit mm)

■ 导线型 Lead Wring Type

重量 Weight：电机 Motor:2.8Kg　　减速器 Gearhead:1.5Kg

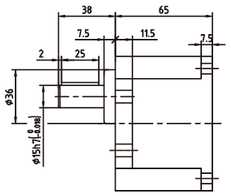


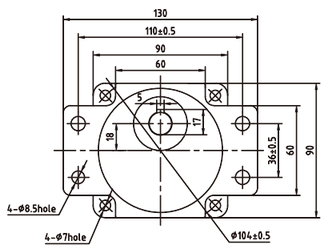


其中速比3~18可以做成短型减速箱,高度为42mm。
Gear ratio 3~18, short case is possible，Height of 42 mm。

■ 凸缘安装型减速器Flange Mounting Reducer

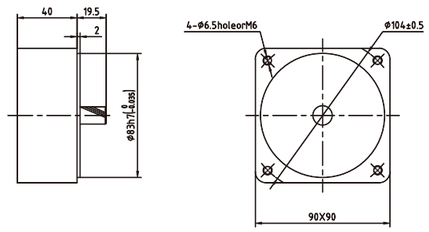
可安装在GU齿轮轴型上
Can be Mounted on GU Type gear shaft 5GU□K
重量：Weight:1.5Kg





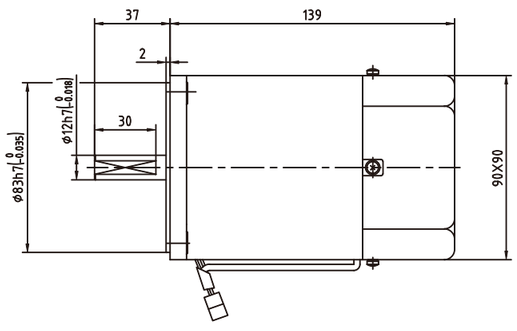
■ 中间减速器 Mid-gearbox

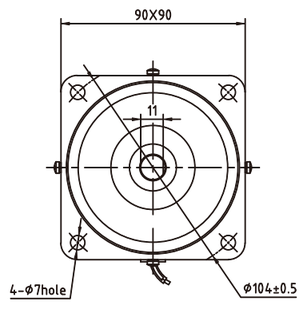
可安装在GU齿轮轴型上
Can be connected to GU pinion 5GU10XK
重量 Weight:0.65Kg



■ 圆轴电机 Round Shaft Motor

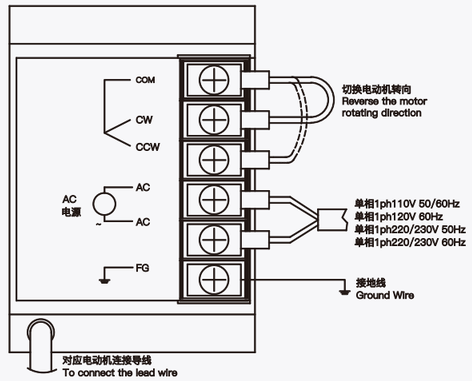
重量 Weight：电机 Motor:2.8Kg



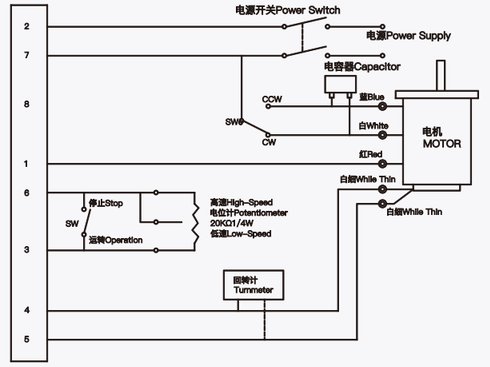


连接图 Connection Diagram

US型/US Type



SS型/SS Type



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	调速范围 Speed control range	额定转矩 Rated Torque		启动转矩 Starting Torque	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	mN.m	90r/min mN.m	1200r/min mN.m	r/min	μF/VAC
5IK90RGU-CF	5IK90RA-CF	90	1ph220	50	0.69	90~1350	230	710	410	5/450
				60	0.71	90~1550	260	710	410	
5IK90RGU-AF	5IK90RA-AF	90	1ph110	50	1.35	90~1350	230	710	410	20/250
				60	1.50	90~1550	260	710	410	

●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。
●各种安全规格以电动机铭牌上的型号名取得认证。
●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; 60 hz: 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; 60 hz:900~1550 RPM.
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减速箱减速比/性能对照表 Gear reduction ratio/performance comparison

减速比 Reduction 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	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	1.55	1.86	2.58	3.10	3.87	4.64	4.64	5.80	6.97	8.36	8.36	10.45	12.54	15.05	16.72	20	20	20	20	20	20	20	20	20
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	1.35	1.62	2.25	2.70	3.37	4.05	4.05	5.06	6.07	7.28	7.28	9.10	10.92	13.11	14.57	18.21	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。
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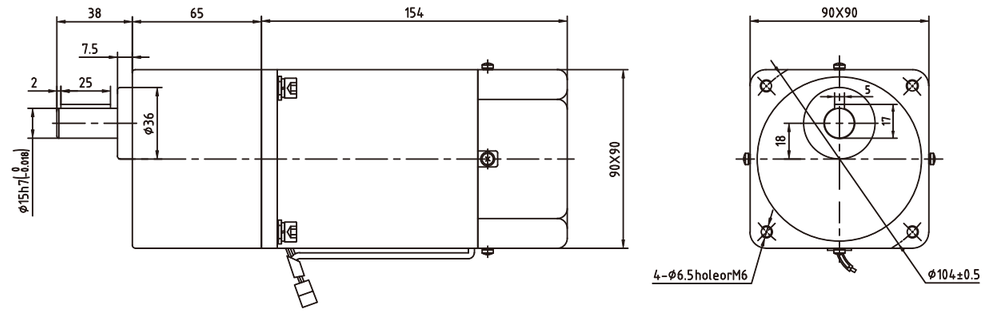
●The maximum allowable torque of the decelerator is 20N·M.

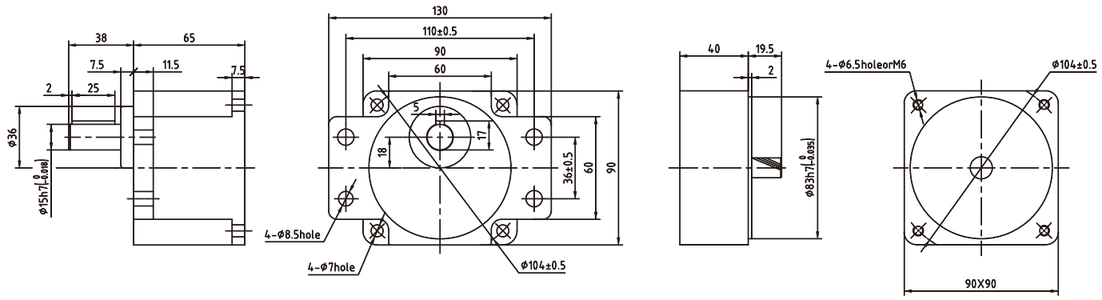
外形尺寸（单位mm） Dimension (unit mm)

■ 导线型 Lead Wring Type
重量 Weight：电机 Motor:3.3Kg　　减速器 Gearhead:1.5Kg

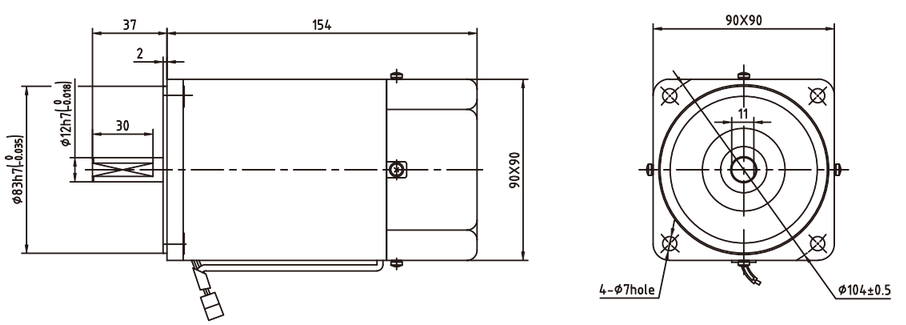


■ 凸缘安装型减速器Flange Mounting Reducer
可安装在GU齿轮轴型上
Can be Mounted on GU Type gear shaft 5GU□K
重量：Weight:1.5Kg

■ 中间减速器 Mid-gearbox
可安装在GU齿轮轴型上
Can be connected to GU pinion 5GU10XK
重量 Weight:0.65Kg

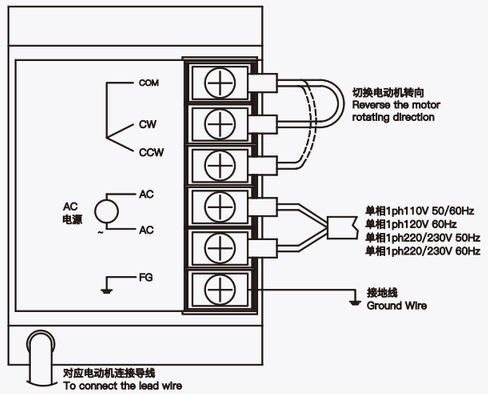


■ 圆轴电机 Round Shaft Motor
重量 Weight：电机 Motor:3.3Kg

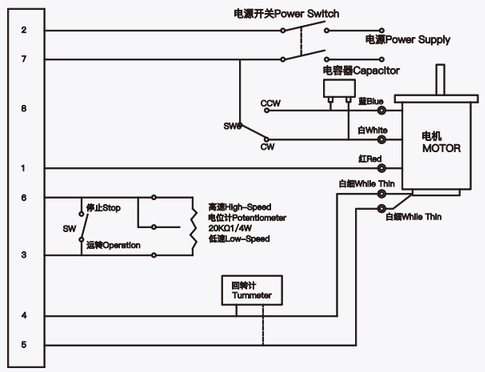


连接图 Connection Diagram

US型/US Type



SS型/SS Type



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	调速范围 Speed control range	额定转矩 Rated Torque		启动转矩 Starting Torque	运行电容 Capacitor/Ve
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5IK120RGU-CF	5IK120RA-CF	120	1ph220	50	0.86	90~1350	330	750	530	6/450
				60	1.00	90~1550	360	750	530	
5IK120RGU-AF	5IK120RA-AF	120	1ph110	50	1.85	90~1350	330	750	530	25/250
				60	1.65	90~1550	360	750	530	

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

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50Hz	转速 Speed r/min	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	2.06	2.48	3.44	4.13	5.16	6.19	6.19	7.74	9.28	11.14	11.14	13.93	16.71	20	20	20	20	20	20	20	20	20	20	20
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	1.80	2.15	2.99	3.59	4.49	5.39	5.39	6.73	8.08	9.70	9.70	12.12	14.55	17.45	19.39	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%。
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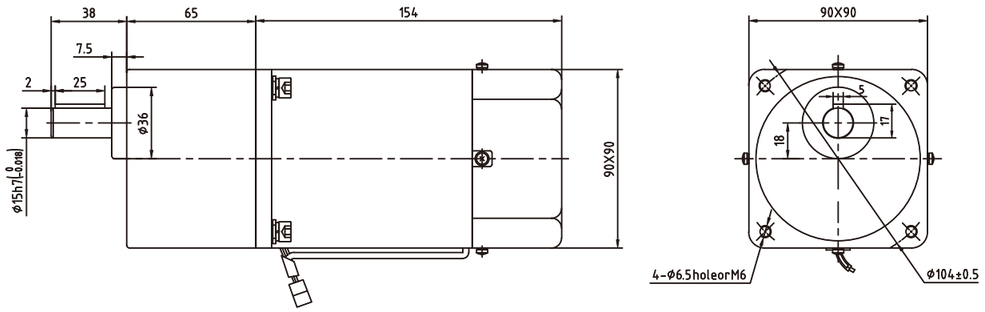
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。
●减速箱的最大容许转矩为20N·M。

●In the table, the speed is calculated from the base of the motor's average speed 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 * deceleration ratio * transmission efficiency.
●The maximum allowable torque of the decelerator is 20N·M.

外形尺寸（单位mm） Dimension (unit mm)

■ 导线型 Lead Wring Type

重量 Weight：电机 Motor:3.5Kg　　减速器 Gearhead:1.5Kg

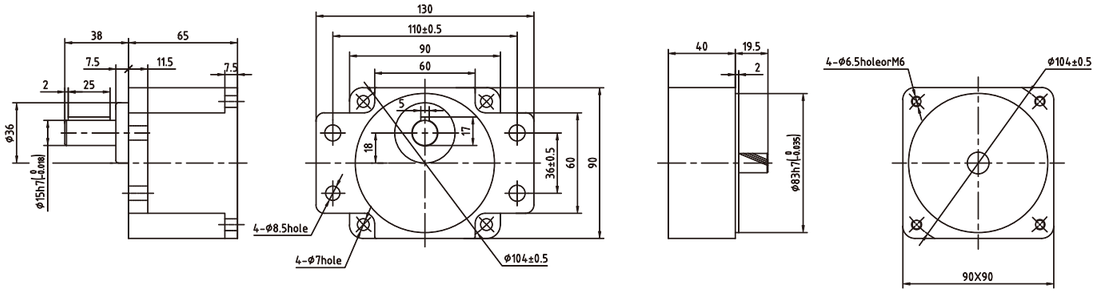


■ 凸缘安装型减速器Flange Mounting Reducer

可安装在GU齿轮轴型上
Can be Mounted on GU Type gear shaft 5GU□K
重量：Weight:1.5Kg

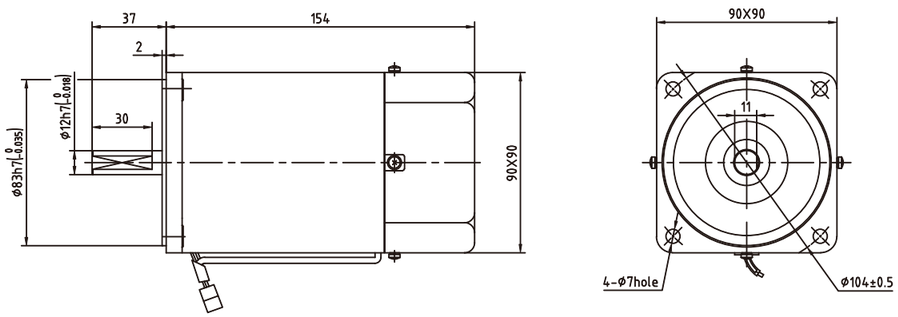
■ 中间减速器 Mid-gearbox

可安装在GU齿轮轴型上
Can be connected to GU pinion 5GU10XK
重量 Weight:0.65Kg



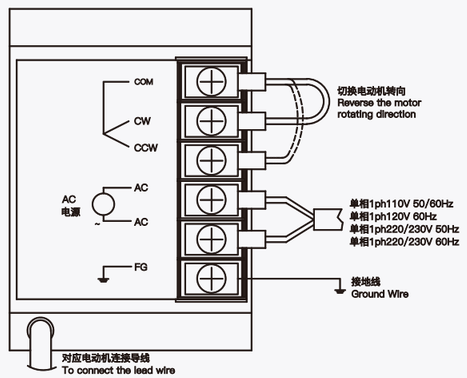
■ 圆轴电机 Round Shaft Motor

重量 Weight：电机 Motor:3.5Kg

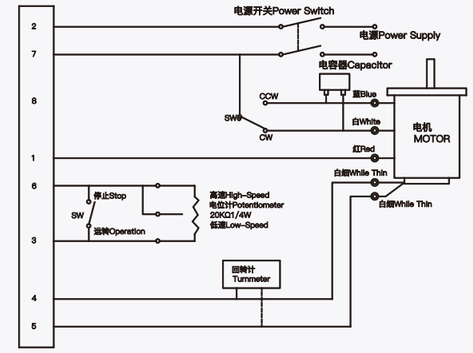


连接图 Connection Diagram

US型/US Type



SS型/SS Type



调速电机

SPEED CONTROL MOTOR

120W

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	调速范围 Speed control range	额定转矩 Rated Torque		启动转矩 Starting Torque	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	mN.m	90r/min mN.m	1200r/min mN.m	r/min	μF/VAC
6IK120RGU-CF	6IK120RA-CF	120	1ph220	50	0.90	90~1350	360	750	530	7/450
				60	0.95	90~1550	360	750	530	
6IK120RGU-AF	6IK120RA-AF	120	1ph110	50	2.10	90~1350	360	750	530	30/250
				60	2.50	90~1550	360	750	530	

●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。
●各种安全规格以电动机铭牌上的型号名取得认证。
●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; 60 hz: 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; 60 hz: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” it means the voltage 110V,the assembly capacitor vaule it is according the labe.

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

减速比 Reduction 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	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	2.06	2.48	3.44	4.13	5.16	6.19	6.88	7.74	9.28	11.14	12.38	15.47	18.57	22.28	24.76	27.85	33.42	40	40	40	40	40	40	40
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	1.80	2.15	2.99	3.59	4.49	5.39	5.99	6.73	8.08	9.70	10.77	13.47	16.16	19.39	21.55	24.24	29.09	36.36	40	40	40	40	40	40

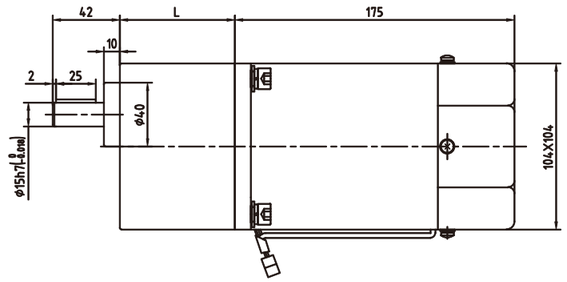
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
●表中 ■ 色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。
●减速箱的最大容许转矩为40N·M。

●In the table, the speed is calculated from the base of the 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 that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.
●The maximum allowable torque of the decelerator is 40N·M.

外形尺寸（单位mm） Dimension (unit mm)

■导线型 Lead Wring Type

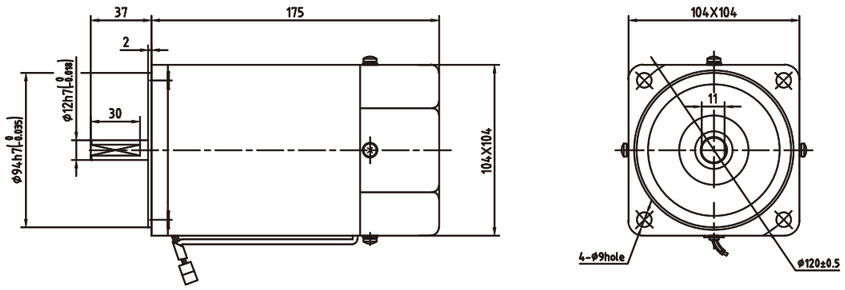
重量 Weight：电机 Motor:4.9Kg　　减速器 Gearhead:2.1Kg



其中，速比3~40，减速箱高度为L=65mm；速比50~200，减速器高度为L=72mm。
Among them,Gear ratio 3~40, The gearbox height is L=65 mm;Gear ratio 50~200, The gearbox height is L=72 mm.

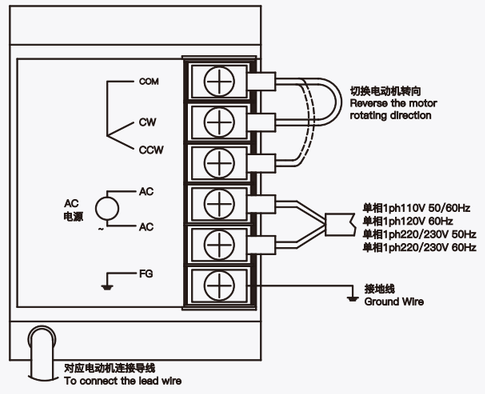
■圆轴电机 Round Shaft Motor

重量 Weight:4.9Kg

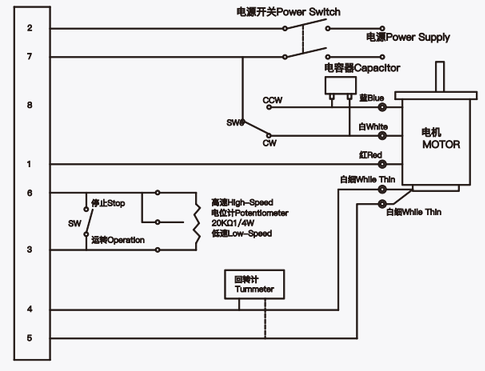


连接图 Connection Diagram

US型/US Type



SS型/SS Type



调速电机

SPEED CONTROL MOTOR

140W

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	调速范围 Speed control range	额定转矩 Rated Torque		启动转矩 Starting Torque	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	mN.m	90r/min mN.m	1200r/min mN.m	r/min	μF/VAC
6IK140RGU-CF	6IK140RA-CF	140	1ph220	50	1.05	90~1350	420	830	620	8/450
				60	1.10	90~1550	450	830	620	
6IK140RGU-AF	6IK140RA-AF	140	1ph110	50	2.70	90~1350	420	830	620	35/250
				60	3.00	90~1550	450	830	620	

●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。
●各种安全规格以电动机铭牌上的型号名取得认证。
●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; 60 hz: 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; 60 hz: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” it means the voltage 110V,the assembly capacitor vaule it is according the labe.

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

减速比 Reduction 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	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	2.41	2.89	4.01	4.81	6.01	7.22	8.02	9.02	10.83	12.99	14.43	18.04	21.65	25.98	28.87	32.48	38.97	40	40	40	40	40	40	40
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	2.10	2.52	3.50	4.19	5.24	6.29	6.99	7.86	9.44	11.32	12.58	15.73	18.87	22.65	25.17	28.31	33.97	40	40	40	40	40	40	40

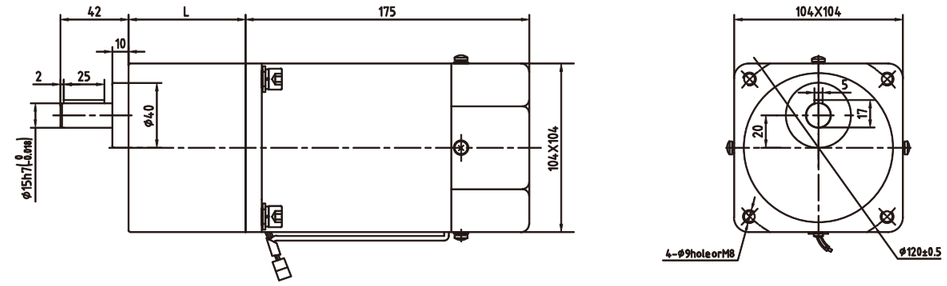
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
●表中 ■ 色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。
●减速箱的最大容许转矩为40N·M。

●In the table, the speed is calculated from the base of the 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 that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.
●The maximum allowable torque of the decelerator is 40N·M.

外形尺寸（单位mm） Dimension (unit mm)

■导线型 Lead Wring Type

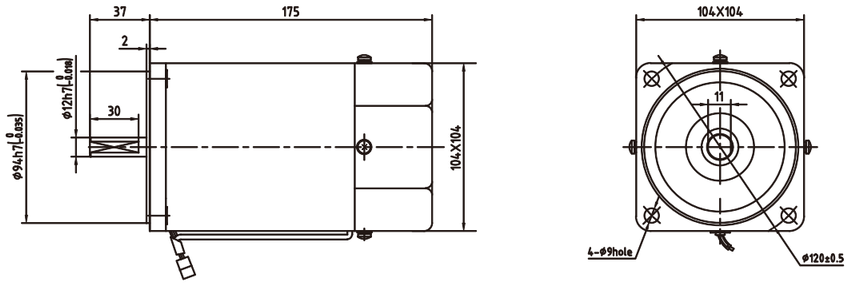
重量 Weight：电机 Motor:5.1Kg　　减速器 Gearhead:2.1Kg



其中，速比3~40，减速箱高度为L=65mm；速比50~200，减速器高度为L=72mm。
Among them,Gear ratio 3~40, The gearbox height is L=65 mm;Gear ratio 50~200, The gearbox height is L=72 mm.

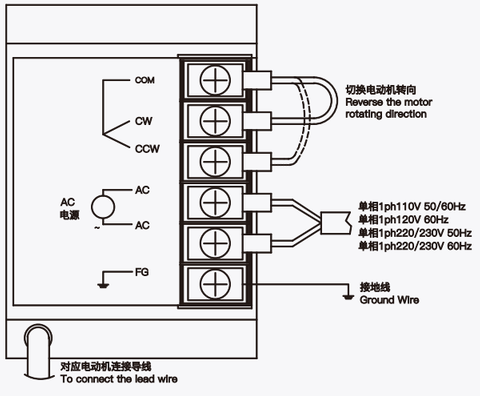
■圆轴电机 Round Shaft Motor

重量 Weight:5.1Kg

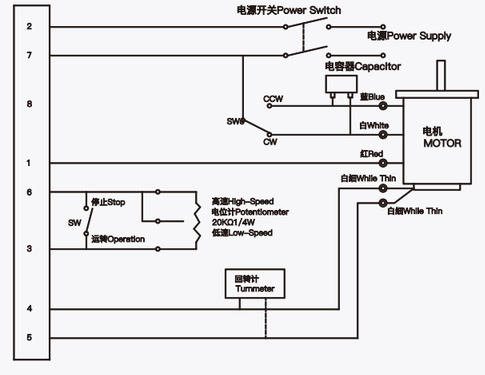


连接图 Connection Diagram

US型/US Type



SS型/SS Type



调速电机

SPEED CONTROL MOTOR

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	调速范围 Speed control range	额定转矩 Rated Torque		启动转矩 Starting Torque	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	mN.m	90r/min mN.m	1200r/min mN.m	r/min	μF/VAC
6IK200RGU-CF	6IK200RA-CF	200	1ph220	50	1.30	90~1350	500	920	700	10/450
				60	1.40	90~1550	500	920	700	
6IK200RGU-AF	6IK200RA-AF	200	1ph110	50	3.20	90~1350	500	920	700	45/250
				60	3.50	90~1550	500	920	700	

●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。
●各种安全规格以电动机铭牌上的型号名取得认证。
●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; 60 hz: 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; 60 hz: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” it means the voltage 110V,the assembly capacitor vaule it is according the labe.

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

减速比 Reduction 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	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	3.44	4.13	5.73	6.88	8.60	10.32	11.46	12.89	15.47	18.57	20.63	25.79	30.95	37.14	40	40	40	40	40	40	40	40	40	40
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	2.99	3.59	4.99	5.99	7.48	8.98	9.98	11.23	13.47	16.17	17.96	22.45	26.94	32.33	35.93	40	40	40	40	40	40	40	40	40

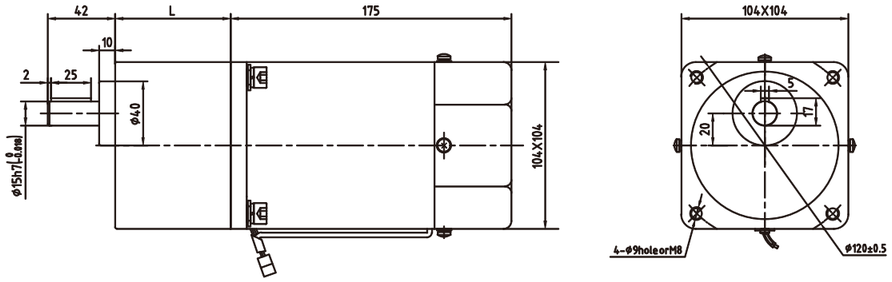
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
●表中 ■ 色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。
●减速箱的最大容许转矩为40N·M。

●In the table, the speed is calculated from the base of the 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 that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.
●The maximum allowable torque of the decelerator is 40N·M.

外形尺寸（单位mm） Dimension (unit mm)

■导线型 Lead Wring Type

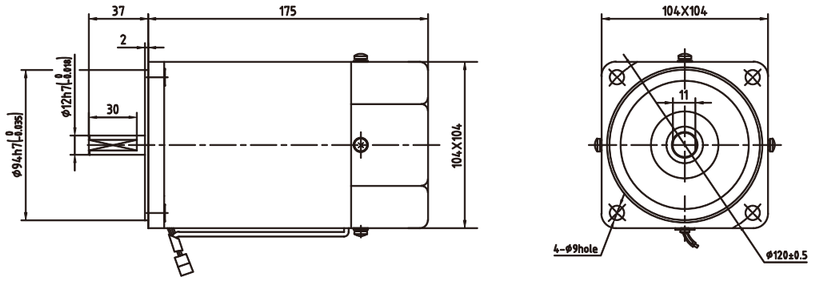
重量 Weight：电机 Motor:5.1Kg　　减速器 Gearhead:2.1Kg



其中，速比3~40，减速箱高度为L=65mm；速比50~200，减速器高度为L=72mm。
Among them,Gear ratio 3~40, The gearbox height is L=65 mm;Gear ratio 50~200, The gearbox height is L=72 mm.

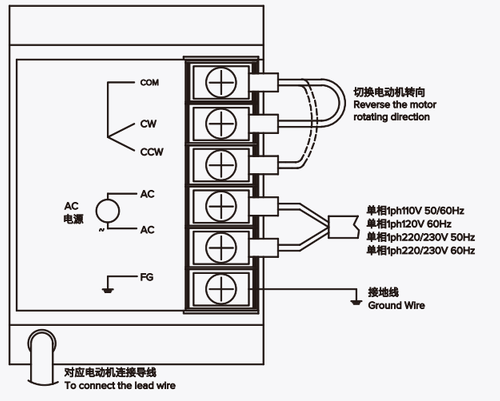
■圆轴电机 Round Shaft Motor

重量 Weight:5.1Kg

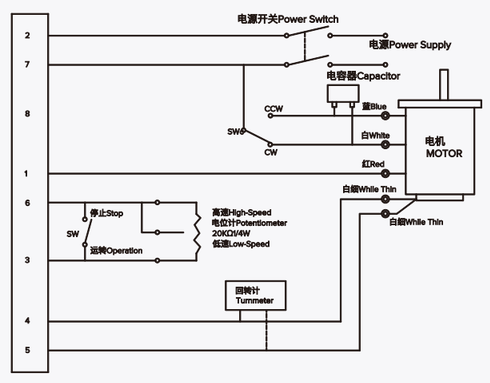


连接图 Connection Diagram

US型/US Type



SS型/SS Type



电磁制动电机

ELECTROMAGNETIC BRAKE MOTOR

6W

60MM

电机型号/性能 List of motor characteristics

电机型号 Motor Model		额定 Rating	输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	启动转矩 Starting Torque	额定转矩 Rated Torque	额定转速 Rated Speed	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft		W	V	Hz	A	mN.m	mN.m	r/min	μF/VAC
2RK6GN-CM	2RK6A-CM	30min	6	1ph220	50	0.14	70	48	1200	1/450
					60	0.13	65	40	1450	
2RK6GN-AM	2RK6A-AM	30min	6	1ph110	50	0.31	65	48	1200	3.5/250
					60	0.26	60	40	1450	
2RK6GN-SM	2RK6A-SM	30min	6	3ph220	50	0.08	85	48	1200	/
					60	0.07	70	40	1450	

●各种安全规格以电动机铭牌上的型号名取得认证。
●内藏热保护装置（自动复位型）。在电机因某种原因过热会自动启动使电动机停止。
●电动机温度下降后恢复运行，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.
●Contaions a built-in thermal protector(automatic return).if a motor overheats for any reason,the thermal protector is opened and the motors 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 labe.

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

减速比 Reduction 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	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	0.12	0.14	0.19	0.23	0.29	0.35	0.39	0.49	0.58	0.70	0.70	0.87	1.05	1.26	1.40	1.75	1.89	2.36	2.83	3	3	3	3	3
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	0.11	0.13	0.18	0.21	0.27	0.32	0.36	0.45	0.53	0.64	0.64	0.80	0.96	1.15	1.28	1.60	1.73	2.17	2.60	2.89	3	3	3	3

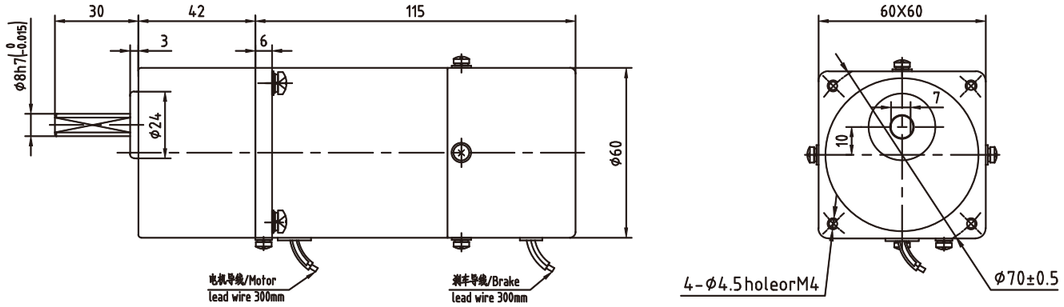
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
●表中 ■ 色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。
●减速箱的最大容许转矩为3N·M。

●In the table, the speed is calculated from the base of the 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 that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.
●The maximum allowable torque of the decelerator is 3N·M.

外形尺寸（单位mm） Dimension (unit mm)

■导线型 Lead Wring Type

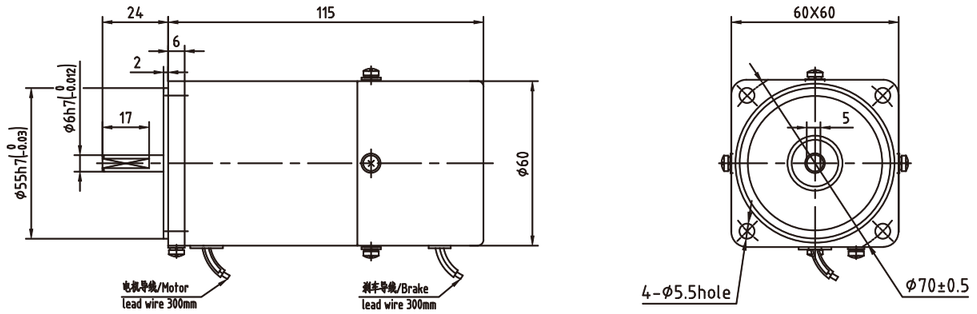
重量 Weight：电机 Motor:1.1Kg　　减速器 Gearhead:0.4Kg



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 32 mm。

■圆轴电机 Round Shaft Motor

重量 Weight:1.1Kg



接线图 Wiring Diagram

●运转方向指从电动机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
●表中所记品名为齿轮轴型，圆轴型亦同。

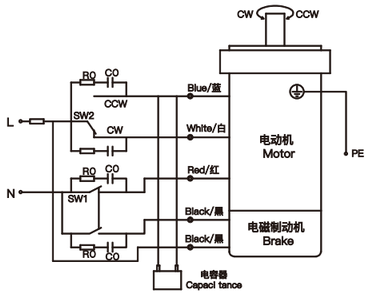
●The direction of motor rotation is as viewed from the shaft end of motor.CW represents the cLockwise direction.whill CCW represents the counter clockwise direction.
●Name indicated in the list is pinion shaft type.aslo valid for the equivalent round shaft type.

■ 单相电动机 Single-phase Motor

2RK6GN-AM、2RK6GN-CM

●SW1为电动机的运行/停止及电磁制动操作开关。（连动）
●SW1设定ON时，电磁制动解除，电动机开始运作。
●SW1设定OFF时，电动机停止，电磁制动开始工作。
●在电动机停止状态下解除电磁制动时，应将SW1设定为非连动，而仅将 ■ 色导线侧的接触点设定ON.
●运转方向 ●将SW2转换至CW侧时，电动机作顺时针方向运转。●将SW2转换至CWW侧时，电动机作逆时针方向运转。

●SW1 operates both motor and electromagnetic brake action.(Switched Simultaneously)
●The motor will rotate when SW1 is switched simultaneously to ON
●When SW1 is switched simultaneously to OFF, the motor is stopped, set the electromagnetic brake and holds the load.
●If you wish to release the brake while the mator is stoped, set the SW1 to be of and connection point at the side of black lead to be on.
●Diretion of Rotation. To rtate the motor in a clocwise(CW)diretion,turn SW2 to CW. To rotate the mator in a coumterclockwise(CCW)direction,turn SW2 to CCW.



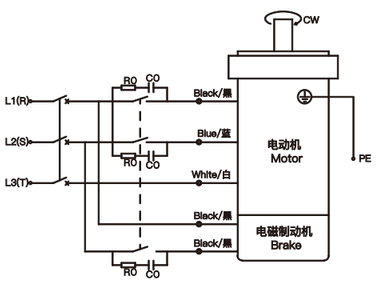
开关号码 Switch NO.	开关的接触点容量Contact capacity switch		参考 Note
	单相100V、110/120V输入 Single-Phase 100VAC, 110/120VAC Input	单相220V、230V、输入 Single-Phase 200VAC, 220/230VAC Input	
SW1	AC125V 8A以上（感应负载） AC125V 8A minimum(Inductive Load)	AC125V 8A以上（感应负载） AC125V 8A minimum(Inductive Load)	连动Switched Simultaneously
SW2			

■ 三相电动机 Theree-phase Motor

2RK6GN-SM

●SW1为电动机的运行/停止及电磁制动操作开关。（连动）
●SW1设定ON时，电磁制动解除，电动机开始运作。
●SW1设定OFF时，电动机停止，电磁制动开始工作。
●在电动机停止状态下解除电磁制动时，应将SW1设定为非连动，而仅将 ■ 色导线侧的接触点设定ON.
●运转方向 ●若对换R、S、T中任意二条，电动机会逆时针方向运转。

●SW1 operates both motor and electromagnetic brake action.(Switched Simultaneously)
●The motor will rotate when SW1 is switched simultaneously to ON
●When SW1is switched simultaneously to OFF,the motor is stopped,set the electromagnetic brake and holds the load.
●If you wish to release the brake while the motor is stopped, set the SW1 to off and conection point at the side of black lead to on.
●Direction of Rotation.●To Change the rotation direction,change any two connections amony R,S and T.



开关号码 Switch NO.	开关的接触点容量Contact capacity switch	参考 Note
SW1	AC125V 1.5A以上（感应负载） AC125V AC1.5A minimum(Inductive Load)	连动Switched Simultaneously

请注意 Note

●R0C0为吸收电涌电压用CR电路。【R0=5~200Ω C0=0.1~0.2μF、200WV（400WV）】
●请使用选购配件EPCR1201-2。
●R0 or C0 indicate surge suppressor circuit.【R0=5~200Ω C0=0.1~0.2μF、200WV（400WV）】
●EPCR1201-2 is available as an optional surge suppressor.

电磁制动电机

ELECTROMAGNETIC BRAKE MOTOR

15W　70MM

电机型号/性能 List of motor characteristics

电机型号 Motor Model		额定 Rating	输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	启动转矩 Starting Torque	额定转矩 Rated Torque	额定转速 Rated Speed	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft		W	V	Hz	A	mN.m	mN.m	r/min	μF/VAC
3RK15GN-CM	3RK15A-CM	30min	15	1ph220	50	0.21	90	119	1200	1.5/450
					60	0.19	85	99	1450	
3RK15GN-AM	3RK15A-AM	30min	15	1ph110	50	0.42	95	119	1200	6/250
					60	0.36	90	99	1450	
3RK15GN-SM	3RK15A-SM	30min	15	3ph220	50	0.14	220	119	1200	/
					60	0.12	180	99	1450	

●各种安全规格以电动机铭牌上的型号名取得认证。
●内藏热保护装置（自动复位型）。在电机因某种原因过热会自动启动使电动机停止。
●电动机温度下降后恢复运行，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.
●Contaions a built-in thermal protector(automatic return).if a motor overheats for any reason,the thermal protector is opened and the motors 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 labe.

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

减速比 Reduction 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	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	0.29	0.35	0.48	0.58	0.72	0.87	0.96	1.20	1.45	1.74	1.74	2.17	2.60	3.12	3.47	4.34	4.68	5	5	5	5	5	5	5
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	0.24	0.29	0.40	0.48	0.60	0.72	0.80	1.00	1.20	1.44	1.44	1.80	2.17	2.60	2.89	3.61	3.90	4.87	5	5	5	5	5	5

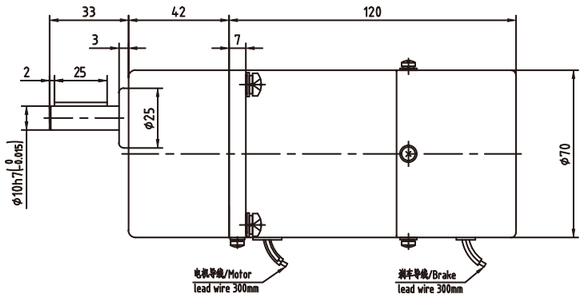
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
●表中 ■ 色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。
●减速箱的最大容许转矩为5N·M。

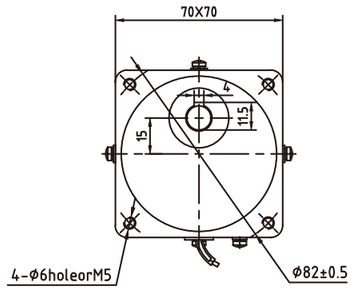
●In the table, the speed is calculated from the base of the motor's average speed divided by the deceleration ratio.The actual speed will vary with the load, ranging from 2 % to 20%.
●The ■ box in the table indicates that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.
●The maximum allowable torque of the decelerator is 5N·M.

外形尺寸（单位mm） Dimension (unit mm)

■ 导线型 Lead Wring Type

重量 Weight：电机 Motor:1.47Kg　　减速器 Gearhead:0.5Kg

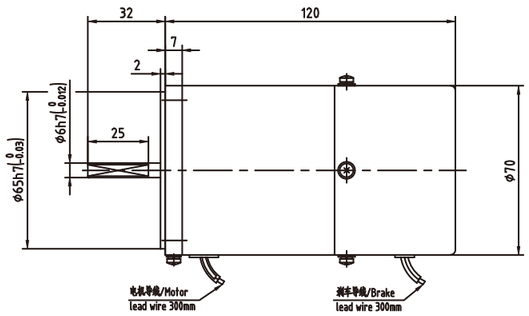


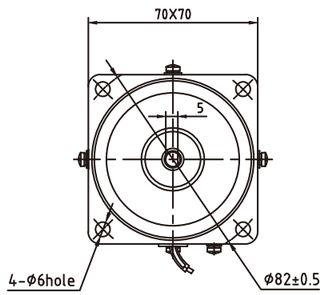


其中速比3~18可以做成短型减速箱,高度为32mm。
Gear ratio 3~18, short case is possible，Height of 32 mm。

■ 圆轴电机 Round Shaft Motor

重量 Weight:1.47Kg





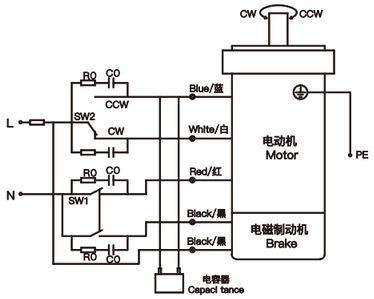
接线图 Wiring Diagram

●运转方向指从电动机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
●表中所记品名为齿轮轴型，圆轴型亦同。
●The direction of motor rotation is as viewed from the shaft end of motor.CW represents the cLockwise direction.whill CCW represents the counter clockwise direction.
●Name indicated in the list is pinion shaft type.aslo valid for the equivalent round shaft type.

■ 单相电动机 Single-phase Motor　　3RK15GN-AM、3RK15GN-CM

●SW1为电动机的运行/停止及电磁制动操作开关。（连动）
●SW1设定ON时，电磁制动解除，电动机开始运作。
●SW1设定OFF时，电动机停止，电磁制动开始工作。
●在电动机停止状态下解除电磁制动时，应将SW1设定为非连动，而仅将 ■ 色导线侧的接触点设定ON.
●运转方向 ●将SW2转换至CW侧时，电动机作顺时针方向运转。●将SW2转换至CWW侧时，电动机作逆时针方向运转。

●SW1 operates both motor and electromagnetic brake action.(Switched Simultaneously)
●The motor will rotate when SW1 is switched simultaneously to ON
●When SW1 is switched simultaneously to OFF, the motor is stopped, set the electromagnetic brake and holds the load.
●If you wish to release the brake while the mator is stoped, set the SW1 to be of and connection point at the side of black lead to be on.
●Diretion of Rotation. To rtate the motor in a clocwise(CW)diretion,turn SW2 to CW. To rotate the mator in a coumterclockwise(CCW)direction,turn SW2 to CCW.

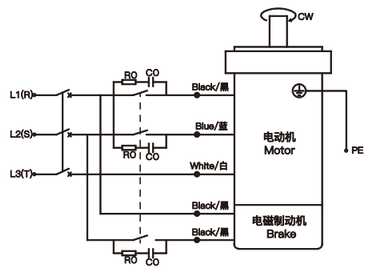


开关号码 Switch NO.	开关的接触点容量Contact capacity switch		参考 Note
	单相100V、110/120V输入 Single-Phase 100VAC, 110/120VAC Input	单相220V、230V、输入 Single-Phase 200VAC, 220/230VAC Input	
SW1	AC125V 8A以上（感应负载） AC125V 8A minimum(Inductive Load)	AC125V 8A以上（感应负载） AC125V 8A minimum(Inductive Load)	连动Switched Simultaneously
SW2			

■ 三相电动机 Theree-phase Motor　　3RK15GN-SM

●SW1为电动机的运行/停止及电磁制动操作开关。（连动）
●SW1设定ON时，电磁制动解除，电动机开始运作。
●SW1设定OFF时，电动机停止，电磁制动开始工作。
●在电动机停止状态下解除电磁制动时，应将SW1设定为非连动，而仅将 ■ 色导线侧的接触点设定ON.
●运转方向 ●若对换R、S、T中任意二条，电动机会逆时针方向运转。

●SW1 operates both motor and electromagnetic brake action.(Switched Simultaneously)
●The motor will rotate when SW1 is switched simultaneously to ON
●When SW1is switched simultaneously to OFF,the motor is stopped,set the electromagnetic brake and holds the load.
●If you wish to release the brake while the motor is stopped, set the SW1 to off and conection point at the side of black lead to on.
●Direction of Rotation.●To Change the rotation direction,change any two connections amony R,S and T.



开关号码 Switch NO.	开关的接触点容量Contact capacity switch	参考 Note
SW1	AC125V 1.5A以上（感应负载） AC125V AC1.5A minimum(Inductive Load)	连动Switched Simultaneously

请注意 Note

●R0C0为吸收电涌电压用CR电路。【R0=5~200Ω C0=0.1~0.2μF、200WV（400WV）】
●请使用选购配件EPCR1201-2。
●R0 or C0 indicate surge suppressor circuit.【R0=5~200Ω C0=0.1~0.2μF、200WV（400WV）】
●EPCR1201-2 is available as an optional surge suppressor.

