

NIETZ

DC GEAR MOTOR

有刷直流减速电机

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2023

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型号的阅读方法

PRODUCT NUMBER CODE

●电机 Motor

5 **D** **90** - **24** **GU** - **30S** - **M**

① ② ③ ④ ⑤ ⑥ ⑦

①	机座号 Code	2	3	4	5	55	6
	电机外径 × 安装法兰 Mounting flange(mm)	60x60	60x70	80x80	80x90	90x90	90x104
②	马达系列 Motor Series	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		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					
⑦	选配件 Matching	M: 刹车器 Brake B: 编码器 coder					

●减速机Reducer

5 **GU** **60** **K** - **T**

① ② ③ ④ ⑤

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)
⑤	安装孔类型 Mounting hole type	T: 箱体通孔, 无则表示箱体螺纹孔 If not, it represents the threaded hole of box body

●电机的一般规格 General Specification of Motors

项目 Items	规格 Specifications
绝缘电阻 Insulation Resistance	于常温·常湿下的电机额定运行后, 以 DC500V 电阻表测量线圈外壳间时, 测量值为 20MΩ 以上 In the circumstance of normal ambient temperature and humidity, the resistance can be up to 20MΩ or more when DC 500v megger is applied between the windings and the frame after rated motor operations.
绝缘耐压 Insulation voltage	于常温·常湿下电机额定运行后, 在线圈和外壳间施加一分钟 50Hz 或 60Hz、1.5kv 的电压, 亦无异常 In the circumstance of normal ambient temperature and humidity, there will be no problem to withstand 1.5kv at 50Hz/60Hz between the windings and the frame for 1 minute after rated motor operation.
温度上升 Temperature Rise	运行电机后, 用温度计法来测量时, 电机表面最热点温升数值在 80℃ 以下 The temperature rise should be lower than 80℃ measured by resistance method when the motor is working
绝缘等级 insulation Class	B 级 (130℃) Class B(130℃)
使用温度 Use Temperature	-10℃ ~+40℃ (无结冰) -10℃ ~+40℃ (Non Freezing)
使用湿度 Use Humidity	80% 以下 (无结露的场所) ≤80% (place without dew)

有刷直流减速电机
DC GEAR MOTOR

6W
60mm



● 电机型号/性能 List of motor characteristics

电机型号 Model	单压 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	0.7	2000	0.6
2D6-12 □	12	6	2100	0.5	1800	32	1.2	2000	0.6
2D6-24 □	24	6	2100	0.3	1800	32	0.7	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。
- 外置电刷电机，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；F2D 此型号是内置电刷电机。
- Motor voltage, power and speed will be customized according to his requestment under allowed circumstance of adoptable dimension.
- For external brush motor, you can replace the brush directly. For internal ones, we need to disassembly the motor fist. F2D this model is internal brush motor.

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

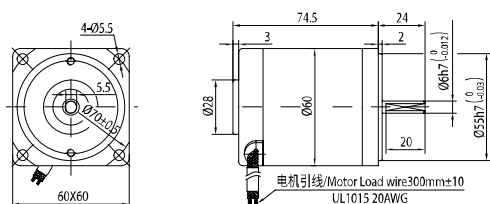
型号 Model	减速比 Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
2D6-24 □ -30S	转速 Speed r/min	999	833	600	500	400	333	300	240	200	166	150	120	100	83	75	60	50	40	33	30	25	20	16.5	15
	转矩 Torgne N.m	0.05	0.06	0.08	0.09	0.12	0.14	0.16	0.19	0.23	0.28	0.31	0.35	0.42	0.50	0.56	0.70	0.75	0.94	1.13	1.25	1.5	1.88	2.25	2.5
2D6-24 □ -18S	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 Torgne N.m	0.08	0.09	0.13	0.16	0.19	0.23	0.26	0.32	0.39	0.47	0.52	0.58	0.70	0.84	0.93	1.17	1.26	1.57	1.89	2.10	2.50	2.50	2.50	2.50

- 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)

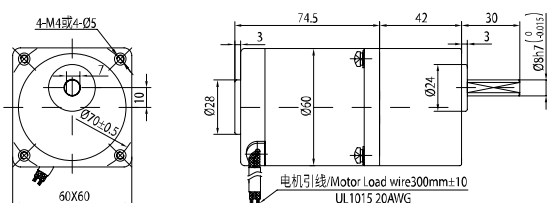
● 圆轴电机

重量 Weight: 0.6kg



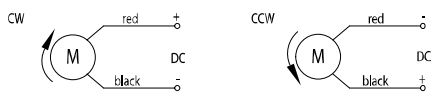
● 组合: 引线型电机 + 标准减速箱 (减速比 1:3~200)

重量 Weight: 1.0kg



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

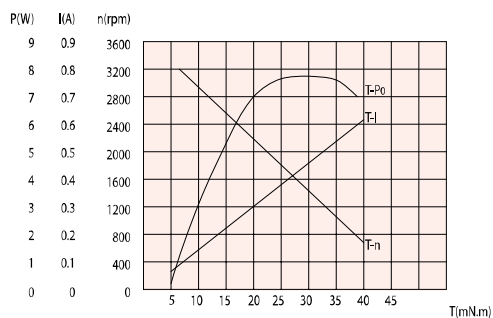
● 接线图 Wiring Diagram



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

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

● 电机特性曲线 Characteristic Curve of Motor



有刷直流减速电机
DC GEAR MOTOR

10W
60mm



电机型号/性能 List of motor characteristics

电机型号 Model	单压 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	10	3300	0.7	3000	32	1.8	2000	0.7
2D10-24 □	24	10	3300	0.5	3000	32	0.9	2000	0.7
2D10-12 □	12	10	2100	0.6	1800	53	1.8	2000	0.7
2D10-24 □	24	10	2100	0.4	1800	53	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。
- 外置电刷电机，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；F2D 此型号是内置电刷电机。
- Motor voltage, power and speed will be customized according to his requestment under allowed circumstance of adoptable dimension.
- For external brush motor, you can replace the brush directly. For internal ones, we need to disassembly the motor fist. F2D this model is internal brush motor.

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

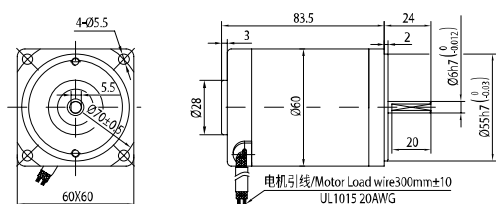
型号 Model	减速比 Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
2D10-24 □ -30S	转速 Speed r/min	999	833	600	500	400	333	300	240	200	166	150	120	100	83	75	60	50	40	33	30	25	20	16.5	15
	转矩 Torgne N.m	0.08	0.09	0.13	0.16	0.19	0.23	0.26	0.32	0.39	0.46	0.52	0.58	0.70	0.84	0.93	1.16	1.25	1.57	1.88	2.09	2.5	3	3	3
2D10-24 □ -18S	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 Torgne N.m	0.13	0.15	0.21	0.26	0.32	0.39	0.43	0.54	0.64	0.77	0.86	0.97	1.16	1.39	1.55	1.93	2.09	2.50	2.50	2.50	2.50	2.50	2.50	2.50

- 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)

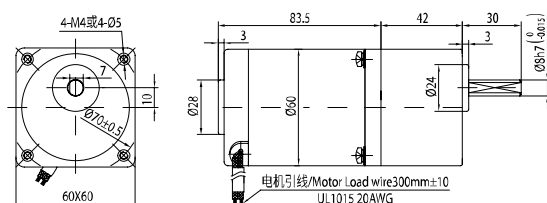
● 圆轴电机

重量 Weight: 0.7kg



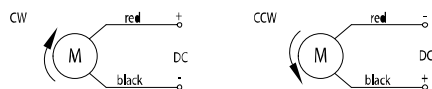
● 组合: 引线型电机 + 标准减速箱 (减速比 1:3~200)

重量 Weight: 1.1kg



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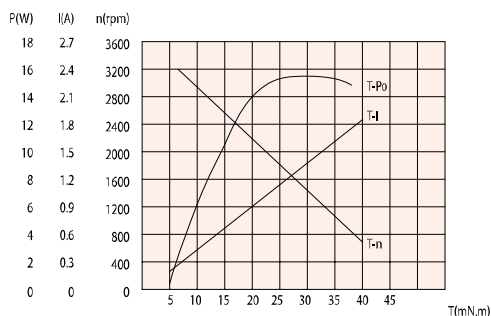
● 接线图 Wiring Diagram



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

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● 电机特性曲线 Characteristic Curve of Motor



有刷直流减速电机
DC GEAR MOTOR

15W
60mm



电机型号/性能 List of motor characteristics

电机型号 Model	单压 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	1.95	2000	0.8
2D15-24 □	24	15	3350	0.4	3000	47	0.95	2000	0.8
2D15-12 □	12	15	2200	0.5	1800	80	1.95	2000	0.7
2D15-24 □	24	15	2200	0.3	1800	80	0.95	2000	0.7

- 电机电压、功率及转速可在配件尺寸等条件下根据客户要求定制。
- 外置电刷电机，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；F2D 此型号是内置电刷电机。
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减速箱减速比 / 性能对照表 Gear reduction ratio/performance comparison

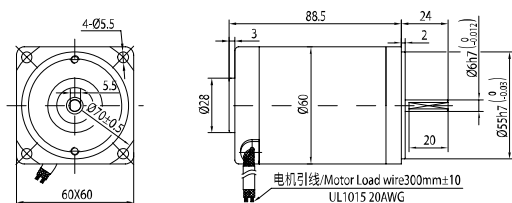
型号 Model	减速比 Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
2D15-24 □ -30S	转速 Speed r/min	999	833	600	500	400	333	300	240	200	166	150	120	100	83	75	60	50	40	33	30	25	20	16.5	15
	转矩 Torgne N.m	0.11	0.14	0.19	0.23	0.29	0.34	0.38	0.48	0.57	0.69	0.76	0.86	1.03	1.23	1.37	1.71	1.85	2.31	2.78	3	3	3	3	3
2D15-24 □ -18S	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 Torgne N.m	0.11	0.14	0.19	0.23	0.29	0.34	0.38	0.48	0.57	0.69	0.76	0.86	1.03	1.23	1.37	1.71	1.85	2.31	2.78	3	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。
- 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)

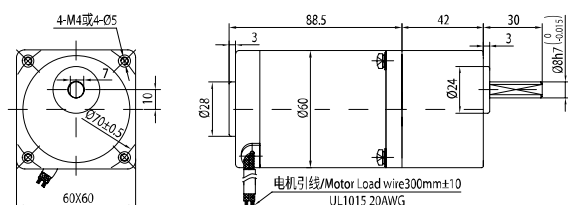
● 圆轴电机

重量 Weight: 0.8kg



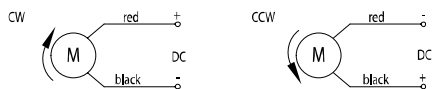
● 组合: 引线型电机 + 标准减速箱 (减速比 1:3~200)

重量 Weight: 1.2kg



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

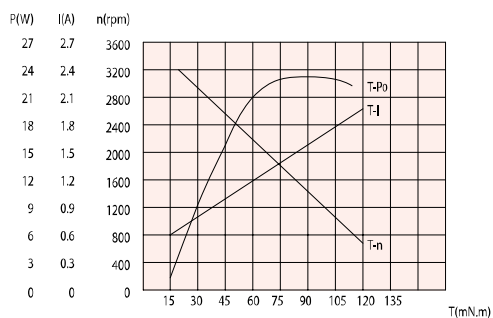
● 接线图 Wiring Diagram



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

● 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 Characteristic Curve of Motor



有刷直流减速电机
DC GEAR MOTOR

25W
70mm



● 电机型号/性能 List of motor characteristics

电机型号 Model	单压 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	25	3400	0.8	3000	80	3	2000	1.0
3D25-24 □	24	25	3350	0.4	3000	80	1.5	2000	1.0
3D25-12 □	12	25	2200	0.6	1800	132	3	2000	0.7
3D25-24 □	24	25	2250	0.3	1800	132	1.5	2000	0.7

- 电机电压、功率及转速可在配件尺寸等条件下根据客户要求定制。
- 外置电刷电机，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；F3D 此型号是内置电刷电机。
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● 减速箱减速比 / 性能对照表 Gear reduction ratio/performance comparison

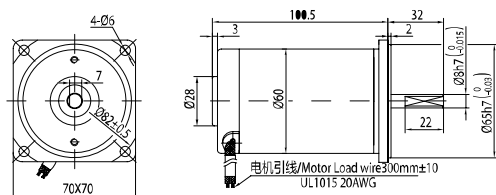
型号 Model	减速比 Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
3D25-24 □ -30S	转速 Speed r/min	999	833	600	500	400	333	300	240	200	166	150	120	100	83	75	60	50	40	33	30	25	20	16.5	15
	转矩 Torgne N.m	0.19	0.23	0.32	0.38	0.48	0.58	0.64	0.80	0.97	1.04	1.16	1.45	1.74	2.09	2.32	2.90	3.13	3.92	4.70	5	5	5	5	5
3D25-24 □ -18S	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 Torgne N.m	0.32	0.38	0.53	0.64	0.80	0.96	1.07	1.34	1.60	1.92	2.14	2.41	2.89	3.46	3.85	4.81	5	5	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。
- 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)

● 圆轴电机

重量 Weight: 1.0kg

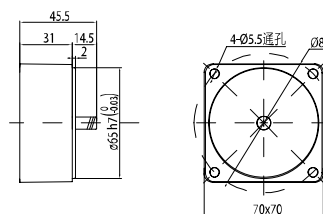


● 中间齿轮箱 Decimal Gearhead

可安装在齿轮轴型上 Can be connected to GN pinion shaft type

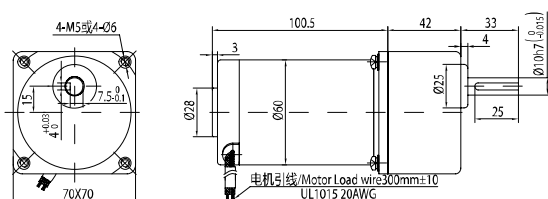
电动机外形与齿轮轴型相同 3GN10XK

重量 Weight: 0.35kg

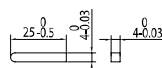


● 组合: 引线型电机 + 标准减速箱 (减速比 1:3~200)

重量 Weight: 1.6kg

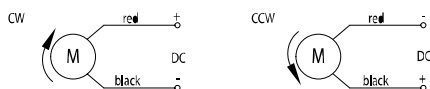


● 键 (减速器附件)



● 其中速比 3~18 可以做成长型减速箱, 高度为 32mm。Gear ratio 3~18, short case is possible, height of 32mm.