电磁制动电机

ELECTROMAGNETIC BRAKE MOTOR

25W　80MM

电机型号/性能 List of motor characteristics

电机型号 Motor Model		额定 Rating	输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	启动转矩 Starting Torque	额定转矩 Rated Torque	额定转速 Rated Speed	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft		W	V	Hz	A	mN.m	mN.m	r/min	μF/VAC
4RK25GN-CM	4RK25A-CM	30min	25	1ph220	50	0.30	170	190	1250	2/450
					60	0.30	170	154	1550	
4RK25GN-AM	4RK25A-AM	30min	25	1ph110	50	0.57	160	190	1250	8/250
					60	0.54	160	154	1550	
4RK25GN-SM	4RK25A-SM	30min	25	3ph220	50	0.19	350	190	1250	/
					60	0.17	250	154	1550	

●各种安全规格以电动机铭牌上的型号名取得认证。
●内藏热保护装置（自动复位型）。在电机因某种原因过热会自动启动使电动机停止。
●电动机温度下降后恢复运行，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.
●Contaions a built–in thermal protector(automatic return).if a motor overheats for any reason,the thermal protector is opened and the motors 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 labe.

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

减速比 Reduction 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	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	0.46	0.55	0.77	0.92	1.15	1.39	1.54	1.92	2.31	2.77	3.08	3.46	4.16	4.99	5.54	6.93	7.48	8	8	8	8	8	8	8
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	0.37	0.45	0.62	0.75	0.94	1.12	1.25	1.56	1.87	2.25	2.49	2.81	3.37	4.04	4.49	5.61	6.06	7.58	8	8	8	8	8	8

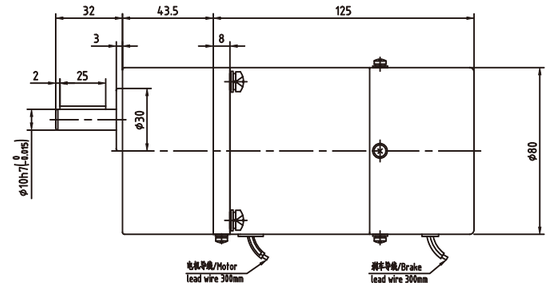
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
●表中 ■ 色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。
●减速箱的最大容许转矩为8N·M。

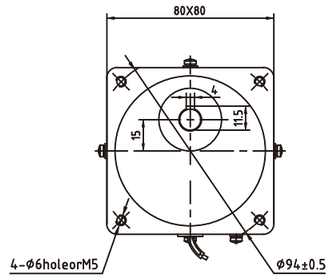
●In the table, the speed is calculated from the base of the motor's average speed divided by the deceleration ratio.The actual speed will vary with the load, ranging from 2 % to 20%.
●The ■ box in the table indicates that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.
●The maximum allowable torque of the decelerator is 8N·M.

外形尺寸（单位mm） Dimension (unit mm)

■导线型 Lead Wring Type

重量 Weight：电机 Motor:2.15Kg　　减速器 Gearhead:0.8Kg





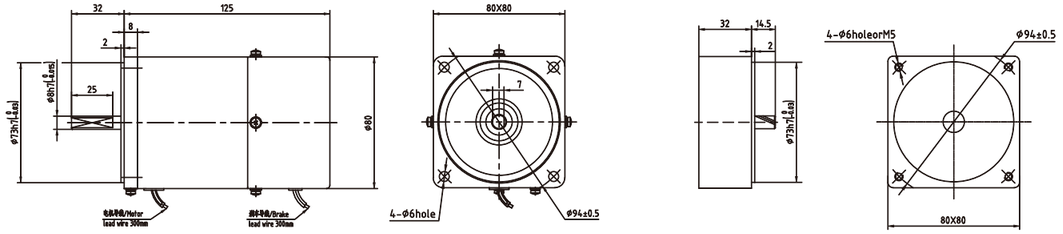
其中速比3~18可以做成短型减速箱,高度为32mm。
Gear ratio 3~18, short case is possible，Height of 32 mm。

■圆轴电机 Round Shaft Motor

重量 Weight:2.15Kg

■中间减速器 Mid–gearbox

可安装在GN齿轮轴型上
Can be connected to GN pinion 4GN10XK
重量 Weight:0.41Kg



接线图 Wiring Diagram

●运转方向指从电动机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
●表中所记品名为齿轮轴型，圆轴型亦同。

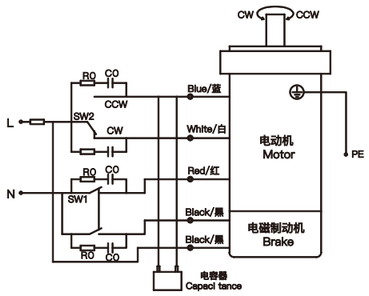
●The direction of motor rotation is as viewed from the shaft end of motor.CW represents the cLockwise direction.whill CCW represents the counter clockwise direction.
●Name indicated in the list is pinion shaft type.aslo valid for the equivalent round shaft type.

■ 单相电动机 Single-phase Motor

4RK25GN-AM、4RK25GN-CM

●SW1为电动机的运行/停止及电磁制动操作开关。（连动）
●SW1设定ON时，电磁制动解除，电动机开始运作。
●SW1设定OFF时，电动机停止，电磁制动开始工作。
●在电动机停止状态下解除电磁制动时，应将SW1设定为非连动，而仅将 ■ 色导线侧的接触点设定ON.
●运转方向 ●将SW2转换至CW侧时，电动机作顺时针方向运转。●将SW2转换至CWW侧时，电动机作逆时针方向运转。

●SW1 operates both motor and electromagnetic brake action.(Switched Simultaneously)
●The motor will rotate when SW1 is switched simultaneously to ON
●When SW1 is switched simultaneously to OFF, the motor is stopped, set the electromagnetic brake and holds the load.
●If you wish to release the brake while the mator is stoped, set the SW1 to be of and connection point at the side of black lead to be on.
●Diretion of Rotation. To rtate the motor in a clocwise(CW)diretion,turn SW2 to CW. To rotate the mator in a coumterclockwise(CCW)direction,turn SW2 to CCW.



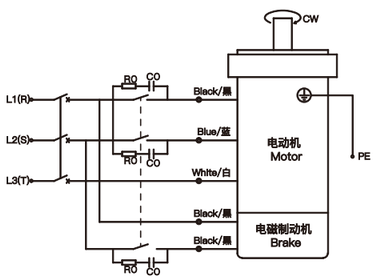
开关号码 Switch NO.	开关的接触点容量Contact capacity switch		参考 Note
	单相100V、110/120V输入 Single-Phase 100VAC, 110/120VAC Input	单相220V、230V、输入 Single-Phase 200VAC, 220/230VAC Input	
SW1	AC125V 8A以上（感应负载） AC125V 8A minimum(Inductive Load)	AC125V 8A以上（感应负载） AC125V 8A minimum(Inductive Load)	连动Switched Simultaneously
SW2			

■ 三相电动机 Theree-phase Motor

4RK25GN-SM

●SW1为电动机的运行/停止及电磁制动操作开关。（连动）
●SW1设定ON时，电磁制动解除，电动机开始运作。
●SW1设定OFF时，电动机停止，电磁制动开始工作。
●在电动机停止状态下解除电磁制动时，应将SW1设定为非连动，而仅将 ■ 色导线侧的接触点设定ON.
●运转方向 ●若对换R、S、T中任意二条，电动机会逆时针方向运转。

●SW1 operates both motor and electromagnetic brake action.(Switched Simultaneously)
●The motor will rotate when SW1 is switched simultaneously to ON
●When SW1is switched simultaneously to OFF,the motor is stopped,set the electromagnetic brake and holds the load.
●If you wish to release the brake while the motor is stopped, set the SW1 to off and conection point at the side of black lead to on.
●Direction of Rotation.●To Change the rotation direction,change any two connections amony R,S and T.



开关号码 Switch NO.	开关的接触点容量Contact capacity switch	参考 Note
SW1	AC125V 1.5A以上（感应负载） AC125V AC1.5A minimum(Inductive Load)	连动Switched Simultaneously

请注意 Note

●R0C0为吸收电涌电压用CR电路。【R0=5~200Ω C0=0.1~0.2μF、200WV（400WV）】
●请使用选购配件EPCR1201-2。
●R0 or C0 indicate surge suppressor circuit.【R0=5~200Ω C0=0.1~0.2μF、200WV（400WV）】
●EPCR1201-2 is available as an optional surge suppressor.

AC 交流减速电动机 AC REDUCTION MOTOR
感应电机 Induction motor
可逆电机 Reversible motor
调速电机 Speed control motor
电磁制动电机 Electromagnetic brake motor
力矩电机 Torque motor

电磁制动电机

ELECTROMAGNETIC BRAKE MOTOR

40W　90MM

电机型号/性能 List of motor characteristics

电机型号 Motor Model		额定 Rating	输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	启动转矩 Starting Torque	额定转矩 Rated Torque	额定转速 Rated Speed	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft		W	V	Hz	A	mN.m	mN.m	r/min	μF/VAC
5RK40GN-CM	5RK40A-CM	30min	40	1ph220	50	0.43	200	283	1350	3/450
					60	0.52	210	246	1550	
5RK40GN-AM	5RK40A-AM	30min	40	1ph110	50	0.92	230	283	1350	15/250
					60	0.92	230	246	1550	
5RK40GN-SM	5RK40A-SM	30min	40	3ph220	50	0.30	800	283	1350	/
					60	0.25	600	246	1550	

●各种安全规格以电动机铭牌上的型号名取得认证。
●内藏热保护装置（自动复位型）。在电机因某种原因过热会自动启动使电动机停止。
●电动机温度下降后恢复运行，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.
●Contaions a built-in thermal protector(automatic return).if a motor overheats for any reason,the thermal protector is opened and the motors 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 labe.

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

减速比 Reduction 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	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	0.69	0.83	1.15	1.38	1.72	2.06	2.29	2.87	3.44	4.13	4.13	5.16	6.19	7.43	7.43	9.28	10	10	10	10	10	10	10	10
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	0.60	0.72	1.00	1.20	1.49	1.79	1.99	2.49	2.99	3.59	3.59	4.48	5.38	6.46	6.46	8.07	9.68	10	10	10	10	10	10	10

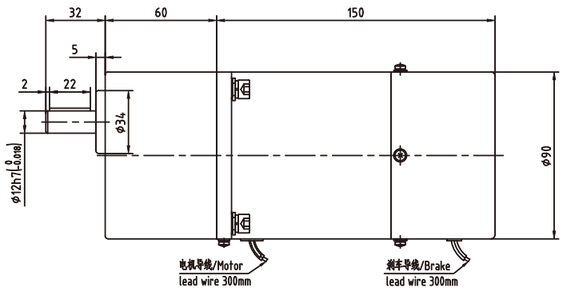
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
●表中 ■ 色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。
●减速箱的最大容许转矩为10N·M。

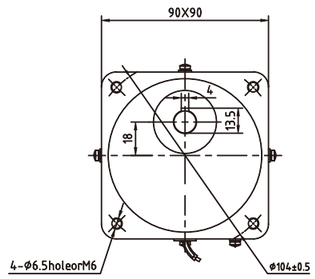
●In the table, the speed is calculated from the base of the motor's average speed divided by the deceleration ratio.The actual speed will vary with the load, ranging from 2 % to 20%.
●The ■ box in the table indicates that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.
●The maximum allowable torque of the decelerator is 10N·M.

外形尺寸（单位mm） Dimension (unit mm)

■ 导线型 Lead Wring Type

重量 Weight：电机 Motor:3.1Kg　　减速器 Gearhead:1.35Kg

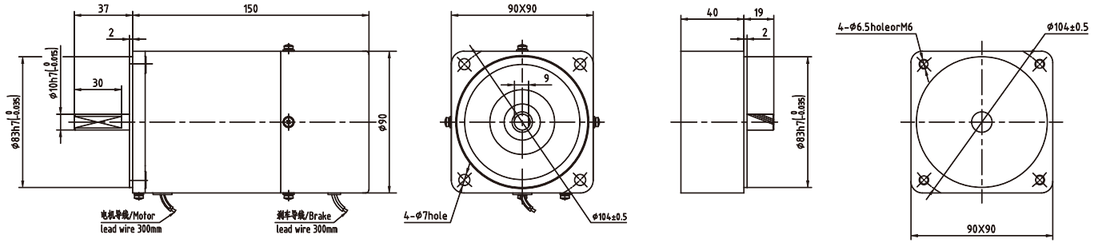




其中速比3~18可以做成短型减速箱,高度为42mm
Gear ratio 3~18, short case is possible，Height of 42 mm。

■ 圆轴电机 Round Shaft Motor

重量 Weight:3.1Kg



■ 中间减速器 Mid-gearbox

可安装在GN齿轮轴型上
Can be connected to GN pinion 5GN10XK
重量 Weight:0.6Kg

接线图 Wiring Diagram

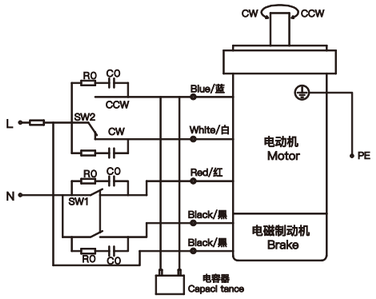
●运转方向指从电动机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
●表中所记品名为齿轮轴型，圆轴型亦同。
●The direction of motor rotation is as viewed from the shaft end of motor.CW represents the cLockwise direction.whill CCW represents the counter clockwise direction.
●Name indicated in the list is pinion shaft type.aslo valid for the equivalent round shaft type.

■ 单相电动机 Single-phase Motor

5RK40GN-AM、5RK40GN-CM

●SW1为电动机的运行/停止及电磁制动操作开关。（连动）
●SW1设定ON时，电磁制动解除，电动机开始运作。
●SW1设定OFF时，电动机停止，电磁制动开始工作。
●在电动机停止状态下解除电磁制动时，应将SW1设定为非连动，而仅将 ■ 色导线侧的接触点设定ON.
●运转方向 ●将SW2转换至CW侧时，电动机作顺时针方向运转。●将SW2转换至CWW侧时，电动机作逆时针方向运转。

●SW1 operates both motor and electromagnetic brake action.(Switched Simultaneously)
●The motor will rotate when SW1 is switched simultaneously to ON
●When SW1 is switched simultaneously to OFF, the motor is stopped, set the electromagnetic brake and holds the load.
●If you wish to release the brake while the mator is stoped, set the SW1 to be of and connection point at the side of black lead to be on.
●Diretion of Rotation. To rtate the motor in a clocwise(CW)diretion,turn SW2 to CW. To rotate the mator in a coumterclockwise(CCW)direction,turn SW2 to CCW.



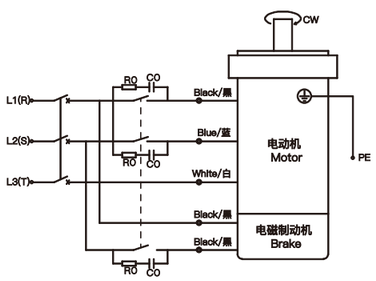
开关号码 Switch NO.	开关的接触点容量Contact capacity switch		参考 Note
	单相100V、110/120V输入 Single-Phase 100VAC, 110/120VAC Input	单相220V、230V、输入 Single-Phase 200VAC, 220/230VAC Input	
SW1	AC125V 8A以上 （感应负载） AC125V 8A minimum(Inductive Load)	AC125V 8A以上 （感应负载） AC125V 8A minimum(Inductive Load)	连动Switched Simultaneously
SW2			

■ 三相电动机 Theree-phase Motor

5RK40GN-SM

●SW1为电动机的运行/停止及电磁制动操作开关。（连动）
●SW1设定ON时，电磁制动解除，电动机开始运作。
●SW1设定OFF时，电动机停止，电磁制动开始工作。
●在电动机停止状态下解除电磁制动时，应将SW1设定为非连动，而仅将 ■ 色导线侧的接触点设定ON.
●运转方向 ●若对换R、S、T中任意二条，电动机会逆时针方向运转。

●SW1 operates both motor and electromagnetic brake action.(Switched Simultaneously)
●The motor will rotate when SW1 is switched simultaneously to ON
●When SW1is switched simultaneously to OFF,the motor is stopped,set the electromagnetic brake and holds the load.
●If you wish to release the brake while the motor is stopped, set the SW1 to off and conection point at the side of black lead to on.
●Direction of Rotation.●To Change the rotation direction,change any two connections amony R,S and T.



开关号码 Switch NO.	开关的接触点容量Contact capacity switch	参考 Note
SW1	AC125V 1.5A以上（感应负载） AC125V AC1.5A minimum(Inductive Load)	连动Switched Simultaneously

请注意 Note

●R0C0为吸收电涌电压用CR电路。【R0=5~200Ω C0=0.1~0.2μF、200WV（400WV）】
●请使用选购配件EPCR1201-2。
●R0 or C0 indicate surge suppressor circuit.【R0=5~200Ω C0=0.1~0.2μF、200WV（400WV）】
●EPCR1201-2 is available as an optional surge suppressor.

电磁制动电机

ELECTROMAGNETIC BRAKE MOTOR

60W　90MM

电机型号/性能 List of motor characteristics

电机型号 Motor Model		额定 Rating	输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	启动转矩 Starting Torque	额定转矩 Rated Torque	额定转速 Rated Speed	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft		W	V	Hz	A	mN.m	mN.m	r/min	μF/VAC
5RK60GN-CMF	5RK60A-CMF	30min	60	1ph220	50	0.62	420	424	1350	4/450
					60	0.66	420	370	1550	
5RK60GN-AMF	5RK60A-AMF	30min	60	1ph110	50	1.22	470	424	1350	18/250
					60	1.24	470	370	1550	
5RK60GN-SMF	5RK60A-SMF	30min	60	3ph220	50	0.45	1000	424	1350	/
					60	0.40	800	370	1550	

●各种安全规格以电动机铭牌上的型号名取得认证。
●内藏热保护装置（自动复位型）。在电机因某种原因过热会自动启动使电动机停止。
●电动机温度下降后恢复运行，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.
●Contaions a built–in thermal protector(automatic return).if a motor overheats for any reason,the thermal protector is opened and the motors 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 labe.

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

减速比 Reduction 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	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	1.03	1.24	1.72	2.06	2.58	3.09	3.43	4.29	5.15	6.18	6.18	7.73	9.27	10	10	10	10	10	10	10	10	10	10	10
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	0.90	1.08	1.50	1.80	2.25	2.70	3.00	3.75	4.50	5.39	5.39	6.74	8.09	9.71	9.71	10	10	10	10	10	10	10	10	10

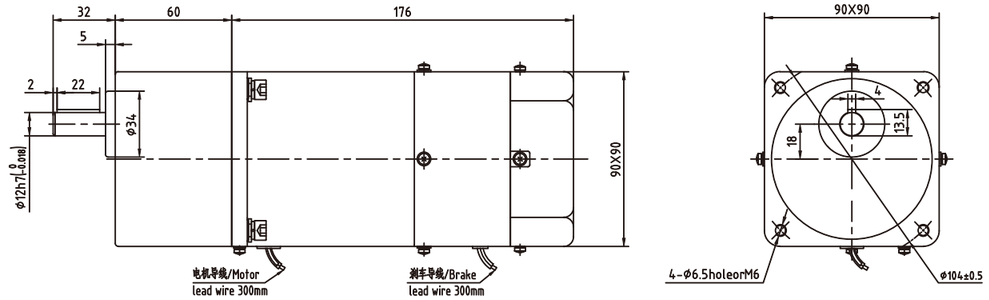
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
●表中 ■ 色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。
●减速箱的最大容许转矩为10N·M。

●In the table, the speed is calculated from the base of the 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 that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.
●The maximum allowable torque of the decelerator is 10N·M.

外形尺寸（单位mm） Dimension (unit mm)

■导线型 Lead Wring Type

重量 Weight：电机 Motor:3.55Kg　　减速器 Gearhead:1.35Kg



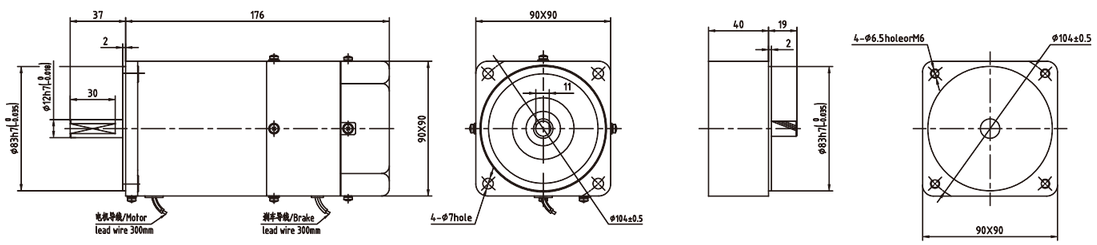
其中速比3~18可以做成短型减速箱,高度为42mm。
Gear ratio 3~18, short case is possible，Height of 42 mm。

■圆轴电机 Round Shaft Motor

重量 Weight:3.55Kg

■中间减速器 Mid–gearbox

可安装在GN齿轮轴型上
Can be connected to GN pinion 5GN10XK
重量 Weight:0.6Kg



接线图 Wiring Diagram

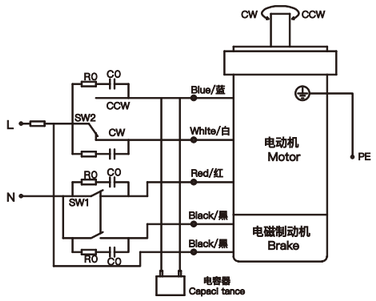
●运转方向指从电动机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
●表中所记品名为齿轮轴型，圆轴型亦同。
●The direction of motor rotation is as viewed from the shaft end of motor.CW represents the cLockwise direction.whill CCW represents the counter clockwise direction.
●Name indicated in the list is pinion shaft type.aslo valid for the equivalent round shaft type.

■ 单相电动机 Single-phase Motor

5RK60GN-AMF、5RK60GN-CMF

●SW1为电动机的运行/停止及电磁制动操作开关。（连动）
●SW1设定ON时，电磁制动解除，电动机开始运作。
●SW1设定OFF时，电动机停止，电磁制动开始工作。
●在电动机停止状态下解除电磁制动时，应将SW1设定为非连动，而仅将 ■ 色导线侧的接触点设定ON.
●运转方向 ●将SW2转换至CW侧时，电动机作顺时针方向运转。●将SW2转换至CWW侧时，电动机作逆时针方向运转。

●SW1 operates both motor and electromagnetic brake action.(Switched Simultaneously)
●The motor will rotate when SW1 is switched simultaneously to ON
●When SW1 is switched simultaneously to OFF, the motor is stopped, set the electromagnetic brake and holds the load.
●If you wish to release the brake while the mator is stoped, set the SW1 to be of and connection point at the side of black lead to be on.
●Diretion of Rotation. To rtate the motor in a clocwise(CW)diretion,turn SW2 to CW. To rotate the mator in a coumterclockwise(CCW)direction,turn SW2 to CCW.



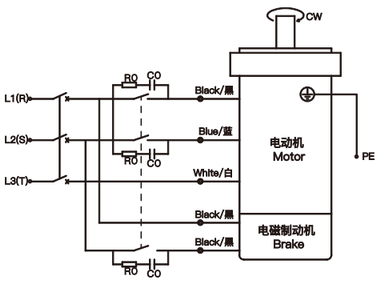
开关号码 Switch NO.	开关的接触点容量Contact capacity switch		参考 Note
	单相100V、110/120V输入 Single-Phase 100VAC, 110/120VAC Input	单相220V、230V、输入 Single-Phase 200VAC, 220/230VAC Input	
SW1	AC125V 8A以上（感应负载） AC125V 8A minimum(Inductive Load)	AC125V 8A以上（感应负载） AC125V 8A minimum(Inductive Load)	连动Switched Simultaneously
SW2			

■ 三相电动机 Theree-phase Motor

5RK60GN-SMF

●SW1为电动机的运行/停止及电磁制动操作开关。（连动）
●SW1设定ON时，电磁制动解除，电动机开始运作。
●SW1设定OFF时，电动机停止，电磁制动开始工作。
●在电动机停止状态下解除电磁制动时，应将SW1设定为非连动，而仅将 ■ 色导线侧的接触点设定ON.
●运转方向 ●若对换R、S、T中任意二条，电动机会逆时针方向运转。

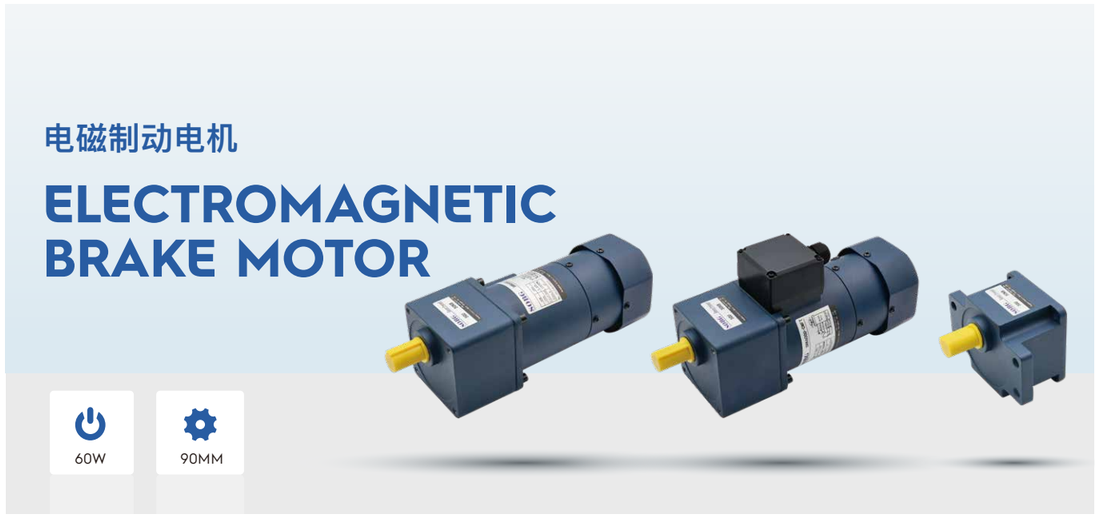
●SW1 operates both motor and electromagnetic brake action.(Switched Simultaneously)
●The motor will rotate when SW1 is switched simultaneously to ON
●When SW1is switched simultaneously to OFF,the motor is stopped,set the electromagnetic brake and holds the load.
●If you wish to release the brake while the motor is stopped, set the SW1 to off and conection point at the side of black lead to on.
●Direction of Rotation.●To Change the rotation direction,change any two connections amony R,S and T.



开关号码 Switch NO.	开关的接触点容量Contact capacity switch	参考 Note
SW1	AC125V 1.5A以上（感应负载） AC125V AC1.5A minimum(Inductive Load)	连动Switched Simultaneously

请注意 Note

●R0C0为吸收电涌电压用CR电路。【R0=5~200Ω C0=0.1~0.2μF、200WV（400WV）】
●请使用选购配件EPCR1201-2。
●R0 or C0 indicate surge suppressor circuit.【R0=5~200Ω C0=0.1~0.2μF、200WV（400WV）】
●EPCR1201-2 is available as an optional surge suppressor.



电机型号/性能 List of motor characteristics

电机型号 Motor Model		额定 Rating	输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	启动转矩 Starting Torque	额定转矩 Rated Torque	额定转速 Rated Speed	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft		W	V	Hz	A	mN.m	mN.m	r/min	μF/VAC
5RK60GU-CMF	5RK60A-CMF	30min	60	1ph220	50	0.62	420	424	1350	4/450
					60	0.66	420	370	1550	
5RK60GU-AMF	5RK60A-AMF	30min	60	1ph110	50	1.22	470	424	1350	18/250
					60	1.24	470	370	1550	
5RK60GU-SMF	5RK60A-SMF	30min	60	3ph220	50	0.45	1000	424	1350	/
					60	0.40	800	370	1550	

●各种安全规格以电动机铭牌上的型号名取得认证。
●内藏热保护装置（自动复位型）。在电机因某种原因过热会自动启动使电动机停止。
●电动机温度下降后恢复运行，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.
●Contaions a built-in thermal protector(automatic return).if a motor overheats for any reason,the thermal protector is opened and the motors 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 labe.

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

减速比 Reduction 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	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	1.03	1.24	1.72	2.06	2.58	3.09	3.43	4.29	5.15	6.18	6.18	7.73	9.27	11.13	11.13	13.91	16.69	20	20	20	20	20	20	20
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	0.90	1.08	1.50	1.80	2.25	2.70	3.00	3.75	4.50	5.39	5.39	6.74	8.09	9.71	9.71	12.14	14.57	18.21	20	20	20	20	20	20

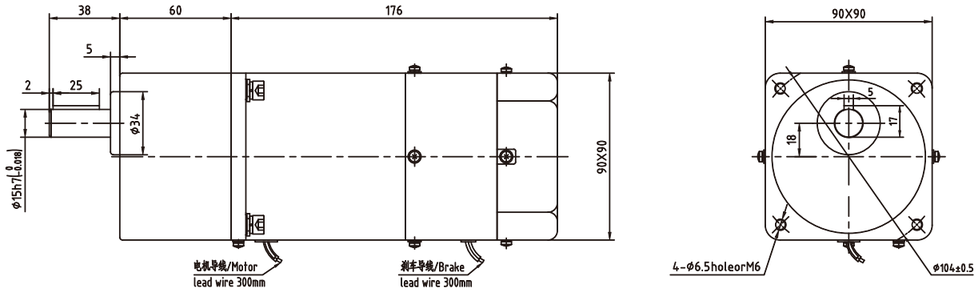
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
●表中 ■ 色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。
●减速箱的最大容许转矩为20N·M。

●In the table, the speed is calculated from the base of the 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 that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.
●The maximum allowable torque of the decelerator is 20N·M.

外形尺寸（单位mm） Dimension (unit mm)

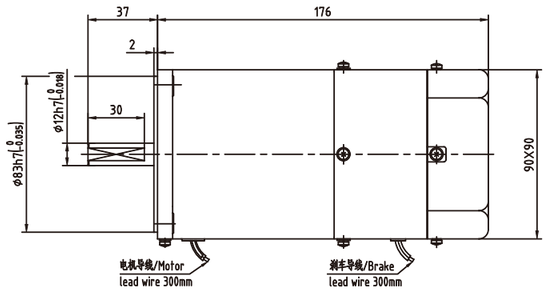
■ 导线型 Lead Wring Type

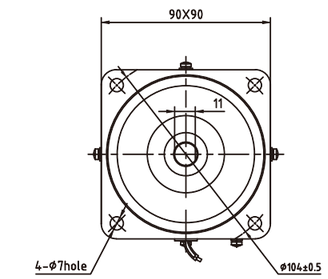
重量 Weight：电机 Motor:3.55Kg　　减速器 Gearhead:1.5Kg



■ 圆轴电机 Round Shaft Motor

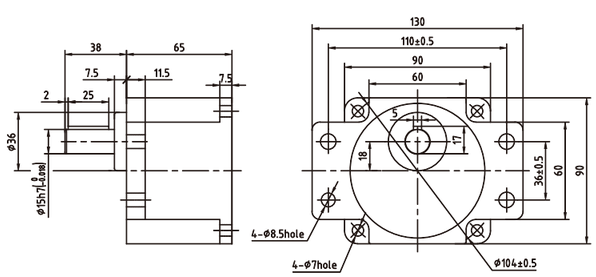
重量 Weight:3.55Kg





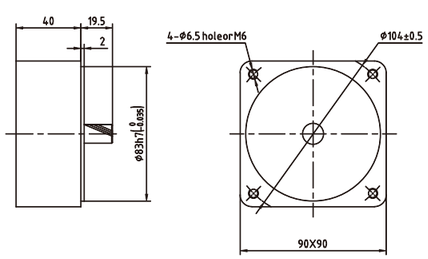
■ 凸缘安装型减速器Flange Mounting Reducer

可安装在GU齿轮轴型上
Can be Mounted on GU Type gear shaft 5GU□K
重量 Weight:1.5Kg



■ 中间减速器 Mid-gearbox

可安装在GU齿轮轴型上
Can be connected to GU pinion 5GU10XK
重量 Weight:0.65Kg



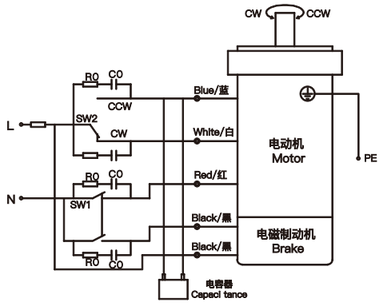
接线图 Wiring Diagram

●运转方向指从电动机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
●表中所记品名为齿轮轴型，圆轴型亦同。
●The direction of motor rotation is as viewed from the shaft end of motor.CW represents the cLockwise direction.whill CCW represents the counter clockwise direction.
●Name indicated in the list is pinion shaft type.aslo valid for the equivalent round shaft type.

■ 单相电动机 Single-phase Motor　　5RK60GU-AMF、5RK60GU-CMF

●SW1为电动机的运行/停止及电磁制动操作开关。（连动）
●SW1设定ON时，电磁制动解除，电动机开始运作。
●SW1设定OFF时，电动机停止，电磁制动开始工作。
●在电动机停止状态下解除电磁制动时，应将SW1设定为非连动，而仅将 ■ 色导线侧的接触点设定ON.
●运转方向 ●将SW2转换至CW侧时，电动机作顺时针方向运转。●将SW2转换至CWW侧时，电动机作逆时针方向运转。

●SW1 operates both motor and electromagnetic brake action.(Switched Simultaneously)
●The motor will rotate when SW1 is switched simultaneously to ON
●When SW1 is switched simultaneously to OFF, the motor is stopped, set the electromagnetic brake and holds the load.
●If you wish to release the brake while the mator is stoped, set the SW1 to be of and connection point at the side of black lead to be on.
●Diretion of Rotation. To rtate the motor in a clocwise(CW)diretion,turn SW2 to CW. To rotate the mator in a coumterclockwise(CCW)direction,turn SW2 to CCW.

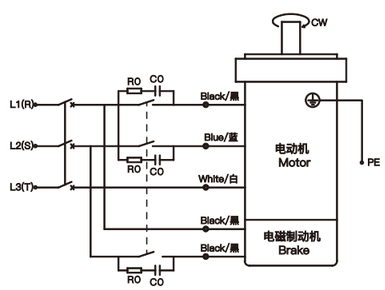


开关号码 Switch NO.	开关的接触点容量Contact capacity switch		参考 Note
	单相100V、110/120V输入 Single-Phase 100VAC, 110/120VAC Input	单相220V、230V、输入 Single-Phase 200VAC, 220/230VAC Input	
SW1	AC125V 8A以上（感应负载） AC125V 8A minimum(Inductive Load)	AC125V 8A以上（感应负载） AC125V 8A minimum(Inductive Load)	连动Switched Simultaneously
SW2			

■ 三相电动机 Theree-phase Motor　　5RK60GU-SMF

●SW1为电动机的运行/停止及电磁制动操作开关。（连动）
●SW1设定ON时，电磁制动解除，电动机开始运作。
●SW1设定OFF时，电动机停止，电磁制动开始工作。
●在电动机停止状态下解除电磁制动时，应将SW1设定为非连动，而仅将 ■ 色导线侧的接触点设定ON.
●运转方向 ●若对换R、S、T中任意二条，电动机会逆时针方向运转。

●SW1 operates both motor and electromagnetic brake action.(Switched Simultaneously)
●The motor will rotate when SW1 is switched simultaneously to ON
●When SW1is switched simultaneously to OFF,the motor is stopped,set the electromagnetic brake and holds the load.
●If you wish to release the brake while the motor is stopped, set the SW1 to off and conection point at the side of black lead to on.
●Direction of Rotation.●To Change the rotation direction,change any two connections amony R,S and T.



开关号码 Switch NO.	开关的接触点容量Contact capacity switch	参考 Note
SW1	AC125V 1.5A以上（感应负载） AC125V AC1.5A minimum(Inductive Load)	连动Switched Simultaneously

请注意 Note

●R0C0为吸收电涌电压用CR电路。【R0=5~200Ω C0=0.1~0.2μF、200WV（400WV）】
●请使用选购配件EPCR1201-2。
●R0 or C0 indicate surge suppressor circuit.【R0=5~200Ω C0=0.1~0.2μF、200WV（400WV）】
●EPCR1201-2 is available as an optional surge suppressor.

电磁制动电机

ELECTROMAGNETIC BRAKE MOTOR

90W

90MM

电机型号/性能 List of motor characteristics

电机型号 Motor Model		额定 Rating	输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	启动转矩 Starting Torque	额定转矩 Rated Torque	额定转速 Rated Speed	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft		W	V	Hz	A	mN.m	mN.m	r/min	μF/VAC
5RK90GU-CMF	5RK90A-CMF	30min	90	1ph220	50	0.83	560	637	1350	6/450
					60	0.99	560	555	1550	
5RK90GU-AMF	5RK90A-AMF	30min	90	1ph110	50	1.64	530	637	1350	25/250
					60	1.77	530	555	1550	
5RK90GU-SMF	5RK90A-SMF	30min	90	3ph220	50	0.60	1350	637	1350	/
					60	0.55	1100	555	1550	

●各种安全规格以电动机铭牌上的型号名取得认证。
●内藏热保护装置（自动复位型）。在电机因某种原因过热会自动启动使电动机停止。
●电动机温度下降后恢复运行，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.
●Contaions a built-in thermal protector(automatic return).if a motor overheats for any reason,the thermal protector is opened and the motors 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 labe.

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

减速比 Reduction 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	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	1.55	1.86	2.58	3.10	3.87	4.64	4.64	5.80	6.97	8.36	8.36	10.45	12.54	15.05	16.72	20	20	20	20	20	20	20	20	20
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	1.35	1.62	2.25	2.70	3.37	4.05	4.05	5.06	6.07	7.28	7.28	9.10	10.92	13.11	14.57	18.21	20	20	20	20	20	20	20	20

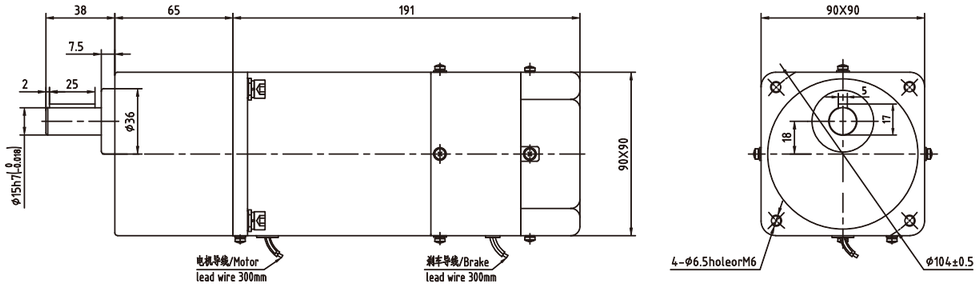
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
●表中 ■ 色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。
●减速箱的最大容许转矩为20N·M。

●In the table, the speed is calculated from the base of the 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 that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.
●The maximum allowable torque of the decelerator is 20N·M.

外形尺寸（单位mm） Dimension (unit mm)

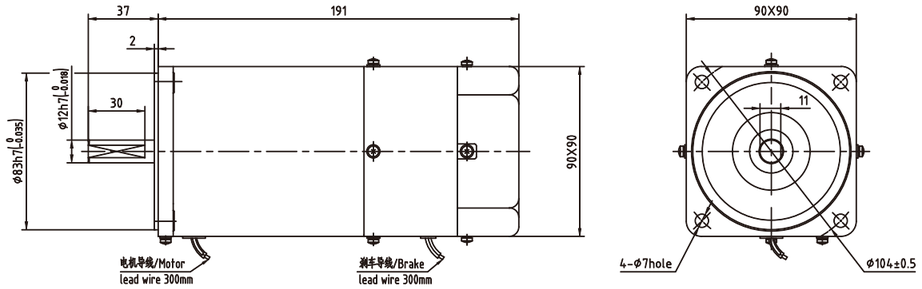
■ 导线型 Lead Wring Type

重量 Weight：电机 Motor:4.1Kg　　减速器 Gearhead:1.5Kg



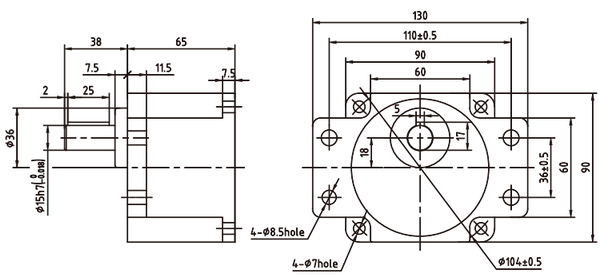
■ 圆轴电机 Round Shaft Motor

重量 Weight:4.1Kg



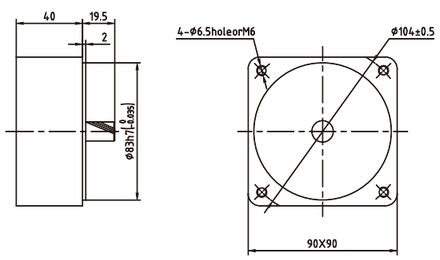
■ 凸缘安装型减速器Flange Mounting Reducer

可安装在GU齿轮轴型上
Can be Mounted on GU Type gear shaft 5GU□K
重量 Weight:1.5Kg



■ 中间减速器 Mid-gearbox

可安装在GU齿轮轴型上
Can be connected to GU pinion 5GU10XK
重量 Weight:0.65Kg



接线图 Wiring Diagram

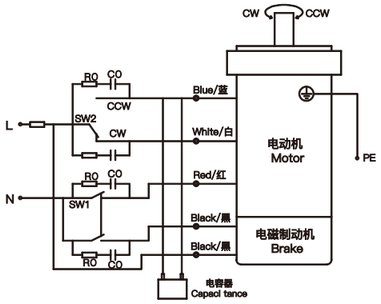
●运转方向指从电动机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
●表中所记品名为齿轮轴型，圆轴型亦同。
●The direction of motor rotation is as viewed from the shaft end of motor.CW represents the cLockwise direction.whill CCW represents the counter clockwise direction.
●Name indicated in the list is pinion shaft type.aslo valid for the equivalent round shaft type.

■ 单相电动机 Single-phase Motor

5RK90GU-AMF、5RK90GU-CMF

●SW1为电动机的运行/停止及电磁制动操作开关。（连动）
●SW1设定ON时，电磁制动解除，电动机开始运作。
●SW1设定OFF时，电动机停止，电磁制动开始工作。
●在电动机停止状态下解除电磁制动时，应将SW1设定为非连动，而仅将 ■ 色导线侧的接触点设定ON.
●运转方向 ●将SW2转换至CW侧时，电动机作顺时针方向运转。●将SW2转换至CWW侧时，电动机作逆时针方向运转。

●SW1 operates both motor and electromagnetic brake action.(Switched Simultaneously)
●The motor will rotate when SW1 is switched simultaneously to ON
●When SW1 is switched simultaneously to OFF, the motor is stopped, set the electromagnetic brake and holds the load.
●If you wish to release the brake while the mator is stoped, set the SW1 to be of and connection point at the side of black lead to be on.
●Diretion of Rotation. To rtate the motor in a clocwise(CW)diretion,turn SW2 to CW. To rotate the mator in a coumterclockwise(CCW)direction,turn SW2 to CCW.



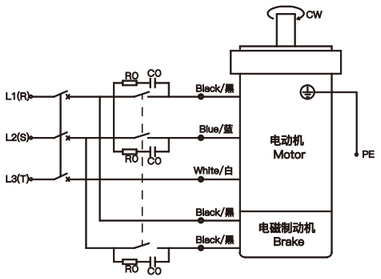
开关号码 Switch NO.	开关的接触点容量Contact capacity switch		参考 Note
	单相100V、110/120V输入 Single-Phase 100VAC, 110/120VAC Input	单相220V、230V、输入 Single-Phase 200VAC, 220/230VAC Input	
SW1	AC125V 8A以上（感应负载） AC125V 8A minimum(Inductive Load)	AC125V 8A以上（感应负载） AC125V 8A minimum(Inductive Load)	连动Switched Simultaneously
SW2			

■ 三相电动机 Theree-phase Motor

5RK90GU-SMF

●SW1为电动机的运行/停止及电磁制动操作开关。（连动）
●SW1设定ON时，电磁制动解除，电动机开始运作。
●SW1设定OFF时，电动机停止，电磁制动开始工作。
●在电动机停止状态下解除电磁制动时，应将SW1设定为非连动，而仅将 ■ 色导线侧的接触点设定ON.
●运转方向 ●若对换R、S、T中任意二条，电动机会逆时针方向运转。

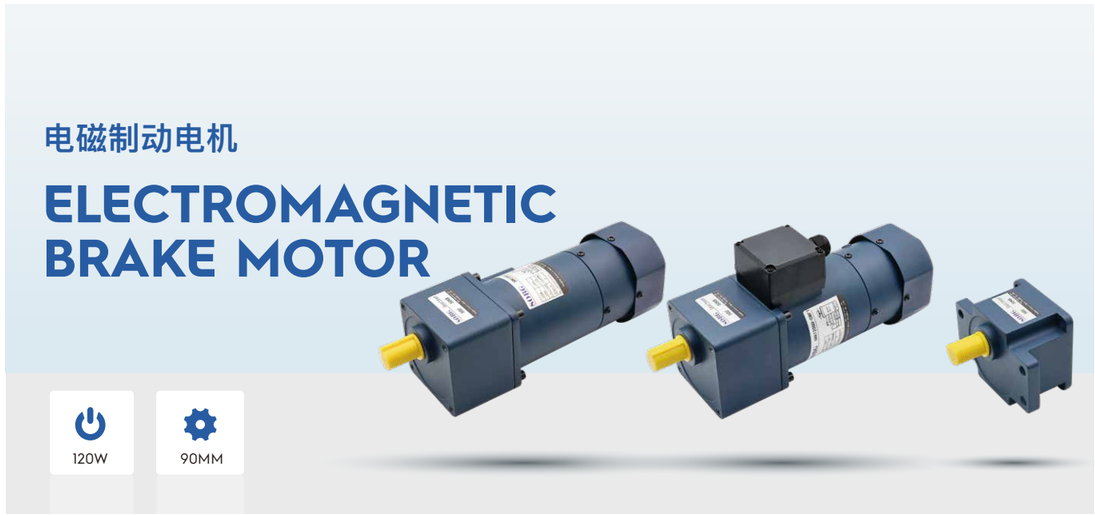
●SW1 operates both motor and electromagnetic brake action.(Switched Simultaneously)
●The motor will rotate when SW1 is switched simultaneously to ON
●When SW1is switched simultaneously to OFF,the motor is stopped,set the electromagnetic brake and holds the load.
●If you wish to release the brake while the motor is stopped, set the SW1 to off and conection point at the side of black lead to on.
●Direction of Rotation.●To Change the rotation direction,change any two connections amony R,S and T.