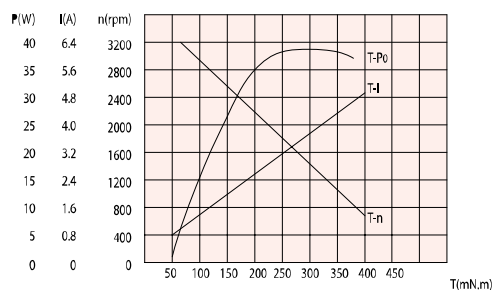
● 接线图 Wiring Diagram



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

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

● 电机特性曲线 Characteristic Curve of Motor



有刷直流减速电机
DC GEAR MOTOR

30W
80mm



● 电机型号/性能 List of motor characteristics

电机型号 Model	单压 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
34D30-12 □	12	25	3250	1.2	3000	80	3.4	2000	1.7
34D30-24 □	24	25	3250	0.6	3000	80	1.7	2000	1.7
34D30-12 □	12	25	2100	0.8	1800	132	3.4	2000	1.7
34D30-24 □	24	25	2050	0.4	1800	132	1.7	2000	1.7

- 电机电压、功率及转速可在配件尺寸等条件下根据客户要求定制。
- 外置电刷电机，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；F4D 此型号是外置电刷电机。
- Motor voltage, power and speed will be customized according to his requestment under allowed circumstance of adoptable dimension.
- For external brush motor, you can replace the brush directly. For internal ones, we need to disassembly the motor fist. F4D this model is external brush motor.

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

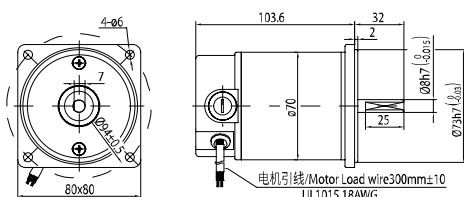
型号 Model	减速比 Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
4D25-24 □ -30S	转速 Speed r/min	999	833	600	500	400	333	300	240	200	166	150	120	100	83	75	60	50	40	33	30	25	20	16.5	15
	转矩 Torgne N.m	0.19	0.23	0.32	0.38	0.48	0.58	0.64	0.80	0.96	1.15	1.28	1.44	1.73	2.07	2.30	2.88	3.11	3.89	4.67	5.18	6.22	7.78	8	8
4D25-24 □ -18S	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 Torgne N.m	0.32	0.38	0.53	0.64	0.80	0.96	1.07	1.34	1.60	1.92	2.14	2.41	2.89	3.46	3.85	4.81	5.20	6.50	7.79	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。
- 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)

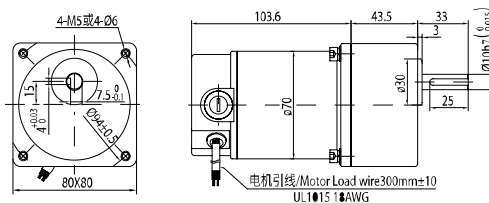
● 圆轴电机

重量 Weight: 1.7kg



● 组合: 引线型电机 + 标准减速箱 (减速比 1:3~200)

重量 Weight: 2.5kg

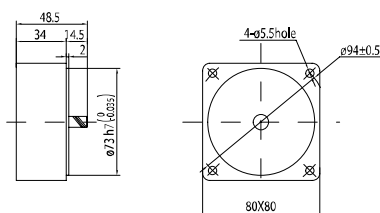


● 中间齿轮箱 Decimal Gearhead

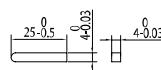
可安装在齿轮轴型上 Can be connected to GN pinion shaft type

电动机外形与齿轮轴型相同 4GN10XK

重量 Weight: 0.41kg

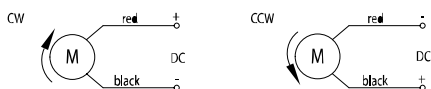


● 键 (减速器附件)



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

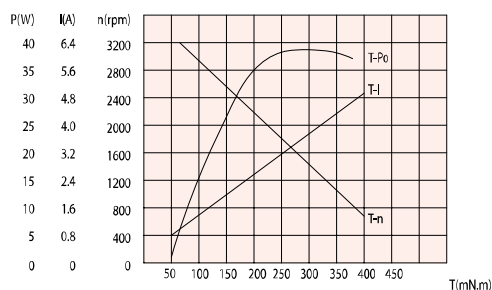
● 接线图 Wiring Diagram



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

● 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 Characteristic Curve of Motor



有刷直流减速电机
DC GEAR MOTOR

40W
80mm



电机型号/性能 List of motor characteristics

电机型号 Model	单压 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	4.5	2000	1.8
4D40-24 □	24	40	3300	0.8	3000	127	2.25	2000	1.8
4D40-90 □	90	40	3250	0.2	3000	127	0.6	2000	1.8
4D40-12 □	12	40	2050	0.8	1800	212	4.5	2000	1.8
4D40-24 □	24	40	2100	0.5	1800	212	2.25	2000	1.8
4D40-90 □	90	40	2050	0.2	1800	212	0.6	2000	1.8

- 电机电压、功率及转速可在配件尺寸等条件下根据客户要求定制。
- 外置电刷电机，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；F4D 此型号是外置电刷电机。
- Motor voltage, power and speed will be customized according to his requestment under allowed circumstance of adoptable dimension.
- For external brush motor, you can replace the brush directly. For internal ones, we need to disassembly the motor first. F4D this model is external brush motor.

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

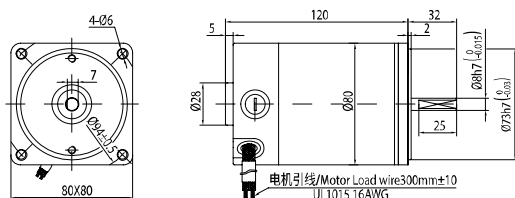
型号 Model	减速比 Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
4D40-24 □ -30S	转速 Speed r/min	999	833	600	500	400	333	300	240	200	166	150	120	100	83	75	60	50	40	33	30	25	20	16.5	15
	转矩 Torgne N.m	0.31	0.37	0.51	0.62	0.77	0.93	1.03	1.29	1.54	1.85	2.06	2.32	2.78	3.33	3.71	4.63	5.00	6.25	7.51	8	8	8	8	8
4D40-24 □ -18S	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 Torgne N.m	0.52	0.62	0.86	1.03	1.29	1.55	1.72	2.15	2.58	3.09	3.43	3.86	4.64	5.56	6.18	7.73	8	8	8	8	8	8	8	8

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

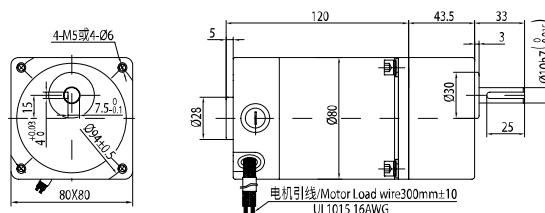
● 圆轴电机

重量 Weight: 1.8kg



● 组合: 引线型电机 + 标准减速箱 (减速比 1:3~200)

重量 Weight: 2.6kg

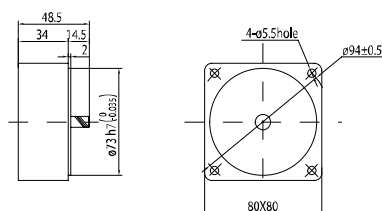


● 中间齿轮箱 Decimal Gearhead

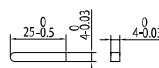
可安装在齿轮轴型上 Can be connected to GN pinion shaft type

电动机外形与齿轮轴型相同 4GN10XK

重量 Weight: 0.41kg

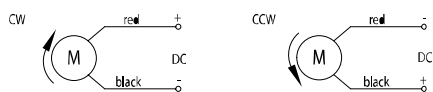


● 键 (减速器附件)



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

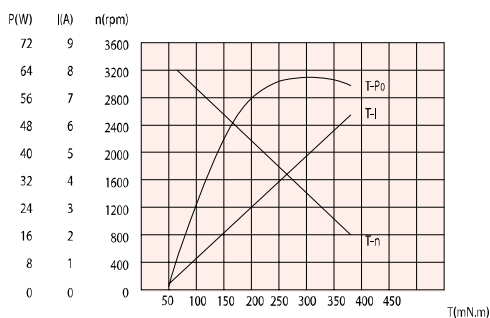
● 接线图 Wiring Diagram



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

● 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 Characteristic Curve of Motor



有刷直流减速电机
DC GEAR MOTOR

60W
80mm



● 电机型号/性能 List of motor characteristics

电机型号 Model	单压 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
4D60-12 □	12	60	3350	2	3000	191	6.7	2000	1.8
4D60-24 □	24	60	3300	1	3000	191	3.4	2000	1.8
4D60-90 □	90	60	3250	0.3	3000	191	0.9	2000	1.8
4D60-12 □	12	60	2200	1	1800	318	6.7	2000	1.8
4D60-24 □	24	60	2150	0.6	1800	318	3.4	2000	1.8
4D60-90 □	90	60	2100	0.25	1800	318	0.9	2000	1.8

- 电机电压、功率及转速可在配件尺寸等条件下根据客户要求定制。
- 外置电刷电机，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；F4D 此型号是外置电刷电机。
- Motor voltage, power and speed will be customized according to his requestment under allowed circumstance of adoptable dimension.
- For external brush motor, you can replace the brush directly. For internal ones, we need to disassembly the motor first. F4D this model is external brush motor.

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

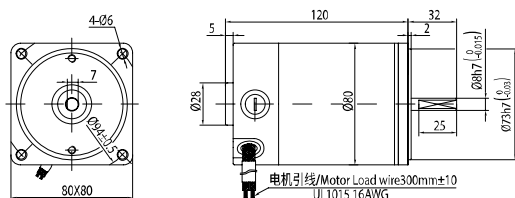
型号 Model	减速比 Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
4D60-24 □ -30S	转速 Speed r/min	999	833	600	500	400	333	300	240	200	166	150	120	100	83	75	60	50	40	33	30	25	20	16.5	15
	转矩 Torgne N.m	0.46	0.56	0.77	0.93	1.16	1.39	1.54	1.93	2.32	2.78	3.10	3.48	4.18	5.01	5.56	6.96	7.51	8	8	8	8	8	8	8
4D60-24 □ -18S	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 Torgne N.m	0.77	0.93	1.29	1.55	1.93	2.32	2.58	3.22	3.86	4.64	5.15	5.80	6.95	8	8	8	8	8	8	8	8	8	8	8

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

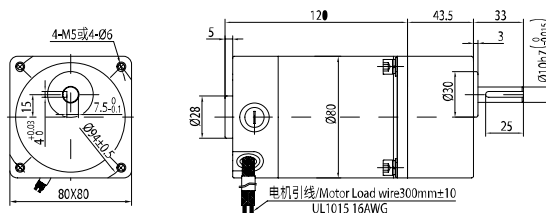
● 圆轴电机

重量 Weight: 1.8kg



● 组合: 引线型电机 + 标准减速箱 (减速比 1:3~200)

重量 Weight: 2.6kg

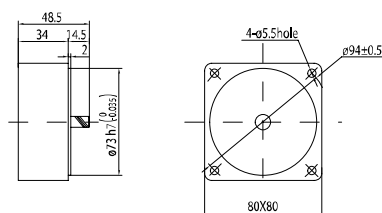


● 中间齿轮箱 Decimal Gearhead

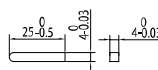
可安装在齿轮轴型上 Can be connected to GN pinion shaft type

电动机外形与齿轮轴型相同 4GN10XK

重量 Weight: 0.41kg

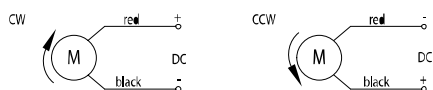


● 键 (减速器附件)



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

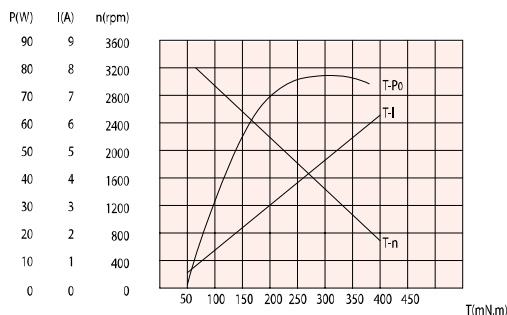
● 接线图 Wiring Diagram



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

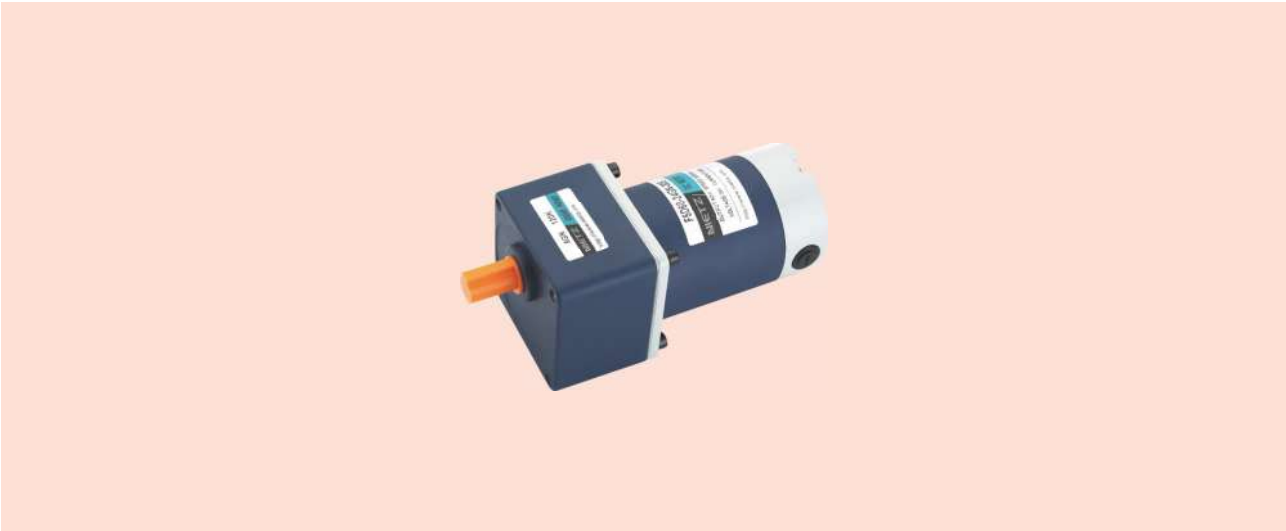
● The direction of motor rotation is as viewed from the shaft end of motor CW represents the clockwise direction, while CCW represents the counterclockwise direction