开关号码 Switch NO.	开关的接触点容量Contact capacity switch	参考 Note
SW1	AC125V 1.5A以上（感应负载） AC125V AC1.5A minimum(Inductive Load)	连动Switched Simultaneously

请注意 Note

●R0C0为吸收电涌电压用CR电路。【R0=5~200Ω C0=0.1~0.2μF、200WV（400WV）】
●请使用选购配件EPCR1201-2。
●R0 or C0 indicate surge suppressor circuit.【R0=5~200Ω C0=0.1~0.2μF、200WV（400WV）】
●EPCR1201-2 is available as an optional surge suppressor.



电机型号/性能 List of motor characteristics

电机型号 Motor Model		额定 Rating	输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	启动转矩 Starting Torque	额定转矩 Rated Torque	额定转速 Rated Speed	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft		W	V	Hz	A	mN.m	mN.m	r/min	μF/VAC
5RK120GU-CF	5RK120A-CF	30min	120	1ph220	50	1.03	720	849	1350	7/450
					60	1.23	720	739	1550	
5RK120GU-AF	5RK120A-AF	30min	120	1ph110	50	2.05	680	849	1350	30/250
					60	2.20	680	739	1550	
5RK120GU-SMF	5RK120A-SMF	30min	120	3ph220	50	0.70	1850	849	1350	/
					60	0.60	1600	739	1550	

●各种安全规格以电动机铭牌上的型号名取得认证。
●内藏热保护装置（自动复位型）。在电机因某种原因过热会自动启动使电动机停止。
●电动机温度下降后恢复运行，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.
●Contaions a built-in thermal protector(automatic return).if a motor overheats for any reason,the thermal protector is opened and the motors 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 labe.

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

减速比 Reduction 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	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	2.06	2.48	3.44	4.13	5.16	6.19	6.19	7.74	9.28	11.14	11.14	13.93	16.71	20	20	20	20	20	20	20	20	20	20	20
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	1.80	2.15	2.99	3.59	4.49	5.39	5.39	6.73	8.08	9.70	9.70	12.12	14.55	17.45	19.39	20	20	20	20	20	20	20	20	20

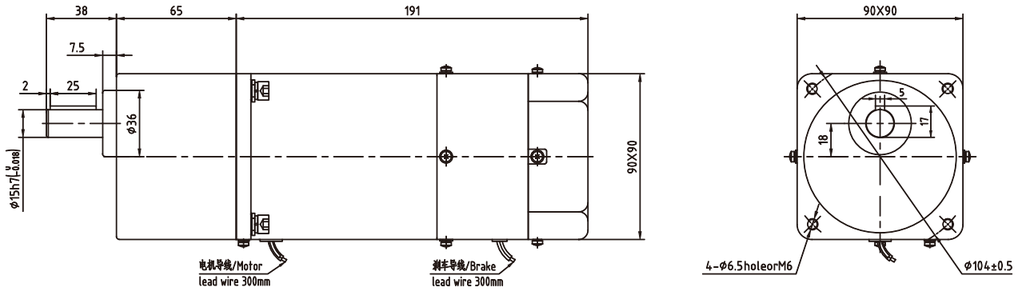
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
●表中 ■ 色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。
●减速箱的最大容许转矩为20N·M。

●In the table, the speed is calculated from the base of the 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 that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.
●The maximum allowable torque of the decelerator is 20N·M.

外形尺寸（单位mm） Dimension (unit mm)

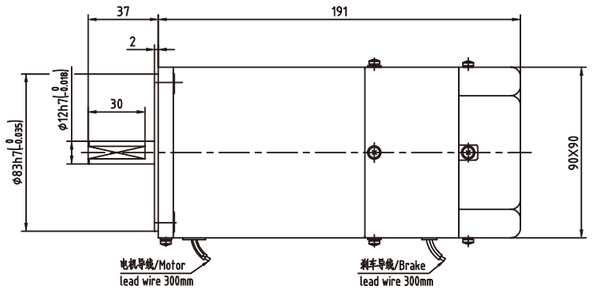
■ 导线型 Lead Wring Type

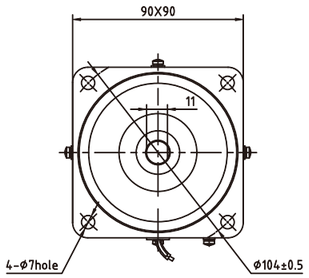
重量 Weight：电机 Motor:4.3Kg　　减速器 Gearhead:1.5Kg



■ 圆轴电机 Round Shaft Motor

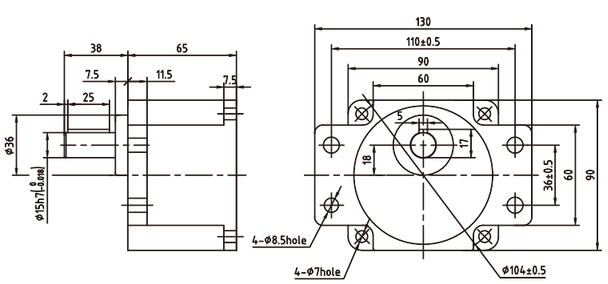
重量 Weight:4.3Kg





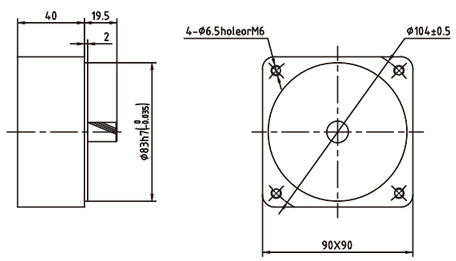
■ 凸缘安装型减速器Flange Mounting Reducer

可安装在GU齿轮轴型上
Can be Mounted on GU Type gear shaft 5GU□K
重量 Weight:1.5Kg



■ 中间减速器 Mid-gearbox

可安装在GU齿轮轴型上
Can be connected to GU pinion 5GU10XK
重量 Weight:0.65Kg



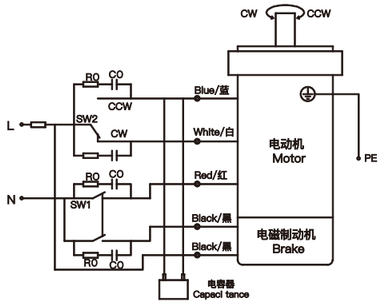
接线图 Wiring Diagram

●运转方向指从电动机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
●表中所记品名为齿轮轴型，圆轴型亦同。
●The direction of motor rotation is as viewed from the shaft end of motor.CW represents the cLockwise direction.whill CCW represents the counter clockwise direction.
●Name indicated in the list is pinion shaft type.aslo valid for the equivalent round shaft type.

■ 单相电动机 Single-phase Motor　　5RK120GU-AMF、5RK120GU-CMF

●SW1为电动机的运行/停止及电磁制动操作开关。（连动）
●SW1设定ON时，电磁制动解除，电动机开始运作。
●SW1设定OFF时，电动机停止，电磁制动开始工作。
●在电动机停止状态下解除电磁制动时，应将SW1设定为非连动，而仅将 ■ 色导线侧的接触点设定ON.
●运转方向 ●将SW2转换至CW侧时，电动机作顺时针方向运转。●将SW2转换至CWW侧时，电动机作逆时针方向运转。

●SW1 operates both motor and electromagnetic brake action.(Switched Simultaneously)
●The motor will rotate when SW1 is switched simultaneously to ON
●When SW1 is switched simultaneously to OFF, the motor is stopped, set the electromagnetic brake and holds the load.
●If you wish to release the brake while the mator is stoped, set the SW1 to be of and connection point at the side of black lead to be on.
●Diretion of Rotation. To rtate the motor in a clocwise(CW)diretion,turn SW2 to CW. To rotate the mator in a coumterclockwise(CCW)direction,turn SW2 to CCW.

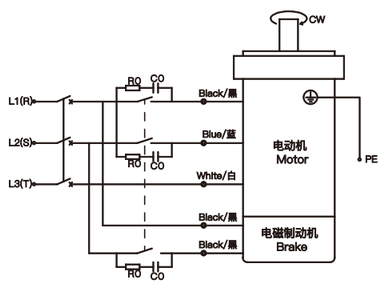


开关号码 Switch NO.	开关的接触点容量Contact capacity switch		参考 Note
	单相100V、110/120V输入 Single-Phase 100VAC, 110/120VAC Input	单相220V、230V、输入 Single-Phase 200VAC, 220/230VAC Input	
SW1	AC125V 8A以上（感应负载） AC125V 8A minimum(Inductive Load)	AC125V 8A以上（感应负载） AC125V 8A minimum(Inductive Load)	连动Switched Simultaneously
SW2			

■ 三相电动机 Theree-phase Motor　　5RK120GU-SMF

●SW1为电动机的运行/停止及电磁制动操作开关。（连动）
●SW1设定ON时，电磁制动解除，电动机开始运作。
●SW1设定OFF时，电动机停止，电磁制动开始工作。
●在电动机停止状态下解除电磁制动时，应将SW1设定为非连动，而仅将 ■ 色导线侧的接触点设定ON.
●运转方向 ●若对换R、S、T中任意二条，电动机会逆时针方向运转。

●SW1 operates both motor and electromagnetic brake action.(Switched Simultaneously)
●The motor will rotate when SW1 is switched simultaneously to ON
●When SW1is switched simultaneously to OFF,the motor is stopped,set the electromagnetic brake and holds the load.
●If you wish to release the brake while the motor is stopped, set the SW1 to off and conection point at the side of black lead to on.
●Direction of Rotation.●To Change the rotation direction,change any two connections amony R,S and T.



开关号码 Switch NO.	开关的接触点容量Contact capacity switch	参考 Note
SW1	AC125V 1.5A以上（感应负载） AC125V AC1.5A minimum(Inductive Load)	连动Switched Simultaneously

请注意 Note

●R0C0为吸收电涌电压用CR电路。【R0=5~200Ω C0=0.1~0.2μF、200WV（400WV）】
●请使用选购配件EPCR1201-2。
●R0 or C0 indicate surge suppressor circuit.【R0=5~200Ω C0=0.1~0.2μF、200WV（400WV）】
●EPCR1201-2 is available as an optional surge suppressor.

电磁制动电机

ELECTROMAGNETIC BRAKE MOTOR

120W

104MM

电机型号/性能 List of motor characteristics

电机型号 Motor Model		额定 Rating	输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	启动转矩 Starting Torque	额定转矩 Rated Torque	额定转速 Rated Speed	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft		W	V	Hz	A	mN.m	mN.m	r/min	μF/VAC
6RK120GU-CMF	6RK120A-CMF	30min	120	1ph220	50	0.90	800	849	1350	7/450
					60	0.95	750	739	1550	
6RK120GU-AMF	6RK120A-AMF	30min	120	1ph110	50	2.10	650	849	1350	30/250
					60	2.50	650	739	1550	
6RK120GU-SMF	6RK120A-SMF	30min	120	3ph220	50	0.75	2200	849	1350	/
					60	0.70	2000	739	1550	

●各种安全规格以电动机铭牌上的型号名取得认证。
●内藏热保护装置（自动复位型）。在电机因某种原因过热会自动启动使电动机停止。
●电动机温度下降后恢复运行，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.
●Contaions a built–in thermal protector(automatic return).if a motor overheats for any reason,the thermal protector is opened and the motors 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 labe.

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

减速比 Reduction 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	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	2.06	2.48	3.44	4.13	5.16	6.19	6.88	7.74	9.28	11.14	12.38	15.47	18.57	22.28	24.76	27.85	33.42	40	40	40	40	40	40	40
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	1.80	2.15	2.99	3.59	4.49	5.39	5.99	6.73	8.08	9.70	10.77	13.47	16.16	19.39	21.55	24.24	29.09	36.36	40	40	40	40	40	40

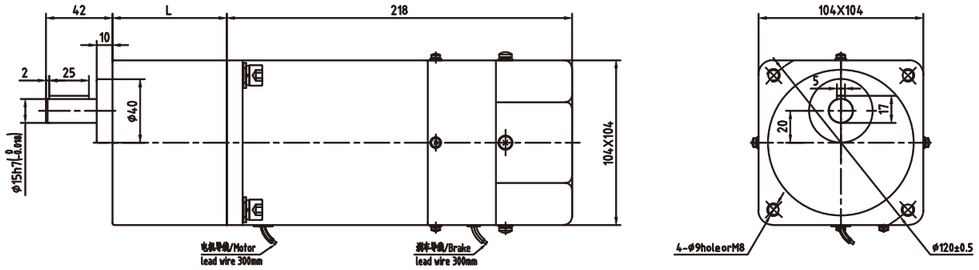
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
●表中 ■ 色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。
●减速箱的最大容许转矩为40N·M。

●In the table, the speed is calculated from the base of the 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 that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.
●The maximum allowable torque of the decelerator is 40N·M.

外形尺寸（单位mm） Dimension (unit mm)

■ 导线型 Lead Wring Type

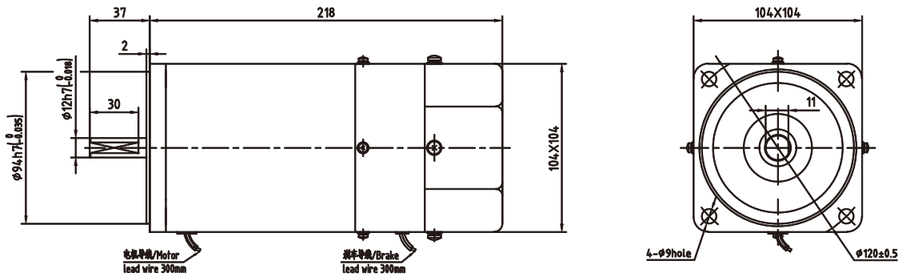
重量 Weight：电机 Motor:5.6Kg　　减速器 Gearhead:2.1Kg



其中，速比3~40，减速箱高度为L=65mm；速比50~200，减速器高度为L=72mm。
Among them,Gear ratio 3~40, The gearbox height is L=65 mm;Gear ratio 50~200, The gearbox height is L=72 mm.

■ 圆轴电机 Round Shaft Motor

重量 Weight:5.6Kg



接线图 Wiring Diagram

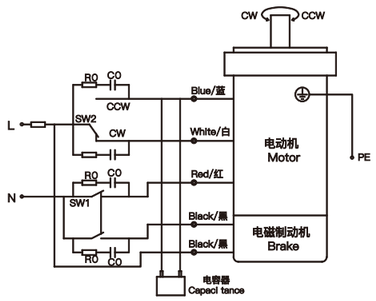
●运转方向指从电动机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
●表中所记品名为齿轮轴型，圆轴型亦同。
●The direction of motor rotation is as viewed from the shaft end of motor.CW represents the cLockwise direction.whill CCW represents the counter clockwise direction.
●Name indicated in the list is pinion shaft type.aslo valid for the equivalent round shaft type.

■ 单相电动机 Single-phase Motor

6RK120GU-AMF、6RK120GU-CMF

●SW1为电动机的运行/停止及电磁制动操作开关。（连动）
●SW1设定ON时，电磁制动解除，电动机开始运作。
●SW1设定OFF时，电动机停止，电磁制动开始工作。
●在电动机停止状态下解除电磁制动时，应将SW1设定为非连动，而仅将 ■ 色导线侧的接触点设定ON.
●运转方向 ●将SW2转换至CW侧时，电动机作顺时针方向运转。●将SW2转换至CWW侧时，电动机作逆时针方向运转。

●SW1 operates both motor and electromagnetic brake action.(Switched Simultaneously)
●The motor will rotate when SW1 is switched simultaneously to ON
●When SW1 is switched simultaneously to OFF, the motor is stopped, set the electromagnetic brake and holds the load.
●If you wish to release the brake while the mator is stoped, set the SW1 to be of and connection point at the side of black lead to be on.
●Diretion of Rotation. To rtate the motor in a clocwise(CW)diretion,turn SW2 to CW. To rotate the mator in a coumterclockwise(CCW)direction,turn SW2 to CCW.



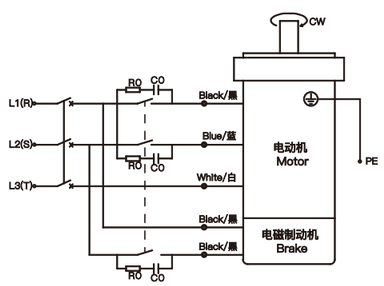
开关号码 Switch NO.	开关的接触点容量Contact capacity switch		参考 Note
	单相100V、110/120V输入 Single-Phase 100VAC, 110/120VAC Input	单相220V、230V、输入 Single-Phase 200VAC, 220/230VAC Input	
SW1	AC125V 8A以上（感应负载） AC125V 8A minimum(Inductive Load)	AC125V 8A以上（感应负载） AC125V 8A minimum(Inductive Load)	连动Switched Simultaneously
SW2			

■ 三相电动机 Theree-phase Motor

6RK120GU-SMF

●SW1为电动机的运行/停止及电磁制动操作开关。（连动）
●SW1设定ON时，电磁制动解除，电动机开始运作。
●SW1设定OFF时，电动机停止，电磁制动开始工作。
●在电动机停止状态下解除电磁制动时，应将SW1设定为非连动，而仅将 ■ 色导线侧的接触点设定ON.
●运转方向 ●若对换R、S、T中任意二条，电动机会逆时针方向运转。

●SW1 operates both motor and electromagnetic brake action.(Switched Simultaneously)
●The motor will rotate when SW1 is switched simultaneously to ON
●When SW1is switched simultaneously to OFF,the motor is stopped,set the electromagnetic brake and holds the load.
●If you wish to release the brake while the motor is stopped, set the SW1 to off and conection point at the side of black lead to on.
●Direction of Rotation.●To Change the rotation direction,change any two connections amony R,S and T.



开关号码 Switch NO.	开关的接触点容量Contact capacity switch	参考 Note
SW1	AC125V 1.5A以上（感应负载） AC125V AC1.5A minimum(Inductive Load)	连动Switched Simultaneously

请注意 Note

●R0C0为吸收电涌电压用CR电路。【R0=5~200Ω C0=0.1~0.2μF、200WV（400WV）】
●请使用选购配件EPCR1201-2。
●R0 or C0 indicate surge suppressor circuit.【R0=5~200Ω C0=0.1~0.2μF、200WV（400WV）】
●EPCR1201-2 is available as an optional surge suppressor.

AC 交流减速电动机 AC REDUCTION MOTOR
感应电机 Induction motor
可逆电机 Reversible motor
调速电机 Speed control motor
电磁制动电机 Electromagnetic brake motor
力矩电机 Torque motor

电磁制动电机
ELECTROMAGNETIC BRAKE MOTOR

140W　104MM

电机型号/性能 List of motor characteristics

电机型号 Motor Model		额定 Rating	输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	启动转矩 Starting Torque	额定转矩 Rated Torque	额定转速 Rated Speed	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft		W	V	Hz	A	mN.m	mN.m	r/min	μF/VAC
6RK140GU-CMF	6RK140A-CMF	30min	140	1ph220	50	1.05	850	990	1350	8/450
					60	1.15	750	862	1550	
6RK140GU-AMF	6RK140A-AMF	30min	140	1ph110	50	2.70	700	990	1350	35/250
					60	3.00	700	862	1550	
6RK140GU-SMF	6RK140A-SMF	30min	140	3ph220	50	0.85	2700	990	1350	/
					60	0.75	2200	862	1550	

●各种安全规格以电动机铭牌上的型号名取得认证。
●内藏热保护装置（自动复位型）。在电机因某种原因过热会自动启动使电动机停止。
●电动机温度下降后恢复运行，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.
●Contaions a built-in thermal protector(automatic return).if a motor overheats for any reason,the thermal protector is opened and the motors 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 labe.

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

减速比 Reduction 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	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	2.06	2.48	3.44	4.13	5.16	6.19	6.88	7.74	9.28	11.14	12.38	15.47	18.57	22.28	24.76	27.85	33.42	40	40	40	40	40	40	40
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	1.80	2.15	2.99	3.59	4.49	5.39	5.99	6.73	8.08	9.70	10.77	13.47	16.16	19.39	21.55	24.24	29.09	36.36	40	40	40	40	40	40

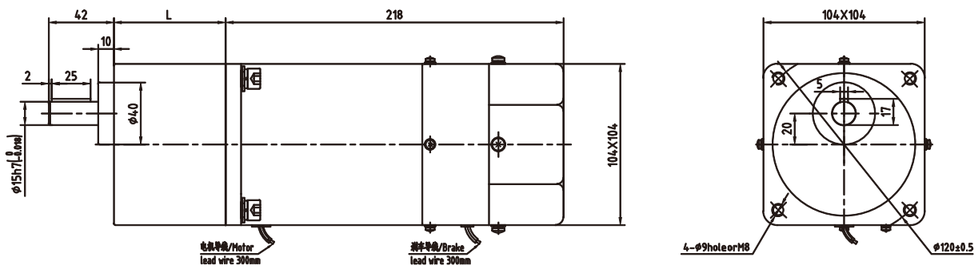
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
●表中 ■ 色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。
●减速箱的最大容许转矩为40N·M。

●In the table, the speed is calculated from the base of the 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 that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.
●The maximum allowable torque of the decelerator is 40N·M.

外形尺寸（单位mm） Dimension (unit mm)

■导线型 Lead Wring Type

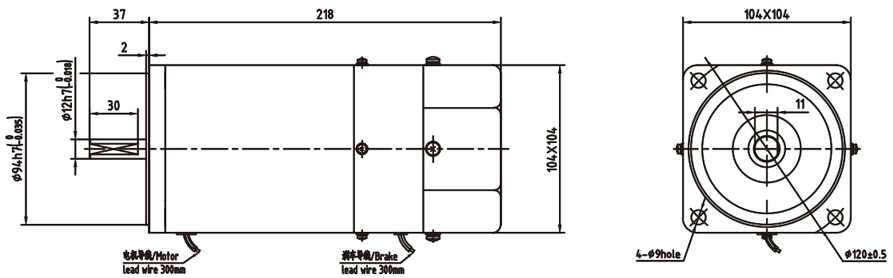
重量 Weight：电机 Motor:5.8Kg　　减速器 Gearhead:2.1Kg



其中，速比3~40，减速箱高度为L=65mm；速比50~200，减速器高度为L=72mm。
Among them,Gear ratio 3~40, The gearbox height is L=65 mm;Gear ratio 50~200, The gearbox height is L=72 mm.

■圆轴电机 Round Shaft Motor

重量 Weight:5.8Kg



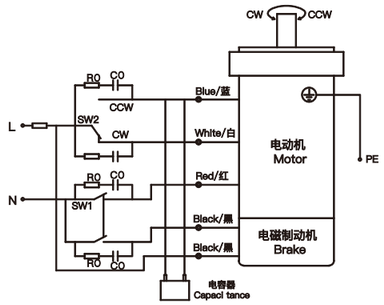
接线图 Wiring Diagram

●运转方向指从电动机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
●表中所记品名为齿轮轴型，圆轴型亦同。
●The direction of motor rotation is as viewed from the shaft end of motor.CW represents the cLockwise direction.whill CCW represents the counter clockwise direction.
●Name indicated in the list is pinion shaft type.aslo valid for the equivalent round shaft type.

■单相电动机 Single-phase Motor　6RK140GU-AMF、6RK140GU-CMF

●SW1为电动机的运行/停止及电磁制动操作开关。（连动）
●SW1设定ON时，电磁制动解除，电动机开始运作。
●SW1设定OFF时，电动机停止，电磁制动开始工作。
●在电动机停止状态下解除电磁制动时，应将SW1设定为非连动，而仅将 ■ 色导线侧的接触点设定ON.
●运转方向 ●将SW2转换至CW侧时，电动机作顺时针方向运转。●将SW2转换至CWW侧时，电动机作逆时针方向运转。

●SW1 operates both motor and electromagnetic brake action.(Switched Simultaneously)
●The motor will rotate when SW1 is switched simultaneously to ON
●When SW1 is switched simultaneously to OFF, the motor is stopped, set the electromagnetic brake and holds the load.
●If you wish to release the brake while the mator is stoped, set the SW1 to be of and connection point at the side of black lead to be on.
●Diretion of Rotation. To rtate the motor in a clocwise(CW)diretion,turn SW2 to CW. To rotate the mator in a coumterclockwise(CCW)direction,turn SW2 to CCW.

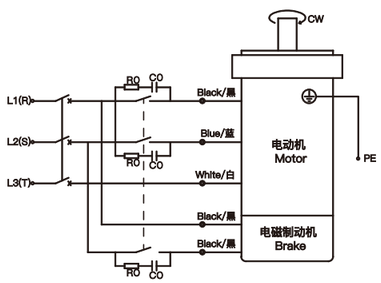


开关号码 Switch NO.	开关的接触点容量Contact capacity switch		参考 Note
	单相100V、110/120V输入 Single-Phase 100VAC, 110/120VAC Input	单相220V、230V、输入 Single-Phase 200VAC, 220/230VAC Input	
SW1	AC125V 8A以上（感应负载） AC125V 8A minimum(Inductive Load)	AC125V 8A以上（感应负载） AC125V 8A minimum(Inductive Load)	连动Switched Simultaneously
SW2			

■三相电动机 Theree-phase Motor　6RK140GU-SMF

●SW1为电动机的运行/停止及电磁制动操作开关。（连动）
●SW1设定ON时，电磁制动解除，电动机开始运作。
●SW1设定OFF时，电动机停止，电磁制动开始工作。
●在电动机停止状态下解除电磁制动时，应将SW1设定为非连动，而仅将 ■ 色导线侧的接触点设定ON.
●运转方向 ●若对换R、S、T中任意二条，电动机会逆时针方向运转。

●SW1 operates both motor and electromagnetic brake action.(Switched Simultaneously)
●The motor will rotate when SW1 is switched simultaneously to ON
●When SW1is switched simultaneously to OFF,the motor is stopped,set the electromagnetic brake and holds the load.
●If you wish to release the brake while the motor is stopped, set the SW1 to off and conection point at the side of black lead to on.
●Direction of Rotation.●To Change the rotation direction,change any two connections amony R,S and T.



开关号码 Switch NO.	开关的接触点容量Contact capacity switch	参考 Note
SW1	AC125V 1.5A以上（感应负载） AC125V AC1.5A minimum(Inductive Load)	连动Switched Simultaneously

请注意 Note

●R0C0为吸收电涌电压用CR电路。【R0=5~200Ω C0=0.1~0.2μF、200WV（400WV）】
●请使用选购配件EPCR1201-2。
●R0 or C0 indicate surge suppressor circuit.【R0=5~200Ω C0=0.1~0.2μF、200WV（400WV）】
●EPCR1201-2 is available as an optional surge suppressor.

电磁制动电机

ELECTROMAGNETIC BRAKE MOTOR

200W

104MM

电机型号/性能 List of motor characteristics

电机型号 Motor Model		额定 Rating	输出功率 Output Power	电压 Voltage	频率 Frequency	电流 Current	启动转矩 Starting Torque	额定转矩 Rated Torque	额定转速 Rated Speed	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft		W	V	Hz	A	mN.m	mN.m	r/min	μF/VAC
6RK200GU-CMF	6RK200A-CMF	30min	200	1ph220	50	1.65	1100	1415	1350	10/450
					60	1.65	1000	1232	1550	
6RK200GU-AMF	6RK200A-AMF	30min	200	1ph110	50	3.20	1100	1415	1350	35/250
					60	3.30	1000	1232	1550	
6RK200GU-SMF	6RK200A-SMF	30min	200	3ph220	50	1.20	3400	1415	1350	/
					60	1.00	3700	1232	1550	

●各种安全规格以电动机铭牌上的型号名取得认证。
●内藏热保护装置（自动复位型）。在电机因某种原因过热会自动启动使电动机停止。
●电动机温度下降后恢复运行，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.
●Contaions a built-in thermal protector(automatic return).if a motor overheats for any reason,the thermal protector is opened and the motors 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 labe.

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

减速比 Reduction 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	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	2.06	2.48	3.44	4.13	5.16	6.19	6.88	7.74	9.28	11.14	12.38	15.47	18.57	22.28	24.76	27.85	33.42	40	40	40	40	40	40	40
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	1.80	2.15	2.99	3.59	4.49	5.39	5.99	6.73	8.08	9.70	10.77	13.47	16.16	19.39	21.55	24.24	29.09	36.36	40	40	40	40	40	40

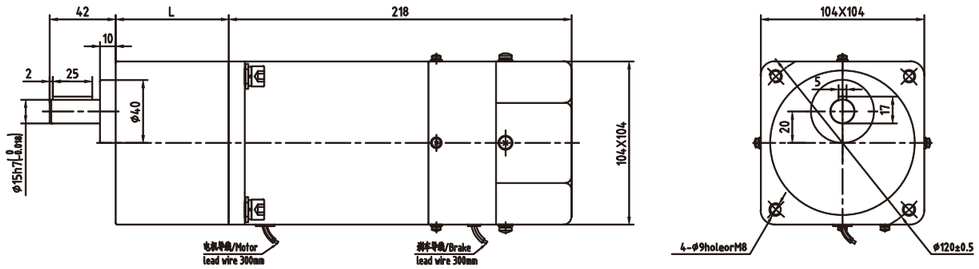
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
●表中 ■ 色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。
●减速箱的最大容许转矩为40N·M。

●In the table, the speed is calculated from the base of the 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 that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.
●The maximum allowable torque of the decelerator is 40N·M.

外形尺寸（单位mm） Dimension (unit mm)

■ 导线型 Lead Wring Type

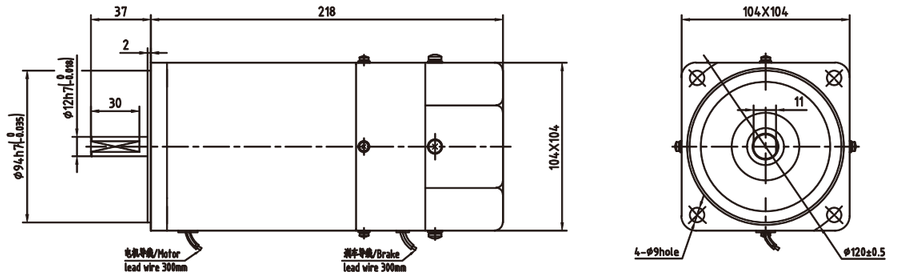
重量 Weight：电机 Motor:6.2Kg　　减速器 Gearhead:2.1Kg



其中，速比3~40，减速箱高度为L=65mm；速比50~200，减速器高度为L=72mm。
Among them,Gear ratio 3~40, The gearbox height is L=65 mm;Gear ratio 50~200, The gearbox height is L=72 mm.

■ 圆轴电机 Round Shaft Motor

重量 Weight:6.2Kg



接线图 Wiring Diagram

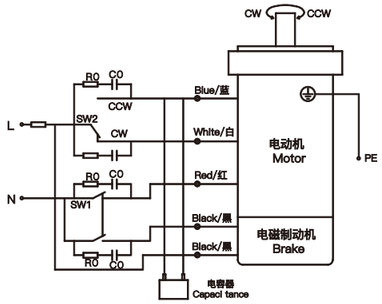
●运转方向指从电动机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
●表中所记品名为齿轮轴型，圆轴型亦同。
●The direction of motor rotation is as viewed from the shaft end of motor.CW represents the cLockwise direction.whill CCW represents the counter clockwise direction.
●Name indicated in the list is pinion shaft type.aslo valid for the equivalent round shaft type.

■ 单相电动机 Single-phase Motor

6RK200GU-AMF、6RK200GU-CMF

●SW1为电动机的运行/停止及电磁制动操作开关。（连动）
●SW1设定ON时，电磁制动解除，电动机开始运作。
●SW1设定OFF时，电动机停止，电磁制动开始工作。
●在电动机停止状态下解除电磁制动时，应将SW1设定为非连动，而仅将 ■ 色导线侧的接触点设定ON.
●运转方向 ●将SW2转换至CW侧时，电动机作顺时针方向运转。●将SW2转换至CWW侧时，电动机作逆时针方向运转。

●SW1 operates both motor and electromagnetic brake action.(Switched Simultaneously)
●The motor will rotate when SW1 is switched simultaneously to ON
●When SW1 is switched simultaneously to OFF, the motor is stopped, set the electromagnetic brake and holds the load.
●If you wish to release the brake while the mator is stoped, set the SW1 to be of and connection point at the side of black lead to be on.
●Diretion of Rotation. To rtate the motor in a clocwise(CW)diretion,turn SW2 to CW. To rotate the mator in a coumterclockwise(CCW)direction,turn SW2 to CCW.



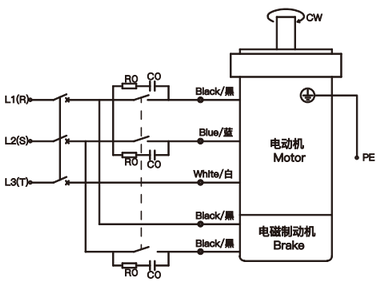
开关号码 Switch NO.	开关的接触点容量Contact capacity switch		参考 Note
	单相100V、110/120V输入 Single-Phase 100VAC, 110/120VAC Input	单相220V、230V、输入 Single-Phase 200VAC, 220/230VAC Input	
SW1	AC125V 8A以上（感应负载） AC125V 8A minimum(Inductive Load)	AC125V 8A以上（感应负载） AC125V 8A minimum(Inductive Load)	连动Switched Simultaneously
SW2			

■ 三相电动机 Theree-phase Motor

6RK200GU-SMF

●SW1为电动机的运行/停止及电磁制动操作开关。（连动）
●SW1设定ON时，电磁制动解除，电动机开始运作。
●SW1设定OFF时，电动机停止，电磁制动开始工作。
●在电动机停止状态下解除电磁制动时，应将SW1设定为非连动，而仅将 ■ 色导线侧的接触点设定ON.
●运转方向 ●若对换R、S、T中任意二条，电动机会逆时针方向运转。

●SW1 operates both motor and electromagnetic brake action.(Switched Simultaneously)
●The motor will rotate when SW1 is switched simultaneously to ON
●When SW1is switched simultaneously to OFF,the motor is stopped,set the electromagnetic brake and holds the load.
●If you wish to release the brake while the motor is stopped, set the SW1 to off and conection point at the side of black lead to on.
●Direction of Rotation.●To Change the rotation direction,change any two connections amony R,S and T.



开关号码 Switch NO.	开关的接触点容量Contact capacity switch	参考 Note
SW1	AC125V 1.5A以上（感应负载） AC125V AC1.5A minimum(Inductive Load)	连动Switched Simultaneously

请注意 Note

●R0C0为吸收电涌电压用CR电路。【R0=5~200Ω C0=0.1~0.2μF、200WV（400WV）】
●请使用选购配件EPCR1201-2。
●R0 or C0 indicate surge suppressor circuit.【R0=5~200Ω C0=0.1~0.2μF、200WV（400WV）】
●EPCR1201-2 is available as an optional surge suppressor.

力矩电机
TORQUE MOTOR

特征 Feature

●具有垂下特征，可调速范围宽大
●转矩电动机由于起动转矩大,具有垂下的特征,因此,能够通过改变电压进行调速。(电动机的转矩与电压的平方成正比)

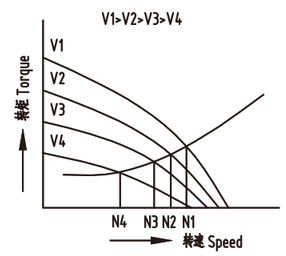
●The Speed Can Vary Widely, Depending on the Sloping Characteristics
●Torque motors have a high starting torque and Torque motors have a high starting torque and sloping characteristics, allowing easy speedcontrol simply by changing the volgeof the power supply.（The motor torque changes approximately proportion to the square of the voltage)

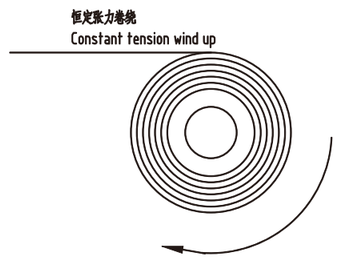
适用于卷取作业 Suitable For Winding Applications

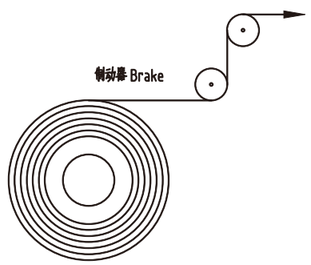
●以固定的张力连续卷取定速运转的物体时,若卷轴机直径增大至2倍,则电动机的输出转矩亦增大至2倍,而电动机转速则减半。作业时须保持这一比例关系。
●In an application where an object is released continuously at a constant speed and wound upwith constant tension, the torque must be doubled and the speed must be halved if the diameter of thewinding spool is doubled.

可作为制动使用 Use As A Brake

●电动机在转速-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。
●By using the motor in the braking region of the speed-torque characteristics, it can serve as abrake Constant tension operation can be achieved by applying a DC voltage.



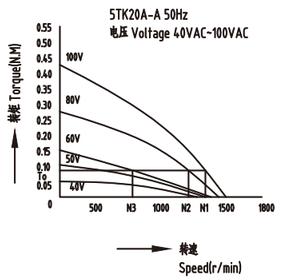




转速一转矩特性图的读方法 How To Read Speed- Torque Characteristics

●转矩电动机的转矩几乎与电压变化。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转速-转矩特性曲线。
●负载转矩时电压调整为100V、80V、60V的话,电动机会分别以N1、N2、N3转速旋转,如上所述，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。

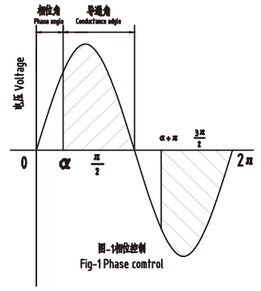
● The motor torque chargios'approxineiately proportion to the square of the voltage. When thevoltage supplied to the notors: changed speed-torque curves with a sloping characteristics (torqueis highest at zero speed and decreases steadily with increasing speed) shifts to that of thecorresponding voltage.
●When the voltage is changed to 100V, 80V and 60v while the load torque is TO, the motor rotatesat the 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 amotor using the speed- torque characteristics curves to determine whether the motor should beoperated under continuous duty or limited duty. When used under locked rotor conditions, only thetorque factor is considered.
●The temperature rise of the motor may cause a problem during continuous operation. In thiscase, choose a motor with an output power large enough for continuous operation and adjust theoltage to control the torque and speed



转矩电动机电压控制方法 oltage 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空硅的相位角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 shownin Fig. 1, by changing the phase angle a at which the triac switches, the input voltage is controlled asrepresented 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,转矩电动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.

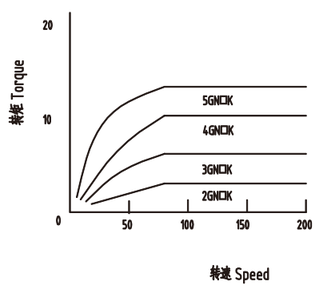
减速器输出轴转速NG=电动机转速*1/减速器减速比
减速器输出轴转矩TG=电动机转矩*减速器减速比*减速器传动效率

●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 agearhead and a decimal gearhead are directly connected can be calculated according to the following formula, using the speed and torque determined from the speed-torquecharacteristics.

Peed of gearhead output shaft NG=Motor speed*1/gearhead gear ratio
Output torque of gearhead TG=Motor torque*gearhead gear ratio*gearhead efficiency

请注意,减速器的输出轴转矩不可大于减速器的最大的最大容许转矩

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 Rario	减速器传动效率 Gearhead Efficiency
2GN□K	3~18	81%
3GN□K	25~36	73%
4GN□K		
5GN□K	50~200	66%

●减速器、中间减速器另售。
●减速器型号的口中为减速比的数值。

●Gearheads and decimal gearheads are sold separatel.
●Enter the gear ratio in the box (口) within the model name.

规格 Specifications

●3W、6W、10W、20W、40W

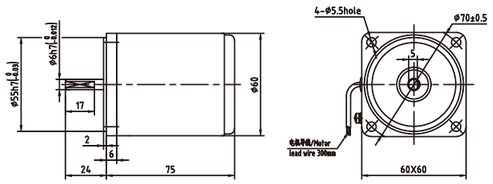
型号Model·类型Type 导线型Lead		使用额定（堵转）	电压	频率	启动转矩	最大输出功率	最大输出功率时的转速	最大输出功率时的转矩	电容器容量
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	Rating At Locked Rotor	Voltage	Frequency	Starting Torque	Max.Output Power	Speed Max. Output Power	Torque At Max. Output Power	Capacitor
			V	Hz	mN.m	W	r/min	mN.m	μF
2TK3GN-A	2TK3A-A	5MIN	110	50	69	3.2	750	41	7/250
		连续CONT	60		25	1.3		16	
		5MIN	110	60	69	3.2	900	37	6/250
		连续CONT	60		25	1.3		11	
3TK6GN-A	3TK6A-A	5MIN	110	50	134	6.0	750	80	8/250
		连续CONT	60		68	2.5		36	
		5MIN	110	60	134	6.5	900	74	7/250
		连续CONT	60		68	2.8		30	
4TK10GN-A	4TK10A-A	5MIN	110	50	235	10.0	750	127	10/250
		连续CONT	60		74	3		46	
		5MIN	110	60	25	10	900	127	8/250
		连续CONT	60		69	3		38	
5TK20GN-A	5TK20A-A	5MIN	110	50	363	20	750	224	15/250
		连续CONT	60		137	6		76	
		5MIN	110	60	294	26	900	216	12/250
		连续CONT	60		108	6		64	
2TK3GN-C	2TK3A-C	5MIN	220	50	69	3.2	750	41	1.5/450
		连续CONT	140		25	1.2		16	
		5MIN	220	60	69	3.2	900	37	1.2/450
		连续CONT	140		25	1.2		11	
3TK6GN-C	3TK6A-C	5MIN	220	50	134	6	750	80	2/450
		连续CONT	140		68	2.5		36	
		5MIN	220	60	134	6.5	900	74	1.5/450
		连续CONT	140		68	2.8		30	
4TK10GN-C	4TK10A-C	5MIN	220	50	265	10	750	127	2.5/450
		连续CONT	140		98	3		46	
		5MIN	220	60	225	10	900	127	2/450
		连续CONT	140		90	3		38	
5TK20GN-C	5TK20A-C	5MIN	220	50	363	20	750	224	3.5/450
		连续CONT	140		137	6		76	
		5MIN	220	60	294	26	900	216	3/450
		连续CONT	140		108	6		64	
6TK40GU-C	6TK40A-C	5MIN	220	50	1056	40	750	803	8/450
		连续CONT	140		522	12		351	
		5MIN	220	60	980	40	900	750	8/450
		连续CONT	140		490	12		331	

●各种安全规格以电动机铭牌上的型号取得认证。
●hen the motor is approved under varus safety standards, the model name on the nameplate is the approved model name.

外形尺寸（单位mm） Dimension (unit mm)

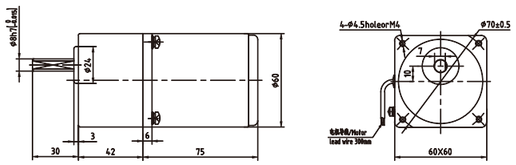
■ 3W
■ 圆轴电机 Round Shaft Motor

重量 Weight:0.75Kg



■ 3W
■ 电动机/减速器 Motor/Gearhead

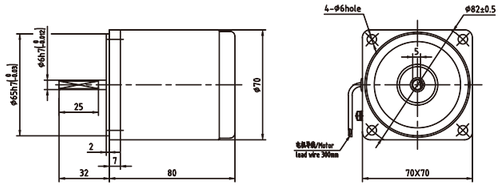
重量 Weight:电机 Motor:0.75Kg
减速器 Gearhead: 0.4Kg



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 32 mm.

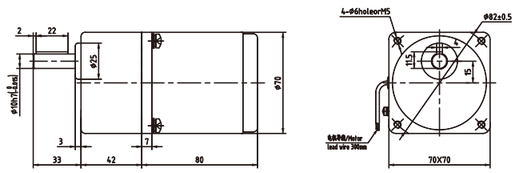
■ 6W
■ 圆轴电机 Round Shaft Motor

重量 Weight:1.1Kg



■ 6W
■ 电动机/减速器 Motor/Gearhead

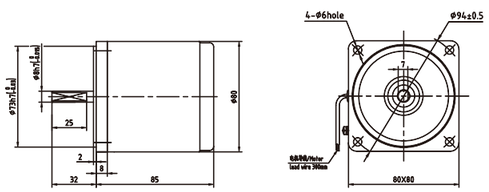
重量 Weight:电机 Motor:1.1Kg
减速器 Gearhead: 0.5Kg



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 32 mm.

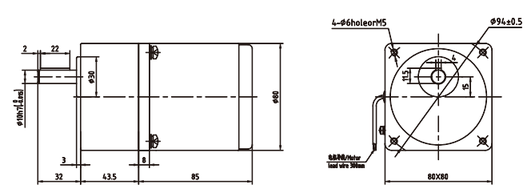
■ 10W
■ 圆轴电机 Round Shaft Motor

重量 Weight:1.6Kg



■ 10W
■ 电动机/减速器 Motor/Gearhead

重量 Weight:电机 Motor:1.6Kg
减速器 Gearhead: 0.8Kg

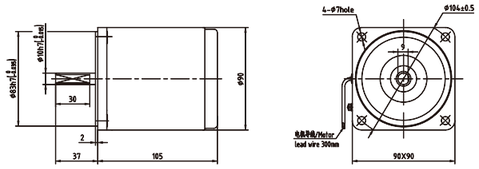


其中速比3~18可以做成短型减速箱,高度为32mm。
Gear ratio 3~18, short case is possible，Height of 32 mm.

外形尺寸（单位mm） Dimension (unit mm)

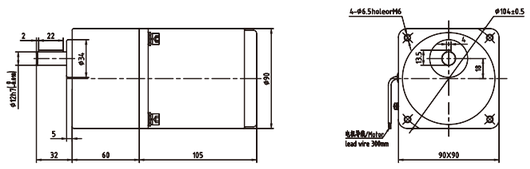
■ 20W
■ 圆轴电机 Round Shaft Motor

重量 Weight:2.4Kg



■ 20W
■ 电动机/减速器 Motor/Gearhead

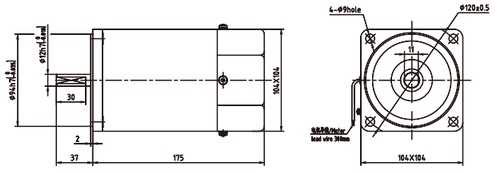
重量 Weight:电机 Motor:2.4Kg
减速器 Gearhead: 1.35Kg



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 42 mm.

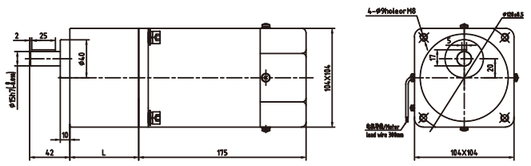
■ 40W
■ 圆轴电机 Round Shaft Motor

重量 Weight:5.1Kg



■ 40W
■ 电动机/减速器 Motor/Gearhead

重量 Weight:电机 Motor:5.1Kg
减速器 Gearhead: 2.1Kg

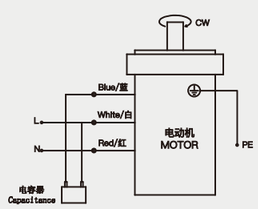


其中，速比3~40，减速箱高度为L=65m;速比50~200，减速器高度为L=72mm
Among them,Gear ratio 3~40,The gearbox height isL=65mm;
Gear ratio 50~200,The gearbox height is L=72mm

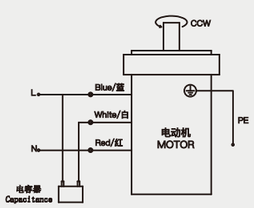
接线图 Wiring Diagram

●运转方向指从电动机轴看来的方向。CW表示顺时针方向，CCW表示逆时针方向。
●表中所记品名为齿轮轴型，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 counter clockwise direction.
●Name indicated in the list is pinion shaft type.aslo valid for the equivalent round shaft type.

顺时针方向CW



逆时针方向CCW



请注意 Note

●单相电动机运转方向的转换应在电动机停止后进行。
●若在电动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 direcition 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.

SF系列面板式减速器

SF SERIES PANEL SPEED CONTROLLER

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。
●可面板操作、外接开关控制。
●面板旋纽自动匹配最高转速，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）

●Wth 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 user's requirement, and the display target value can be automatically converted.
●Slow acceleration and slow deceleration are possible.
●Paneloperation, external switch control.
●The panel knob automatically matches the maximum speed, and the speed control is convenient and safe.
●Built-in capacitor.
●The stall protection function prevents the motor and drive from being burnt out due to blockage.
(This function protects against stalled overload but does not protect against non-blocking overlcad.)

型号阵列表 Model array table

类别 Category	SF系列面板式调速器 SF SERIES PANEL GOVERNOR		SK系列内置式调速器 SK SERIES BUILT-IN GOVERNOR	
电源电压 Voltage / 电机功率Power	220V	110V	220V	110V
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		

型号命名方法 Model naming method

		①	②	③	④
面板式 PANEL TYPE		SF	□	E	□
	名称代号 Name code.			面板式调速器 Panel governor	
	适用调速电机功率代号(W) Applicable speed motorPower code			6W~200W	
	电压代号 Voltage			E(单相single phase 220V) A(单相Single phase 110V)	
	派生代号 Promotian code				
内置式 BUILT-IN		SK	□ □	E	□
	名称代号 Name code.			内置式调速器 Built-in governor	
	适用调速电机功率代号(W) Applicable speed motorPower code			6W~200W	
	电压代号 Voltage			E(单相Single phase 220V) A(单相Single phase 110V)	
	派生代号 Promotian code				

性能参数表 Model array 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	
电源电源 Voltage	单相 single phase 220V	单相 single phase 110V	单相 single phase 220V	单相 single phase 110V
电源频率 Power frequency	50/60HZ			
适用电机类型 Motor tyrpe	调速电机 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 themselves)	
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/mino(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℃-+45℃(无结冰 No icing) 环境湿度 Ambient humidity:85%以下(无结露)No condensation			

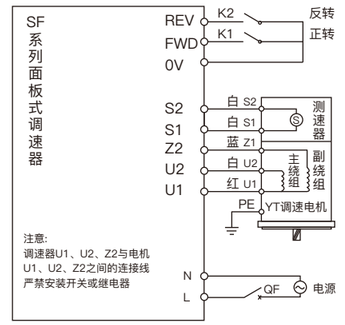
SF系列面板式调速器接线图 SF series panel governor diagram

操作面板按钮控制电机运转

●无需安装K1、K2开关。
●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。QF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

●No need to install the K1 and K2 switches.
●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 ofthe drive.
●The power supply voltage must match the drive supply voltage specifications. QF is a circuit breaker that protects the drive and the speed control motorin the event of a short circuit.



外接开关K1、K2控制电机运转

●必须安装K1、K2开关。
●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

●Install the K1 and K2 switches
●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.

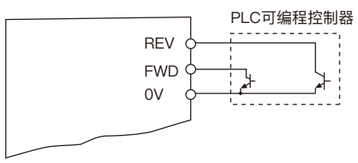
QF断路器电流规格表 QF Circuit Breaker Current Specification Table

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

FWD、REV采用PLC可编程控制器控制
PLC输出方式:NPN或漏型晶体管输出。

FWD、REV采用接近开关、光电开关等传感器控制
开关输出方式:三线式NPN晶体管输出。

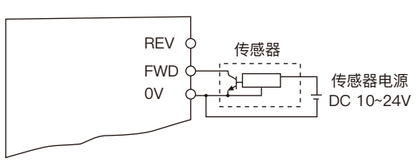
菜单设置
运转控制方式F-03选择“2”或“3”外接开关控制。



FWD、REV with pLc Program with controller to control
Plc output method :NPN or Sink transistor output

FWD, REV use proximity sensor, photoelectric switch and othersensor control.
Switch output mode:Three-wire NPN transistor output.

Menu Settings
Run control mode F3 select "2"or "3" external switch control

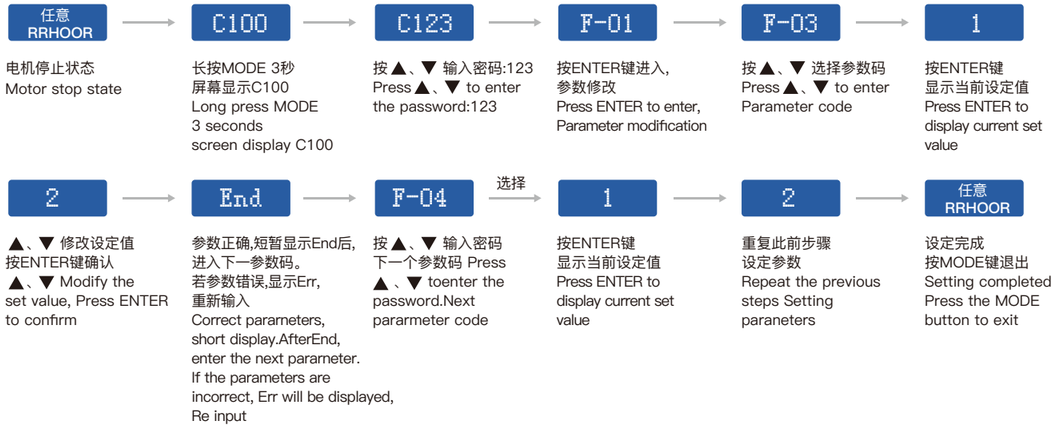


SF系列面板式调速器菜单 SF Series Panel governor Menu

菜单修改 Menu modification

●注意：为保证安全,F-05、F-29参数修改必须在电机停止状态下进行,否则无法设置,屏幕显示Err。

●Note. In order to ensure safety, the parameters of F-05 and F-29must be modified while the motor is stopped.Otherwise , it cannot be set the sceen display Err.



电机停止状态
Motor stop state

长按MODE 3秒
屏幕显示C100
Long press MODE 3 seconds screen display C100

按▲、▼ 输入密码:123
Press▲、▼ to enter the password:123

按ENTER键进入,
参数修改
Press ENTER to enter, Parameter modification

按▲、▼ 选择参数码
Press▲、▼ to enter Parameter code

按ENTER键
显示当前设定值
Press ENTER to display current set value

▲、▼ 修改设定值
按ENTER键确认
▲、▼ Modify the set value, Press ENTER to confirm

参数正确,短暂显示End后,进入下一参数码。
若参数错误,显示Err,重新输入
Correct parameters, short display.AfterEnd, enter the next parameter. If the parameters are incorrect, Err will be displayed, Re input

按▲、▼ 输入密码
下一个参数码 Press ▲、▼ toenter the password.Next pararmeter code

按ENTER键
显示当前设定值
Press ENTER to display current set value

重复此前步骤
设定参数
Repeat the previous steps Setting paraneters

设定完成
按MODE键退出
Setting completed Press the MODE button to exit

SF系列面板式调速器菜单清单 SF series panel governor menu

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-01	显示内容 Display content	1.电机转速设定值 2.倍率转速设定值 1.Motor speed setting 2.Rate of rotation setting	倍率转速设定值=电机转速设定值÷倍率 Multiplying speed setting value = motor speed setting value ÷ magnification	1	
F-02	倍率设定 Magnification setting	1.0~999.9	根据显示直观性需要设定，显示目值。 The target value is displayed according to the display intuitiveness setting.	1.0	
F-03	运转控制方式 Operation control method	1.操作面板按钮控制、无记忆 2.外接开关控制，面板STOP键无效 3.外接开关控制，面板STOP键有效 4.操作面板按钮控制、有记忆 1.Operation panel button control, no memory. 2.External switch control. Panel STOPbutton is invalid. 3.External switch control, panel STOPbutton is valid. 4.Operation panel button control,with memory.	选择“1”由面板按钮控制电机,关闭调速器电源后再次打开电源,调速器不记忆关电前的运转状态,重新上电电机为停止状态。 选择“4”调速器记忆关电前的运转状态,重新上电后电机为上次关电前的状态,例如:关电前电机正转,再次上电电机立即正转。选择此功能。请注意安全!选择外接开关控制时。由FWD、REV外接开关K1、K2控制电机。 Select ”1” to control the motor by the panel button. Turn off the power to the governor and then turn it on again. The governor does not remember the operating state before turning off the power, and the motor is in a stopped state when it is re powered on. Select ”4” to memorize the operating status of the governor before power off. After re powering on, the motor will return to the previous state before power off. For example, the motor will rotate forward before power off, and immediately forward when power on again. Select this feature. Please pay attention to safety! When selecting external switch control. The motor is controlled by external switches K1 and K2 of FWD and REV.	1	
F-04	旋转方式 Rotation mode	1.允许正反转 2.允许正转，禁止反转 3.允许反转，禁止正转 1.Allow positive and negative reversal. 2.Allow forward rotation, prohibit reverse rotation 3.Allow reverse, prohibit forward rotation	限制电机旋转方向,防止设备故障或事故。 Limit the diretion of motor rotation. Prevent equipment failure or accidents.	1	
F-05	旋转方向 Rotation direction	1.不取反；2.取反 1.Don't reverse；2.Invert	无需改变电机接线，轻而易举改变电机转向,使之与习惯或要求一致。 easy to change the motor steering without changing the motor wiring. Make it consistent with the customary requirements.	1	

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 2.面板旋钮 1.Panel ▲▼ button 2. Panel knob	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。 Limit the maximum speed of the motorto prevent overspeed. Damage or accident has occurred.	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	正转后动加速时间 Forward rotation acceleration time	0.1~10.0秒 seconds	时间长,电机起动平缓,起动时间长;时间短,电机起动快猛,起动时间短 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-10	正转停止方式 Forward stop mode	自由减速停止 缓慢减速停止 Free deceleration stop 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-11设定值,可改变缓慢减速停止的快慢。 When choosing free deceleration to stop. If the motor stops faster;you can select the stage slow deceleration stop and change the F-11 set value to change the speed of the slow deceleration stop.	1	
F-11	正转停止时缓慢减速时间 When the forward stop Slow decele ration time	0.1~10.0秒 seconds	F-10 选择 2 时，菜单有效 When F-10 selects 2，the menu is valid.	1.0	
F-12	反转后动加速时间 Reverse start acceleration time	0.1~10.0秒 seconds	时间长,电机起动平缓,起动时间长;时间短,电机起动快猛,起动时间短 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-13	反转停止方式 Reverse stop mode	自由减速停止 缓慢减速停止 Free deceleration stop Slowly slow down and stop	当选择自由减速停止时,若电机停止较快,可选择级慢减速停止,改变F-14设定值,可改变缓慢减速停止的快慢。 When choosing free deceleration to stop. If the motor stops faster;you can select the stage slow deceleration stop and change the F-14 set value to change the speed of the slow decelerationstop.	1	
F-14	反转停止时缓慢减速时间 Revers stop Slow decele ration time	0.1~10.0秒 seconds	F-13 选择 2 时，菜单有效 When F-13 selects 2，the menu is valid.	1.0	
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		0.1**	

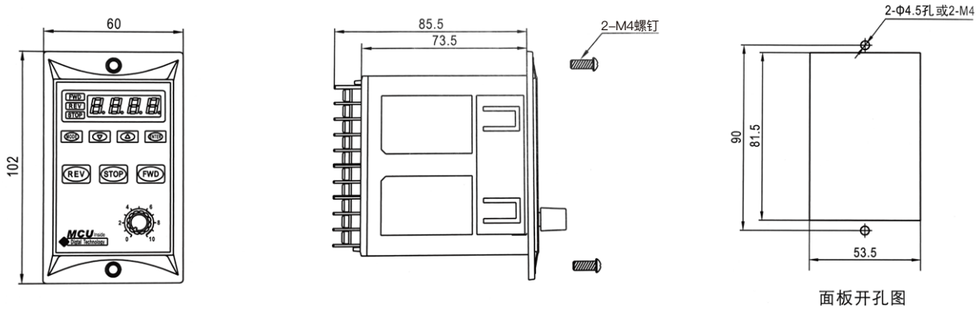
故障报警Er-1
Fault alarm Er-1

1)过载堵转。
2)调速器与电机或运行电容的连接异常。
1) Overload blocked.
2) The connection between the governor and the motor or running capacitor is abnormal.

故障处理方式
Trouble！shooting:

1)检查、排除故障。
2)重新上电解除报警。
1) Check and trouble shoot.
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



面板开孔图

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燃物周围使用。
●避免连续振动,过度冲击。
●电机在正常运转状态下,有时电机外表面的温度可能会超过70℃,因此在可能触及电机的使用环境下请加贴右图所示的警告标志。
●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。

●Donot use in a fragile environment,an easy-to-existing gas environment, a corosive environment,or a place where it's easy to get water or a bakeable object.
●Avoid continuous vibration.Excessive impact.
●When the mator is in normal operation, sometimes the termperature of the motor casing surface may exceed 70℃
●Therefore, please put the general sign shown on the right circle in the environment where the motor may be touched.
●Be sure to ground the ground terminall.
●Installation, connection,inspection, etc. must be carried out by professional 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、失电电磁制动停止等复杂运动控制。
●可面板操作、外接开关控制。
●面板旋纽自动匹配最高转速，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）

●Wth 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 user's requirement, and the display target value can be automatically converted.
●It can achieve complex motion control such as slow acceleration, slow deceleration, and power loss electromagnetic braking stop.
●Paneloperation, external switch control.
●The panel knob automatically matches the maximum speed, and the speed control is convenient and safe.
●Built-in capacitor.
●The stall protection function prevents the motor and drive from being burnt out due to blockage.
(This function protects against stalled overload but does not protect against non-blocking overlcad.)

型号阵列表 Model array table

类别 Category	SFB系列面板式驱动器 SFB SERIES PANEL DRIVE		SKB系列内置式驱动器 SKB SERIES BUILT-IN DRIVE	
电机功率Power \ 电源电压 Voltage	220V	110V	220V	110V
15W	SFB15E	SFB15A	SKB200E	SKB200A
25W	SFB25E	SFB25A		
40W	SFB40E	SFB40A		
60W	SFB60E	SFB60A		
90W	SFB90E	SFB90A		
120W	SFB120E	SFB120A		
200W	SFB200E	SFB200A		

型号命名方法 Model naming method

面板式 PANEL TYPE

SFB ①	□ ②	E ③	□ ④
名称代号 Name code.		面板式驱动器 Panel drive	
适用调速电机功率代号(W) Applicable speed motorPower code		15W~200W	
电压代号 Voltage		E(单相single phase 220V) A(单相Single phase 110V)	
派生代号 Promotian code			

内置式 BUILT-IN

SKB ①	200 ②	E ③	□ ④
名称代号 Name code.		内置式调速器Builtingovernor	
适用调速电机功率代号(W) Applicable speed motorPower code		15W~200W	
电压代号 Voltage		E(单相Single phase 220V) A(单相Single phase 110V)	
派生代号 Promotian code			

性能参数表 Model array table

型号 Model	SFB □□ E	SFB □□ A	SKB200E	SKB200A
安装方式 Install method	面板式 panel type		内置式 built-in	
电源电源 Voltage	单相 single phase 220V	单相 single phase 110V	单相 single phase 220V	单相 single phase 110V
电源频率 Power frequency	50/60HZ			
适用电机类型 Motor tyrpe	调速电磁制动电机Variable speed electromagnetic brake 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 themselves)	
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,失电电磁制动停止 Panel or external switch operation control, speed control, Slow acceleration, slow deceleration,Power loss electromagnetic braking stop.		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,失电电磁制动停止 External switch operation control,speed control.Slow acceleration, slow deceleration, fast stop, 4 speed stage,Power loss electromagnetic braking stop	
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/mino(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℃–+45℃(无结冰 No icing) 环境湿度 Ambient humidity:85%以下(无结露)No condensation			

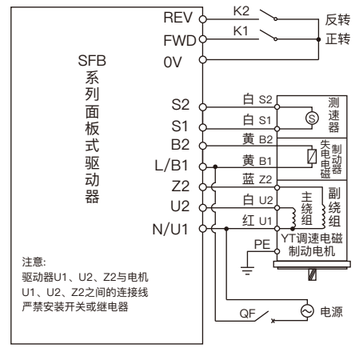
SFB 系列面板式驱动器接线图 SFB series panel drive diagram

操作面板按钮控制电机运转

●无需安装K1、K2开关。
●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。
●电源电压必须与驱动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。

Operator panel buttons control motor operation

●No need to install the K1 and K2 switches.
●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 voltage must match the drive supply voltage specifications. QF is a circuit breaker that protects the drive and the speed control motorin the event of a short circuit.



外接开关K1、K2控制电机运转

●必须安装K1、K2开关。
●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

●Install the K1 and K2 switches
●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 Circuit Breaker Current Specification Table

电源电压 Voltage	电机功率 Power	QF电流规格 QF current specification
220V	15~90W	1A
220V	120~200W	2A
110V	15~90W	2A
110V	120~200W	4A

FWD、REV采用PLC可编程控制器控制

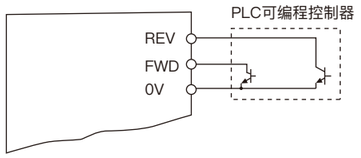
PLC输出方式:NPN或漏型晶体管输出。

FWD、REV采用接近开关、光电开关等传感器控制

开关输出方式:三线式NPN晶体管输出。

菜单设置

运转控制方式F–03选择“2”或“3”外接开关控制。

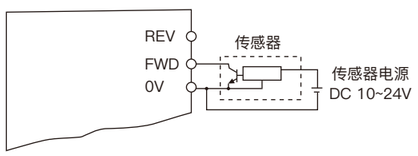


FWD、REV with pLc Program with controller to control

Plc output method :NPN or Sink transistor output

FWD, REV use proximity sensor, photoelectric switch and othersensor control.

Switch output mode:Three–wire NPN transistor output.



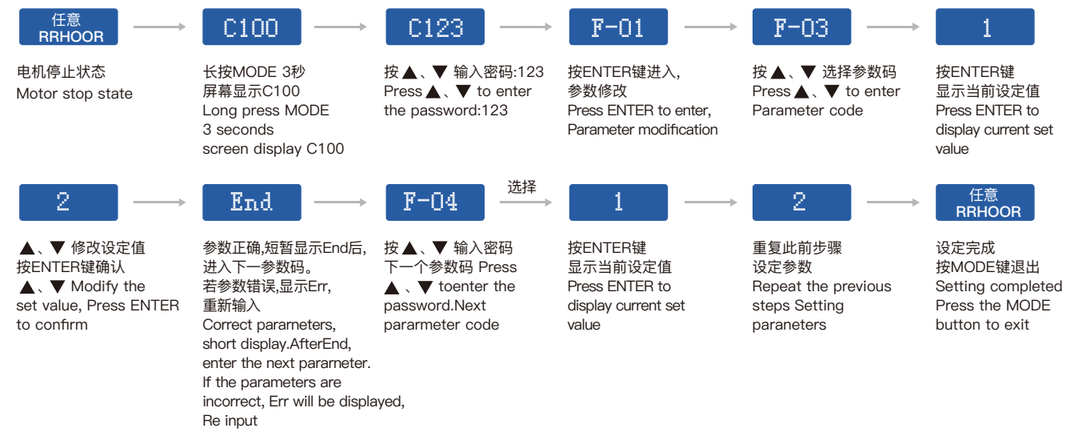
Menu Settings

Run control mode F3 select "2" or "3" external switch control

SFB系列面板式驱动器菜单 SFB Series Panel Drive Menu

菜单修改 Menu modification

●注意：为保证安全,F–05、F–29参数修改必须在电机停止状态下进行,否则无法设置,屏幕显示Err。
●Note. In order to ensure safety, the parameters of F–05 and F–29must be modified while the motor is stopped.Otherwise , it cannot be set the sceen display Err.



SFB系列面板式驱动器菜单清单 SFB series panel drive menu list

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–01	显示内容 Display content	1.电机转速设定值 2.倍率转速设定值 1.Motor speed setting 2.Rate of rotation setting	倍率转速设定值=电机转速设定值÷倍率 Multiplying speed setting value = motor speed setting value ÷ magnification	1	
F–02	倍率设定 Magnification setting	1.0~999.9	根据显示直观性需要设定，显示目值。 The target value is displayed according to the display intuitiveness setting.	1.0	
F–03	运转控制方式 Operation control method	1.操作面板按钮控制、无记忆 2.外接开关控制，面板STOP键无效 3.外接开关控制，面板STOP键有效 4.操作面板按钮控制、有记忆 1.Operation panel button control, no memory. 2.External switch control. Panel STOPbutton is invalid. 3.External switch control, panel STOPbutton is valid. 4.Operation panel button control,with memory.	选择“1”由面板按钮控制电机,关闭调速器电源后再次打开电源,调速器不记忆关电前的运转状态,重新上电电机为停止状态。 选择“4”调速器记忆关电前的运转状态,重新上电后电机为上次关电前的状态,例如:关电前电机正转,再次上电电机立即正转。选择此功能。请注意安全!选择外接开关控制时。由FWD、REV外接开关K1、K2控制电机。 Select ”1” to control the motor by the panel button. Turn off the power to the governor and then turn it on again. The governor does not remember the operating state before turning off the power, and the motor is in a stopped state when it is re powered on. Select ”4” to memorize the operating status of the governor before power off. After re powering on, the motor will return to the previous state before power off. For example, the motor will rotate forward before power off, and immediately forward when power on again. Select this feature. Please pay attention to safety! When selecting external switch control. The motor is controlled by external switches K1 and K2 of FWD and REV.	1	
F–04	旋转方式 Rotation mode	1.允许正反转 2.允许正转，禁止反转 3.允许反转，禁止正转 1.Allow positive and negative reversal. 2.Allow forward rotation, prohibit reverse rotation 3.Allow reverse, prohibit forward rotation	限制电机旋转方向,防止设备故障或事故。 Limit the diretion of motor rotation. Prevent equipment failure or accidents.	1	
F–05	旋转方向 Rotation direction	1.不取反；2.取反 1.Don’t reverse；2.Invert	无需改变电机接线，轻而易举改变电机转向, 使之与习惯或要求一致。 easy to change the motor steering without changing the motor wiring. Make it consistent with the customary requirements.	1	

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 2.面板旋钮 1.Panel ▲▼ button 2. Panel knob	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。 Limit the maximum speed of the motor to prevent overspeed. Damage or accident has occurred.	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	正转起动是解除失电电磁制动器后电机延迟起动时间 Forward rotation start is the motor delay starttime after the de-energized electromagnetic brake is released.	0.0~2.0秒 seconds	一般该值取0,仅特殊应用需让电机延后起动才需改变设定值。 Generally, this value is taken as 0, and the set value needs to be changed only when the motor needs to be delayed forspecial applications	0.0	
F-10	正转后动加速时间 Forward rotation acceleration time	0.1~10.0秒 seconds	时间长,电机起动平缓,起动时间长; 时间短,电机起动快猛,起动时间短 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 stop mode	失电电磁制动停止 自由减速停止 缓慢减速停止 Power failure electromagnetic brake stops Free deceleration stop 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 for ward rotation stops	0.0~5.0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 1, the menu is valid. When the motor stops, within the setting time, be decelerated in free deceleration mode then brake.	0.0	
F-13	正转停止时缓慢减速时间 When the forward rotation stops Slow deceleration time	0.1~10.0秒 seconds	F-11 选择 3 时，菜单有效 When F-11 selects 3，the menu is valid.	1.0	
F-14	反转起动时解除失电电磁制动器后电机延迟起动时间 Relieve de-powered electromagnetic braker delay time whenforward rotation start	0.0~2.0秒 seconds	一般该值取0,仅特殊应用需让电机延后起动才需改变设定值。 Generally, this value is taken as 0, and the set value needs to be changed only when the motor needs to be delayed for special applications	0.0	
F-15	反转起动加速时间 Reverse start acceleration time	0.1~10.0秒 seconds	时间长,电机起动平缓,起动时间长; 时间短,电机起动快猛,起动时间短 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	反转停止方式 Reverse stop mode	失电电磁制动停止 自由减速停止 缓慢减速停止 Power failure electromagnetic brake stops Free deceleration stop 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	

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-17	反转停止时失电电磁制动器制动延时时间 De-energized electromagnetic brake brake delay time	0.0~5.0秒 seconds	F-16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-16isselected 1,the menu is valid. When the motor slops, during this set time, first decelerate in the free deceleration mode and then brake.	0.0	
F-18	反转停止时缓慢减速时间 Slow deceleration time when reverse rotation stops	0.1~10.0秒 seconds	F-16选择1时，菜单有效 When F-16isselected 1,the menu is valid.	1400	
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**	

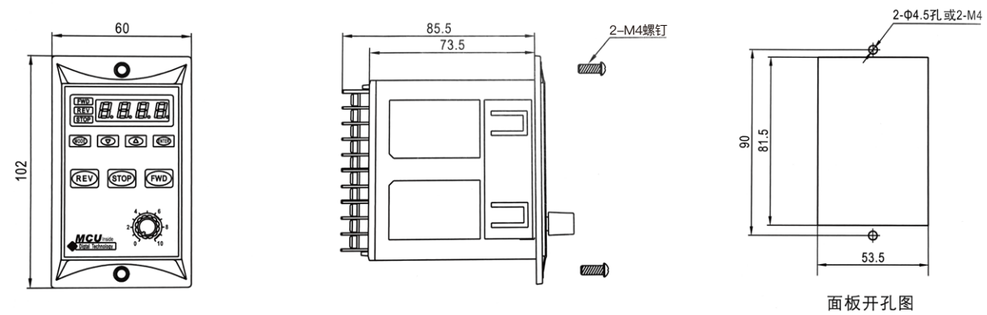
故障报警Er-1
Fault alarm Er-1

1)过载堵转。
2)调速器与电机或运行电容的连接异常。
1) Overload blocked.
2) The connection between the governor and the motor or running capacitor is abnormal.

故障处理方式
Trouble！shooting:

1)检查、排除故障。
2)重新上电解除报警。
1) Check and trouble shoot.
2)Re-power on to cancel the alarm.

SFB系列面板式驱动器外形及安装图 SFB series panel drive shape and installation diagram



面板开孔图

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燃物周围使用。
●避免连续振动,过度冲击。
●电机在正常运转状态下,有时电机外表面的温度可能会超过70℃,因此在可能触及电机的使用环境下请加贴右图所示的警告标志。
●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。

●Donot use in a fragile environment,an easy-to-existing gas environment, a corosive environment,or a place where it's easy to get water or a bakeable object.
●Avoid continuous vibration.Excessive impact.
●When the mator is in normal operation, sometimes the termperature of the motor casing surface may exceed 70℃
●Therefore, please put the general sign shown on the right circle in the environment where the motor may be touched.
●Be sure to ground the ground terminall.
●Installation, connection,inspection, etc. must be carried out by professional technicians.

SK系列内置式调速器

SK SERIES BUILT-IN SPEED CONTROLLER

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。
●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)

●Wth 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 user's requirement, and the display target value can be automatically converted.
●Slow acceleration and slow deceleration are possible.
●Paneloperation, external switch control.
●The panel knob automatically matches the maximum speed, and the speed control is convenient and safe.
●Built-in capacitor.
●The stall protection function prevents the motor and drive from being burnt out due to blockage.
(This function protects against stalled overload but does not protect against non-blocking overlcad.)

型号阵列表 Model array table

类别 Category	SF系列面板式调速器 SF SERIES PANEL GOVERNOR		SK系列内置式调速器 SKSERIES BUILT-IN GOVERNOR	
电源电压 Voltage / 电机功率Power	220V	110V	220V	110V
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		

型号命名方法 Model naming method

面板式 PANEL TYPE

SF ①	□ □ ②	E ③	□ ④
名称代号 Name code.		面板式调速器 Panel governor	
适用调速电机功率代号(W) Applicable speed motorPower code		6W~200W	
电压代号 Voltage		E(单相single phase 220V) A(单相Single phase 110V)	
派生代号 Promotian code			

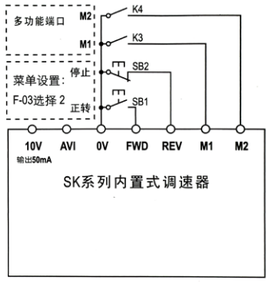
内置式 BUILT-IN

SK ①	200 ②	E ③	□ ④
名称代号 Name code.		内置式调速器 Built-in governor	
适用调速电机功率代号(W) Applicable speed motorPower code		6W~200W	
电压代号 Voltage		E(单相Single phase 220V) A(单相Single phase 110V)	
派生代号 Promotian code			

性能参数表 Model array 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	
电源电源 Voltage	单相 single phase 220V	单相 single phase 110V	单相 single phase 220V	单相 single phase 110V
电源频率 Power frequency	50/60HZ			
适用电机类型 Motor tyrpe	调速电机 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 themselves)	
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/mino(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-+45°C(无结冰 No icing) 环境湿度 Ambient humidity:85%以下(无结露)No condensation			

SK系列内置式调速器接线图 SK Series Built-in Speed Controller Diagram



QF断路器电流规格表 QF Circuit Breaker Current Specifcation Table

电源电压 Voltage	电机功率 Power	QF电流规格 QF current specifcation
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 ashort circuit occurs.

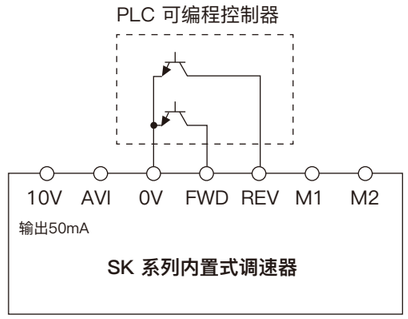
运行电容 C 规格表 Operating capacitor C specification sheet

电机功率 Power / 电源电压 Voltage	200V	200V
6W	0.7μF/500V	2.5μF/250V
15W	1μF/500V	4μF/250V
25W	1.5μF/500V	6μF/250V
40W	3.5μF/500V	10μF/250V
60W	3μF/500V	14μF/250V
90W	5μF/500V	20μF/250V
120W	6μF/500V	24μF/250V
200W	10μF/500V	40μF/250V

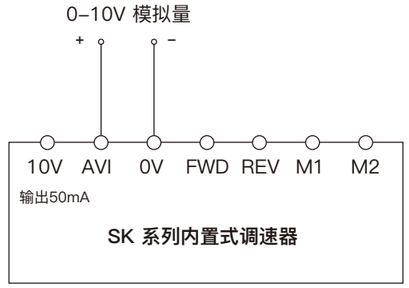
注:运行电容按电机型号配,放置于调速电机包装内。
Note: The running capacitor is matched to the motor model and placed in the motor package.

10V端口最大输出电流为 50mA.MAXIMUM OUTPUT CURRENT IS 50mA TO 10V PORT

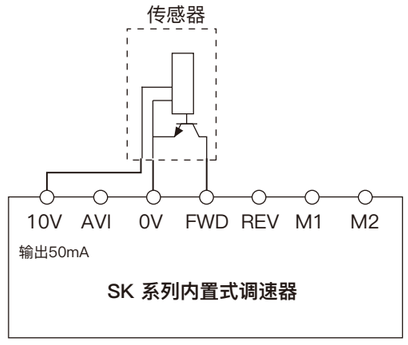
1)FWD、REV、M1、M2控制端口采用PLC可编程控制器控制。
2)PLC输出方式：NPN或漏型晶体管输出。
1)FWD,REV, M1,M2 control ports are controlled by PLC programmable controller.
2)PLC output mode: NPN or sink transistor output.



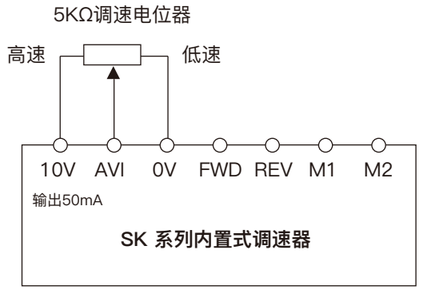
1)采用外部0～10V模拟量控制电机速度。
2)菜单设置：F-06设定值3，外部0~10V模拟量控制。
1)Control the motor speed with an external 0~10V analog quantity.
2)Menu setting:F-06 set value 3, external 0~10V analog quantity control.



1)FWD、REV、M1、M2控制端口采用接近开关、光电开关等传感器控制。
2)开关输出方式：三线式NPN晶体管输出
1)FWD, REV M1,M2 control ports are controlled by sensors such as proximity switches and photoelectric switches.
2)Switch output mode: 3-wire NPN transistor output



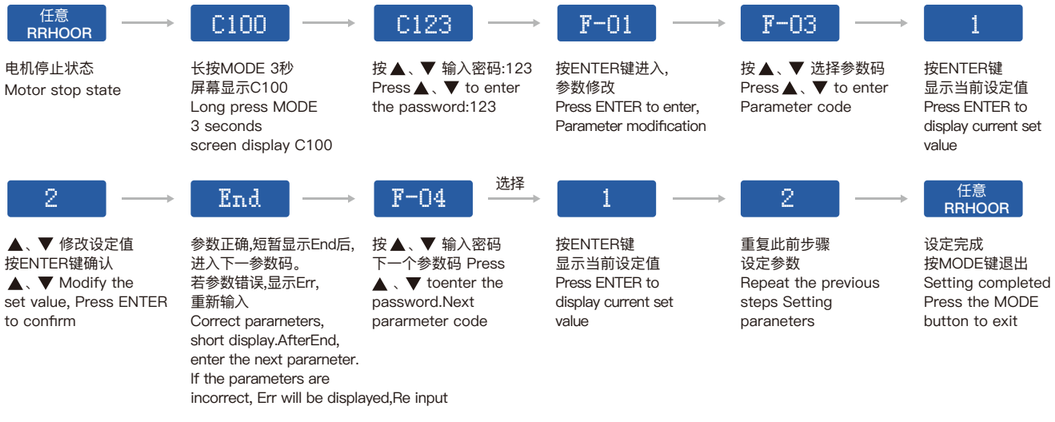
1)采用外部外接调速电位器控制电机速度。
2)菜单设置：F-06设定值3，外部0~10V模拟量控制。
1)Use external speed potentiometer to control motor speed.
2)Menu setting:F-06 set value 3, external 0–10V analog control



SK系列内置式调速器菜单 SK Series Built-in Governor Menu

菜单修改 Menu modification

●注意：为保证安全,F-05、F-29参数修改必须在电机停止状态下进行,否则无法设置,屏幕显示Err。
●Note. In order to ensure safety, the parameters of F-05 and F-29must be modified while the motor is stopped.Otherwise , it cannot be set the sceen display Err.



SK系列内置式调速器菜单清单 Menu list of SK Series built-in governor

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-01	显示内容 Display content	1.电机转速设定值 2.倍率转速设定值 1.Motor speed setting 2.Rate of rotation setting	倍率转速设定值=电机转速设定值÷倍率 Multiplying speed setting value = motor speed setting value ÷ magnification	1	
F-02	倍率设定 Magnification setting	1.0~999.9	根据显示直观性需要设定，显示目值。 The target value is displayed according to the display intuitiveness setting.	1.0	
F-03	运转控制方式 Operation control method	1.正转/反转 2.正转/停止 1.Forward/reverse 2.Forward / stop	选择正转/反转电机由K1、K2开关控制。 选择正转/停止,电机由SB1.SB2按钮控制。 Select forward/reverse, the motor is controlled by the K1 and K2 switches. Select forward/stop and the motor is controlled by the SB1 and SB2 buttons.	1	
F-04	旋转方式 Rotation mode	1.允许正反转 2.允许正转，禁止反转 3.允许反转，禁止正转 1.Allow positive and negative reversal. 2.Allow forward rotation, prohibit reverse rotation 3.Allow reverse, prohibit forward rotation	限制电机旋转方向,防止设备故障或事故。 当F-03选择2时，FP4自动选择2且无法修改, 若需改变旋转方向可由F-05设定。 Limit the direction of motor rotation to prevent equipment failure or accidents. When F-03 selects 2,F-04 automatically selects 2 and cannot be modified.If you need to change the direction of motor rotation which can be set by F-05.	1	
F-05	旋转方向 Rotation direction	1.不取反；2.取反 1.Don't reverse；2.Invert	无需改变电机接线，轻而易举改变电机转向, 使之与习惯或要求一致。 easy to change the motor steering without changing the motor wiring. Make it consistent with the customary requirements.	1	
F-06	主速度调整方式 Main Speed adjustment method	1.面板▲▼ 按键 2.面板旋钮 3.外部0~10V模拟量 1.Panel ▲▼ button 2. Panel knob 3.External 0–10V analog	1.当任意闭合多功能端子M1、M2时,电机运行为段速,主速调整无效。 2.面板旋钮、外部0–10V模拟量自动匹配0～最高转速。 3.由于外接调速电位器连接于0–10V模拟量，AV输入端故采用外接调速电位器调速时,主速调整方式F06应选择3。 1. When the multi-function terminals M1 and M2 are closed arbitrarily, the motor runs at the segment speed and the main speed adjustment is invalid. 2. Panel knob, external 0–10V analog automatically matches 0~maximum speed. 3. Since the external speed potentiometer is connected to the 0–10V analog AV input terminal, the main speed adjustment mode F06 should be selected 3 When using external speed potentiometer to adjust 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。 Limit the maximum speed of the motor to prevent overspeed. Damage or accident has occurred.	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	正转后动加速时间 Forward rotation acceleration time	0.1~10.0秒 seconds	时间长,电机起动平缓,起动时间长; 时间短,电机起动快猛,起动时间短 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-10	正转停止方式 Forward stop mode	1.自由减速停止 2.快速停止 3.缓慢减速停止 1.Free deceleration stop 2.Quick stop 3.Slowly slow down and stop	1.若选择自由减速停止,电机停止较慢,可选择快速停止,改变F-11设定值,改变快速停止快慢。 2.若选择自由减速停止,电机停止较快,可选择缓慢减速停止,改变F-12设定值,改变缓慢减速停止的快慢。 1. If you choose free deceleration stop, the motor stops slowly, you can choose to stop quickly, change the F-11setting value, change the fast stop speed. 2.If you choose free deceleration stop, the motor stops faster, you can choose slow deceleration stop, change the F-12set value, change the speed of slow deceleration stop.	1	
F-11	正转停止时快速停止强度 When the forward stop Quick stop strength	1~10	F-10选择2时,菜单有效,数值越大,停止越快。 When F-10 selects 2,the menu is valid.The larger the value,the faster the slop.	5	

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–12	正转停止时缓慢减速时间 When the forward stop Slow deceleration time	0.1~10.0秒 seconds	F–10选择3时，菜单有效数值越大，停止越慢 When F–10 selects 3, the larger the effective value of the menu, the slower the stop	1.0	
F–13	反转后动加速时间 Reverse start acceleration time	0.1~10.0秒 seconds	时间长,电机起动平缓,起动时间长; 时间短,电机起动快猛,起动时间短 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–14	反转停止方式 Reverse stop mode	1.自由减速停止 2.快速停止 3.缓慢减速停止 1.Free deceleration stop 2.Quick stop 3.Slowly slow down and stop	1.若选择自由减速停止,电机停止较慢,可选择快速停止,改变F–15设定值,改变快速停止快慢。 2.若选择自由减速停止,电机停止较快,可选择缓慢减速停止,改变F–16设定值,改变缓慢减速停止的快慢。 1. If you choose free deceleration stop, the motor stops slowly, you can choose to stop quickly, change the F–15setting value, change the fast stop speed. 2.If you choose free deceleration stop, the motor stops faster, you can choose slow deceleration stop, change the F–16 set value, change the speed of slow deceleration stop.	1.0	
F–15	反转停止时快速停止强度 Reverse stop Quick stop strength	1~10	F–14选择2时,菜单有效,数值越大,停止越快。 When F–14 selects 2,the menu is valid.The larger the value,the faster the slop.	5	
F–16	反转停止时缓慢减速时间 Reverse stop Slow deceleration time	0.1~10.0秒 seconds	F–14选择3时,菜单有效,数值越大,停止越快。 When F–14 selects 3,the menu is valid.The larger the value,the faster the slop.	1.0	
F–17	第一段速 First speed	最低转速~最高转速 Minimum speed~maximum speed		500	
F–18	第二段速 Second speed	最低转速~最高转速 Minimum speed~maximum speed	闭合M2,电机以第二段速运转。 When M2 is closed, the motor runs at the second speed.	700	
F–19	第三段速 Third speed	最低转速~最高转速 Minimum speed~maximum speed	闭合M1+M2,电机以第三段速运转。 When M1+M2 is closed, the motor runs at the third speed.	900	
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**	

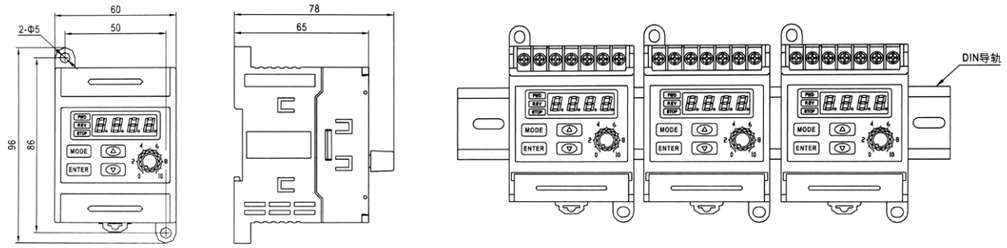
故障报警Er–1
Fault alarm Er–1

1)过载堵转。
2)调速器与电机或运行电容的连接异常。
1) Overload blocked.
2) The connection between the governor and the motor or running capacitor is abnormal.

故障处理方式
Trouble！shooting:

1)检查、排除故障。
2)重新上电解除报警。
1) Check and trouble shoot.
2)Re–power on to cancel the alarm.

SK系列内置式调速器外形及安装图 SK series built-in 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燃物周围使用。
●避免连续振动,过度冲击。
●电机在正常运转状态下,有时电机外表面的温度可能会超过70℃,因此在可能触及电机的使用环境下请加贴右图所示的警告标志。
●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。

●Donot use in a fragile environment,an easy–to–existing gas environment, a corosive environment,or a place where it's easy to get water or a bakeable object.
●Avoid continuous vibration.Excessive impact.
●When the mator is in normal operation, sometimes the termperature of the motor casing surface may exceed 70°C
●Therefore, please put the general sign shown on the right circle in the environment where the motor may be touched.
●Be sure to ground the ground terminall.
●Installation, connection,inspection, etc. must be carried out by professional technicians.

SKB系列内置式驱动器

SKB SERIES BNILT-IN 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、失电电磁制动停止等复杂运动控制。
●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。
●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）

●Wth 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 user's requirement, and the display target value can be automatically converted.
●Can realize complex motion control such as slow acceleration, slow deceleration, 4-speed, and brake stop.
●Externalswitch 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 protects against stalled overload but does not protect against non-blocking overload)

型号阵列表 Model array table

类别 Category	SFB系列面板式驱动器 SFB SERIES PANEL DRIVE		SKB系列内置式驱动器 SKB SERIES BUILT-IN DRIVE	
电源电压 Voltage / 电机功率Power	220V	110V	220V	110V
15W	SFB15E	SFB15A	SKB200E	SKB200A
25W	SFB25E	SFB25A		
40W	SFB40E	SFB40A		
60W	SFB60E	SFB60A		
90W	SFB90E	SFB90A		
120W	SFB120E	SFB120A		
200W	SFB200E	SFB200A		

型号命名方法 Model naming method

面板式 PANEL TYPE

SFB ①	□ ②	E ③	□ ④
名称代号 Name code.		面板式驱动器 Panel drive	
适用调速电机功率代号(W) Applicable speed motorPower code		15W~200W	
电压代号 Voltage		E(单相single phase 220V) A(单相Single phase 110V)	
派生代号 Promotian code			

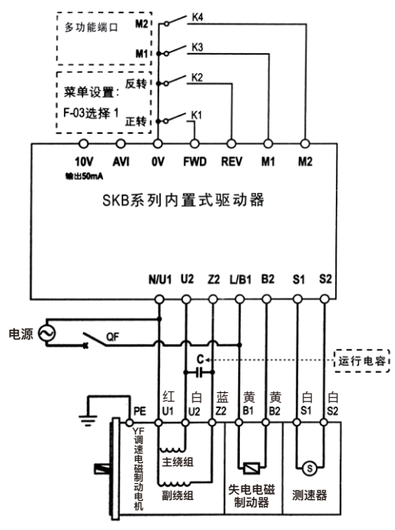
内置式 BUILT-IN

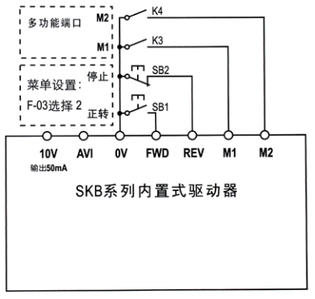
SKB ①	200 ②	E ③	□ ④
名称代号 Name code.		内置式驱动器 built-in drive	
适用调速电机功率代号(W) Applicable speed motorPower code		15W~200W	
电压代号 Voltage		E(单相Single phase 220V) A(单相Single phase 110V)	
派生代号 Promotian code			

性能参数表 Model array table

型号 Model	SFB □□ E	SFB □□ A	SKB200E	SKB200A
安装方式 Install method	面板式 panel type		内置式 built-in	
电源电源 Voltage	单相 single phase 220V	单相 single phase 110V	单相 single phase 220V	单相 single phase 110V
电源频率 Power frequency	50/60HZ			
适用电机类型 Motor tyrpe	调速电磁制动电机 Variable speed electromagnetic brake 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 themselves)	
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/mino(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-+45°C(无结冰 No icing) 环境湿度 Ambient humidity:85%以下(无结露)No condensation			

SKB系列内置式驱动器接线图 SKB Series Built-in Drive Diagram





QF断路器电流规格表 QF Circuit 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 ashort circuit occurs.