● 电机特性曲线 Characteristic Curve of Motor



有刷直流减速电机
DC GEAR MOTOR

60W
90mm



电机型号/性能 List of motor characteristics

电机型号 Model	单压 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	3350	2	3000	191	6.7	2000	1.8
5D60-24 □	24	60	3300	1	3000	191	3.4	2000	1.8
5D60-90 □	90	60	3250	0.3	3000	191	0.9	2000	1.8
5D60-12 □	12	60	2200	1	1800	318	6.7	2000	1.8
5D60-24 □	24	60	2150	0.6	1800	318	3.4	2000	1.8
5D60-90 □	90	60	2100	0.25	1800	318	0.9	2000	1.8

- 电机电压、功率及转速可在配件尺寸等条件下根据客户要求定制。
- 外置电刷电机，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；F5D 此型号是外置电刷电机。
- Motor voltage, power and speed will be customized according to his requestment under allowed circumstance of adoptable dimension.
- For external brush motor, you can replace the brush directly. For internal ones, we need to disassembly the motor first. F5D this model is external brush motor.

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

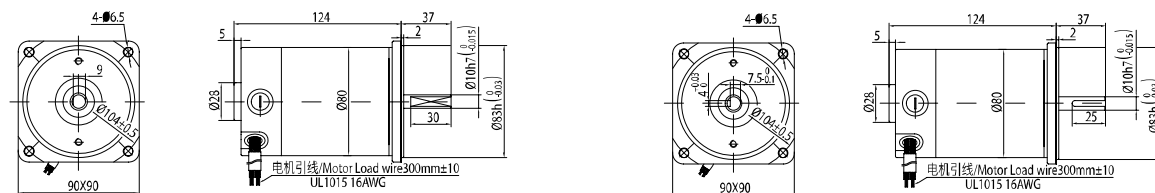
型号 Model	减速比 Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
5D60-24 □ -30S	转速 Speed r/min	999	833	600	500	400	333	300	240	200	166	150	120	100	83	75	60	50	40	33	30	25	20	16.5	15
	转矩 Torgne N.m	0.46	0.56	0.77	0.93	1.16	1.39	1.54	1.93	2.32	2.51	2.78	3.48	4.78	5.01	5.01	6.27	7.52	9.40	10	10	10	10	10	10
5D60-24 □ -18S	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 Torgne N.m	0.77	0.93	1.29	1.55	1.93	2.32	2.58	3.22	3.86	4.17	4.64	5.80	6.95	8.35	8.35	10	11	12	13	14	15	16	17	18

- 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)

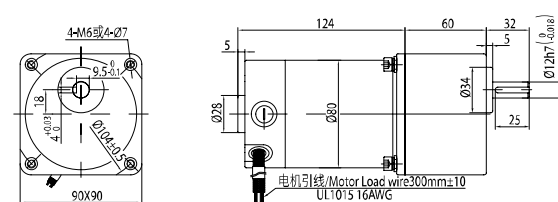
● 圆轴电机

重量 Weight: 2.0kg



● 组合: 引线型电机 + 标准减速箱 (减速比 1:3~200)

重量 Weight: 3.5kg

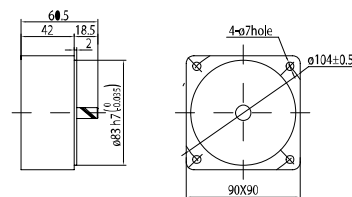


● 中间齿轮箱 Decimal Gearhead

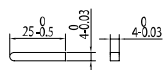
可安装在 GN 齿轮轴型上 Can be connected to GN pinion shaft type

电动机外形与齿轮轴型相同 5GN10XK

重量 Weight: 0.6kg

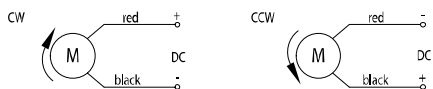


● 键 (减速器附件)



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

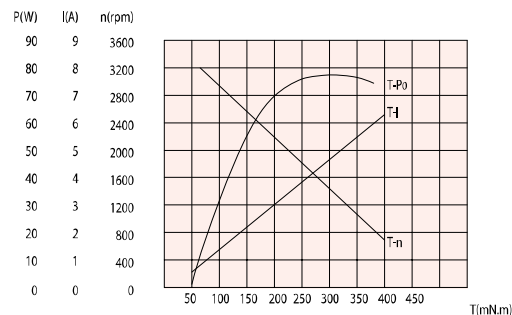
● 接线图 Wiring Diagram



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

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

● 电机特性曲线 Characteristic Curve of Motor



有刷直流减速电机
DC GEAR MOTOR

90W
90mm



● 电机型号/性能 List of motor characteristics

电机型号 Model	单压 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	3400	1.7	3000	286	10.0	2000	2.2
5D90-24 □	24	90	3350	0.9	3000	286	5.0	2000	2.2
5D90-90 □	90	90	3300	0.35	3000	286	1.35	2000	2.2
5D90-12 □	12	90	2200	1.2	1800	477	10.0	2000	2.2
5D90-24 □	24	90	2150	0.7	1800	477	5.0	2000	2.2
5D90-90 □	90	90	2100	0.3	1800	477	1.35	2000	2.2

- 电机电压、功率及转速可在配件尺寸等条件下根据客户要求定制。
- 外置电刷电机，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；F5D 此型号是外置电刷电机。
- Motor voltage, power and speed will be customized according to his request under allowed circumstance of adoptable dimension.
- For external brush motor, you can replace the brush directly. For internal ones, we need to disassembly the motor first. F5D this model is external brush motor.

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

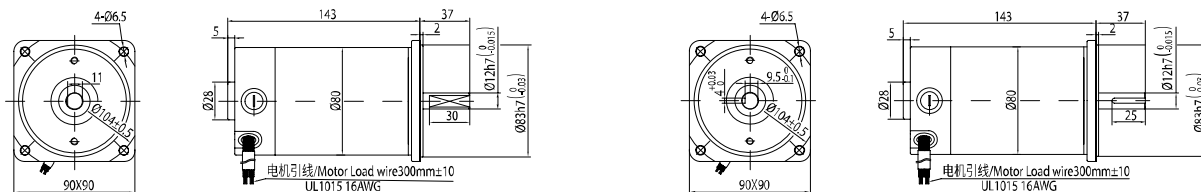
型号 Model	减速比 Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
5D90-24 □ -30S	转速 Speed r/min	999	833	600	500	400	333	300	240	200	166	150	120	100	83	75	60	50	40	33	30	25	20	16.5	15
	转矩 Torgne N.m	0.69	0.83	1.16	1.39	1.74	2.09	2.32	2.61	3.13	3.75	3.75	4.69	5.63	6.76	7.51	9.38	11.25	14.07	15.20	16.89	20	20	20	20
5D90-24 □ -18S	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 Torgne N.m	1.16	1.39	1.93	2.32	2.90	3.48	3.86	4.35	5.22	6.26	6.95	7.82	9.39	11.27	12.52	15.65	18.78	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。
- 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)