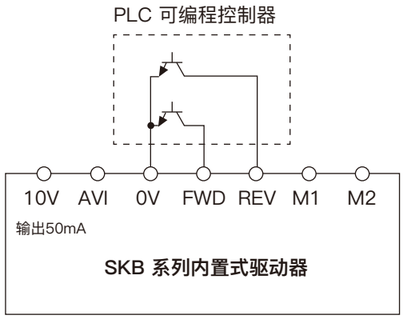
运行电容 C 规格表 Operating capacitor C specification sheet

电机功率 Power / 电源电压 Voltage	200V	200V
15W	1μF/500V	4μF/250V
25W	1.5μF/500V	6μF/250V
40W	3.5μF/500V	10μF/250V
60W	3μF/500V	14μF/250V
90W	5μF/500V	20μF/250V
120W	6μF/500V	24μF/250V
200W	10μF/500V	40μF/250V

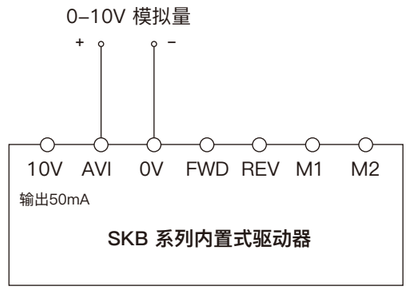
注:运行电容按电机型号配,放置于调速电机包装内。
Note: The running capacitor is matched to the motor model and placed in the motor package.

10V端口最大输出电流为 50mA.MAXIMUM OUTPUT CURRENT IS 50mA TO 10V PORT

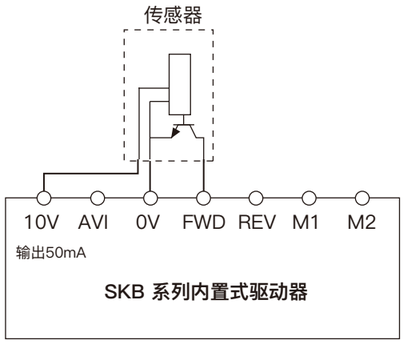
1)FWD、REV、M1、M2控制端口采用PLC可编程控制器控制。
2)PLC输出方式：NPN或漏型晶体管输出。
1)FWD,REV, M1,M2 control ports are controlled by PLC programmable controller.
2)PLC output mode: NPN or sink transistoroutput.



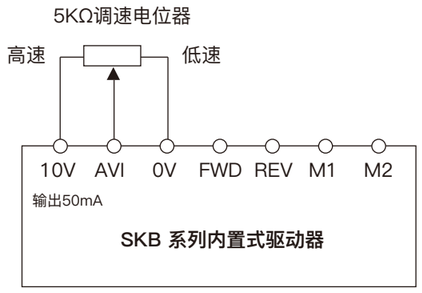
1)采用外部0～10V模拟量控制电机速度。
2)菜单设置：F-06设定值3，外部0~10V模拟量控制。
1)Control the motor speed with an external 0~10V analog quantity.
2)Menu setting:F-06 set value 3, external 0~10V analog quantity control.



1)FWD、REV、M1、M2控制端口采用接近开关、光电开关等传感器控制。
2)开关输出方式：三线式NPN晶体管输出
1)FWD, REV M1,M2 control ports are controlled by sensors such as proximity switches and photoelectric switches.
2)Switch output mode: 3-wire NPN transistor output.



1)采用外部外接调速电位器控制电机速度。
2)菜单设置：F-06设定值3，外部0~10V模拟量控制。
1)Use external speed potentiometer to control motor speed.
2)Menu setting:F-06 set value 3, external 0–10V analog control



SKB系列内置式驱动器菜单 SKB Series built-in Drive Menu

菜单修改 Menu modification

●注意：为保证安全,F-05、F-29参数修改必须在电机停止状态下进行,否则无法设置,屏幕显示Err。
●Note. In order to ensure safety, the parameters of F-05 and F-29must be modified while the motor is stopped.Otherwise , it cannot be set the sceen display Err.

任意 RRHOOR	→	C100	→	C123	→	F-01	→	F-03	→	1
电机停止状态 Motor stop state		长按MODE 3秒 屏幕显示C100 Long press MODE 3 seconds screen display C100		按▲、▼ 输入密码:123 Press ▲、▼ to enter the password:123		按ENTER键进入, 参数修改 Press ENTER to enter, Parameter modification		按 ▲、▼ 选择参数码 Press ▲、▼ to enter Parameter code		按ENTER键 显示当前设定值 Press ENTER to display current set value

2	→	End	→	F-04	选择	1	→	2	→	任意 RRHOOR
▲、▼ 修改设定值 按ENTER键确认 ▲、▼ Modify the set value, Press ENTER to confirm		参数正确,短暂显示End后,进入下一参数码。 若参数错误,显示Err, 重新输入 Correct parameters, short display.AfterEnd, enter the next pararneter. If the parameters are incorrect, Err will be displayed,Re input		按▲、▼ 输入密码 下一个参数码 Press ▲、▼ toenter the password.Next pararmeter code		按ENTER键 显示当前设定值 Press ENTER to display current set value		重复此前步骤 设定参数 Repeat the previous steps Setting paraneters		设定完成 按MODE键退出 Setting completed Press the MODE button to exit

SKB系列内置式驱动器菜单清单 SKB series built-in drive menu

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-01	显示内容 Display content	1.电机转速设定值 2.倍率转速设定值 1.Motor speed setting 2.Rate of rotation setting	倍率转速设定值=电机转速设定值÷倍率 Multiplying speed setting value = motor speed setting value ÷ magnification	1	
F-02	倍率设定 Magnification setting	1.0~999.9	根据显示直观性需要设定，显示目值。 The target value is displayed according to the display intuitiveness setting.	1.0	
F-03	运转控制方式 Operation control method	1.正转/反转 2.正转/停止 1.Forward/reverse 2.Forward / stop	选择正转/反转电机由K1、K2开关控制。 选择正转/停止,电机由SB1.SB2按钮控制。 Select forward/reverse, the motor is controlled by the K1 and K2 switches. Select forward/stop and the motor is controlled by the SB1 and SB2 buttons.	1	
F-04	旋转方式 Rotation mode	1.允许正反转 2.允许正转，禁止反转 3.允许反转，禁止正转 1.Allow positive and negative reversal. 2.Allow forward rotation, prohibit reverse rotation 3.Allow reverse, prohibit forward rotation	限制电机旋转方向,防止设备故障或事故。 当F-03选择2时，FP4自动选择2且无法修改, 若需改变旋转方向可由F-05设定。 Limit the direction of motor rotation to prevent equipment failure or accidents. When F-03 selects 2,F-04 automatically selects 2 and cannot be modified.If you need to change the direction of motor rotation which can be set by F-05.	1	
F-05	旋转方向 Rotation direction	1.不取反；2.取反 1.Don't reverse；2.Invert	无需改变电机接线，轻而易举改变电机转向, 使之与习惯或要求一致。 easy to change the motor steering without changing the motor wiring. Make it consistent with the customary requirements.	1	
F-06	主速度调整方式 Main Speed adjustment method	1.面板▲▼ 按键 2.面板旋钮 3.外部0~10V模拟量 1.Panel ▲▼ button 2. Panel knob 3.External 0–10V analog	1.当任意闭合多功能端子M1、M2时,电机运行为段速,主速调整无效。 2.面板旋钮、外部0–10V模拟量自动匹配0～最高转速。 3.由于外接调速电位器连接于0–10V模拟量，AV输入端故采用外接调速电位器调速时,主速调整方式F06应选择3。 1. When the multi–function terminals M1 and M2 are,closed arbitrarily, the motor runs at the segment speed and the main speed adjustment is invalid. 2. Panel knob, external 0–10V analog automatically matches 0~maximum speed. 3. Since the external speed potentiometer is connected to the 0–10V analog AV input terminal, the main speed adjustment mode F06 should be selected 3 When using external speed potentiometer to adjust 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。 Limit the maximum speed of the motor to prevent overspeed. Damage or accident has occurred.	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.	120	
F-09	停止方式控制 Stcon mrod control	1.由F-12、F-17菜单控制 2.由M2多功能端子控制 1.Controlled by F–l2,F–17menu 2.Controlled by M2 multi–function terminal	F-09选择2时,失电电磁制动器制动,由M2多功能端子控制,菜单F-12、F-13、F-17、F-18无效,M2多功能端子多段速功能无效。电机停止时,若M2不闭合,则电机以自由减速方式停止。 When F-09 selects 2, the brake is controlled by M2 multi–function terminal, menus F-12,F-13, F-17, F-17 are invalid,and M2 multi–function terminal multi–speed function is invalid. When the motor stops, if M2 does notdose, the motor will stop in free deceleration mode.	1	
F-10	正转起动时解除失电电磁制动器后电机延迟起动时间 Forward rotation start is the motor delay start time after the de–energized electromagnet–ic brake is released.	0.0~2.0秒 seconds	一般该值取0,仅特殊应用需让电机延后起动才需改变设定值。 Generally, this value is set to 0, and only special applications require the motor to start later before changing the set value.	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–11	正转起动加速时间 Forward rotation acceleration time	0.1~10.0秒 seconds	时间长,电机起动平缓,起动时间长; 时间短,电机起动快猛,起动时间短 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–12	正转停止方式 Forward stop mode	失电电磁制动停止 自由减速停止 缓慢减速停止 Power failure electromagnetic brake stops Free deceleration stop 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.	1.0	
F–13	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 for ward rotation stops	0.0~5.0秒 seconds	F–12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–12 selects 1, the menu is valid. When the motor stops, within the setting time, be decelerated in free deceleration mode then brake.	0.0	
F–14	正转停止时缓慢减速时间 When the forward rotation stops Slow deceleration time	0.1~10.0秒 seconds	F–12 选择 3 时，菜单有效,数值越大，停止越慢 When F–11 selects3，the menu is valid. The larger the value, thes lower the stop.	1.0	
F–15	反转起动时解除失电电磁制动器后电机延迟起动时间 Relieve de–powered electromagnetic braker delay time whenforward rotation start	0.1~2.0秒 seconds	一般该值取0,仅特殊应用需让电机延后起动才需改变设定值。 Generally, this value is taken as 0, and the set value needs to be changed only when the motor needs to be delayed for special applications	0.0	
F–16	反转起动加速时间 Reverse start acceleration time	0.1~10.0秒 seconds	时间长,电机起动平缓,起动时间长; 时间短,电机起动快猛,起动时间短 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–17	反转停止方式 Reverse stop mode	失电电磁制动停止 自由减速停止 缓慢减速停止 Power failure electromagnetic brake stops Free deceleration stop 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–18	反转停止时失电电磁制动器制动延时时间 De–energized electromagnetic brake brake delay time	0.0~5.0秒 seconds	F–17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–17 isselected 1,the menu is valid. When the motor slops, during this set time, first decelerate in the free deceleration mode and then brake.	0.0	
F–19	反转停止时缓慢减速时间 When the forward rotation stops Slow deceleration time	0.1~10.0秒 seconds	F–17 选择 3 时，菜单有效,数值越大，停止越慢 When F–17 selects 3，the menu is valid. The larger the value, thes lower the stop.	1.0	

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–20	第一段速 First speed	最低转速~最高转速 Minimum speed~maximum speed	闭合M1,电机以第一段速运转。 When M1 is closed, the motor runs at the second speed.	500	
F–21	第二段速 Second speed	最低转速~最高转速 Minimum speed~maximum speed	闭合M2,电机以第二段速运转，与F–09设置有关。 When M2 is closed, the motor runs at the second speed. Which is related to the F–09 setting.	700	
F–22	第三段速 Third speed	最低转速~最高转速 Minimum speed~maximum speed	闭合M1+M2,电机以第三段速运转，与F–09设置有关。 When M1+M2 is closed, the motor runs at the third speed. Which is related to the F–09 setting.	900	
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		0.4**	

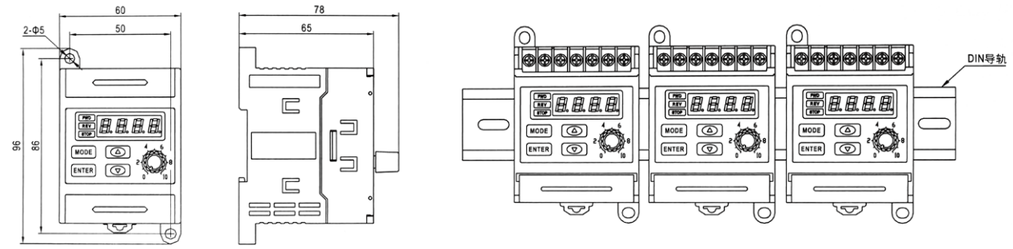
故障报警Er–1
Fault alarm Er–1

1)过载堵转。
2)驱动器与电机或运行电容的连接异常。
1) Overload blocked.
2) The connection between the drive and the motor or running capacitor is abnormal.

故障处理方式
Trouble！shooting:

1)检查、排除故障。
2)重新上电解除报警。
1) Check and trouble shoot.
2)Re–power on to cancel the alarm.

SKB 系列内置式驱动器外形及安装图 SKB Outline and installation drawing of series built-in driver



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●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燃物周围使用。
●避免连续振动,过度冲击。
●电机在正常运转状态下,有时电机外表面的温度可能会超过70℃,因此在可能触及电机的使用环境下请加贴右图所示的警告标志。
●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。

●Donot use in a fragile environment,an easy–to–existing gas environment, a corosive environment,or a place where it's easy to get water or a bakeable object.
●Avoid continuous vibration.Excessive impact.
●When the mator is in normal operation, sometimes the termperature of the motor casing surface may exceed 70°C
●Therefore, please put the general sign shown on the right circle in the environment where the motor may be touched.
●Be sure to ground the ground terminall.
●Installation, connection,inspection, etc. must be carried out by professional technicians.

TF系列面板式力矩交流驱动器

TF SERIES PANEL TYPE TORQUR AC DRIVER

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。
●可实现缓慢加大力矩缓慢减小力矩。
●可面板操作、外接开关控制。
●面板旋钮自动匹配最大力矩，调节控制方便、安全。
●附电机散热风扇电源接口，方便接线。

●With MCU digital control technology, it has rich functions and excellent performance.
●Easy to change settings with digital menu options.
●Slowly increase the torque and slowly reduce the torque.
●Panel operation, external switch control.
●The panel knob automatically matches the maximum torque, and the adjustment is convenient and safe.
●With power connector to motor cooling fan for easy wiring.

型号阵列表 Model array table

类别 Category	TF系列面板式力矩交流驱动器 TF SERIES PANEL TYPETOROUE AC DRIVER		TK系列内置式力矩交流驱动器 TK SERIES BUILT-IN TOROUE AC DRIVER	
电源电压 Voltage / 电机功率Power	220V	110V	220V	110V
3-40W	TF100E	TF100A	TK100E	TK100A

型号命名方法 Model naming method

面板式 PANEL TYPE

TF ①	100 ②	E ③	□ ④
名称代号 Name code.		面板式力矩交流驱动器 Panel type torque ac driver	
适用调速电机功率代号(W) Applicable speed motorPower code		3W~40W	
电压代号 Voltage		E(单相single phase 220V) A(单相Single phase 110V)	
派生代号 Promotian code			

内置式 BUILT-IN

TK ①	100 ②	E ③	□ ④
名称代号 Name code.		内置式力矩交流驱动器 Built-in torque ac driver	
适用调速电机功率代号(W) Applicable speed motorPower code		3W~40W	
电压代号 Voltage		E(单相Single phase 220V) A(单相Single phase 110V)	
派生代号 Promotian code			

性能参数表 Modelarray table

型号 Model	TF100E	TF100A	TK100E	TK100A
安装方式 Install method	面板式 panel type		内置式 built-in	
电源电源 Voltage	单相 single phase 220V	单相 single phase 110V	单相 single phase 220V	单相 single phase 110V
电源频率 Power frequency	50/60HZ			
适用电机类型 Motor tyrpe	力矩电机 Torque motor			
运行电容 Capacitor	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 themselves)			
运动控制功能 Motion control function	面板或外接开关运转控制、调整力矩、缓慢加大力矩、缓慢减小力矩、4段力矩 Panel or external switch operation control, torque adjustment, slowly increasing torque, slowly decreasing torque, 4-stage torque		外接开关运转控制、调整力矩、缓慢加大力矩、缓慢减小力矩、4段力矩 External switch operation control, torque adjustment, slowly increasing torque, slowly decreasing torque, 4-stage torque	
力矩调节方式 Torque 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	
力矩调整范围 Torque adjustment range	0-100%			
适用环境 Applicable environment	环境温度 Ambient temperature:-10℃-+45℃(无结冰 No icing) 环境湿度 Ambient humidity:85%以下(无结露)No condensation			

TF系列面板式力矩交流驱动器接线图 TF series panel type torque AC driver wiring diagram

操作面板按钮控制电机运转

●无需安装K1、K2开关。
●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。

Operator panel buttons control motor operation

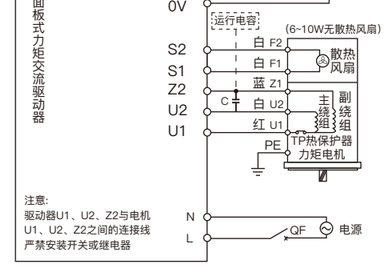
●No need to install the K1 and K2 switches.
●Menu Settings:Operation control mode F-03 select "1" or"4"operator panel button control.

外接开关K1、K2控制电机运转

●必须安装K1、K2开关。
●菜单设置：运转控制方式F-03选择"2""或"3"外接开关控制。

External switches K1, K2 control motor operation

●Install the K1 and K2 switches
●Menu Settings:Operation control mode F-03 select "2"Or "3"external switch control.



运行电容 C 规格表 Operating capacitor C specification sheet

电源电压 Voltage / 电机功率 Power	200V	200V
6W	2.5μF/500V	10μF/250V
10W	3μF/500V	12μF/250V
20W	4μF/500V	16μF/250V
40W	8μF/500V	32μF/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.

QF断路器电流规格表 QF Circuit Breaker Current Specification Table

电源电压 Voltage	电机功率 Power	QF电流规格 QF current specification
220V	6~40W	1A
110V	6~40W	2A

电源电压必须与驱动器电源电压规格一致。
QF为断路器在发生短路时保护驱动器和调速电机。
The power voltage must match the drive voltage specifications. QF is the circuit breaker which protect the speed controller and motor when ashort circuit occurs.

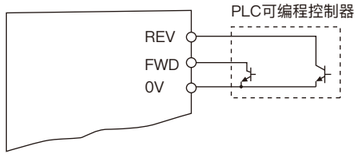
●力矩电机内装自动复位型热保护器，若电机运转过热，热保护器将切断电机电源，电机将停止运转：当电机温度下降后，热保护器将自动复位供电，电机重新运转。故在进行检查操作时，请勿必事先切断电源，防止发生事故。
●自动复位型热保护器，动作温度：120℃±5℃，复位温度：82℃±5℃

●The torque motor is equipped with an automatic reset type thermal protector. If the motor runs overheated, the thermal protector will cut off the motor power supply and the motor will stop running: When the motor temperature drops, the thermal protector will automatically reset the power supply and the motor will run again.Therefore,when performing inspection operations, do not cut off the power supply beforehand to prevent accidents.
●Automatic reset type thermal protector, operating temperature: 120C±5℃, reset temperature: 82C±5℃.

FWD、REV采用PLC可编程控制器控制
PLC输出方式:NPN或漏型晶体管输出。

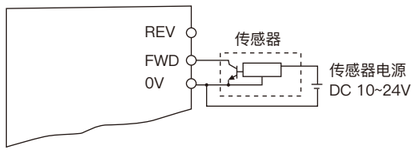
FWD、REV采用接近开关、光电开关等传感器控制
开关输出方式:三线式NPN晶体管输出。

菜单设置
运转控制方式F-03选择“2”或“3”外接开关控制。



FWD、REV with pLc Program with controller to control
Plc output method:NPN or Sink transistor output

FWD, REV use proximity sensor, photoelectric switch and othersensor control.
Switch output mode:Three-wire NPN transistor output.



Menu Settings
Run control mode F3 select "2" or "3" external switch control

TF系列面板式驱动器菜单 TF Series Panel Type Torque AC Driver Menu

菜单修改 Menu modification

●注意：为保证安全,F-05、F-29参数修改必须在电机停止状态下进行,否则无法设置,屏幕显示Err。

●Note. In order to ensure safety, the parameters of F-05 and F-29must be modified while the motor is stopped.Otherwise , it cannot be set the sceen display Err.

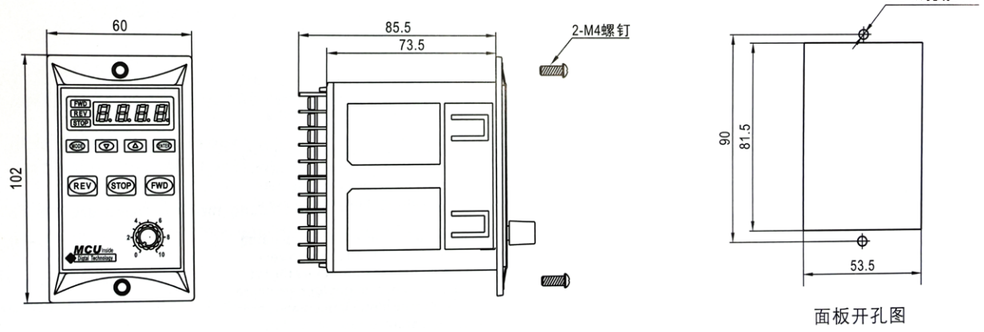
任意 RRHOOR	→	C100	→	C123	→	F-01	→	F-03	→	1
电机停止状态 Motor stop state		长按MODE 3秒 屏幕显示C100 Long press MODE 3 seconds screen display C100		按▲、▼ 输入密码:123 Press▲、▼ to enter the password:123		按ENTER键进入, 参数修改 Press ENTER to enter, Parameter modification		按▲、▼ 选择参数码 Press▲、▼ to enter Parameter code		按ENTER键 显示当前设定值 Press ENTER to display current set value

2	→	End	→	F-04	选择	1	→	2	→	任意 RRHOOR
▲、▼ 修改设定值 按ENTER键确认 ▲、▼ Modify the set value, Press ENTER to confirm		参数正确,短暂显示End后, 进入下一参数码。 若参数错误,显示Err, 重新输入 Correct pararneters, short display.AfterEnd, enter the next pararneter. If the parameters are incorrect, Err will be displayed,Re input		按▲、▼ 输入密码 下一个参数码 Press ▲、▼ toenter the password.Next pararmeter code		按ENTER键 显示当前设定值 Press ENTER to display current set value		重复此前步骤 设定参数 Repeat the previous steps Setting paraneters		设定完成 按MODE键退出 Setting completed Press the MODE button to exit

TF系列面板式力矩交流驱动器菜单清单 TF Series Panel Type Torque Ac Driver Menu List

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-01	运转控制方式 Operation control method	1.操作面板按钮控制、无记忆 2.外接开关控制，面板STOP键无效 3.外接开关控制，面板STOP键有效 4.操作面板按钮控制、有记忆 1.Operation panel button control, no memory. 2.External switch control. Panel STOPbutton is invalid. 3.External switch control, panel STOPbutton is valid. 4.Operation panel button control,with memory.	选择“1”由面板按钮控制电机,关闭调速器电源后再次打开电源,调速器不记忆关电前的运转状态,重新上电电机为停止状态。 选择“4”调速器记忆关电前的运转状态,重新上电后电机为上次关电前的状态,例如:关电前电机正转,再次上电电机立即正转。选择此功能。请注意安全!选择外接开关控制时。由FWD、REV外接开关K1、K2控制电机。 Select "1" to control the motor by the panel button. Turn off the power to the governor and then turn it on again. The governor does not remember the operating state before turning off the power, and the motor is in a stopped state when it is re powered on. Select "4" to memorize the operating status of the governor before power off. After re powering on, the motor will return to the previous state before power off. For example, the motor will rotate forward before power off, and immediately forward when power on again. Select this feature. Please pay attention to safety! When selecting external switch control. The motor is controlled by external switches K1 and K2 of FWD and REV.	1	
F-02	旋转方式 Rotation mode	1.允许正反转 2.允许正转，禁止反转 3.允许反转，禁止正转 1.Allow positive and negativereversal. 2.Allow forward rotation, prohibit reverse rotation 3.Allow reverse, prohibit forward rotation	限制电机旋转方向,防止设备故障或事故。 Limit the diretion of motor rotation. Prevent equipment failure or accidents.	1	
F-03	旋转方向 Rotation direction	1.不取反；2.取反 1.Don’t reverse；2.Invert	无需改变电机接线，轻而易举改变电机转向, 使之与习惯或要求一致。 easy to change the motor steering without changing the motor wiring. Make it consistent with the customary requirements.	1	
F-04	力矩调整方式 Torue Speed adjustment method	1.面板▲▼ 按键 2.面板旋钮 1.Panel ▲▼ button 2. Panel knob	按 ▲▼ 按钮在0至最大力矩范围,调整电机力矩，面板旋钮自动匹配0-最高力矩。 Press the▲▼ button to rang from 0 to the maximum torque.Asiust the motor torque,the panel knob auto matically matches 0 to the maximum torque.	1	
F-05	最高力矩 Maximum torue	50%-100%	限制电机最大力矩,可防止力矩过大,损坏产品或设备。 Limit the maximum torque of the motor to prevent excessive torque anddamage to the product or equipment.	80	
F-06	正转起动时力矩增大至最大值时间 Time when torque increases to maximum during forward rotation	0.1~10.0秒 seconds	时间越长,电机起动平缓,起动时间长; 时间越短,电机起动快猛,起动时间短 Long time, motor starting level, long starting time. The time is short, the motor starts fast and the starting time is short.	1	
F-07	正转停止时力矩减小至0时间 Time when torque is reduced to 0 as forward rotation stops	0.1~10.0秒 seconds	时间越长,电机起动平缓,起动时间长; 时间越短,电机起动快猛,起动时间短 Long time, motor starting level, long starting time. The time is short, the motor starts fast and the starting time is short.	1	
F-08	反转起动时力矩增大至最大值时间 Time when torque increase to maximum during reverse start	0.1~10.0秒 seconds	时间越长,电机起动平缓,起动时间长; 时间越短,电机起动快猛,起动时间短 Long time, motor starting level, long starting time. The time is short, the motor starts fast and the starting time is short.	1	
F-09	反转停止时力矩减小至0时间 Time when torque is reduced to 0 as reverse rotation stops	0.1~10.0秒 seconds	时间越长,电机起动平缓,起动时间长; 时间越短,电机起动快猛,起动时间短 Long time, motor starting level, long starting time. The time is short, the motor starts fast and the starting time is short.	1	
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		06.**	

TF系列面板式力矩交流驱动器外形及安装图 TF series panel type torque AC driver and installation diagram



面板开孔图

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燃物周围使用。
●避免连续振动,过度冲击。
●电机在正常运转状态下,有时电机外表面的温度可能会超过70℃,因此在可能触及电机的使用环境下请加贴右图所示的警告标志。
●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。

●Donot use in a fragile environment,an easy-to-existing gas environment, a corosive environment,or a place where it's easy to get water or a bakeable object.
●Avoid continuous vibration.Excessive impact.
●When the mator is in normal operation, sometimes the termperature of the motor casing surface may exceed 70℃
●Therefore, please put the general sign shown on the right circle in the environment where the motor may be touched.
●Be sure to ground the ground terminall.
●Installation, connection,inspection, etc. must be carried out by professional technicians.

TK系列内置式力矩交流驱动器

TK SERIES BUILT-IN TORQUE AC DRIVER

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。
●可实现缓慢加大力矩、缓慢减小力矩、4段力矩等复杂运动控制。
●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大力矩,调节控制方便、安全。
●附电机散热风扇电源接口,方便接线。

●With MCU digital control technology, it has rich functions and excellent performance.
●Easy to change settings with digital menu options
●Can realize complex motion control such as slowly increasing torque, slowly reducing torque, and 4-stage torque.
●External switch control, 0-10V analog control.
●The analog control can automatically match the maximum torque, and the adjustment control is convenient and safe.
●With power connector to motor cooling fan for easy wiring.

型号阵列表 Model array table

类别 Category	TF系列面板式力矩交流驱动器 TF SERIES PANEL TYPETOROUE AC DRIVER		TK系列内置式力矩交流驱动器 TK SERIES BUILT IN TOROUE AC DRIVER	
电源电压 Voltage / 电机功率Power	220V	110V	220V	110V
3-40W	TF100E	TF100A	TK100E	TK100A

型号命名方法 Model naming method

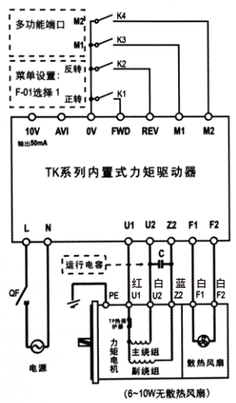
面板式 PANEL TYPE	TF ①	100 ②	E ③	□ ④
名称代号 Name code.			面板式力矩交流驱动器 Panel type torque ac driver	
适用调速电机功率代号(W) Applicable speed motorPower code			3W~40W	
电压代号 Voltage			E(单相single phase 220V) A(单相Single phase 110V)	
派生代号 Promotian code				

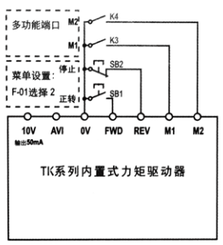
内置式 BUILT-IN	TK ①	100 ②	E ③	□ ④
名称代号 Name code.			内置式力矩交流驱动器 Built-in torque ac driver	
适用调速电机功率代号(W) Applicable speed motorPower code			3W~40W	
电压代号 Voltage			E(单相Single phase 220V) A(单相Single phase 110V)	
派生代号 Promotian code				

性能参数表 Model array table

型号 Model	TF100E	TF100A	TK100E	TK100A
安装方式 Install method	面板式 panel type		内置式 built-in	
电源电源 Voltage	单相 single phase 220V	单相 single phase 110V	单相 single phase 220V	单相 single phase 110V
电源频率 Power frequency	50/60HZ			
适用电机类型 Motor tyrpe	力矩电机 Torque motor			
运行电容 Capacitor	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 themselves)			
运动控制功能 Motion control function	面板或外接开关运转控制、调整力矩、缓慢加大力矩、缓慢减小力矩、4段力矩 Panel or external switch operation control, torque adjustment, slowly increasing torque, slowly decreasing torque, 4–stage torque		外接开关运转控制、调整力矩、缓慢加大力矩、缓慢减小力矩、4段力矩 External switch operation control, torque adjustment, slowly increasing torque, slowly decreasing torque, 4–stage torque	
力矩调节方式 Torque 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	
力矩调整范围 Torque adjustment range	0–100%			
适用环境 Applicable environment	环境温度 Ambient temperature:–10℃–+45℃(无结冰 No icing) 环境湿度 Ambient humidity:85%以下(无结露)No condensation			

TK系列内置式力矩交流驱动器接线图 TK series built-in torque AC driver wiring diagram





●力矩电机内装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，热保护器将自动复位供电，电机重新运转。故在进行检查操作时，请勿必事先切断电源，防止发生事故。

●自动复位型热保护器，动作温度：120C±5℃，复位温度：82℃±5℃

●The torque motor is equipped with an automatic reset type thermal protector. If the motor runs overheated, the thermal protector will cut off the motor power supply and the motor will stop running: When the motor temperature drops, the thermal protector will automatically reset the power supply and the motor will run again.Therefore,when performing inspection operations, do not cut off the power supply beforehand to prevent accidents.

●Automatic reset type thermal protector, operating temperature: 120C±5 ℃, reset temperature: 82C±5℃.

运行电容 C 规格表 Operating capacitor C specification sheet

电源电压 Voltage / 电机功率 Power	200V	200V
6W	2.5μF/500V	10μF/250V
10W	3μF/500V	12μF/250V
20W	4μF/500V	16μF/250V
40W	8μF/500V	32μF/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.

QF断路器电流规格表 QF Circuit Breaker Current Specification Table

电源电压 Voltage	电机功率 Power	QF电流规格 QF current specification
220V	6~40W	1A
110V	6~40W	2A

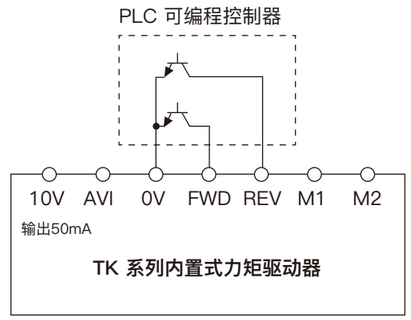
电源电压必须与驱动器电源电压规格一致。

QF为断路器在发生短路时保护调速器和调速电机。

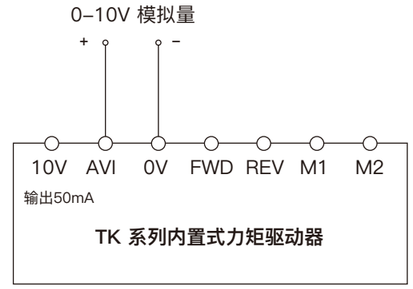
The power voltage must match the driver voltage specifications. QF is the circuit breaker which protect the speed controller and motor when ashort circuit occurs.

10V端口最大输出电流为 50mA.MAXIMUM OUTPUT CURRENT IS 50mA TO 10V PORT

1)FWD、REV、M1、M2控制端口采用PLC可编程控制器控制。
2)PLC输出方式：NPN或漏型晶体管输出。
1)FWD,REV, M1,M2 control ports are controlled by PLC programmable controller.
2)PLC output mode: NPN or sink transistor output.



1)采用外部0～10V模拟量控制电机速度。
2)菜单设置：F–04设定值3，外部0~10V模拟量控制。
1)Control the motor speed with an external 0~10V analog quantity.
2)Menu setting:F–04 set value 3, external 0~10V analog quantity control.



1)FWD、REV、M1、M2控制端口采用接近开关、光电开关等传感器控制。
2)开关输出方式：三线式NPN晶体管输出
1)FWD, REV M1,M2 control ports are controlled by sensors such as proximity switches and photoelectric switches.
2)Switch output mode: 3–wire NPN transistor output

1)采用外部外接调速电位器控制电机力矩。
2)菜单设置：F–04设定值3，外部0~10V模拟量控制。
1)Use external speed potentiometer to control torque.
2)Menu setting:F–04 set value 3, external 0–10V analog control

TK系列内置式力矩交流驱动器菜单 TK Series Built-in Torque AC Driver menu

菜单修改 Menu modification

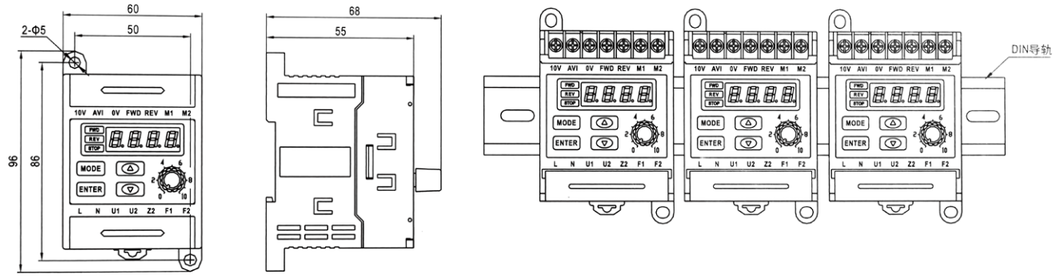
●注意：为保证安全,F–05、F–29参数修改必须在电机停止状态下进行,否则无法设置,屏幕显示Err。

●Note. In order to ensure safety, the parameters of F–05 and F–29must be modified while the motor is stopped.Otherwise , it cannot be set the sceen display Err.

TK系列内置式力矩交流驱动器菜单清单 Tk series built-in torque AC driver menu list

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-01	运转控制方式 Operation control method	1.正转/反转 2.正转/停止 1.Forward / reverse 2.Forward / stop	选择正转/反转,电机由K1、K2开关控制。 选择正转/停止,电机由SB1、SB2按钮控制。 Select forward/reverse,the motor is controlled by the K1 and K2 switches. Select forward/stop and the motoris controlled by the SB1 and SB2 buttons.	1	
F-02	旋转方式 Rotation mode	1.允许正反转 2.允许正转，禁止反转 3.允许反转，禁止正转 1.Allow positive and negativereversal. 2.Allow forward rotation, prohibit reverse rotation 3.Allow reverse, prohibit forward rotation	限制电机旋转方向，防止设备故障或事故。 当F-01选择2时，F-02自动选择2且无法修改，若需改变旋转方向可由F03设定。 Limit the direction of motor rotation to prevent equipment failure or accidents. When F01 selects 2, F02 automatically selects 2 and cannot be modified. If you need to change the direction of motor rotation which can be set by F03.	1	
F-03	旋转方向 Rotation direction	1.不取反；2.取反 1.Don't reverse；2.Invert	无需改变电机接线，轻而易举改变电机转向，使之与习惯或要求一致。 easy to change the motor steering without changing the motor wiring. Make it consistent with the customary requirements.	1	
F-04	力矩调整方式 Torue Speed adjustment method	1.面板▲▼ 按键 2.面板旋钮 3.外部0~10V模拟量 1.Panel ▲▼ button 2. Panel knob 3.External 0-10V analog	1.当任意闭合多功能端子M1、M2时,电机运行为段力矩,主矩调整无效。 2.面板旋钮、外部0-10V模拟量自动匹配0~最大力矩。 3.由于外接电位器连接于0-10V模拟量AVI输入端，故采用外接电位器调整力矩时,主力矩调整方式F04应选择3。 1.When the multi-function terminals M1 and M2 are closed arbitrarily, the motor runs as asegment torque, and the main torque adjustment is invalid. 2.Panel knob, external 0-10V analog quantity automatically matches 0-maximum torque. 3.Since the external potentiometer is connected to the 0-10V analog input terminal, when the external potentiometer is used for speed regulation, the main speed adjustment mode F04 should be selected 3.	1	
F-05	最大力矩 Maximum torue	50%-100%	限制电机最大力矩,可防止力矩过大,损坏产品或设备。 Limit the maximum torque of the motor to prevent excessive torque anddamage to the product or equipment.	80	
F-06	正转起动时力矩增大至最大值时间 Time when torque increases to maximum during forward rotation	0.1~10.0秒 seconds	时间越长,电机起动平缓,起动时间长; 时间越短,电机起动快猛,起动时间短 Long time, motor starting level, long starting time. The time is short, the motor starts fast and the starting time is short.	1	
F-07	正转停止时力矩减小至0时间 Time when torque is reduced to 0 as forward rotation stops	0.1~10.0秒 seconds	时间越长,电机起动平缓,起动时间长; 时间越短,电机起动快猛,起动时间短 Long time, motor starting level, long starting time. The time is short, the motor starts fast and the starting time is short.	1	
F-08	反转起动时力矩增大至最大值时间 Time when torque increase to maximum during reverse start	0.1~10.0秒 seconds	时间越长,电机起动平缓,起动时间长; 时间越短,电机起动快猛,起动时间短 Long time, motor starting level, long starting time. The time is short, the motor starts fast and the starting time is short.	1	
F-09	反转停止时力矩减小至0时间 Time when torque is reduced to 0 as reverse rotation stops	0.1~10.0秒 seconds	时间越长,电机起动平缓,起动时间长; 时间越短,电机起动快猛,起动时间短 Long time, motor starting level, long starting time. The time is short, the motor starts fast and the starting time is short.	1	
F-09	第一段力矩 First torque	0~最大力矩 0～maximum torque	闭合M1,电机以第一段力矩运转。 Closing M1, the motor runs at the first torque.	40	
F-09	第二力矩 Second torque	0~最大力矩 0～maximum torque	闭合M2电机以第二段力矩运转。 Closing M2, the motor runs at the second torque.	50	
F-09	第三力矩 Third torque	0~最大力矩 0～maximum torque	闭合M1+M2,电机以第三段力矩运转。 Close M1+M2,the motor runs with the third torque.	50	
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		07.**	

TK系列内置式力矩交流驱动外形及安装图 Tk series built-in torque AC driver outline 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燃物周围使用。
●避免连续振动,过度冲击。
●电机在正常运转状态下,有时电机外表面的温度可能会超过70℃,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。
●Donot use in a fragile environment,an easy-to-existing gas environment, a corosive environment,or a place where it's easy to get water or a bakeable object.
●Avoid continuous vibration.Excessive impact.
●When the mator is in normal operation, sometimes the termperature of the motor casing surface may exceed 70°C
●Therefore, please put the general sign shown on the right circle in the environment where the motor may be touched.
●Be sure to ground the ground terminall.
●Installation, connection,inspection, etc. must be carried out by professional technicians.

单相调速器
SINGLE-PHASE GOVERNOR

特点 Characteristics

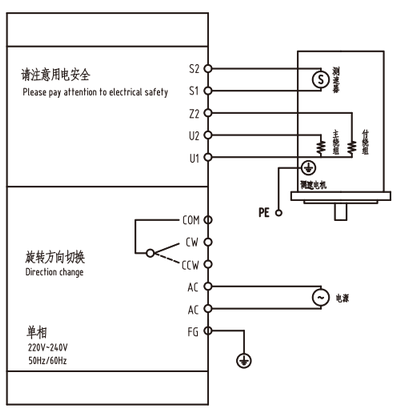
●采用数字微处理器控制技术，先进的的PID控制技术，功能丰富，性能优异；
●内置运行电容；
●可进行PID参数设定，满足不同场合电机平稳运行；
●可实现电机启动，停止加减速设定；
●带有堵转保护功能，防止电机、调速器因堵转烧毁；(该功能只能保护堵转过载,不能保护非堵转过载)

●Using digital microprocessor control technology, advanced PID control technology, rich in functions and excellent performance.
●Built-in operating capacitor.
●PID parameters can be set to meet the smooth running of motors in different occasions.
●The motor can be started and the acceleration/deceleration setting can be stopped.
●With blocking protection function to prevent the motor and governor from burning due to blockage.
(This function can only protect the stall overload, can not protect the non-blocking overload)

型号类别 Model category

可以根据电机的型号选择调速器(可分为6W,15w,15W,25W,40W,60W,90W,120W,200W)
The drive can be selected according to the model of the motor can be divided into 6W,15W,15W,25W,40W,60W,90W,120W,200W)

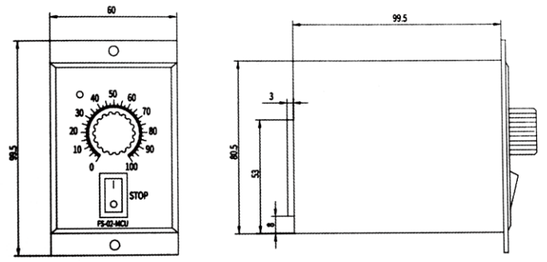
产品接线图 Product wiring diagram



1.AC电源输入接口
2.COM为公共接口
3.CW、CCW为正向反向切换端口
4.FG为地线接口
5.U1为电机主线
6.U2、Z2为启动电容接线（电机启动绕组）
7.S1、S2为电机反馈信号输入端口

1."AC" "AC" power input interface.
2."COM" is a public interface.
3."CW" and "CCW"are forward and reverse switching ports.
4.FG is the ground interface.
5."U1" is the main motor line.
6."U2" Z2" is the starting capacitor wiring.
(motor starting winding)
7."S1" "S2" is the motor feadhack signal input port.

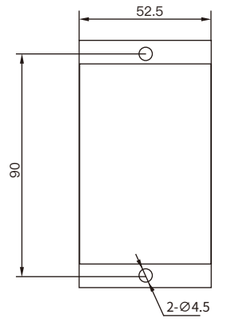
单相调速器安装图 Single-phase governor installation diagram



1.开关“1”闭合为“run”运行。
2.开关“0”闭合为“STOP”停止。
3.刻度盘0-100表示电机运行120rpm-1350rpm
4.指示灯为双色灯,红灯表示停止,绿灯表示运行。

1.Switch "1" is turned off to "run" operation.
2.The switch "0" is closed to "STOP" to stop.
3.the dial 0-100 indicates that the motor runs 120rpm-1350rpm
4.The indicator light is a two-color light, the red light means stop, and the green light means run.

安全注意事项 Safety precautions



这里提示的注意事项，其目的是为了使您能安全，正确的使用本产品，并防患于未然，以免对您和他人造成危险和损伤。请您在对其内容充分理解以后再使用本产品。
在操作时违反本警告事项所示的内容要求，可能会导致人员的死亡或负重伤。在操作时违反注意事项所示的内容要求，可能会导致人员负伤或物品损坏。为了使您能正确使用产品，在正文的相关使用项目中请用户务必遵守的事项。

The precautions here are intended to enable you to use this product safely and correctly ,and to prevent it from causing danger and damage to you and others. Please use this product after you fully understand its contents.
Violation ofthe content requirements shown in this warning during operation may result in death or serious injury. Failure to observe the contents of the precautions during operation may result in personal injury or damage to the item.In order for you to use it properly. The product,please be sure to observe the matter in the relevant use items ofthe text.

警告 Warning

●使用马达，速度控制器(调速器)时，请勿超过其规格值，否则有可能引起触电，致伤，或造成设备损坏；
●请安装漏电保护器，否则有可能引起火灾；
●出现异常时，请立即停止运转，切断速度控制器(调速器)电源，否则有可能引起火灾，触电或致伤；
●接通电源之前，请将速度控制器(调速器)面板电位器，旋转至最低值。否则马达有可能启动，致伤或造成设备损坏。
●请勿在爆炸性环境，可燃性气体环境，腐蚀性环境，容易沾水的场所以及可燃物附近使用本产品；
●安装，连接，运转操作，检查，故障诊断等作业时，请由具备适当资格的人来实施，否则有可能引起火灾，触电或致伤；
●请勿在通电状态下进行移动，安装，接线和检查作业。请切断电源后再进行作业，否则有可能引起触电；
●为马达的过热保护装置(Thermal Protector)动作时，请切断电源，否则过热保护装置自动恢复后马达会突然启动，有可能致伤或造成设备损坏。

●When using the motor and speed controller (speed governor), please do not exceed the specification value, otherwise it may cause electric shock,injury, or equipment damage.
●Please install the leakage protector, otherwise it may cause fire.
●When an abnormality occurs, stop the operation immediately and turn off the power of the speed controller (speed governor).Otherwise,it may cause fire, electric shock or injury.
●Before turning on the power, please rotate the speed controller (speed governor) panel potentiometer to the lowest value.Otherwise, the motor may start, cause injury or cause equipment damage.
●Do not use this product in an explosive environment, a flammable gas environment, a corrosive environment, a place that is prone to water, or a flammable material.
●Installation, connection, operation, inspection, troubleshooting, etc. should be carried out by suitably qualified persons,otherwise it may cause fire, electric shock or injury.
●Do not move. install, wire or check the power while it is powered on. Please turn off the power before proceeding, otherwise it may cause electric shock.
●When the motor's thermal protector (Thermal Protector) is activated, please turn off the power. Otherwise, the motor will suddenly start after the overheat protection device is automatically restored, which may cause injury or equipment damage.