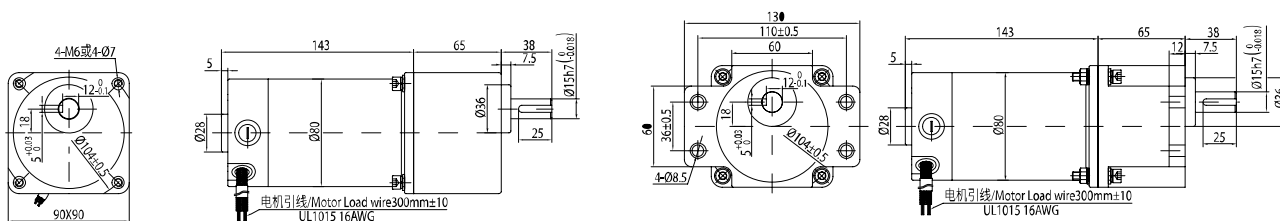
●圆轴电机

重量 Weight: 2.2kg



●组合：引线型电机 + 标准减速箱（减速比 1:3~200）

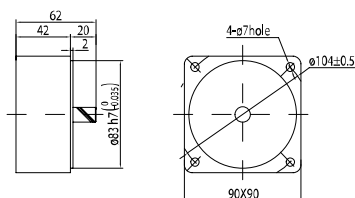
重量 Weight: 3.7kg



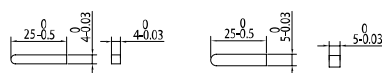
●中间齿轮箱 Decimal Gearhead

可安装在 GU 齿轮轴型上 Can be connected to GU pinion shaft type
电动机外形与齿轮轴型相同 5GU10XK

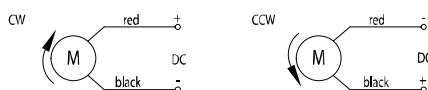
重量 Weight: 0.7kg



●键（减速器附件）



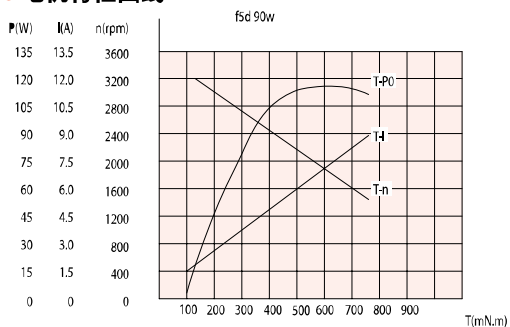
●接线图 Wiring Diagram



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

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

●电机特性曲线 Characteristic Curve of Motor



有刷直流减速电机
DC GEAR MOTOR

120W
90mm



● 电机型号/性能 List of motor characteristics

电机型号 Model	单压 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	3450	2.1	3000	382	13.5	2000	2.2
5D120-24 □	24	120	3450	1.2	3000	382	6.7	2000	2.2
5D120-90 □	90	120	3400	0.4	3000	382	1.8	2000	2.2
5D120-12 □	12	120	2300	1.3	1800	636	13.5	2000	2.2
5D120-24 □	24	120	2250	0.7	1800	636	6.7	2000	2.2
5D120-90 □	90	120	2100	0.3	1800	636	1.9	2000	2.2

- 电机电压、功率及转速可在配件尺寸等条件下根据客户要求定制。
- 外置电刷电机，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；F5D 此型号是外置电刷电机。
- 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 fist. F5D this model is external brush motor.

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

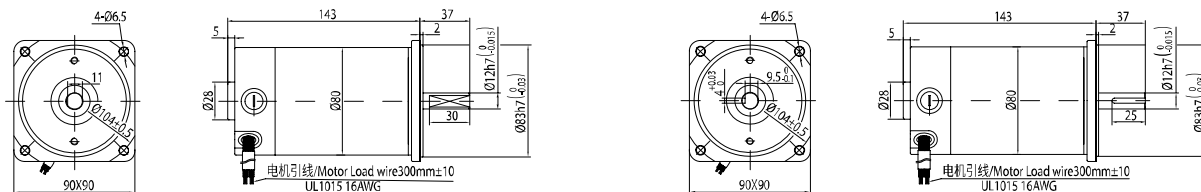
型号 Model	减速比 Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
5D120-24 □ -30S	转速 Speed r/min	999	833	600	500	400	333	300	240	200	166	150	120	100	83	75	60	50	40	33	30	25	20	16.5	15
	转矩 Torgne N.m	0.93	1.11	1.55	1.86	2.32	2.79	3.09	3.48	4.18	5.01	5.01	6.27	7.52	9.0	10.0	12.53	15.0	18.8	20	20	20	20	20	20
5D120-24 □ -18S	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 Torgne N.m	1.55	1.85	2.58	3.09	3.86	4.64	5.15	5.80	6.95	8.35	9.27	11.59	13.91	16.69	18.55	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。
- 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)

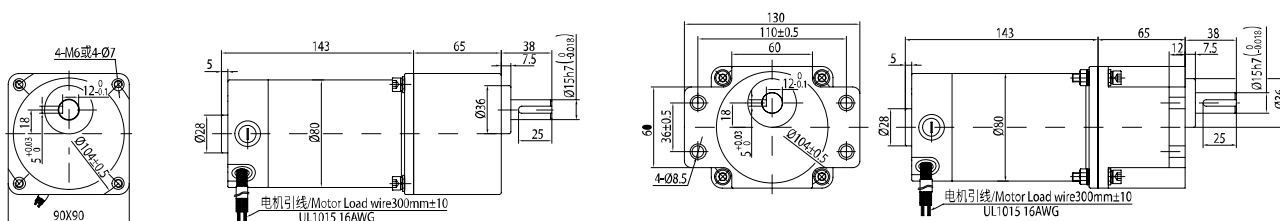
● 圆轴电机

重量 Weight: 2.2kg



● 组合: 引线型电机 + 标准减速箱 (减速比 1:3~200)

重量 Weight: 3.7kg

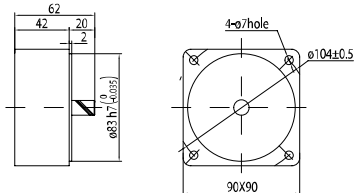


● 中间齿轮箱 Decimal Gearhead

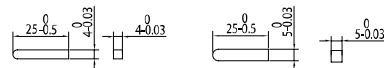
可安装在 GU 齿轮轴型上 Can be connected to GU pinion shaft type

电动机外形与齿轮轴型相同 5GU10XK

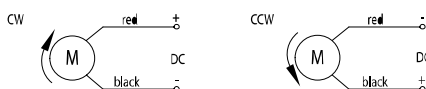
重量 Weight: 0.7kg



● 键 (减速器附件)



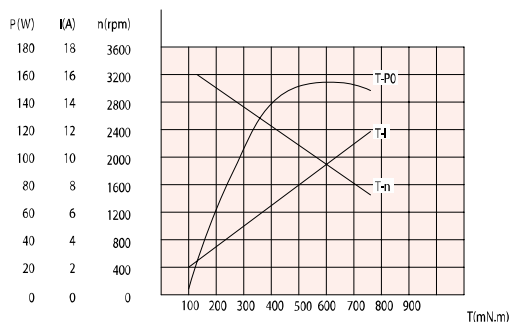
● 接线图 Wiring Diagram



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

● 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 Characteristic Curve of Motor