保养检查 Maintenance check

在切断电源后的短时间内(10秒钟内)，请勿触摸数显调速器，电机接线端子，否则有可能因残留电压引起触电。
Do not touch the digital display governor or the motor terminal within a short time (within 10 seconds) after the power is turned off Otherwise, electric shock may occur due to residual voltage

AG

直角减速电动机

ANGEL GEAR MOTORS

型号的阅读方法 PRODUCT NUMBER CODE

●电动机 Motor

5	I	K	60	R	GU	——	C	T
①	②	③	④	⑤	⑥		⑦	⑧

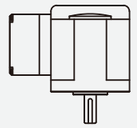
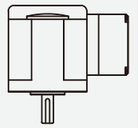
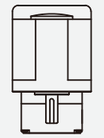
①电动机的尺寸 Motor frame size	2 :60mm 3 :70mm 4 :80mm 5 :90mm 6 :104mm
②类型名称 Motor type	I：感应电机 Induction motor R：可逆电机 Reversible motor T：转矩电机 Turque motor
③系列名称 Series	K：系列 Series
④输出功率 Output（W）	例（Example）40:40W
⑤R:表示带调速电动机,无:表示未带 The suffix"-R" after the output power means speed adjustable motor	
⑥转轴形状 Motor shaft ty	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 A1:键槽型 Keyway
⑦电源电压.极数 Voltage.poles	A: 单相 Single-phase 110V 50Hz/60Hz 4P B: 单相 Single-phase 110V 50Hz/60Hz 2P C: 单相 Single-phase 220V 50Hz/60Hz 4P D: 单相 Single-phase 220V 50Hz/60Hz 2P S: 三相 Three-phase 220V 50Hz/60Hz 4P S3:三相 Three-phase 380V 50Hz/60Hz 4P T: 三相 Three-phase 220V 50Hz/60Hz 2P T3:三相 Three-phase 380V 50Hz/60Hz 2P
⑧	T：带接线盒型 Terminal box type
	F：带自冷风扇 Since the cool fan
	FF:带强制风扇 W/Fan
	M：带无励磁动作型电磁制动电动机 Power off activated electromagnrtic brake motor
	P：带热保器 Thermal protector

●减速器 Reducer

5	GU	——	60	RC
①	②		③	④

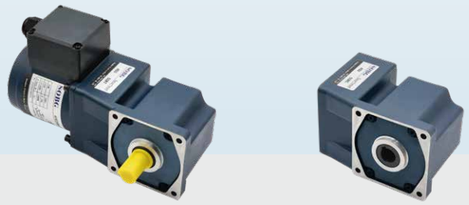
①减速器的尺寸Reducer frame size	2 :60mm 3 :70mm 4 :80mm 5 :90mm 6 :104mm
②类型type of pinion	GN:GN型齿轮轴 GN type pinion shaft GU:GU型齿轮轴 GU type pinion shaft
③减速比Gear ratio	例（Example）60：1:60
④轴承种类Bearing type	RC:弧锥齿空心轴输出Spiral bevel hollow shaft RT:弧锥齿实心轴输出Spiral bevel output shaft

●接线盒的选定 Selection of junction box

G-左方向 Left	G1-上方向 Up	G2-右方向 Right	G3-下方向 Down
			

直角电机

ANGEL 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	启动转矩 Starting Torque	额定转矩 Rated Torque	额定转速 Rated Speed	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	mN.m	mN.m	r/min	μF/VAC
4IK25GN-C	4IK25A-C	25	1ph220	50	0.24	160	190	1250	1.8/450
				60	0.23	160	154	1550	
4IK25GN-A	4IK25A-A	25	1ph110	50	0.55	150	190	1250	7/250
				60	0.50	150	154	1550	
4IK25GN-S	4IK25A-S	25	3ph220	50	0.18	350	190	1250	/
				60	0.17	250	154	1550	
4IK25GN-S3	4IK25A-S3	25	3ph380	50	0.11	350	190	1250	/
				60	0.10	250	154	1550	

●各种安全规格以电动机铭牌上的型号名取得认证。
●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” it means the voltage 110V,the assembly capacitor vaule it is according the labe.

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

减速比 Reduction 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 Speed r/min	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8
	转矩 Torque N.m	0.35	0.42	0.59	0.71	0.98	1.18	1.31	1.64	1.96	2.35	2.62	3.27	3.92	4.71	5.23	6.54	6.36	8	8	8	8	8	8
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10
	转矩 Torque N.m	0.29	0.34	0.48	0.57	0.80	1.12	1.25	1.56	1.87	2.25	2.49	3.12	3.74	4.49	4.99	6.24	5.15	6.44	8	8	8	8	8

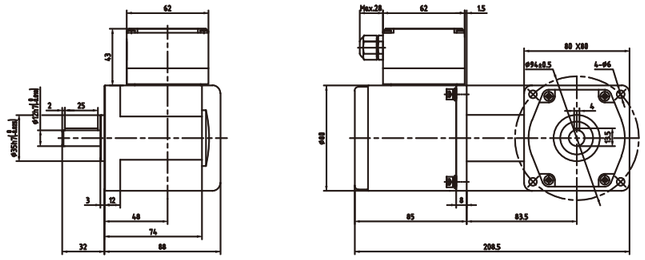
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
●表中 ■ 色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。
●减速箱的最大容许转矩为8N·M。

●In the table, the speed is calculated from the base of the 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 that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.
●The maximum allowable torque of the decelerator is 8N·M.

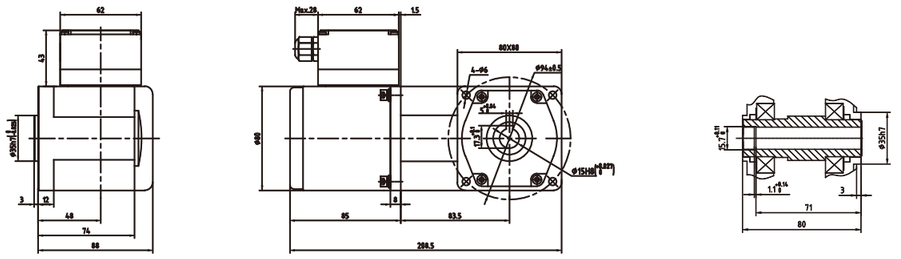
外形尺寸（单位MM） Dimension (unit mm)

感应、可逆尺寸图 INDUCTION、REVERSIBLE TYPE DRAWING

■弧锥齿实心轴 Spiral bevel solid shaft
重量 Weight:3.5Kg

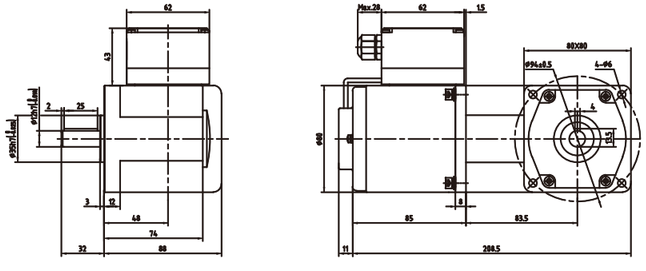


■弧锥齿空心轴 Hollow shaft with arc cone teeth
重量 Weight:3.3Kg



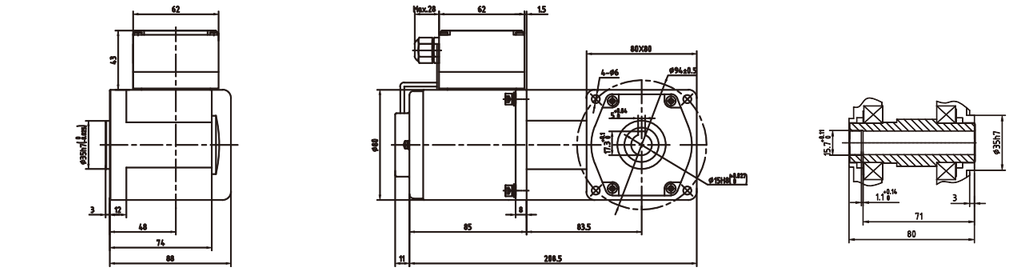
调速尺寸图 SPEED CONTROL TYPE DRAWING

■弧锥齿实心轴 Spiral bevel solid shaft
重量 Weight:3.8Kg



■ 弧锥齿空心轴 Hollow shaft with arc cone teeth

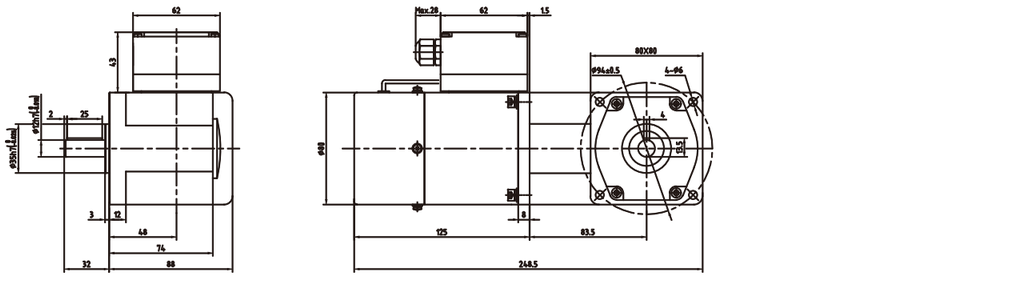
重量 Weight:3.6Kg



刹车尺寸图 BRAKE TYPE DRAWING

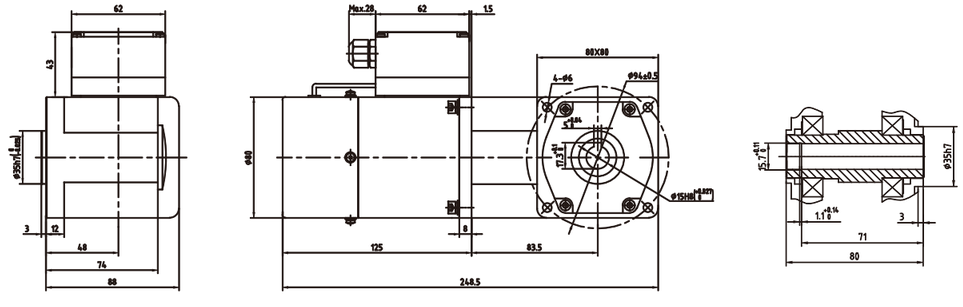
■ 弧锥齿实心轴 Spiral bevel solid shaft

重量 Weight: 4Kg



■ 弧锥齿空心轴 Hollow shaft with arc cone teeth

重量 Weight:3.8Kg



直角电机

ANGEL 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	启动转矩 Starting Torque	额定转矩 Rated Torque	额定转速 Rated Speed	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	mN.m	mN.m	r/min	μF/VAC
5IK40GU-C	5IK40A-C	40	1ph220	50	0.33	190	283	1350	2.5/450
				60	0.34	200	246	1550	
5IK40GU-A	5IK40A-A	40	1ph110	50	0.64	220	283	1350	10/250
				60	0.67	220	246	1550	
5IK40GU-S	5IK40A-S	40	3ph220	50	0.32	1110	283	1350	/
				60	0.28	830	246	1550	
5IK40GU-S3	5IK40A-S3	40	3ph380	50	0.18	1000	283	1350	/
				60	0.16	830	246	1550	

●各种安全规格以电动机铭牌上的型号名取得认证。
●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” it means the voltage 110V,the assembly capacitor vaule it is according the labe.

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

减速比 Reduction 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	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	0.53	0.63	0.88	1.05	1.46	1.75	1.95	2.44	2.92	3.51	3.90	4.87	5.85	6.31	7.01	8.77	10.52	13.15	15.78	17.54	20	20	20	20
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	0.46	0.55	0.76	0.91	1.27	1.52	1.69	2.12	2.54	3.05	3.39	4.23	5.08	5.49	6.10	7.62	9.15	11.43	13.72	15.24	18.29	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。

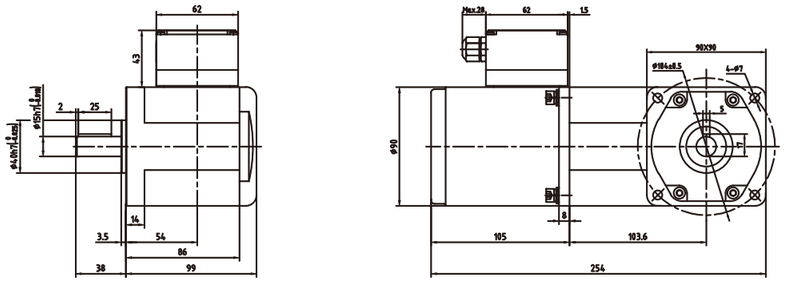
●In the table, the speed is calculated from the base of the motor's average speed divided by the deceleration ratio.The actual speed will vary with the load, ranging from 2 % to 20%.
●The ■ box in the table indicates that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.
●The maximum allowable torque of the decelerator is 20N·M.

外形尺寸（单位MM） Dimension (unit mm)

感应、可逆尺寸图 INDUCTION、REVERSIBLE TYPE DRAWING

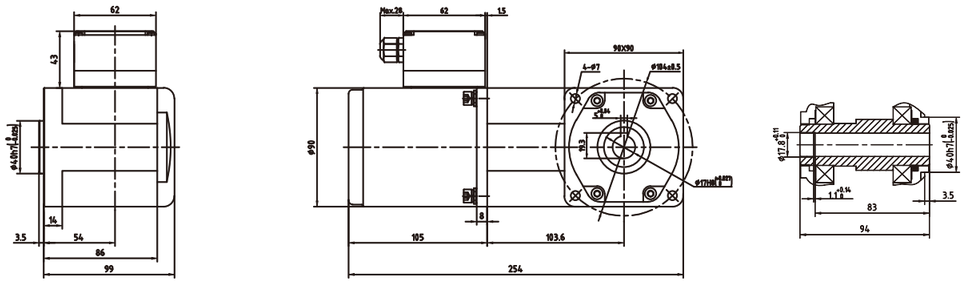
■ 弧锥齿实心轴 Spiral bevel solid shaft

重量 Weight:5.4Kg



■ 弧锥齿空心轴 Hollow shaft with arc cone teeth

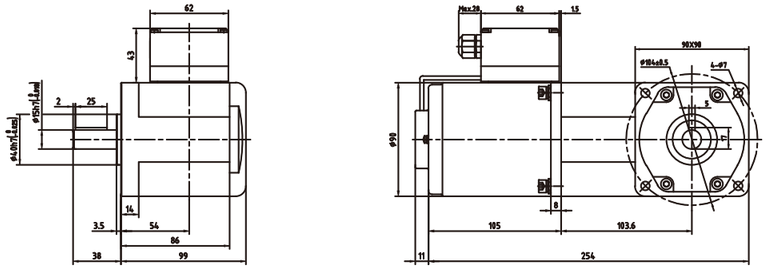
重量 Weight:5.05Kg



调速尺寸图 SPEED CONTROL TYPE DRAWING

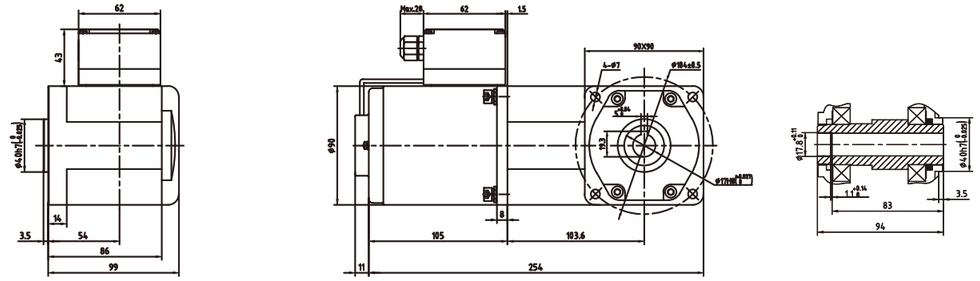
■ 弧锥齿实心轴 Spiral bevel solid shaft

重量 Weight:5.15Kg



■ 弧锥齿空心轴 Hollow shaft with arc cone teeth

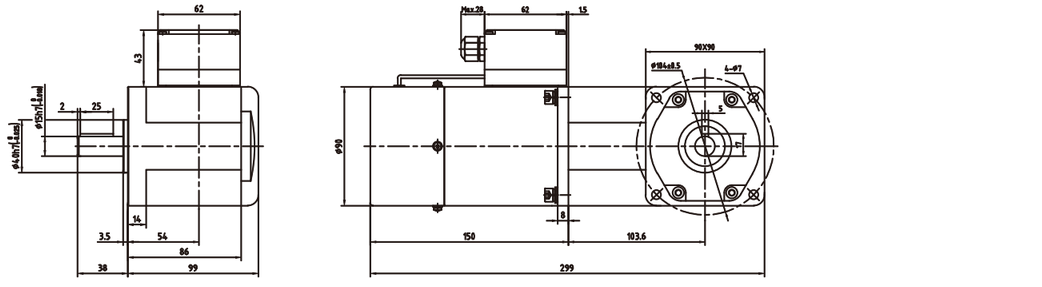
重量 Weight:4.8Kg



刹车尺寸图 BRAKE TYPE DRAWING

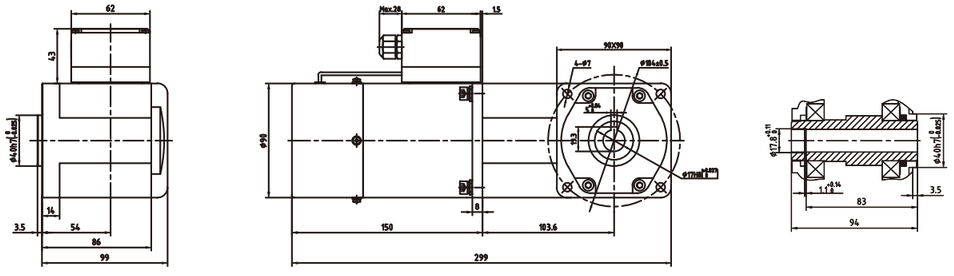
■ 弧锥齿实心轴 Spiral bevel solid shaft

重量 Weight:6.1Kg



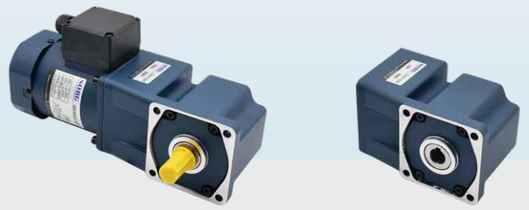
■ 弧锥齿空心轴 Hollow shaft with arc cone teeth

重量 Weight:5.75Kg



直角电机

ANGEL 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	启动转矩 Starting Torque	额定转矩 Rated Torque	额定转速 Rated Speed	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	mN.m	mN.m	r/min	μF/VAC
5IK60GU-CF	5IK60A-CF	60	1ph220	50	0.48	380	424	1350	4/450
				60	0.55	380	370	1550	
5IK60GU-AF	5IK60A-AF	60	1ph110	50	1.00	350	424	1350	15/250
				60	1.10	350	370	1550	
5IK60GU-SF	5IK60A-SF	60	3ph220	50	0.38	1110	424	1350	/
				60	0.38	830	370	1550	
5IK60GU-S3F	5IK60A-S3F	60	3ph380	50	0.22	1000	424	1350	/
				60	0.20	830	370	1550	

●各种安全规格以电动机铭牌上的型号名取得认证。
●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" it means the voltage 110V,the assembly capacitor vaule it is according the labe.

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

减速比 Reduction 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	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	0.79	0.95	1.31	1.58	2.19	2.63	2.92	3.65	4.38	5.25	5.84	7.30	8.76	10.51	11.68	14.60	17.52	20	20	20	20	20	20	20
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	0.69	0.83	1.15	1.38	1.91	2.29	2.55	3.18	3.82	4.59	5.09	6.37	7.64	9.17	10.19	12.74	15.28	19.11	20	20	20	20	20	20

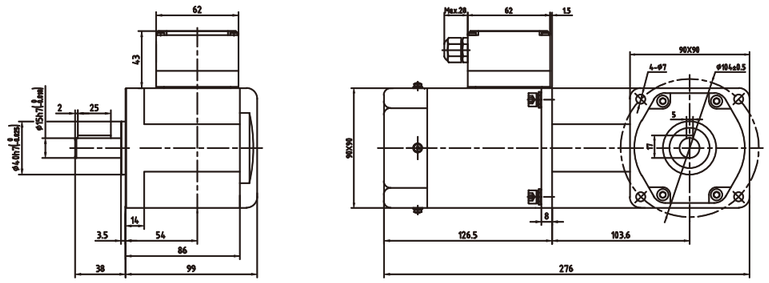
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
●表中 ■ 色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。
●减速箱的最大容许转矩为20N·M。

●In the table, the speed is calculated from the base of the 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 that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.
●The maximum allowable torque of the decelerator is 20N·M.

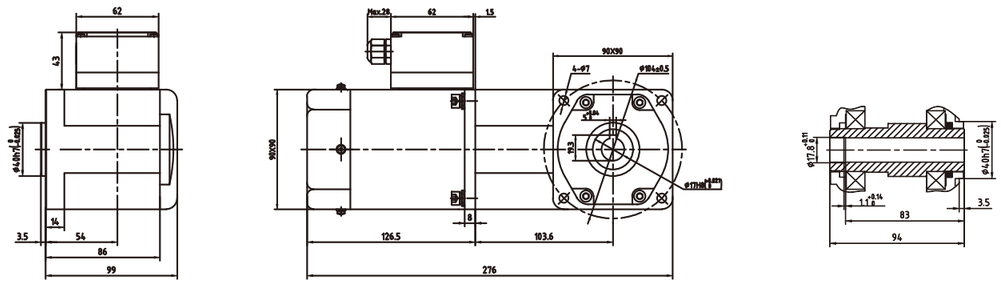
外形尺寸（单位MM） Dimension (unit mm)

感应、可逆尺寸图 INDUCTION、REVERSIBLE TYPE DRAWING

■弧锥齿实心轴 Spiral bevel solid shaft
重量 Weight:5.7Kg

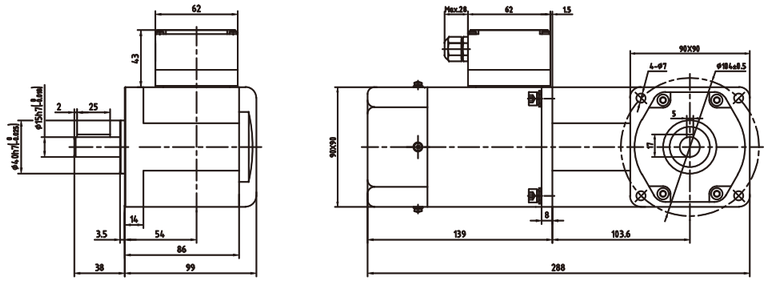


■弧锥齿空心轴 Hollow shaft with arc cone teeth
重量 Weight:5.35Kg



调速尺寸图 SPEED CONTROL TYPE DRAWING

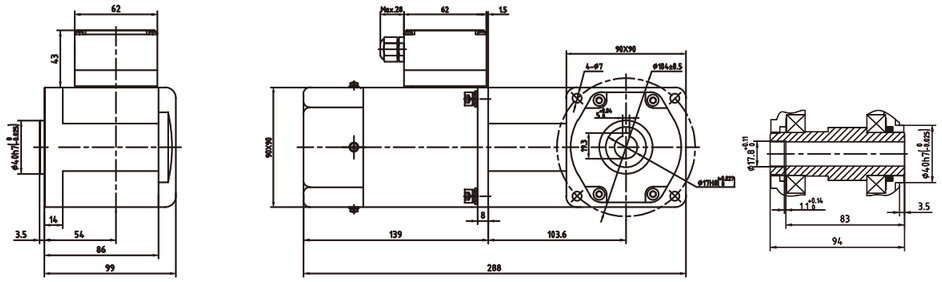
■弧锥齿实心轴 Spiral bevel solid shaft
重量 Weight:5.8Kg



外形尺寸（单位MM） Dimension (unit mm)

■ 弧锥齿空心轴 Hollow shaft with arc cone teeth

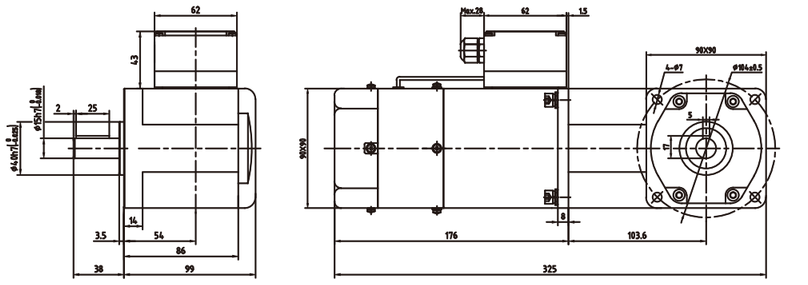
重量 Weight:5.45Kg



刹车尺寸图 BRAKE TYPE DRAWING

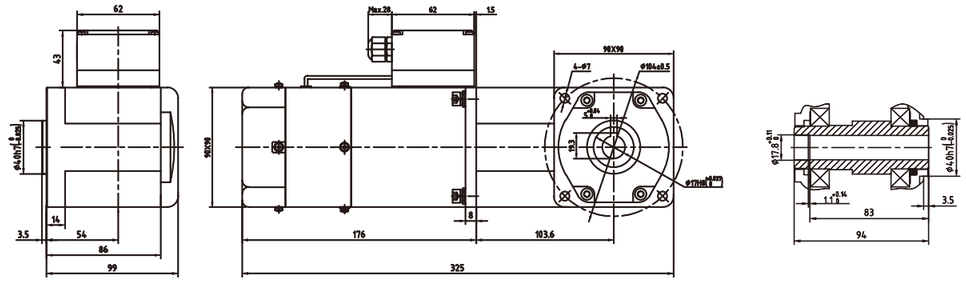
■ 弧锥齿实心轴 Spiral bevel solid shaft

重量 Weight:Motor:6.35Kg



■ 弧锥齿空心轴 Hollow shaft with arc cone teeth

重量 Weight:6.0Kg



直角电机

ANGEL 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	启动转矩 Starting Torque	额定转矩 Rated Torque	额定转速 Rated Speed	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	mN.m	mN.m	r/min	μF/VAC
5IK90GU-CF	5IK90A-CF	90	1ph220	50	0.69	450	637	1350	5/450
				60	0.71	450	555	1550	
5IK90GU-AF	5IK90A-AF	90	1ph110	50	1.35	470	637	1350	20/250
				60	1.50	470	555	1550	
5IK90GU-SF	5IK90A-SF	90	3ph220	50	0.60	1350	637	1350	/
				60	0.55	1100	555	1550	
5IK90GU-S3F	5IK90A-S3F	90	3ph380	50	0.35	1350	637	1350	/
				60	0.32	1100	555	1550	

●各种安全规格以电动机铭牌上的型号名取得认证。
●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” it means the voltage 110V,the assembly capacitor vaule it is according the labe.

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

减速比 Reduction 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	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	1.18	1.42	1.97	2.37	3.29	3.95	4.39	5.48	6.58	7.89	8.77	10.96	13.16	14.21	15.79	19.74	20	20	20	20	20	20	20	20
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	1.35	1.62	2.25	2.70	2.87	3.44	3.82	4.78	5.73	6.88	7.64	9.55	11.46	12.38	13.76	17.20	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。

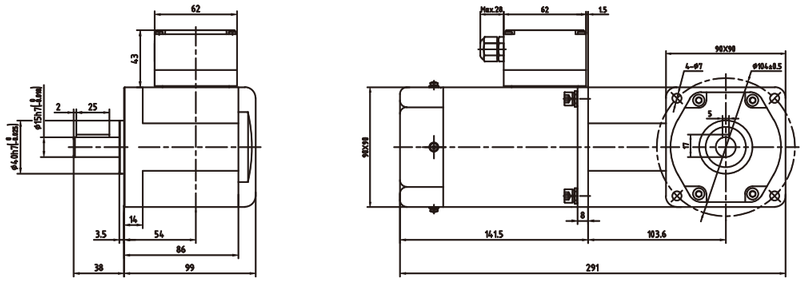
●In the table, the speed is calculated from the base of the motor's average speed divided by the deceleration ratio.The actual speed will vary with the load, ranging from 2 % to 20%.
●The ■ box in the table indicates that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.
●The maximum allowable torque of the decelerator is 20N·M.

外形尺寸（单位MM） Dimension (unit mm)

感应、可逆尺寸图 INDUCTION、REVERSIBLE TYPE DRAWING

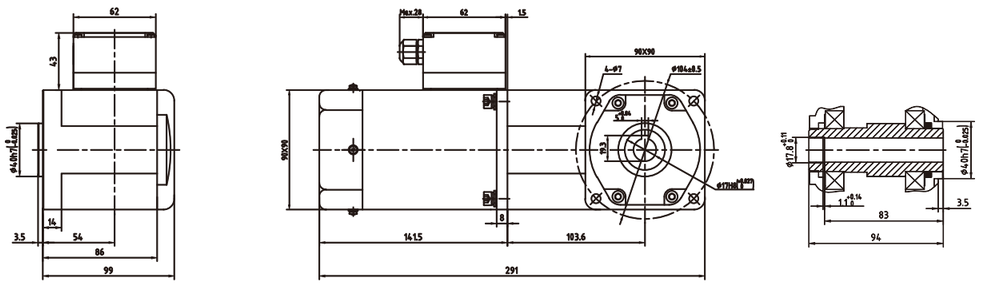
■ 弧锥齿实心轴 Spiral bevel solid shaft

重量 Weight:6.0Kg



■ 弧锥齿空心轴 Hollow shaft with arc cone teeth

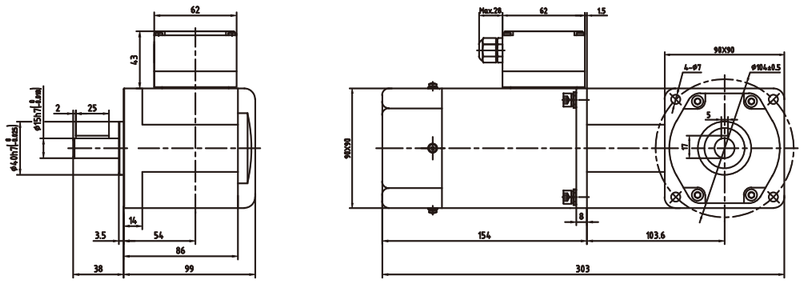
重量 Weight:5.65Kg



调速尺寸图 SPEED CONTROL TYPE DRAWING

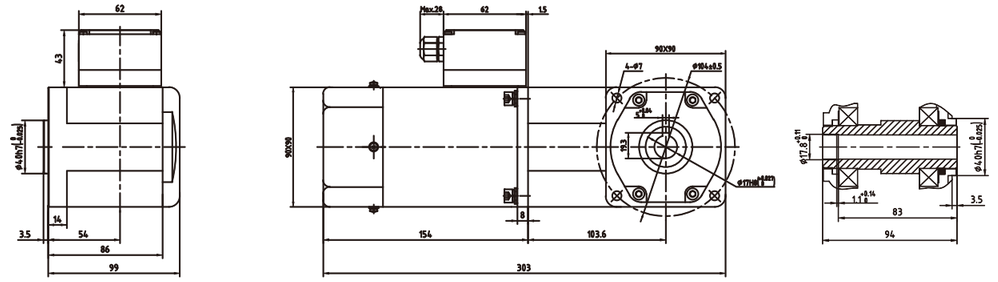
■ 弧锥齿实心轴 Spiral bevel solid shaft

重量 Weight:6.5Kg



■ 弧锥齿空心轴 Hollow shaft with arc cone teeth

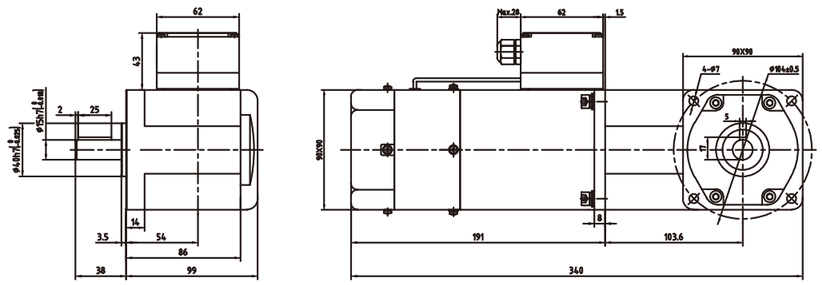
重量 Weight:6.15Kg



刹车尺寸图 BRAKE TYPE DRAWING

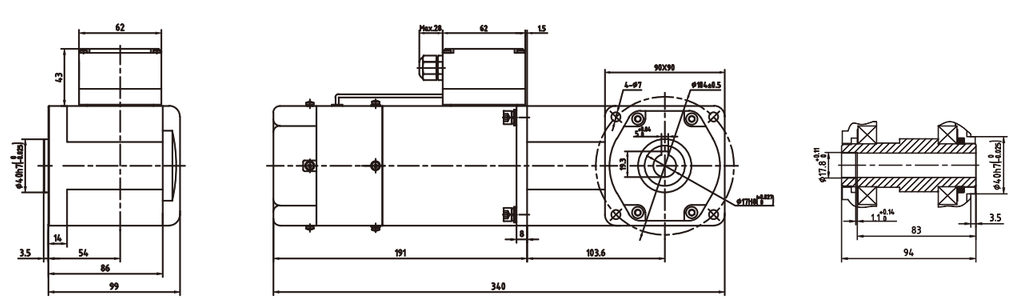
■ 弧锥齿实心轴 Spiral bevel solid shaft

重量 Weight:7.3Kg



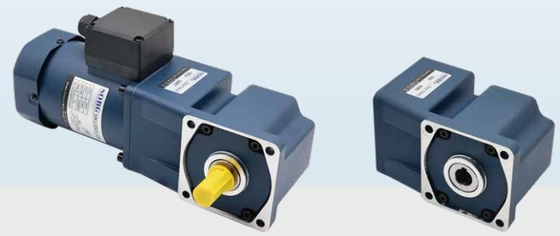
■ 弧锥齿空心轴 Hollow shaft with arc cone teeth

重量 Weight:6.95Kg



直角电机

ANGEL 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	启动转矩 Starting Torque	额定转矩 Rated Torque	额定转速 Rated Speed	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	mN.m	mN.m	r/min	μF/VAC
5IK120GU-CF	5IK120A-CF	120	1ph220	50	0.86	650	849	1350	6/450
				60	1.00	650	739	1550	
5IK120GU-AF	5IK120A-AF	120	1ph110	50	1.85	600	849	1350	25/250
				60	1.65	600	739	1550	
5IK120GU-SF	5IK120A-SF	120	3ph220	50	0.70	1850	849	1350	/
				60	0.60	1600	739	1550	
5IK120GU-S3F	5IK120A-S3F	120	3ph380	50	0.40	1850	849	1350	/
				60	0.35	1600	739	1550	

●各种安全规格以电动机铭牌上的型号名取得认证。
●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” it means the voltage 110V,the assembly capacitor vaule it is according the labe.

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

减速比 Reduction 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	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	2.06	2.48	3.44	4.13	5.16	6.19	6.19	7.74	9.28	11.14	11.14	13.93	16.71	20	20	20	20	20	20	20	20	20	20	20
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	1.80	2.15	2.99	3.59	4.49	5.39	5.39	6.73	8.08	9.70	9.70	12.12	14.55	17.45	19.39	20	20	20	20	20	20	20	20	20

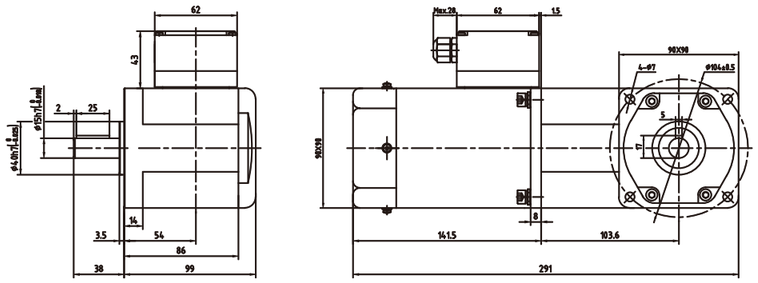
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2~20%。
●表中 色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。
●减速箱的最大容许转矩为20N·M。

●In the table, the speed is calculated from the base of the 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 that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.
●The maximum allowable torque of the decelerator is 20N·M.

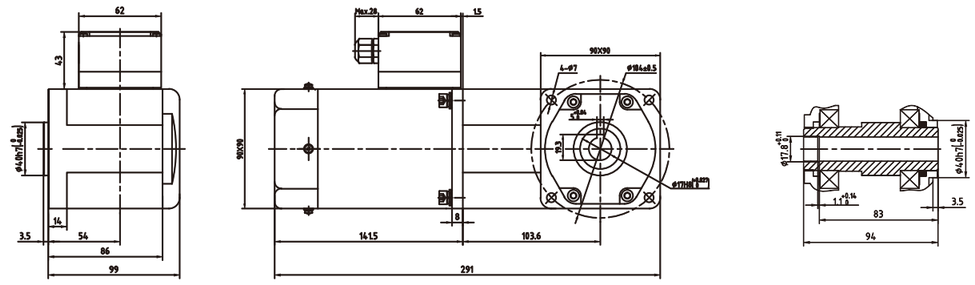
外形尺寸（单位MM） Dimension (unit mm)

感应、可逆尺寸图 INDUCTION、REVERSIBLE TYPE DRAWING

■ 弧锥齿实心轴 Spiral bevel solid shaft
重量 Weight:6.4Kg

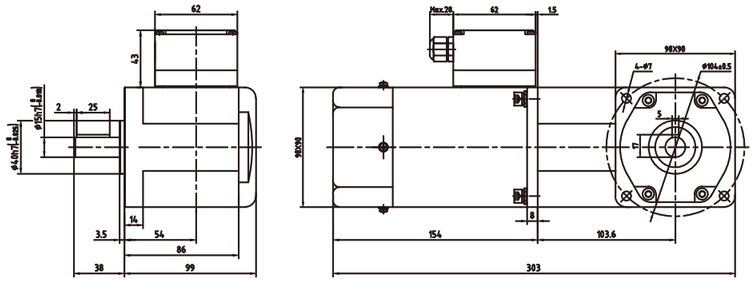


■ 弧锥齿空心轴 Hollow shaft with arc cone teeth
重量 Weight:6.05Kg



调速尺寸图 SPEED CONTROL TYPE DRAWING

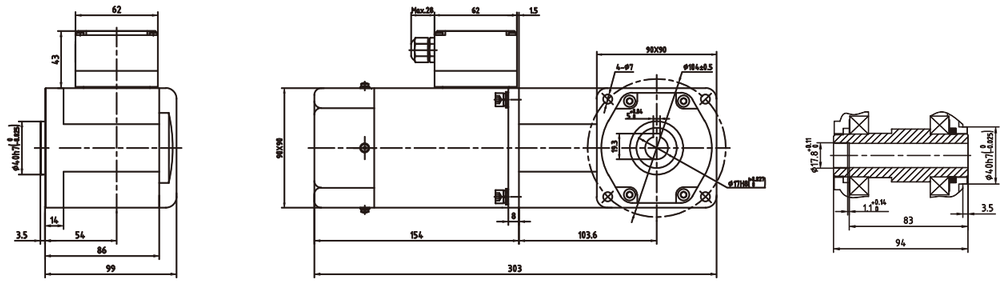
■ 弧锥齿实心轴 Spiral bevel solid shaft
重量 Weight:6.5Kg



外形尺寸（单位MM） Dimension (unit mm)

■ 弧锥齿空心轴 Hollow shaft with arc cone teeth

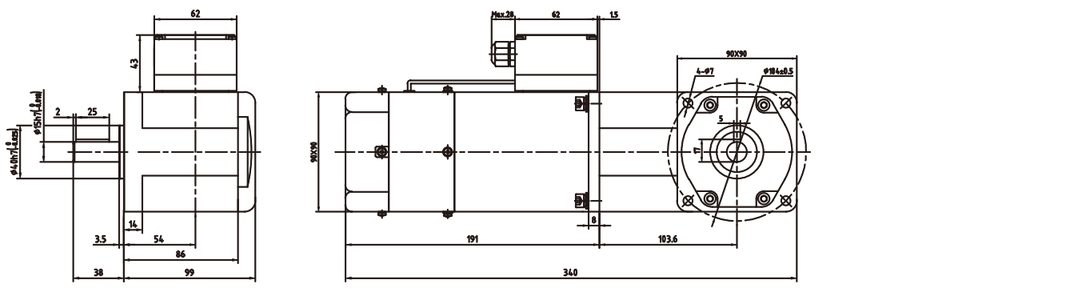
重量 Weight:6.15Kg



刹车尺寸图 BRAKE TYPE DRAWING

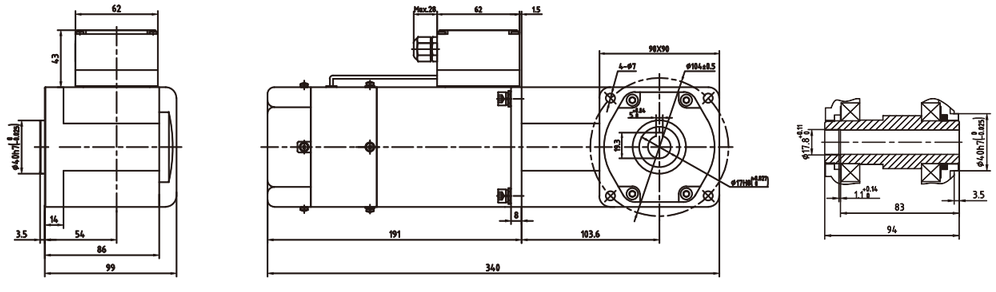
■ 弧锥齿实心轴 Spiral bevel solid shaft

重量 Weight:7.5Kg



■ 弧锥齿空心轴 Hollow shaft with arc cone teeth

重量 Weight:7.15Kg



直角电机

ANGEL 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	启动转矩 Starting Torque	额定转矩 Rated Torque	额定转速 Rated Speed	运行电容 Capacitor/Ve
齿轮轴型 Pinion Shaft	圆轴型 Round Shaft	W	V	Hz	A	mN.m	mN.m	r/min	μF/VAC
6IK200GU-CF	6IK200A-CF	200	1ph220	50	1.30	1000	1415	1350	10/450
				60	1.40	900	1232	1550	
6IK200GU-AF	6IK200A-AF	200	1ph110	50	3.20	900	1415	1350	45/250
				60	3.50	850	1232	1550	
6IK200GU-SF	6IK200A-SF	200	3ph220	50	1.20	3400	1415	1350	/
				60	1.00	2700	1232	1550	
6IK200GU-S3F	6IK200A-S3F	200	3ph380	50	0.69	3400	1415	1350	/
				60	0.58	2700	1232	1550	

●各种安全规格以电动机铭牌上的型号名取得认证。
●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” it means the voltage 110V,the assembly capacitor vaule it is according the labe.

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

减速比 Reduction 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	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
	转矩 Torque N.m	3.44	4.13	5.73	6.88	8.60	10.32	11.46	12.89	15.47	18.57	20.63	25.79	30.95	37.14	40	40	40	40	40	40	40	40	40	40
60Hz	转速 Speed r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
	转矩 Torque N.m	2.99	3.59	4.99	5.99	7.48	8.98	9.98	11.23	13.47	16.17	17.96	22.45	26.94	32.33	35.93	40	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。

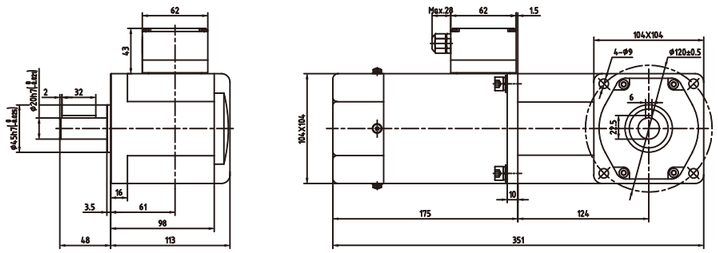
●In the table, the speed is calculated from the base of the motor's average speed divided by the deceleration ratio.The actual speed will vary with the load, ranging from 2 % to 20%.
●The ■ box in the table indicates that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.
●The maximum allowable torque of the decelerator is 40N·M.