有刷直流减速电机
DC GEAR MOTOR

200W
90mm



● 电机型号/性能 List of motor characteristics

电机型号 Model	单压 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
	V	W	转速 Speed	电流 Current	转速 speed	力矩 torque	电流 current	H	kg
			r/min	A	r/min	mN.m	A		
55D200-12 □	12	200	3450	3.5	3000	636	22.0	2000	3.2
55D200-24 □	24	200	3400	1.5	3000	636	11.0	2000	3.2
55D200-48 □	48	200	3300	0.9	3000	636	5.4	2000	3.2
55D200-12 □	12	200	2250	2	1800	1060	22.0	2000	3.2
55D200-24 □	24	200	2200	1.0	1800	1060	11.0	2000	3.2
55D200-48 □	48	200	2200	0.5	1800	1060	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。
- 外置电刷电机，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；F55D 此型号是外置电刷电机。
- Motor voltage, power and speed will be customized according to his requestment under allowed circumstance of adoptable dimension.
- For external brush, you can replce the brush directly. For internal ones, we need to disassembly the motor fist. F55D this model is external brush motor.

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

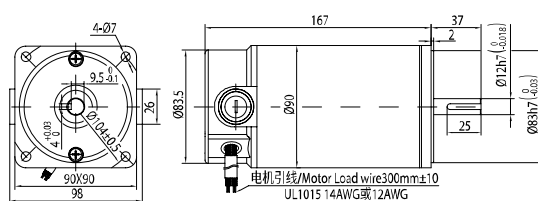
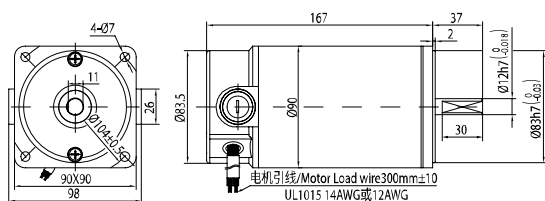
型号 Model	减速比 Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
55D200-24 □ -30S	转速 Speed r/min	999	833	600	500	400	333	300	240	200	166	150	120	100	83	75	60	50	40	33	30	25	20	16.5	15
	转矩 Torgne N.m	1.55	1.85	2.58	3.09	3.86	4.64	5.15	5.80	6.96	8.35	8.35	10.43	12.52	15.0	16.7	20	20	20	20	20	20	20	20	20
55D200-24 □ -18S	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 Torgne N.m	2.58	3.09	4.29	5.15	6.44	7.73	8.59	9.66	11.59	13.91	15.45	19.32	20.00	20.00	20	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。
- 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)

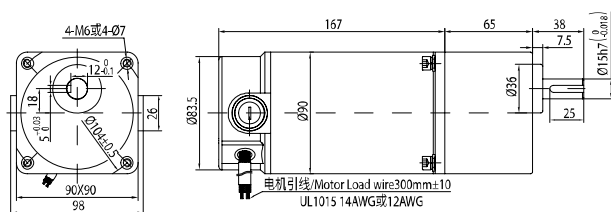
● 圆轴电机

重量 Weight: 3.2kg



● 组合: 引线型电机 + 标准减速箱 (减速比 1:3~200)

重量 Weight: 4.7kg

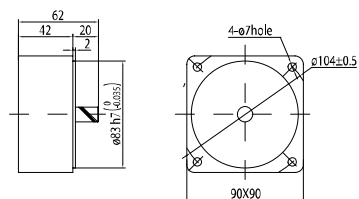


● 中间齿轮箱 Decimal Gearhead

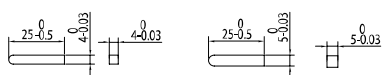
可安装在 GU 齿轮轴型上 Can be connected to GU pinion shaft type

电动机外形与齿轮轴型相同 5GU10XK

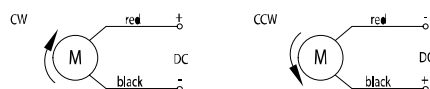
重量 Weight: 0.7kg



● 键 (减速器附件)



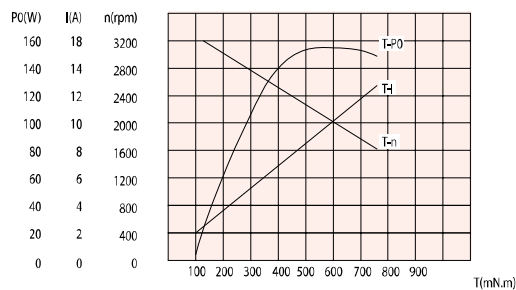
● 接线图 Wiring Diagram



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

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

● 电机特性曲线 Characteristic Curve of Motor



有刷直流减速电机
DC GEAR MOTOR

250W
104mm



● 电机型号/性能 List of motor characteristics

电机型号 Model	单压 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	27.0	2000	3.2
6D250-24 □	24	250	3500	1.5	3000	795	13.5	2000	3.2
6D250-48 □	48	250	3350	0.9	3000	795	6.5	2000	3.2
6D250-12 □	12	250	2300	2.5	1800	1326	27.0	2000	3.2
6D250-24 □	24	250	2250	1.2	1800	1326	13.5	2000	3.2
6D250-48 □	48	250	2000	0.5	1800	1326	6.5	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。
- 外置电刷电机，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；F6D 此型号是外置电刷电机。
- 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 fist. F6D this model is external brush motor.

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

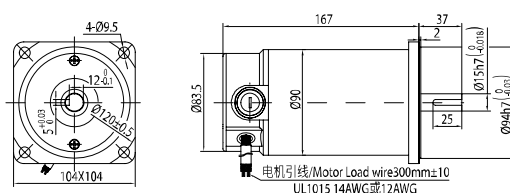
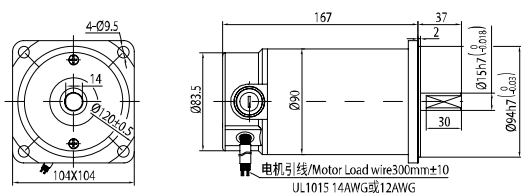
型号 Model	减速比 Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
6D250- 24 □ -30S	转速 Speed r/min	999	833	600	500	400	333	300	240	200	166	150	120	100	83	75	60	50	40	33	30	25	20	16.5	15
	转矩 Torgne N.m	1.93	2.32	3.22	3.86	4.83	5.80	6.44	7.24	8.69	10.43	10.43	13.04	15.65	18.8	20.9	26.1	31.3	39.1	40	40	40	40	40	40
6D250- 24 □ -18S	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 Torgne N.m	3.22	3.87	5.37	6.44	8.06	9.67	10.74	12.08	14.50	17.40	19.33	21.75	26.10	31.32	34.80	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。
- 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)