外形尺寸（单位MM） Dimension (unit mm)

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

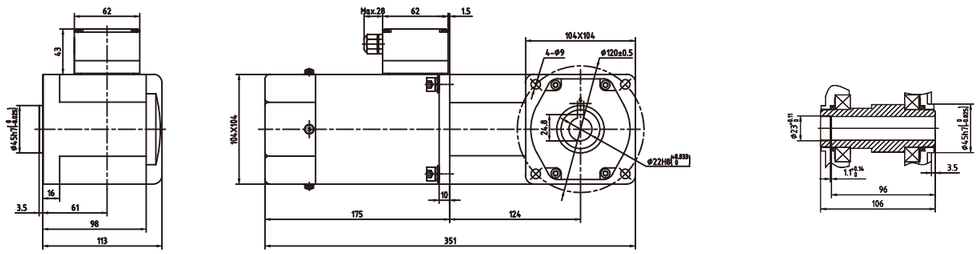
■ 弧锥齿实心轴 Spiral bevel solid shaft

重量 Weight:9.5Kg



■ 弧锥齿空心轴 Hollow shaft with arc cone teeth

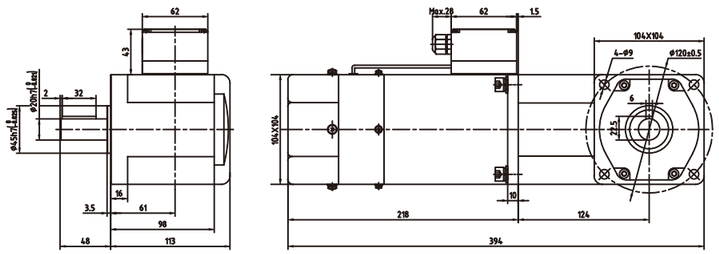
重量 Weight:9.25Kg



刹车尺寸图 BRAKE TYPE DRAWING

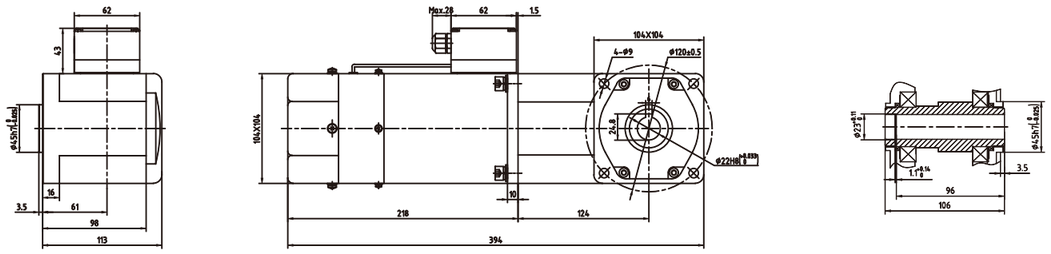
■ 弧锥齿实心轴 Spiral bevel solid shaft

重量 Weight:10.4Kg



■ 弧锥齿实心轴 Spiral bevel solid shaft

重量 Weight:10.15Kg



DC

直流减速电动机

DC GEAR MOTORS

型号的阅读方法 PRODUCT NUMBER CODE

●电动机 Motor

5	D	90	——	24	GN	——	30S
①	②	③		④	⑤		⑥

①	座机号 Code 电机安装法兰Mounting Flange(mm) 机壳直径Case Diameter(mm)	2	3	4	5	55	6
		60X60	70X70	80X80	90X90	90X90	104X104
		60	60	80	80	90	90
②	马达系列Motor Serires	D:有刷直流DC Motor					
③	输出功率Output（W）	例（Example）90:90W					
④	电源电压Voltage	12:12v 24:24v 90:90V 120:120V 220:220V					
⑤	转轴形状Motor shaft ty	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 A1:键槽型 Keyway					
⑥	转速 Speed	30S:3000RPM 18S:1800RPM					

●减速器 Reducer

5	GU	——	60	K
①	②		③	④

①减速器的尺寸Reducer frame size	2 :60mm 3 :70mm 4 :80mm 5 :90mm 6 :104mm
②类型type of pinion	GN:GN型齿轮轴 GN type pinion shaft GU:GU型齿轮轴 GU type pinion shaft
③减速比Gear ratio	例（Example）60：1:60
④轴承种类Bearing type	K:滚珠轴承（对5GU方型箱体标注为KB） Bearing（make KB for type GU square case）

●直流电机得一般规格General specification of DC motor

项目Item	规格specifications
绝缘电阻 Insulation Resistance	于常温·常湿下的电动机额定运行后,以DC500V电阻表测量线圈外壳间时,测量值为20MΩ以上 In the circumstance of normal temperature and humidity, the resistance can be up to 20MΩ, measured DC 500vinsulation resistance measure rbetween 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、15kv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 at 50Hz/60Hz between the metal wiring and motor shell for 1 minute while the motor is working.
温度上升 Temperature Rise	运行电机后，用电阻法来测量时，线圈绕组温度的上升数值在80℃一下 The temperature rise should be lower than 80℃ measured by resistance method when the motor is working
绝缘等级 insulation Class	UL/CSA规格:A种(105℃)、EN规格:B种(130℃) UL/CSA Standards: Class A(105℃) EN Standards: Class B(130℃)
使用环境温度 Ambient Temperature	其他电压:-10℃~+40℃(无结冰) -10℃~+40℃(Non Freezing)
使用环境湿度 Ambient Humidity	85%以下（无结露） ≤85%（Non condensing）

直流电动机

DC MOTORS

6W

60MM

电机型号/性能 List of motor characteristics

电机型号 Motor Model	电压 Voltage	功率 Power	空载参数 No-load Parameter		负载参数 Load Parameters			电刷寿命 Brush life	电机重量 Motor Weight
			转速 Speed	电流 Current	转速 Speed	力矩 Torque	电流 Current		
	V	W	r/min	A	r/min	mN.m	A	H	kg
2D6-12□	12	6	3300	0.6	3000	19	1.2	2000	0.6
2D6-24□	24	6	3300	0.4	3000	19	0.6	2000	0.6

●电机电压、功率及转速可在配件尺寸等条件允许下根据客户要求定制。
●外置电刷，用户可自行在外部更换电刷：内置电刷电机更换电刷时需将电机拆装后方可更换。

●Motor voltage，power and speed will be customized according to his requestment under allowed circumstance of adoptable dimension.
●For external brush motor,you can replce the brush directly.For internal ones,we need to disassembly the motor first.

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

减速比 Reduction ratio		3	3.6	5	6	7.5	9	10	13	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
2D6-24GN	转速 Speed r/min	983	819	590	492	393	328	295	236	197	164	148	118	98	82	74	59	49	39	33	30	25	20	16	15
	转距 Torque N.M	0.05	0.06	0.08	0.09	0.11	0.13	0.16	0.2	0.24	0.27	0.28	0.34	0.41	0.51	0.57	0.7	0.76	0.96	1.15	1.27	1.53	1.91	2.29	2.55
		0.46	0.56	0.77	0.93	1.16	1.39	1.54	1.93	2.31	2.78	2.78	3.47	4.16	5	5.55	6.94	7.49	9.37	11.2	12.5	15	18.7	22.5	25.0

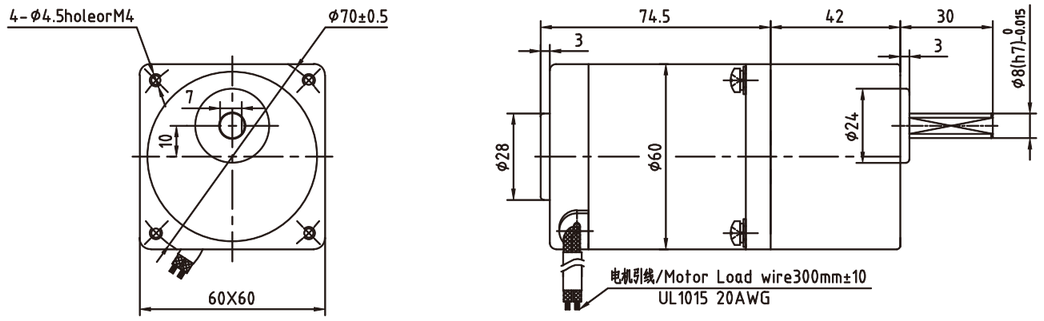
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2-20%。
●表中■色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。

●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 that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.

外形尺寸（单位mm） Dimension (unit mm)

■ 导线型 Lead Wring Type

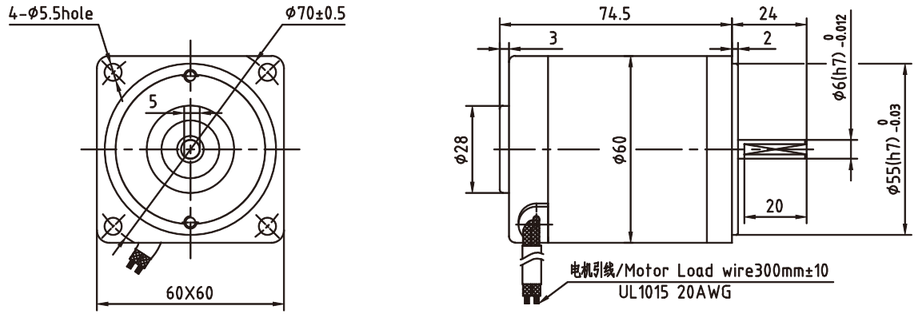
重量 Weight: 电机 Motor:0.6Kg 减速器 Gearhead:0.4Kg



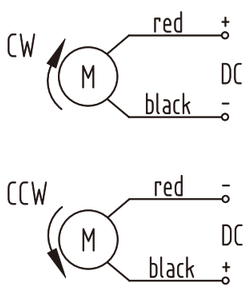
其中速比3~18可以做成短型减速箱（L=32）
Gear ratio 3~18, short case is possible (L =32)

■ 圆轴电机 Round Shaft Motor

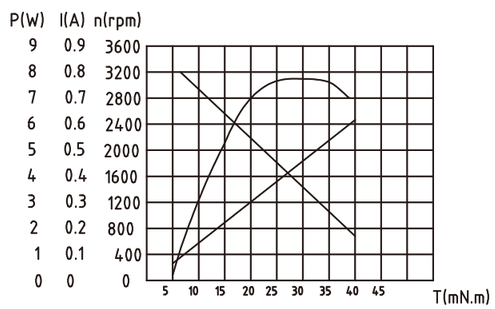
重量 Weight: 电机 Motor:0.6Kg



接线图 Wiring Diagram



电机特性曲线 Motor characteristic curve



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

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

直流电动机

DC MOTORS

10W

60MM

电机型号/性能 List of motor characteristics

电机型号 Motor Model	电压 Voltage	功率 Power	空载参数 No-load Parameter		负载参数 Load Parameters			电刷寿命 Brush life	电机重量 Motor Weight
			转速 Speed	电流 Current	转速 Speed	力矩 Torque	电流 Current		
	V	W	r/min	A	r/min	mN.m	A	H	kg
2D10-12□	12	6	3400	0.7	3000	32	1.8	2000	0.7
2D10-24□	24	6	3400	0.5	3000	32	0.9	2000	0.7

●电机电压、功率及转速可在配件尺寸等条件允许下根据客户要求定制。
●外置电刷，用户可自行在外部更换电刷：内置电刷电机更换电刷时需将电机拆装后方可更换。

●Motor voltage，power and speed will be customized according to his requestment under allowed circumstance of adoptable dimension.
●For external brush motor,you can replce the brush directly.For internal ones,we need to disassembly the motor first.

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

减速比 Reduction ratio		3	3.6	5	6	7.5	9	10	13	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
2D10-24GN	转速 Speed r/min	1000	833	600	500	400	333	300	240	200	166	150	120	100	83	75	60	50	40	33	30	25	20	16.5	15
	转距 Torque N.M	0.08	0.09	0.13	0.15	0.19	0.23	0.26	0.32	0.39	0.46	0.46	0.58	0.7	0.84	0.93	1.16	1.25	1.75	1.88	1.27	2.51	3.00	3.00	3.00
		0.76	0.91	1.26	1.52	1.90	2.27	2.53	3.16	3.79	4.55	4.55	5.69	6.82	8.19	9.10	11.4	12.3	15.4	18.4	12.5	24.6	30.0	30.0	30.0

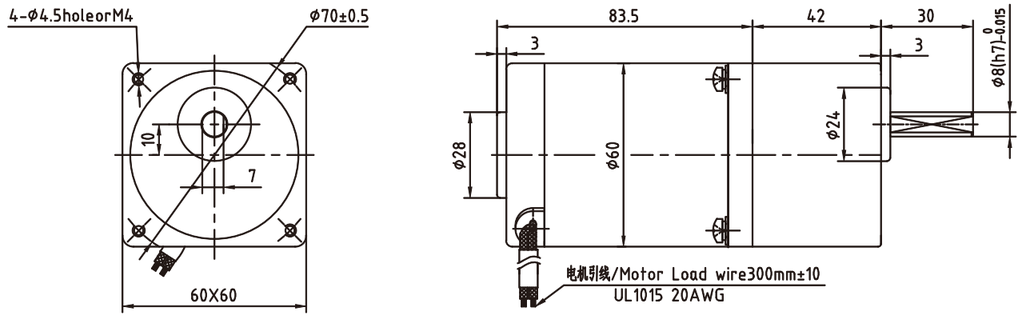
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2–20%。
●表中 色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。

●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 that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.

外形尺寸（单位mm） Dimension (unit mm)

■ 导线型 Lead Wring Type

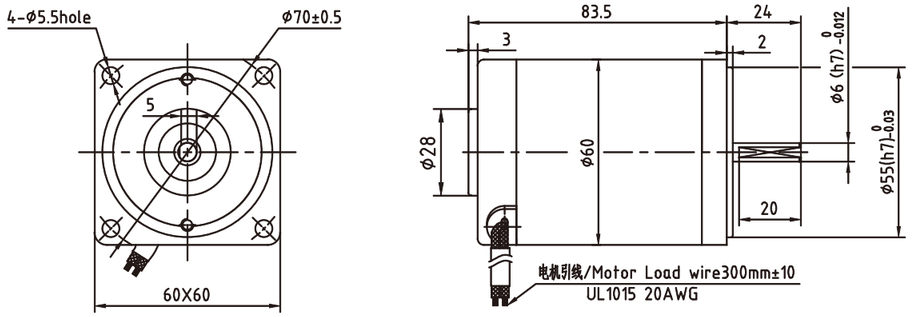
重量 Weight: 电机 Motor:0.7Kg 减速器 Gearhead:0.4Kg



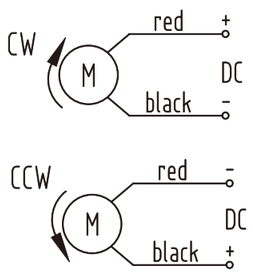
其中速比3~18可以做成短型减速箱（L=32）
Gear ratio 3~18, short case is possible (L =32)

■ 圆轴电机 Round Shaft Motor

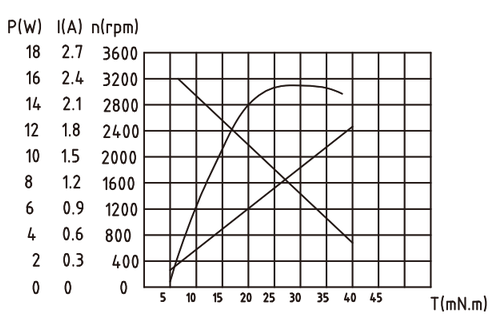
重量 Weight: 电机 Motor:0.7Kg



接线图 Wiring Diagram



电机特性曲线 Motor characteristic curve



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

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

直流电动机

DC MOTORS

15W 60MM

电机型号/性能 List of motor characteristics

电机型号 Motor Model	电压 Voltage	功率 Power	空载参数 No-load Parameter		负载参数 Load Parameters			电刷寿命 Brush life	电机重量 Motor Weight
			转速 Speed	电流 Current	转速 Speed	力矩 Torque	电流 Current		
	V	W	r/min	A	r/min	mN.m	A	H	kg
2D15-12□	12	15	3400	0.8	3000	47	2.1	2000	0.8
2D15-24□	24	15	3350	0.4	3000	47	1.1	2000	0.8

●电机电压、功率及转速可在配件尺寸等条件允许下根据客户要求定制。
●外置电刷，用户可自行在外部更换电刷：内置电刷电机更换电刷时需将电机拆装后方可更换。

●Motor voltage，power and speed will be customized according to his requestment under allowed circumstance of adoptable dimension.
●For external brush motor,you can replce the brush directly.For internal ones,we need to disassembly the motor first.

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

减速比 Reduction ratio		3	3.6	5	6	7.5	9	10	13	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
2D15-24GN	转速 Speed r/min	1000	833	600	500	400	333	300	240	200	167	150	120	100	83	75	60	50	40	33	30	25	20	16.5	15
	转距 Torque N.M	0.12	0.14	0.19	0.23	0.29	0.35	0.39	0.48	0.58	0.7	0.7	0.87	1.04	1.25	1.39	1.74	1.88	2.35	2.82	3.00	3.00	3.00	3.00	3.00
		1.14	1.36	1.90	2.27	2.84	3.41	3.79	4.74	5.69	6.82	6.82	8.53	10.2	12.3	13.7	17.1	18.4	23	27.6	30.0	30.0	30.0	30.0	30.0

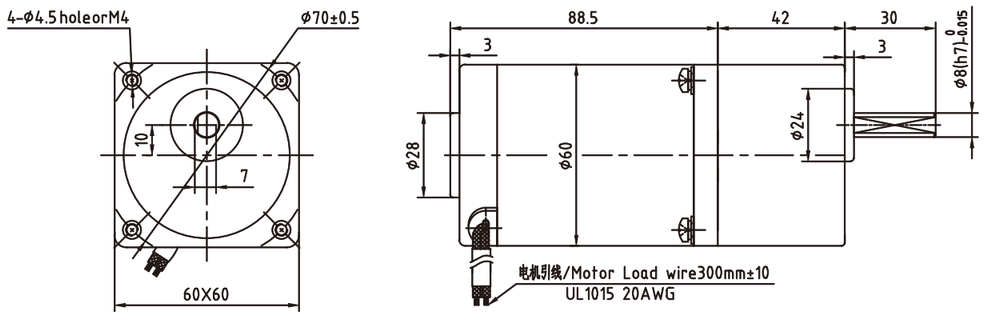
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2–20%。
●表中■色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。

●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 that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.

外形尺寸（单位mm） Dimension (unit mm)

■ 导线型 Lead Wring Type

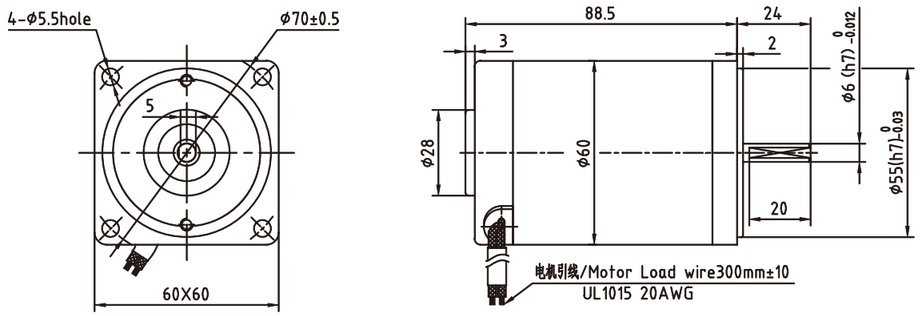
重量 Weight: 电机 Motor:0.8Kg　　减速器 Gearhead:0.4Kg



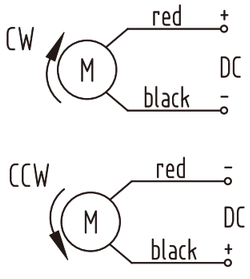
其中速比3~18可以做成短型减速箱（L=32）
Gear ratio 3~18, short case is possible (L =32)

■ 圆轴电机 Round Shaft Motor

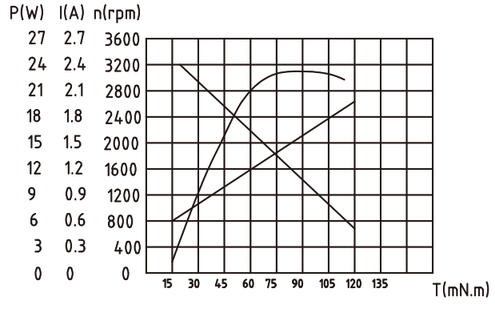
重量 Weight: 电机 Motor:0.8Kg



接线图 Wiring Diagram



电机特性曲线 Motor characteristic curve



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

●The direction of motor rotation is as viewed from the shaft end of motor CW represents the clockwise direction, while CCW represents the counter clckwise direction

直流电动机

DC MOTORS

25W　70MM

电机型号/性能 List of motor characteristics

电机型号 Motor Model	电压 Voltage	功率 Power	空载参数 No-load Parameter		负载参数 Load Parameters			电刷寿命 Brush life	电机重量 Motor Weight
			转速 Speed	电流 Current	转速 Speed	力矩 Torque	电流 Current		
	V	W	r/min	A	r/min	mN.m	A	H	kg
3D25-12□	12	30	3400	0.8	3000	80	3	2000	1
3D25-24□	24	30	3350	0.4	3000	80	1.5	2000	1

●电机电压、功率及转速可在配件尺寸等条件允许下根据客户要求定制。
●外置电刷，用户可自行在外部更换电刷：内置电刷电机更换电刷时需将电机拆装后方可更换。

●Motor voltage，power and speed will be customized according to his requestment under allowed circumstance of adoptable dimension.
●For external brush motor,you can replce the brush directly.For internal ones,we need to disassembly the motor first.

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

减速比 Reduction ratio		3	3.6	5	6	7.5	9	10	13	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
3D25-24GN	转速 Speed r/min	933	778	560	467	373	311	280	224	187	156	140	112	93	78	70	56	47	37	31	28	23	19	16	14
	转距 Torque N.M	0.21	0.25	0.35	0.41	0.52	0.62	0.69	0.86	1.04	1.24	1.24	1.55	1.86	2.24	2.49	3.11	3.73	4.65	5.00	5.00	5.00	5.00	5.00	5.00
		2.03	2.44	3.38	4.06	5.08	6.09	6.77	8.46	10.2	12.2	12.2	15.2	18.3	21.9	24.4	30.5	36.6	45.7	50.0	50.0	50.0	50.0	50.0	50.0

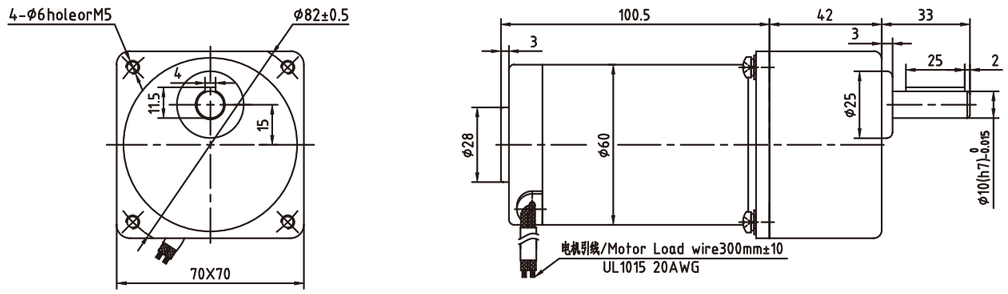
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2–20%。
●表中 ■ 色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。

●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 that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.

外形尺寸（单位mm） Dimension (unit mm)

■ 导线型 Lead Wring Type

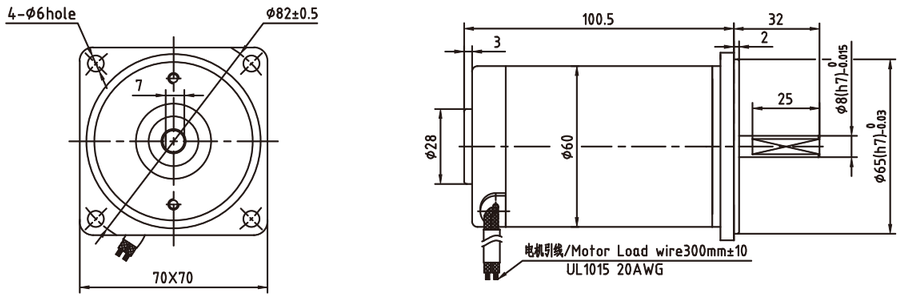
重量 Weight: 电机 Motor:1.0Kg 减速器 Gearhead:0.5Kg



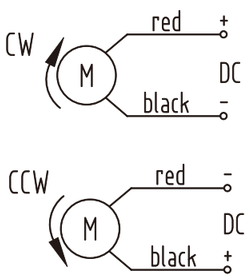
其中速比3~18可以做成短型减速箱（L=32）
Gear ratio 3~18, short case is possible (L =32)

■ 圆轴电机 Round Shaft Motor

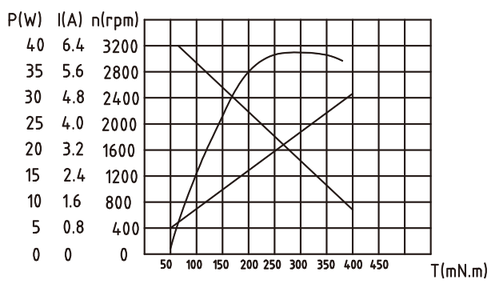
重量 Weight: 电机 Motor:1.0Kg



接线图 Wiring Diagram



电机特性曲线 Motor characteristic curve



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

●The direction of motor rotation is as viewed from the shaft end of motor CW represents the clockwise direction, while CCW represents the counter clckwise direction

直流电动机

DC MOTORS

25W

80MM

电机型号/性能 List of motor characteristics

电机型号 Motor Model	电压 Voltage	功率 Power	空载参数 No-load Parameter		负载参数 Load Parameters			电刷寿命 Brush life	电机重量 Motor Weight
			转速 Speed	电流 Current	转速 Speed	力矩 Torque	电流 Current		
	V	W	r/min	A	r/min	mN.m	A	H	kg
4D25-12□	12	25	3250	1.6	3000	80	3	2000	1.7
4D25-24□	24	25	3250	0.8	3000	80	1.5	2000	1.7
4D25-90□	90	25	3200	0.2	3000	80	0.5	2000	1.7

●电机电压、功率及转速可在配件尺寸等条件允许下根据客户要求定制。

●外置电刷，用户可自行在外部更换电刷：内置电刷电机更换电刷时需将电机拆装后方可更换。

●Motor voltage，power and speed will be customized according to his requestment under allowed circumstance of adoptable dimension.

●For external brush motor,you can replce the brush directly.For internal ones,we need to disassembly the motor first.

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

减速比 Reduction 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
4D25-24GN	转速 Speed r/min	950	792	570	475	380	317	285	228	190	158	143	114	95	79	71	57	48	38	32	29	24	19	16	14
	转距 Torque N.M	0.20	0.24	0.34	0.41	0.51	0.61	0.68	0.85	1.02	1.22	1.36	1.53	1.83	2.20	2.44	3.05	3.30	4.12	4.95	5.50	6.60	8.00	8.00	8.00
		1.99	2.39	3.32	3.99	4.99	5.98	6.65	8.31	10.0	12.0	13.3	15.0	18.0	21.5	23.9	29.9	32.3	40.4	48.5	53.9	64.6	80.0	80.0	80.0

●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。

●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%.

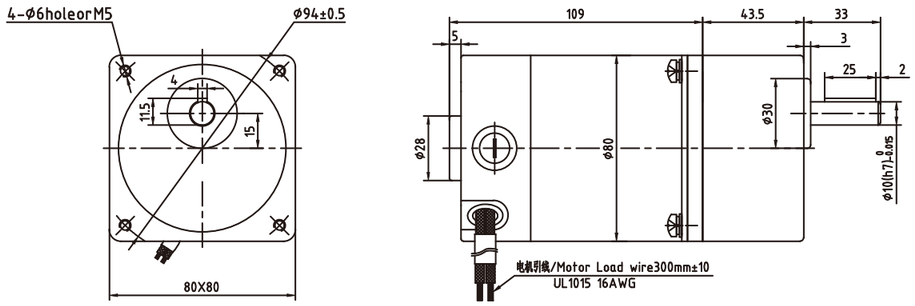
●The ■ box in the table indicates that the rotation direction of the output axis is opposite to that of the motor.

●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.

外形尺寸（单位mm） Dimension (unit mm)

■ 导线型 Lead Wring Type

重量 Weight：电机 Motor:1.7Kg　　减速器 Gearhead:0.8Kg



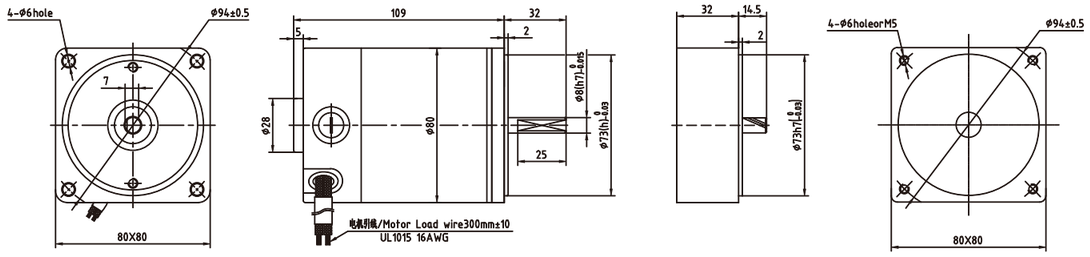
其中速比3~18可以做成短型减速箱（L=32）
Gear ratio 3~18, short case is possible (L =32)

■ 圆轴电机 Round Shaft Motor

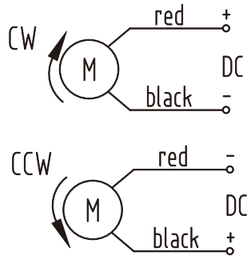
重量 Weight：电机 Motor:1.7Kg

■ 中间减速器 Mid-gearbox

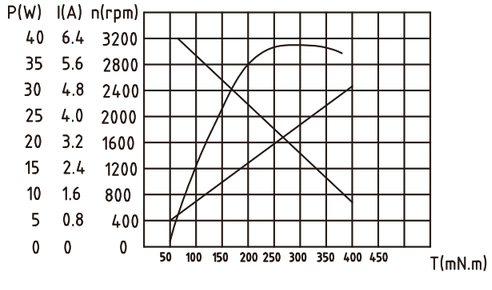
可安装在GN齿轮轴型上
Can be connected to GN pinion 4GN10XK
重量 Weight:0.41Kg



接线图 Wiring Diagram



电机特性曲线 Motor characteristic curve



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

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

直流电动机

DC MOTORS

40W　80MM

电机型号/性能 List of motor characteristics

电机型号 Motor Model	电压 Voltage	功率 Power	空载参数 No-load Parameter		负载参数 Load Parameters			电刷寿命 Brush life	电机重量 Motor Weight
			转速 Speed	电流 Current	转速 Speed	力矩 Torque	电流 Current		
	V	W	r/min	A	r/min	mN.m	A	H	kg
4D40-12□	12	40	3350	1.6	3000	127	4.8	2000	1.8
4D40-24□	24	40	3300	0.8	3000	127	2.4	2000	1.8
4D40-90□	90	40	3250	0.2	3000	127	0.65	2000	1.8

●电机电压、功率及转速可在配件尺寸等条件允许下根据客户要求定制。
●外置电刷，用户可自行在外部更换电刷：内置电刷电机更换电刷时需将电机拆装后方可更换。

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●For external brush motor,you can replce the brush directly.For internal ones,we need to disassembly the motor first.

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

减速比 Reduction 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
4D40-24GN	转速 Speed r/min	1000	833	600	500	400	333	300	240	200	167	150	120	100	83	75	60	50	40	33	30	25	20	17	15
	转距 Torque N.M	0.31	0.37	0.52	0.62	0.77	0.93	1.03	1.29	1.55	1.86	2.06	2.32	2.78	3.34	3.71	4.64	5.01	6.27	7.52	8.00	8.00	8.00	8.00	8.00
		3.03	3.64	5.05	6.06	7.58	9.10	10.1	12.6	15.2	18.2	20.2	22.7	27.3	32.7	36.4	45.5	49.1	61.4	73.7	80.0	80.0	80.0	80.0	80.0

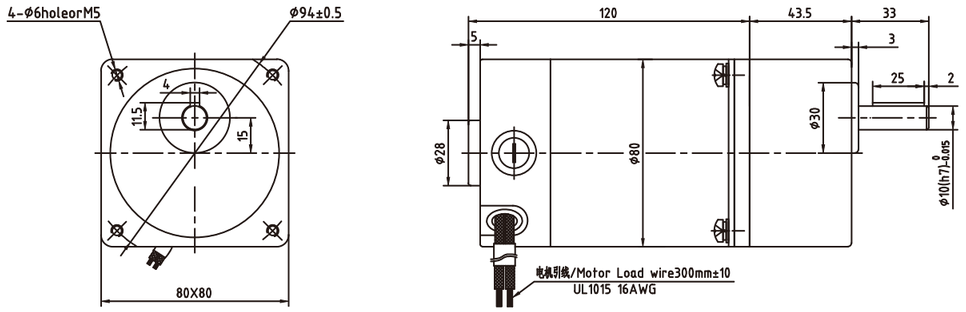
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2–20%。
●表中 □ 色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。

●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 that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.

外形尺寸（单位mm） Dimension (unit mm)

■ 导线型 Lead Wring Type

重量 Weight: 电机 Motor:1.8Kg　　减速器 Gearhead:0.8Kg



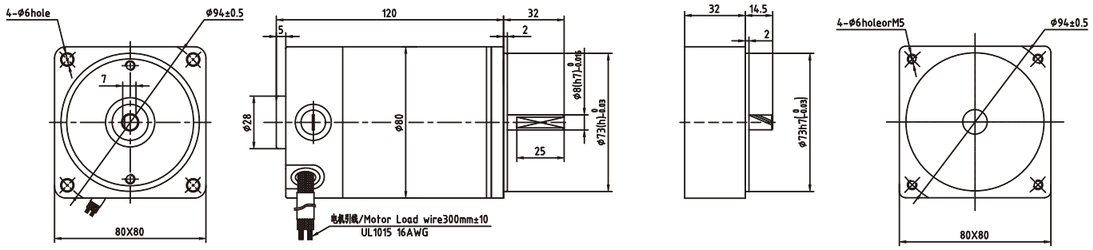
其中速比3~18可以做成短型减速箱（L=32）
Gear ratio 3~18, short case is possible (L =32)

■ 圆轴电机 Round Shaft Motor

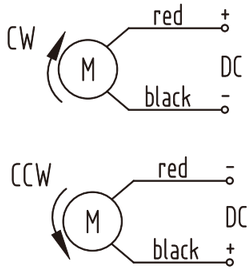
重量 Weight: 电机 Motor:1.8Kg

■ 中间减速器 Mid-gearbox

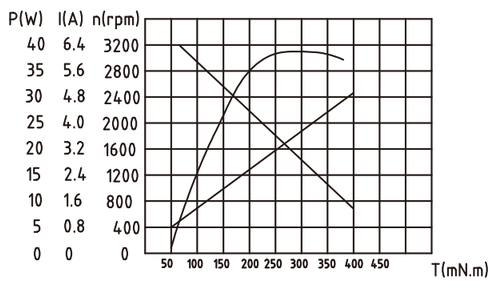
可安装在GN齿轮轴型上
Can be connected to GN pinion 4GN10XK
重量 Weight:0.41Kg



接线图 Wiring Diagram



电机特性曲线 Motor characteristic curve



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

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

直流电动机

DC MOTORS

40W　90MM

电机型号/性能 List of motor characteristics

电机型号 Motor Model	电压 Voltage	功率 Power	空载参数 No-load Parameter		负载参数 Load Parameters			电刷寿命 Brush life	电机重量 Motor Weight
			转速 Speed	电流 Current	转速 Speed	力矩 Torque	电流 Current		
	V	W	r/min	A	r/min	mN.m	A	H	kg
5D40-12□	12	40	3350	1.6	3000	127	4.8	2000	1.9
5D40-24□	24	40	3300	0.8	3000	127	2.4	2000	1.9
5D40-90□	90	40	3250	0.2	3000	127	0.65	2000	1.9

●电机电压、功率及转速可在配件尺寸等条件允许下根据客户要求定制。
●外置电刷，用户可自行在外部更换电刷：内置电刷电机更换电刷时需将电机拆装后方可更换。

●Motor voltage，power and speed will be customized according to his requestment under allowed circumstance of adoptable dimension.
●For external brush motor,you can replce the brush directly.For internal ones,we need to disassembly the motor first.

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

减速比 Reduction 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
5D40-24GN	转速 Speed r/min	933	778	560	467	373	311	280	224	187	156	140	112	93	78	70	56	47	37	31	28	23	19	16	14
	转距 Torque N.M	0.33	0.40	0.55	0.66	0.83	0.99	1.11	1.38	1.66	1.79	1.99	2.49	2.98	3.58	3.58	4.48	5.37	6.71	8.06	8.95	10.0	10.0	10.0	10.0
		3.25	3.9	5.41	6.50	8.12	9.75	10.8	13.5	16.2	17.5	19.5	24.4	29.2	35.1	35.1	43.9	52.6	65.8	78.9	87.7	100.0	100.0	100.0	100.0

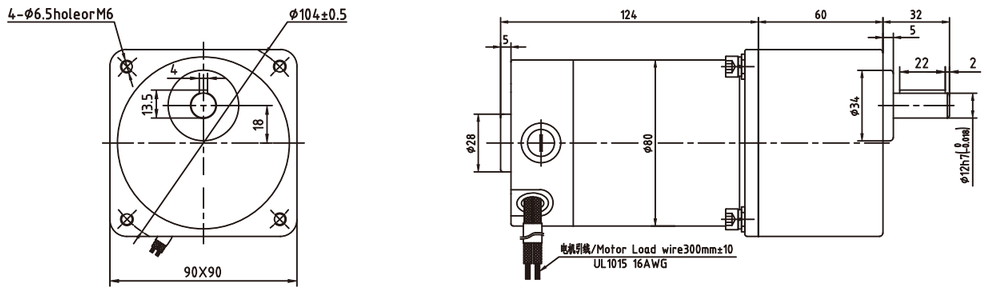
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2–20%。
●表中 □ 色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。

●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 that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.

外形尺寸（单位mm） Dimension (unit mm)

■ 导线型 Lead Wring Type

重量 Weight: 电机 Motor:1.8Kg　　减速器 Gearhead:1.35Kg



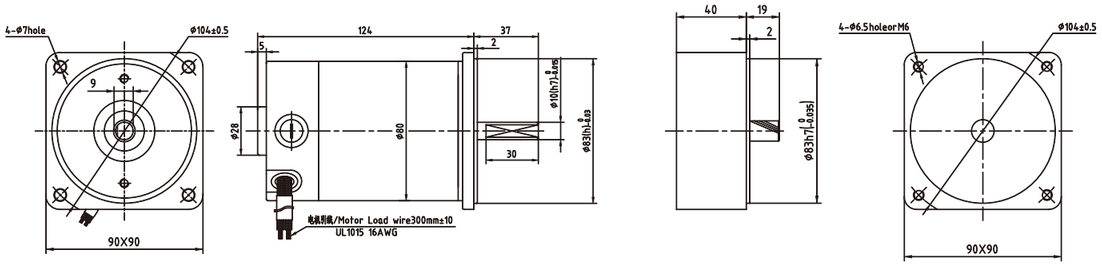
其中速比3~18可以做成短型减速箱（L=42）
Gear ratio 3~18, short case is possible (L =42)

■ 圆轴电机 Round Shaft Motor

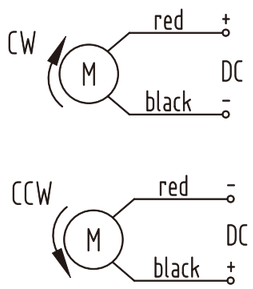
重量 Weight: 电机 Motor:1.8Kg

■ 中间减速器 Mid-gearbox

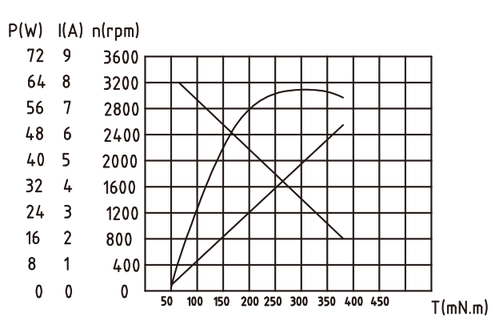
可安装在GN齿轮轴型上
Can be connected to GN pinion 5GN10XK
重量 Weight:0.61Kg



接线图 Wiring Diagram



电机特性曲线 Motor characteristic curve



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

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

直流电动机

DC MOTORS

60W　90MM

电机型号/性能 List of motor characteristics

电机型号 Motor Model	电压 Voltage	功率 Power	空载参数 No-load Parameter		负载参数 Load Parameters			电刷寿命 Brush life	电机重量 Motor Weight
			转速 Speed	电流 Current	转速 Speed	力矩 Torque	电流 Current		
	V	W	r/min	A	r/min	mN.m	A	H	kg
5D60-12□	12	60	3000	2.0	2600	220	9	2000	1.9
5D60-24□	24	60	3100	1.0	2800	205	3.8	2000	1.9
5D60-90□	90	60	3100	0.3	2900	198	1.0	2000	1.9

●电机电压、功率及转速可在配件尺寸等条件允许下根据客户要求定制。
●外置电刷，用户可自行在外部更换电刷：内置电刷电机更换电刷时需将电机拆装后方可更换。

●Motor voltage，power and speed will be customized according to his requestment under allowed circumstance of adoptable dimension.
●For external brush motor,you can replce the brush directly.For internal ones,we need to disassembly the motor first.

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

减速比 Reduction 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
5D60-24GU	转速 Speed r/min	933	778	560	467	373	311	280	224	187	156	140	112	93	78	70	56	47	37	31	28	23	19	16	14
	转距 Torque N.M	0.50	0.60	0.83	0.99	1.24	1.49	1.49	1.86	2.24	2.69	2.69	3.36	4.03	4.83	5.37	6.71	8.06	10.1	10.9	12.1	14.5	18.1	20.0	20.0
		4.87	5.85	8.12	9.75	12.2	14.6	14.6	18.3	21.9	26.3	26.3	32.9	39.5	47.4	52.6	65.8	78.9	98.7	107	118	142	178	200	200

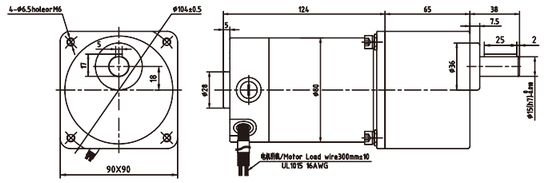
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2-20%。
●表中 色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。

●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 that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.

外形尺寸（单位mm） Dimension (unit mm)

■ 导线型 Lead Wring Type

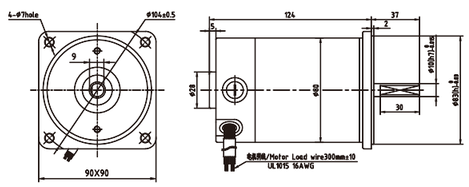
重量 Weight: 电机 Motor:1.9Kg
减速器 Gearhead:1.5Kg



其中速比3~18可以做成短型减速箱（L=42）
Gear ratio 3~18, short case is possible (L =42)

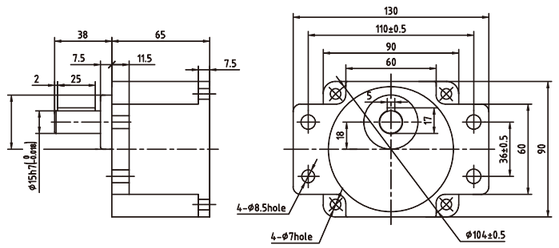
■ 圆轴电机 Round Shaft Motor

重量 Weight:1.9Kg



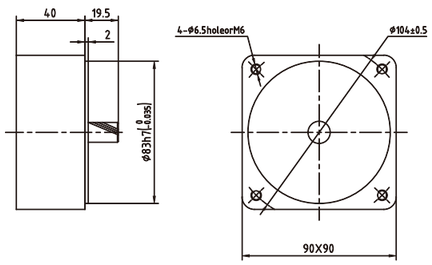
■ 凸缘安装型减速器Flange Mounting Reducer

可安装在GU齿轮轴型上
Can be Mounted on GU Type gear shaft 5GU□K
重量 Weight:1.5Kg

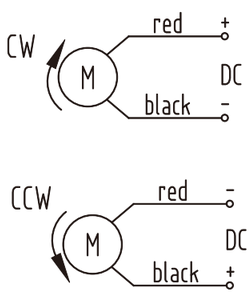


■ 中间减速器 Mid-gearbox

可安装在GU齿轮轴型上
Can be connected to GU pinion 5GU10XK
重量 Weight:0.65Kg



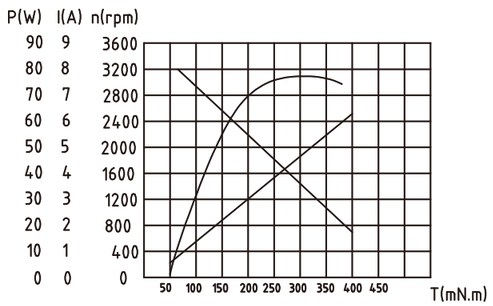
接线图 Wiring Diagram



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

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

电机特性曲线 Motor characteristic curve



直流电动机

DC MOTORS

90W

90MM

电机型号/性能 List of motor characteristics

电机型号 Motor Model	电压 Voltage	功率 Power	空载参数 No-load Parameter		负载参数 Load Parameters			电刷寿命 Brush life	电机重量 Motor Weight
			转速 Speed	电流 Current	转速 Speed	力矩 Torque	电流 Current		
	V	W	r/min	A	r/min	mN.m	A	H	kg
5D90-12□	12	90	3100	2.0	2600	330	12.0	2000	2.2
5D90-24□	24	90	3300	1.0	2800	307	5.00	2000	2.2
5D90-90□	90	90	3300	0.3	2900	307	1.40	2000	2.2

●电机电压、功率及转速可在配件尺寸等条件允许下根据客户要求定制。
●外置电刷，用户可自行在外部更换电刷：内置电刷电机更换电刷时需将电机拆装后方可更换。

●Motor voltage，power and speed will be customized according to his requestment under allowed circumstance of adoptable dimension.
●For external brush motor,you can replce the brush directly.For internal ones,we need to disassembly the motor first.

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

减速比 Reduction 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
5D90-24GU	转速 Speed r/min	933	778	560	467	373	311	280	224	187	156	140	112	93	78	70	56	47	37	31	28	23	19	16	14
	转距 Torque N.M	0.75	0.90	1.24	1.49	1.86	2.24	2.24	2.8	3.36	4.03	4.03	5.03	6.04	7.25	8.06	10.1	12.4	15.1	16.3	18.1	20	20.0	20.0	20.0
		7.31	8.77	12.2	14.6	18.3	21.9	21.9	27.4	32.9	39.5	39.5	49.3	59.2	71.1	78.9	98.7	118	148	160	178	200	200	200	200

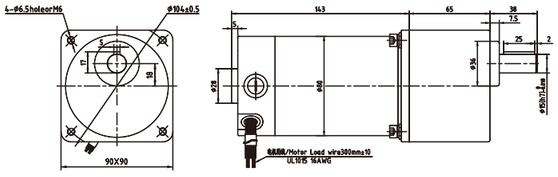
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2–20%。
●表中 色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。

●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 that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.

外形尺寸（单位mm） Dimension (unit mm)

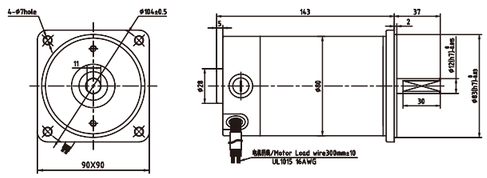
■ 导线型 Lead Wring Type

重量 Weight: 电机 Motor:2.2Kg
减速器 Gearhead:1.5Kg



■ 圆轴电机 Round Shaft Motor

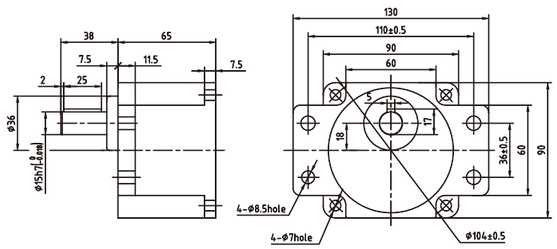
重量 Weight:2.2Kg



其中速比3~18可以做成短型减速箱（L=42）
Gear ratio 3~18, short case is possible (L =42)

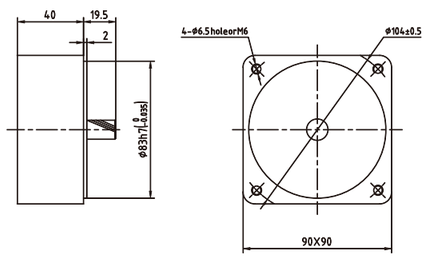
■ 凸缘安装型减速器Flange Mounting Reducer

可安装在GU齿轮轴型上
Can be Mounted on GU Type gear shaft 5GU□K
重量 Weight:1.5Kg

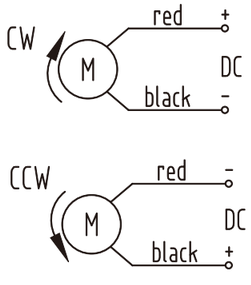


■ 中间减速器 Mid-gearbox

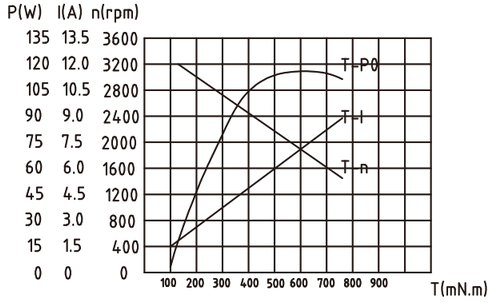
可安装在GU齿轮轴型上
Can be connected to GU pinion 5GU10XK
重量 Weight:0.65Kg



接线图 Wiring Diagram



电机特性曲线 Motor characteristic curve



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

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

直流电动机
DC MOTORS

120W

90MM

电机型号/性能 List of motor characteristics

电机型号 Motor Model	电压 Voltage	功率 Power	空载参数 No-load Parameter		负载参数 Load Parameters			电刷寿命 Brush life	电机重量 Motor Weight
			转速 Speed	电流 Current	转速 Speed	力矩 Torque	电流 Current		
	V	W	r/min	A	r/min	mN.m	A	H	kg
5D120-12□	12	120	3100	2.0	2500	458	15.0	2000	2.2
5D120-24□	24	120	3200	1.0	2600	441	7	2000	2.2
5D120-90□	90	120	3300	0.3	2600	441	2.0	2000	2.2

●电机电压、功率及转速可在配件尺寸等条件允许下根据客户要求定制。
●外置电刷，用户可自行在外部更换电刷：内置电刷电机更换电刷时需将电机拆装后方可更换。

●Motor voltage，power and speed will be customized according to his requestment under allowed circumstance of adoptable dimension.
●For external brush motor,you can replce the brush directly.For internal ones,we need to disassembly the motor first.

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

减速比 Reduction 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
5D120-24GU	转速 Speed r/min	867	722	520	433	347	289	260	208	173	144	130	104	87	72	65	52	43	35	29	26	22	17	14	13
	转距 Torque N.M	1.07	1.29	1.79	2.14	2.68	3.21	3.21	4.02	4.82	5.78	5.78	7.23	8.68	10.4	11.6	14.5	17.4	20.0	20.0	20.0	20.0	20.0	20.0	20.0
		10.5	12.6	17.5	21.0	26.2	31.5	31.5	39.4	47.2	56.7	56.7	70.9	85	102	113	142	170	200	200	200	200	200	200	200

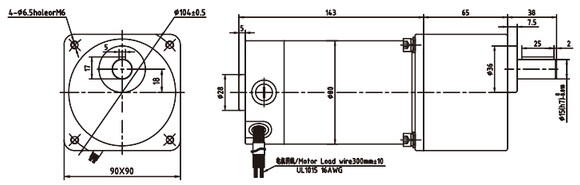
●表中转速是以电机的平均转速为基数除以减速比而算出的数值。实际转速将随负载大小而变化，变化范围2-20%。
●表中 ■ 色框表示输出轴的旋转方向与电机旋转方向相反。
●表中转矩是以电机额定转矩×减速比×传动效率计算而得。

●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 that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.

外形尺寸（单位mm） Dimension (unit mm)

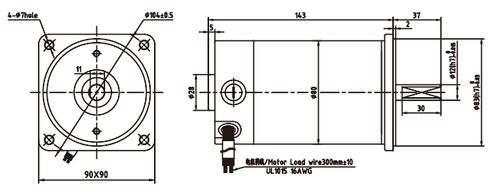
■ 导线型 Lead Wring Type

重量 Weight: 电机 Motor:2.2Kg
减速器 Gearhead:1.5Kg



■ 圆轴电机 Round Shaft Motor

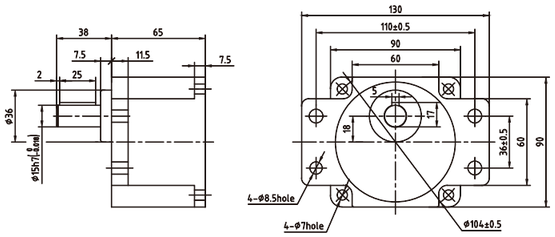
重量 Weight:2.2Kg



其中速比3~18可以做成短型减速箱（L=42）
Gear ratio 3~18, short case is possible (L =42)

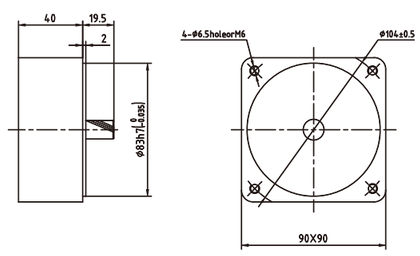
■ 凸缘安装型减速器Flange Mounting Reducer

可安装在GU齿轮轴型上
Can be Mounted on GU Type gear shaft 5GU□K
重量 Weight:1.5Kg

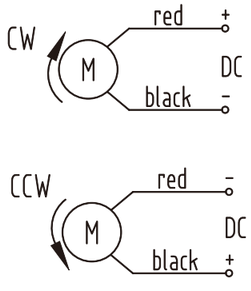


■ 中间减速器 Mid-gearbox

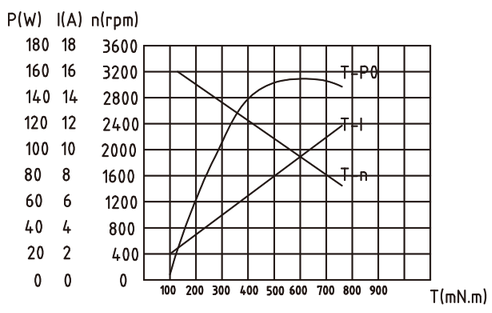
可安装在GU齿轮轴型上
Can be connected to GU pinion 5GU10XK
重量 Weight:0.65Kg



接线图 Wiring Diagram



电机特性曲线 Motor characteristic curve



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

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

直流电动机

DC MOTORS

200W

90MM

电机型号/性能 List of motor characteristics

电机型号 Motor Model	电压 Voltage	功率 Power	空载参数 No-load Parameter		负载参数 Load Parameters			电刷寿命 Brush life	电机重量 Motor Weight
			转速 Speed	电流 Current	转速 Speed	力矩 Torque	电流 Current		
	V	W	r/min	A	r/min	mN.m	A	H	kg
55D200-12□	12	200	3450	3.5	3000	636	22.0	2000	3.2
55D200-24□	24	200	3400	1.5	3000	636	11.3	2000	3.2
55D200-48□	48	200	3300	0.9	3000	636	5.4	2000	3.2

●电机电压、功率及转速可在配件尺寸等条件允许下根据客户要求定制。
●外置电刷，用户可自行在外部更换电刷：内置电刷电机更换电刷时需将电机拆装后方可更换。

●Motor voltage，power and speed will be customized according to his requestment under allowed circumstance of adoptable dimension.
●For external brush motor,you can replce the brush directly.For internal ones,we need to disassembly the motor first.

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

减速比 Reduction 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
55D200-24GU	转速 Speed r/min	999	833	600	500	400	333	300	240	200	166	150	120	100	83	75	60	50	40	33	30	25	20	16.5	15
	转距 Torque N.M	1.55	1.86	2.58	3.09	3.87	4.64	4.64	5.80	6.96	8.35	8.35	10.44	12.53	15.04	16.71	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
		15.2	18.2	25.3	30.3	37.9	45.5	45.48	56.85	68.23	81.87	81.9	102.3	122.8	147.4	163.7	196.0	196.0	196.0	196.0	196.0	196.0	196.0	196.0	196.0

●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。

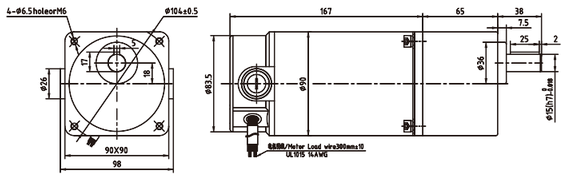
●In the table, the speed is calculated from the base of the motor's average speed divided by the deceleration ratio.The actual speed will vary with the load, ranging from 2% to 20%.
●The box in the table indicates that the rotation direction of the output axis is opposite to that of the motor.
●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.

外形尺寸（单位mm） Dimension (unit mm)

■ 导线型 Lead Wring Type

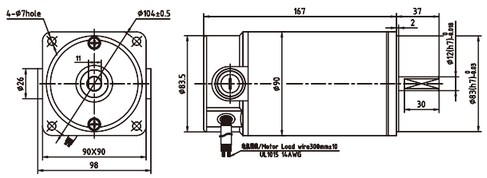
重量 Weight：电机 Motor:3.2Kg

减速器 Gearhead:1.5Kg



■ 圆轴电机 Round Shaft Motor

重量 Weight:3.2Kg



其中速比3~18可以做成短型减速箱（L=42）

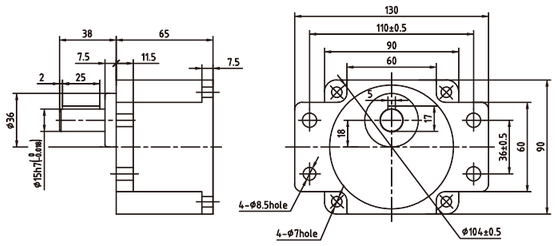
Gear ratio 3~18, short case is possible (L =42)

■ 凸缘安装型减速器Flange Mounting Reducer

可安装在GU齿轮轴型上

Can be Mounted on GU Type gear shaft 5GU□K

重量 Weight:1.5Kg

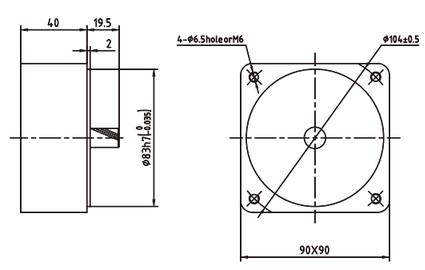


■ 中间减速器 Mid-gearbox

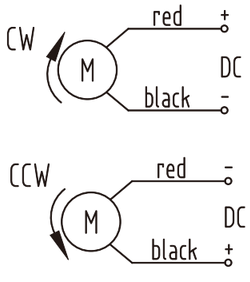
可安装在GU齿轮轴型上

Can be connected to GU pinion 5GU10XK

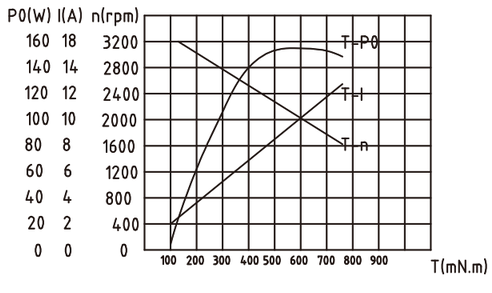
重量 Weight:0.65Kg



接线图 Wiring Diagram



电机特性曲线 Motor characteristic curve



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直流电动机

DC MOTORS

250W

104MM

电机型号/性能 List of motor characteristics

电机型号 Motor Model	电压 Voltage	功率 Power	空载参数 No-load Parameter		负载参数 Load Parameters			电刷寿命 Brush life	电机重量 Motor Weight
			转速 Speed	电流 Current	转速 Speed	力矩 Torque	电流 Current		
	V	W	r/min	A	r/min	mN.m	A	H	kg
6D250-12□	12	250	3550	3.5	3000	795	27.4	2000	3.2
6D250-24□	24	250	3500	1.5	3000	795	13.7	2000	3.2
6D250-48□	48	250	3350	0.9	3000	795	6.7	2000	3.2

●电机电压、功率及转速可在配件尺寸等条件允许下根据客户要求定制。

●外置电刷，用户可自行在外部更换电刷：内置电刷电机更换电刷时需将电机拆装后方可更换。

●Motor voltage，power and speed will be customized according to his requestment under allowed circumstance of adoptable dimension.

●For external brush motor,you can replce the brush directly.For internal ones,we need to disassembly the motor first.

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

减速比 Reduction 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
6D250-24GU	转速 Speed r/min	999	833	600	500	400	333	300	240	200	166	150	120	100	83	75	60	50	40	33	30	25	20	16.5	15
	转距 Torque N.M	1.55	1.86	2.58	3.09	3.87	4.64	4.64	5.80	6.96	8.35	8.35	10.44	12.53	15.04	16.71	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
		15.2	18.2	25.3	30.3	37.9	45.5	45.5	56.86	68.2	81.87	81.9	102.3	122.8	147.4	163.7	196.0	196.0	196.0	196.0	196.0	196.0	196.0	196.0	196.0

●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。

●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%.

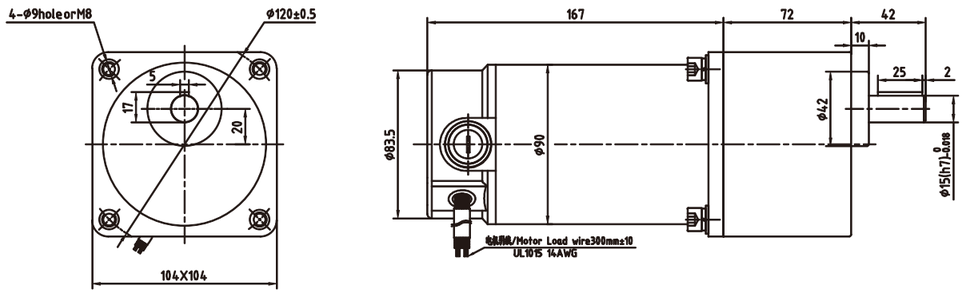
●The ■ box in the table indicates that the rotation direction of the output axis is opposite to that of the motor.

●Table transfer torque is calculated from motor rated torque * deceleration ratio * transmission efficiency.

外形尺寸（单位mm） Dimension (unit mm)

■ 导线型 Lead Wring Type

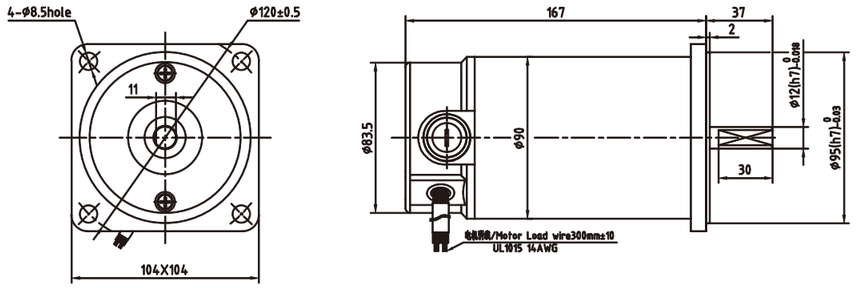
重量 Weight：电机 Motor:3.2Kg　　减速器 Gearhead:2.1Kg



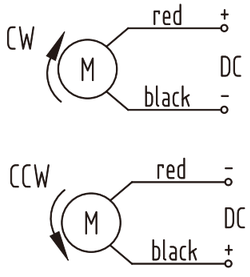
其中，速比3~40，减速箱高度为L=65mm；速比50~200，减速器高度为L=72mm。
Among them,Gear ratio 3~40, The gearbox height is L=65 mm;Gear ratio 50~200, The gearbox height is L=72 mm.

■ 圆轴电机 Round Shaft Motor

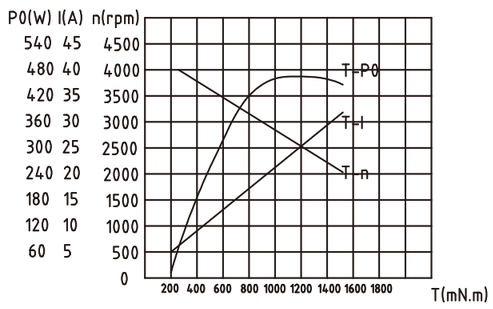
重量 Weight：电机 Motor:3.2Kg



接线图 Wiring Diagram



电机特性曲线 Motor characteristic curve



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

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

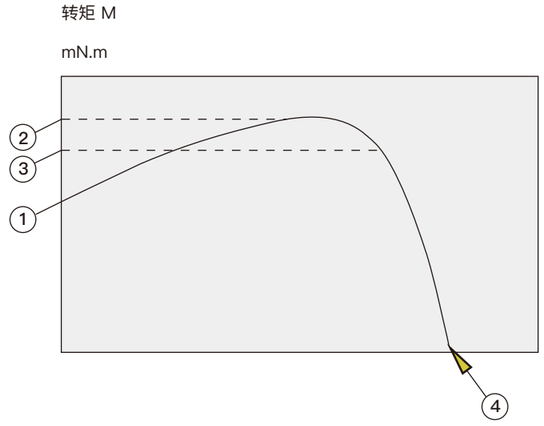
名词解释 Glossary

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、制动停止、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。阻尼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，无法配接减速箱。

●Starting torque — The torque generated by the motor starting moment, usually, the single-phase motor starting torque is 60-70% of the rated torque, and the three-phase motor starting torque is 2~3 times ofthe rated torque.
●Rated torque — The continuously torque at rated voltage and rated frequency
●Rated speed — The speed of the motor at rated voltage, rated frequency, and rated output power.
●No-load speed — The speed of the motor at rated voltage, rated frequency and no load.
●Stop overturn — The number of turns that the motor rotor shaft continues to rotate due to inertia from the moment the power is turned off to completely stop.
●Braking force — The force applied to the rotor shaft of the motor to auickly decelerate the motor output shaft, ston the brake,or maintain the motor ouitnuit shaft in its origina state. The braking force of the erectromagnefic brake motor is equal to the rated torque.The braking force of the damper motor is approximately equal to 10% of the rated torque.
●Gear shaft — The shape of the rotor shaft of the motor is gear-shaped and is used for supporting and connecting the reduction gearbox.
●Round shaft-The rotor shaft of the motor has a cylindrical shape and is used for the motor alone. It cannot be equipped with a reduction 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 空转转矩

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 toraue — The motor is decelerated by the reduction gearbox, and the output torque of the motor end is a multiple of the reduction ratio of the reduction gearbox. When the deceleration is relatively large
●For example, 1:180, after the motor output torque is amplifhed 180 times, if the load of the reduction gearbox is large at this time,
●In theory, the motor can drive the load, but because the mechanical strength of the gearbox cannot withstand this load,
●The gearbox will be damaged, and the maximum load torque that ensures that the gearbox is not damaged is the allowable torque of the gearbox.
●Grayson arc gear — The gear is a 90-degree transmission, which has high transmission efficiency, no self-locking and long ervice life, and is mainly used for rear axle transmission of automobiles.For the most advanced 90 degree transmission structure.

技术参数表 Technical data sheet

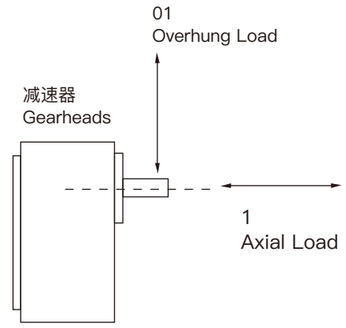
电机通用技术标准 General technical standards for motors

项目 Project	规格 Specification
绝缘电阻 Insulation resistance	100MΩ以上above
绝缘电压 Insulation voltage	额定电压220V以下1500V/S,额定电压380V1800V/S Rated voltage 220V below 1500V/S, rated voltage 380V1800V/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B级(120℃) 。6-200W motor class B(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 (S1)
防护等级 Protection level	IP44
使用环境温度 Ambient temperature	-10℃~+45℃(无冻结 No freeze)
使用环境湿度 Ambient humidity	85% 以下(无结露) 85%or less(no condensation)

电动机的容许悬挂负载 ● 容许轴向负载 Permissible Overhung Load And Permissible Thrust Load Of Motor

容许悬挂负载 Permissible Overhung Load

型号 Model		容许悬挂负载 Permissible Overhung Load N	
安装尺寸 Motor Frame Size □mm	输出轴直径 Output Shaft Diamrter □mm	距轴端的距离 Distance From Shaft End	
		10mm	20mm
60	6	50	110
70	6	40	60
80	8	90	140
	10	110	120
90	10	140	200
	12	240	270
100	14	320	350



容许轴向负载。Permissible thrustloac.
请尽量不要施加轴向负载，即使不得已的情况下，请将轴向负载控制在电动机重量的一半以下。
Avoid thrust loads as much as possible. If thrust load is unavoidable. keep it to half or less of the motor mass.

减速器的容许悬挂负载●容许轴向负载 Permissible Overhung Load And Permissible Thrust Load Of Gearheads

型号 Model	减速比 Gear Ratio	最大容许转矩 Maximum permissibel Torque N.M	容许悬挂负载 Permissible Overhung Load N		容许轴向负载 Permissible Thrust Load N
			距轴端 10mm	距轴端 20mm	
2GN□K	3~18	3	50	80	30
	20~200		120	180	
3GN□K	3~18	5	80	120	40
	20~200		150	250	
4GN□K	3~20	8	100	150	50
	25~200		200	300	
5GN□K	3~18	10	250	350	100
	20~200		300	450	
5GU□K 5GU□KB	3~9	20	400	500	150
	10~18		450	600	
	20~200		500	700	
6GU□K	3~200	40	1100	1500	300

减速器的容许负载惯性惯量 J Permissible Load Lnertia For Gearhead J

●连接到减速器上的负载惯性惯量(J)较大的情况下，在频繁的间歇运转的起动瞬间(或以电磁制动及制动器进行急停时)会出现瞬时较大的转矩。该冲击负载过大会导致减速器及电动机损坏。
●下面列出了电动机轴上的容许负载惯性惯量的值使用时请限制在此数值下。三相电动机的容许负载惯性惯量是指从一旦停止运转后再进行反时的数值。
●请利用下面的公式计算减速器输出轴上的容许惯性惯量(J)。
●通过带电磁制动电动机、制动器及速度控制电动机的瞬时停止来运转容许负载惯性惯量时的使用寿命为200万次。

●When a high load inertia (J) is connected to a gearhead, high torque is exerted instantaneously on the gearhead when starting up in freguent, discontinuous operations for whenstopped by an electromagnetic brake, (or when stopped instantaneously by a brake pack). Excessive impact loads can cause ths earhead or motor damage.
●The table bolow gives values for permissible load inertia on the motor shaft. Use the motor and gearhead within these parameters. The permissible inertial load value shown for three-phase motors is the value when reversing after a stop.
●The permissible load inertia (J) on the gearhead output shaft is calculated with the folowing equation.
●The life ofthe gearhead when operating at the permissible inertial load with instantaneous stops of the motors with electromagnetic brakes, brake packs or speed control motors is atleast 2 million cycles.

减速器输出轴上的容许负载惯性惯量 Permissible Load Lnertia For Gear Head Output Shaft

减速比1/3~1/50时 JG=JMxl 减速比1/60以上时 JG=JMx2500	JG：减速器输出轴容许负载惯性惯量J(x10KG.M²) JM：电机输出轴容许负载惯性惯量J(x10KG.M²) I：减速比(例：减速比1/3时I=3)
Gear ratio 1/3~1/50 JG=JMxl Gear ratio 1/60 or high JG=JMx2500	JG: Permissible load inertia gearhead output shaft J(x10kg.m²) JM: Permissible load inertia at the motor shaft J(x10kg.m²) I: Gear ratio(Example: I=3 means the gear ratio or 1/3)

电机输出轴容许负载惯性惯量 Permissible load inertia at the motor shaft

电动机电源相数 No.Of Phase	安装尺寸 Motor Frame Size	输出功率 Output Power	电机输出轴容许负载惯性惯量 Permissible load inertia at the motor shaft	
			J(×10⁻⁴kg.m²)	GD²(kg.m²)
单相 Single-phase	60	3W※、6W	0.062	0.25
	70	6W※、15W	0.14	0.52
	80	10W※、25W	0.31	1.2
	90	20W※、40W	0.75	3
		60W	1.31	4.6
		90W	1.1	4.6
		120W	1.1	4.6
	100	200W	2	8
三相 Three-phase	80	25W	0.31	1.2
	90	40W	0.75	3
		60W	1.1	4.6
		90W	1.1	4.6
		120W	1.1	4.6
	100	200W	2	8
直流 DC Power	60	6W、10W、15W	0.062	0.25
	70	15W	0.14	0.52
	80	25W、40W	0.31	1.2
	90	40W	0.75	3
		60W	1.1	4.6
		90W	1.1	4.6
		120W	1.1	4.6
	100	250W	2	8

※ 是指转矩电动机输出功率　※ Output powerfortorque motors

减速器容许转矩的计算 The Calculation For The Permissible Torque Of Gearhead

部分未列在转矩表上,需要时可按以下公式计算。
Perrgisstbile torque: for some products are omitted. In that case, use the equation below to calculate the permissible torquemissible torque.

容许转矩 Permissible torque TG=TM x i x η
TG:减速器容许转矩 Permissible torque ofgearheadi
TM:电动机转矩 Motor torque
η:减速器传动效率 Gearhead efficiency
i:减速器减速比 Gear ratio gearhead

减速器传动效率 Gearhead efficiency

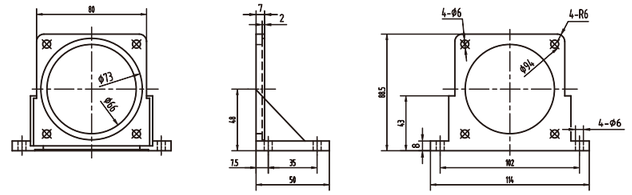
减速比 Gear Ratio / 型号Model	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
2GN□K	81%										73%						66%							
3GN□K	0.81									0.73														
4GN□K	0.81											0.73												
5GN□K	0.81										0.73						0.66							
5GU□KB (K)	0.81						0.73					0.66							59%					
6GU□K	0.81																0.66							

电机/减速器用安装底座 Motor Gearhead Moumin brackets

便于安装固定电机、减速器的专用安装底座。为可对应大功率电机、减速器的高强安装底座上钻有螺孔，请用减速器附属的螺丝来组合电机与减速器。安装电机单体时,请另用安装用螺丝。
Mounting Brackets for attaching and securing a motor and gearhead. They are high-strengh type, Which can beused with high power motors/gearheads. These brackets come with tapped holes.lb mount the motor and grarhead,simply fasten with screws provided to the gearhead. Tb mount the motor alone.mouting screws must be provided separately.

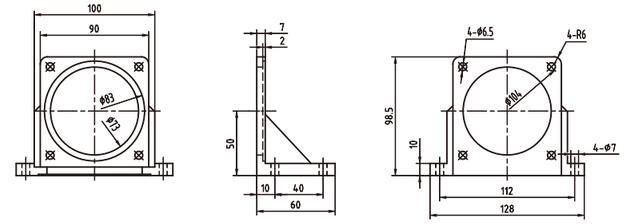
安装尺寸 Motor Frame Size：80mm

型号Model: SB4M5 重量Weight:200g 材质 Material:铝合金Aluminum 适用产品Applicable products:4GN 减速器4GN Gearhead 安装尺寸 □80mm 电机 Motor with the frame size of □80mm



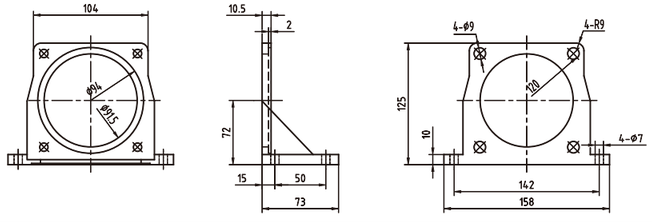
安装尺寸 Motor Frame Size：90mm

型号Model: SB5M6 重量Weight:270g 材质 Material:铝合金Aluminum 适用产品Applicable products:5GN、5GU 减速器 5GN、5GU Gearhead 安装尺寸 □90mm 电机 Motor with the frame size of □90mm



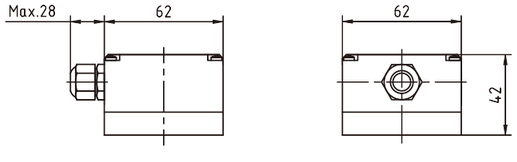
安装尺寸 Motor Frame Size：104mm

型号Model: SB6M6 重量Weight:260g 材质 Material:铝合金Aluminum 适用产品Applicable products:6GU 减速器 6GU Gearhead 安装尺寸 □104mm 电机 Motor with the frame size of □104mm



电动机用端子箱 Terminal Box For motor

根据客户的需求，可选择以下类型的端子箱 You can select from following types of terminal boxes according to customers request.
型号Model：SBTX 重量Weight：10g 材质Material：尼龙 Nylon
适用产品Applicable products:安装尺寸 □ 80、90、104mm 电机 Mator with the frame size of □ 80、90、104mm



常见机械设计安装问题 Common mechanecal design installation problems

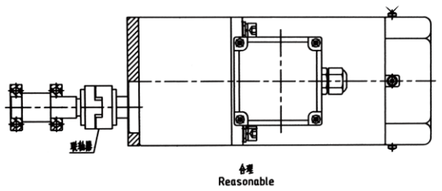
我司6~200W微型系列产品与其他品牌在尺寸、外观互换的区别点如下，其他安装尺寸均相同可互换。
The difference between the size of our 6–200W micro–series products and other brands in terms of size and appearance is as follows. Other installation dimensions are the same and interchangeable.

区别点 Difference point	松本SOBG	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 Standard threaded hole 优点Advantages: ①安装方便; ②强度等级高,螺纹不易损坏 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Standard with terminal box 优点 Advantages: ①IP54防护，符合安规标准 ②美观接线方便 ①IP54 protection, in compliance with safety standards ②beautiful, convenient wiring	引线式 Leaded	定制引线式 Custom lead type

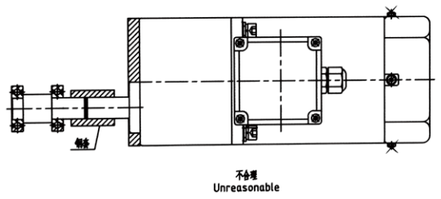
6–200W微型电机与减速箱安装 Micro motor and gearbox installation

任意旋转电机或减速箱、请勿碰伤电机齿轮轴,勿损坏O型密封圈，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。
Any rotating motor or gearbox, do not damage the motor gear shaft, do not damage the 0–ring, and the four screws on the flange are tightened diagonally.Make sure that the motor is tightly coupled to the reducer housing to prevent oil leakage and prevent motor noise.

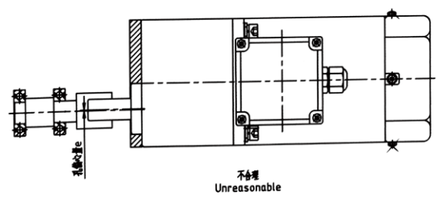
负载轴与电机轴出轴的联接方式 Connection type of load shaft and motor output shafe



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 the concentricity and angular deviation between the load shaft and the motor output shaft to prevent over–positioning and ensure the normal operation of the motor.



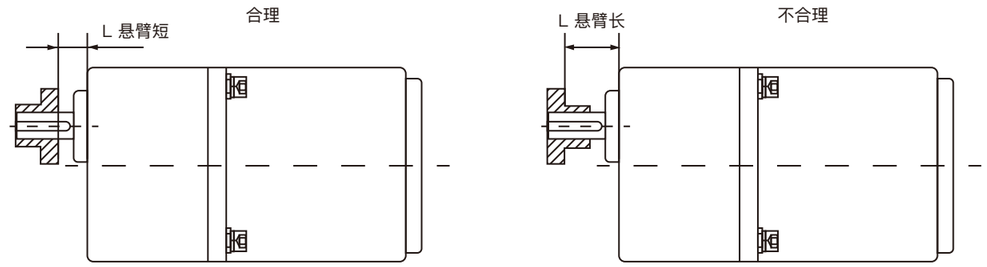
采用钢套连接无法补偿负载轴与电机输出轴之间的同心度与角度偏差，导致负载变大，严重时电机输出轴折断。
The steel sleeve connection cannot compensate for the concentricity and angular deviation between the load shaft and the motor output shaft, resulting in a large load. In severe cases,the motor output shaft is broken.



采用负载轴中心钻孔/挫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, 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 radialload)



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 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减速比(1:50)以上与小减比减速箱均共用同一尺寸减速箱，其设计应用场合为；仅需要低转速度、不需要减速器、电机全功率输出。因此，当选用大减速比(1:50)以上减速箱或加装中间减速箱时，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，其起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，请选用起动转矩小于额定转矩的单相电机。

●90机座号系列电机，有40W、60W小功率电机可选， 因此90机座选用大减速比(1:50)以上减速箱或加装中间减速箱时，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 multi–function geared motor is designed according to international standard size. The series of geared motors have a large reduction ratio (1:50) and a small reduction ratio.The gearboxes all share the same size gearbox, and its application is: only low speed is required. No need for gear unit or motor full power output.Therefore, when the gearbox with a large reduction ratio (1:50) or more is used, the maximum allowable torque of the gearbox will be less than 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 toraue can reach 3 times of the rated torque. If the output shaft of the gearbox is stuck or severely overloaded, please select Use a single–phase motor with a starting torque less than the rated torque.

●90 frame size series motor, 40W,60W low power motor is optional, so 90 machine base adopts large reduction ratio (1:50) or above reducer or add intermediate reduction In the case of the speed box, if the output shaft of the gearbox is stuck or severely overloaded, please use a motor with a small power of 40W or 60W. Do not use 90W or 20W.Motor

●If the design of the gearbox output shaft cannot be prevented from being stuck or severely overloaded, the torque limiting device should be installed to overload or slip or be installed in an easy–to–replace and repair position. It is easy to repair after the safety pin is damaged.

设计举例 Design example

●客户原设计

选用：电磁制动电机51K90GU–S3MF+5GU120RT

51K90GU–S3MF为三相电磁制动电机，额定输出转矩0.7NM，同时三相电机过载能力强，其起动转矩可达额定转矩的3倍，由于该配置减速比高达1：120，即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.MX120X3=252N.M，远远超过最大容许转矩40NM，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，改用起动转矩小于额定转矩的单相电机51K40GU–S3MF按此配置最大输出转矩为：0.3NMX120=36NM，小于最大容许转矩40NM，满足要求。

●客户新设计

改用：电磁制动电机51K40GU–S3MF+5GU120RT，既可满足要求又节约成本。

●Customeroriginaldesign
Optional: electromagnetic brake motor 51K90GU-S3MF+5GU120RT

●Optimized design
The motor power should be reduced. The motor power should be 90-seat 40W motor. Do not use three-phase motor with strong overload capability. Use single-phase motor with starting torgue less than rated torque. 51K90GU-CMF According to this configuration, the maximum output torque is: 03N mx120=36N m, which is less than the maximum allowable torque of 40N m, which satisfies the requirements.

●Customer new design
Switch to: electromagnetic brake motor 51K40GU-S3MF+5GU120RT, which can meet the requirements and save costs.

直角中空减速箱应用优点 Right angle hollow gearbox application advantages

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。
The right-angle hollow gearbox don't need sprocket, chain and chain protection cover, and saves bearing seat at one end,which simplifies design, reduces cost and reduces axial size and saves installation space.

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

●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：
●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。
●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，负载轴转一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。
●修正电机安装法兰面与输出轴的垂直度，直至故障排除。

●Phenomenon:The motor is weak or sudden, and the vibration and swing are obvious during operation.
When severe, the output shaft of the motor is broken.
●Cause: The motor mounting flange surface is not perpendicular to the load shaft.
After the motor is locked, it is strongly pulled and distorted.

Troubleshooting and troubleshooting:
●When the motor lock screw is loosened slightly, the output torque, vibration and oscillation are improved, which can be initially confirmed the reason.
●Loosen the mounting screws and observe whether the gap between the mounting surface of the motor and the mounting surface of the equipment is equalor parallel.If the difference is large, the cause can be judged.The motor can be further removed and the dial indicator is placed on the load shaft, the load shaft rotates one circle to measure the bounce of the mounting flange surface.If the runout value is greater than 0.1 mm, the reason can be finally determined.
●Correct the verticality of the mounting flange surface and the output shaft,until the fault is eliminated.

减速箱齿轮崩齿 Gearbox's gear collapse

●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
我们手拿铁锤打钉子至木头，我们先用静负载力打钉子，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打钉子，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。

●解决措施
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。
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。

●Gear force: analysis Gearbox's gear collapse is theoretically due to the fact that the load on the gear exceeds the bendin strength of the gear, resulting in tooth breakage. The load on the gear is composed of static load and impact load. The statitc 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
We took the hammer and nailed it to the wood. We first used the static load to force the nail. The static force is the weight of the hammer and the pressure that the hand can apply, It is conceivable that the nail is not nailed into the wood. At this time we use the impact load force to nail the nails, and the nails can be easily nailed into the wood. From this example, we can know that theimpact force is verv large, How does the impact force come from?
When the hammer is close to the nail, its speed is V1. When it touches the nail, its speed is rapidly reduced to V2. Since V1 is much larger than V2. a large acceleration a is generated.According to Newton's law. the impact force F=ma,m For the guality of the hammer head, the greater the mass of the hammer head, the greater the impact force. The hammer of the same size is made of a material with a larger material, and the quality is large. Therefore. the hammer of the same size and the hamme are more powerful than the aluminum hammer. Because iron is more important than aluminum.

●Solutions
1.Static load is difficult to optimize due toload torque
2.The dynamic load is the impact force, refer to the iron to nail example, according to F = ma, we can use the following methods to optimize, reduce the impact force, prevent the tooth Wheel collapsed.
1)Parts use light materials instead of heavy materials to reduce m.
2)Reduce part size, optimize shape, and reduce torque inertia.
3)Use the inverter to control the motor start, stop the acceleration and deceleration time, reduce a, and achieve slow
acceleration and slow deceleration.

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

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，但只要我们提前停止，即可改善停止时间，又避免刹车片磨损。

1.The electromagnetic brake motor adopts relay or contactor to directly control the start and stop.When the motor stops,the brake will quickly drop from high speed to stop due to the brake pad. If the motor starts and stops frequently, the brake pad will wear out quickly,just like a car., brake at 100km / h, repeated.
2.If a three-phase electromagnetic brake motor is used with our inverter control, the inverterhas to reduce the motor from high speed to low speed until the motor stops, Near stop state, at this time the brake pads are braked, so the brake pads wear less. Long life,just like the car decelerates at 100km/h only brake at low speed
3.Of course, such a control method, the motor stop time will be extended, but as long as we stop ahead, we can improve the
stop time and avoid the brake pad wear.

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 three-phase motors

电机类型 Motortype	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	单相电机 single phase	一般 General	一般 General	0.6~0.7倍 Times	一般 General	调速器 Drive	低 Low	可以 Ok
三相电机 Three phase motor	三相电机 Three phase	低 Low	小 Little	2~3倍 Times	好 Good	变频器 Frequency converter	高 High	可以 Ok

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. Efficiency 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 sinale-phase motor switch from forward to reverse, but the motor still rotates without reversing

单相电机从正转切换至反转过程中，若电机负载惯量较大，,此时正反转切换易失败，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 switches from forward rotation to reverse rotation, if the motor load inertia is large, the forward/reverse switching is easy to fail at this time, and the switch will not succeed until 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 motor deceleration time and realize fast forward and reverse switching.

单相电机可否用变频器调速
Tan single-phase motor use inverter 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，因为调速器、驱动器均为闭环控制。

No,because the governor or driver are closed loop 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, the speed is not fixed?

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一倍，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 motor speed control principle is similar to the car throttle control. Therefore, for the same load, the speed regulating motor should be twice as powerful as the fixed speed motor; so that it works at 50% power state on average. When the load becomes larger,it immediately increases throttle, avoid 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 motor can be adjusted, but the inverter must be used for speed regulation.

电机"漏电"现象分析
Analysis of the"leakage" phenomenon ofthe 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，用电笔测量，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损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. Measurements with voltmeters sometimes measure voltages above 100V, causing people to mistakenly believe that the motor is ”leakage”.

●Analysis: Since the motor winding coil is equivalent to a capacitor between the metal casing ofthe motor, when the motor is connected to the AC frequency, the AC current can flow through the capacitor to the casing, causing the casing to be charged, This current is temporarily called the leakage currentl ,due to the equivalent capacitance C.The capacity is very small, only a few thousand picofarads. For 50Hz AC, its capacitive reactance is very large, so the leakage current I is very small.even if people touch it it onlvhas the feeling ofelectricity, Will not hurt people

●Solution: Grounding the PE terminal to ground , so that the leakage current lis released to the ground through the ground wire, there is no ”leakage” feeling. At the same time, in accordance with the safety standards, in order to ensure safety and prevent the motor housing from being damaged by electrical noise or insulation failure, the motor pE grounding terminal must be grounded.

安全规格 Safety Specifications

●中国认证制度(CCC制度)

中国自2002年5月1起，便开始针对保护人民健康、安全、动植物生命、健康、环境保护、及公共安全相关产品，实施强制性产品认证制度(CCC制度)，经过一段时间后，于2003年8月1日起正式强制执行。国务院直属的中国国家品质监督检验检疫总局(AQSIQ)，则负责制定强制认证相关规则与制度，并由中国国家认证认可监督管理委员会(CNCA)，负责管理CCC制度的实务。

AQSIQ及CNCA携手公告CCC制度的首次产品目录，其中则以19分类132品种为实施标的。关于标的产品所赋予的义务则是，向取得CNCA认定之指定认证机关(中国质量认证中心、EMC认证中心等)申请、且于取得认证、购买CCC认证标章(或受理印刷许可)后。则粘贴于已认证产品的主体外侧。自2003年8月1日起，未取得CCC制度认证书及认证标志的产品，则禁止在中国大陆境内进行进出口销售。

●UL规格(美国)

UL，全称Underwriters Laboratories Inc，是由美国火灾保险事业协会于1894年创立的非营利性检查机构。该机构成立的目的是对机械、器材、材料的安全性进行监督管理，以防止火灾等事故对消费者生命安全及财产造成危害。因此，UL机构在对机械、器材、材料进行测试、研究的基础上制定了各项有关规格(UL规格)。虽然其规格范围仅限于电子、电动应用机器、电子零部件等一般用途的电子产品，但值得重视的是，若产品不符合UL规格、无法通过UL指定的安全检查或未经UL登记注册，则该产品于美国 境内绝大多数地区将无法获得销售许可。州法已明确规定的地区自然绝对禁止销售，但即使是在州法未明确规定的地区，火灾保险公司亦有对因使用未经UL认证产品而引起的火灾概不负责的规定。所以美国的消费者自然倾向于选购UL认证产品。总之，产品若要销往美国，一般都需要UL认证。此外，UL作为认证、检验机构，亦获得了加拿大规格审议会(SCC)的认可及加拿大各州的公认。因此，产品申请UL规格时，亦可按加拿大的安全规格来接受有关测试，若制品符合规格要求，亦可获得GUL安全标志的表示资格，即在加拿大使用、销售的认可。

●CE标志

若要在EU (欧盟)境内获得机器流通许可，制造商则必须标示证明该机器符合EU有关规格(安全证明)的CE标志，一般来说，制造商可依据EN规格(或IEC等适用规格)来确认机器是否符各项指令的有关要求。然后，制造商即可撰写证明机器符合有关指令规定的自我宣言书并实行CE标志(但依据机器的危险程度，有时亦会出现必须在获得公证机构的机型测试证明之后方可进行自我宣言的情况)实行自我宣言的制品，在其铭牌或包装箱的商标上均印有如图标志。

主要EC指令的适用范围与颁布时期，介绍如下:

●机械指令(2006/42/EC)

适用于机器、可互换的设备、安全零组件、升降配件、链条、绳索及带子，可拆卸之机械传动装置、部分完成之机器。替代之前的机械指令98/37/EC

●EMC指含(2014/30/EU)

适用于市场上销售的最终电子电气产品。替代之前的EMC指令2004/108/EC

●低电压指令(2014/35/EU)

适用于使用交流50~1000V、直流75–1500V的机器。

世界电源规格 World Power Specifications

以下数据仅供参考，使用前请再次核对当地电源规格参数。

The following data is for reference only. Please double check the local power supply specifications before use.

国家/地区 Country/region		频率 Frequency	电压(单相) Voltage (single phase)	电压(三相) Voltage (three phase)
亚洲 Asia	中国 China	50Hz	220V	220V/380V
	香港 Hongkong	50Hz	200V/220V	346V/380V
	台湾 Taiwang	60Hz	110V/220V	220V/380V
	日本 Japan	50Hz/60Hz	100V/220V	200V/400V
	韩国 Korea	60Hz	110V/220V	220V/380V
	新加坡 Singapore	50Hz	230V	400V
	马来西亚 Malaysia	50Hz	240V	415V
	印度尼西亚 Indonesia	50Hz	220V	380V
	印度 Inida	50Hz	240V	240V/415V
	泰国 Thailand	50Hz	220V	220V/380V
	孟加拉 Bengal	50Hz	230V	400V
	菲律宾 Philippines	60Hz	220V	380V
北美 North America	美国 United States	60Hz	115V/230V	230V
	加拿大 Canada	60Hz	120V/347V	208V/240V/600V
欧洲 Europe	英国 United Kingdom	50Hz	230V	400V
	法国 France	50Hz	230V	400V
	德国 Germany	50Hz	230V	400V
	荷兰 Netherlands	50Hz	230V	400V
	芬兰 Finland	50Hz	230V	400V
	丹麦 Denmark	50Hz	230V	400V
	希腊 Greece	50Hz	230V	400V
	瑞士 Switzerland	50Hz	230V	400V
	意大利 Italy	50Hz	230V	400V
	奥地利 Austria	50Hz	230V	400V
	比利时 Belgium	50Hz	230V	400V
	卢森堡 Luxembourg	50Hz	230V	400V
	葡萄牙 Portugal	50Hz	230V	400V/480V
	瑞典 Sweden	50Hz	230V/400V	400V/690V
	挪威 Norway	50Hz	220V/230V	380V
	西班牙 Spain	50Hz	127V/230V	220V/400V
	匈牙利 Hungary	50Hz	220V	380V
	罗马尼亚 Romania	50Hz	220V	380V
	保加利亚 Bulgaria	50Hz	220V	380V
大洋洲 Oceania	澳大利亚 Australia	50Hz	240V	415V
	新西兰 New Zealand	50Hz	230V	230V/415V
	关岛 Guam	60Hz	120V	240V/480V