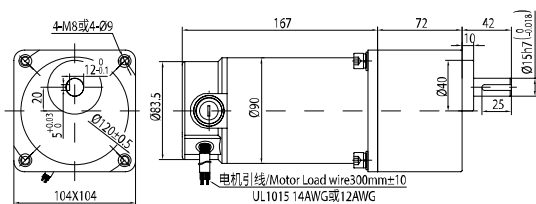
● 圆轴电机

重量 Weight: 3.2kg

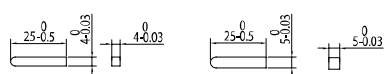


● 组合: 引线型电机 + 标准减速箱 (减速比 1:3~200)

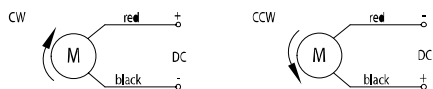
重量 Weight: 5.3kg



● 键 (减速器附件)



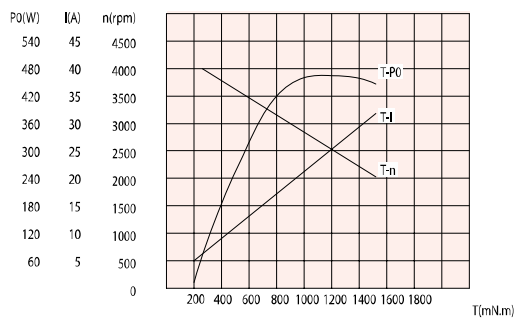
● 接线图 Wiring Diagram



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

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

● 电机特性曲线 Characteristic Curve of Motor



有刷直流减速电机
DC GEAR MOTOR

300W
104mm



电机型号/性能 List of motor characteristics

电机型号 Model	单压 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
	V	W	转速 Speed	电流 Current	转速 speed	力矩 torque	电流 current	H	kg
			r/min	A	r/min	N.m	A		
66D300-36GU-27S	36	300	3050	0.85	2700	1.06	9.45	2000	5.3
66D300-48GU-27S	48	300	3050	0.65	2700	1.06	7.1	2000	5.3

- 电机电压、功率及转速可在配件尺寸等条件下根据客户要求定制。
- 外置电刷电机，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；F66D 此型号是外置电刷电机。
- Motor voltage, power and speed will be customized according to his requestment under allowed circumstance of adoptable dimension.
- For external brush motor, you can replace the brush directly. For internal ones, we need to disassembly the motor fist. F6D this model is external brush motor.

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

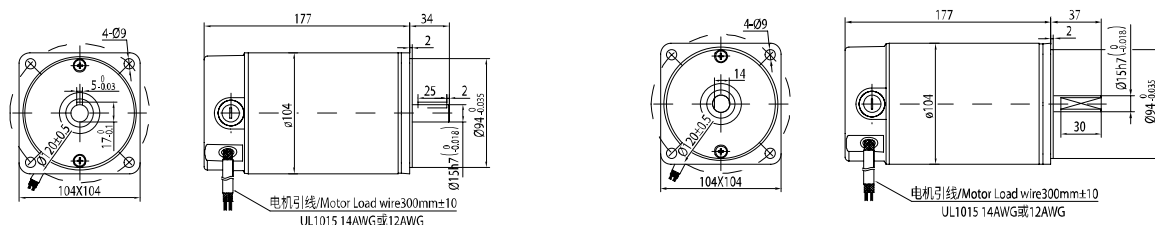
型号 Model	减速比 Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
66D300-36GU-27S	转速 Speed r/min	900	750	540	450	360	300	270	216	180	150	135	108	90	75	67.5	54	45	36	30	27	22.5	18	15	13.5
	转矩 Torgne N.m	2.80	3.3	4.5	5.5	6.8	8.3	8.6	10.6	12.5	15	15.9	19.3	23.2	27.8	30.9	38.6	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。
- 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)

● 圆轴电机

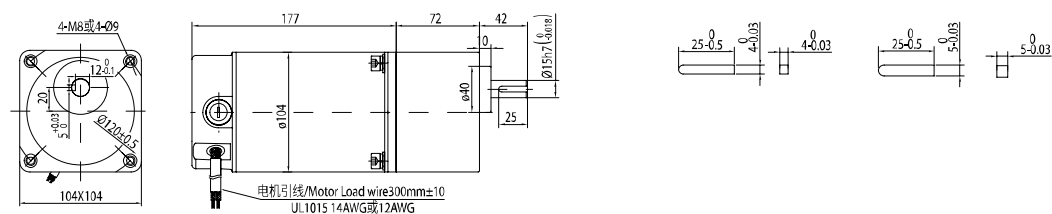
重量 Weight: 5.3kg



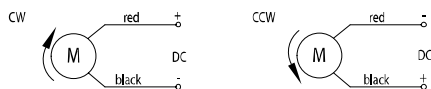
● 组合: 引线型电机 + 标准减速箱 (减速比 1:3~200)

重量 Weight: 7.5kg

● 键 (减速器附件)



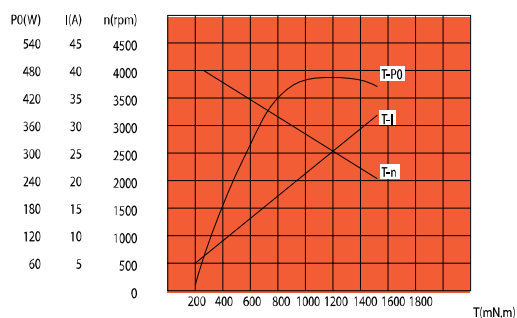
● 接线图 Wiring Diagram



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

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

● 电机特性曲线 Characteristic Curve of Motor



NIETZ

BLDC GEAR MOTOR

无刷直流减速电机

Select type
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2023

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●电机 Motor

①	机座号 Code	2	3	4	5	55	6	7	86
②	电机外径 x 安装法兰 Mounting flange(mm)	60x60	60x70	80x80	80x90	90x90	104x104	120x120	86x86
③	马达系列 Motor Series	B: 无刷直流 BRUSHLESS DC MOTOR							
④	输出功率 Output (W)	例 (Example) 200: 200W							
⑤	电源电压 Voltage	24:24V				36:36V			
		48:48V				220:220V			
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	转速 Speed	30S:3000RPM 18S:1800RPM							

● 减速机,Reducer

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)
⑤	安装孔类型 Mounting hole type	T: 箱体通孔, 无则表示箱体螺纹孔 If not, it represents the threaded hole of box body

● 订购说明 Note

- 无刷直流电机系列产品参考国外优秀产品外形设计, 产品使用方便, 结构合理紧凑。安装方式分为通孔和不通孔, 轴可定制, 其他按常规参数匹配。
- 无刷直流电机系列的防护等级为 IP40。
- 无刷直流电机系列的使用寿命为 5000 小时。此寿命的定义为在目前样本册所表述的转速情况下达到。
- 无刷直流电机系列的控制器为 BX 系列, 均为外置系列。
- 此产品通过 CE 高 / 低压认证。
- BLDC motor series refer to the foreign excellent product appearance design, the product is easy to use, the structure is reasonable and compact. FTG series can be divided into through-hole and through-hole, the shaft can be customized, and the rest can be matched according to the general parameters.
- The protection class of BLDC motor series is IP40.
- The service life of BLDC motor series is 5000 hours. This life is defined to be achieved at the speed described in the current sample book.
- The controller of BLDC motor series is BX series, both are external series.
- This product has passed the CE high/low pressure certification.

● 附件Attachment



无刷直流减速电机 BLDC GEAR MOTOR

15W 60mm



● 电机型号/性能List of motor characteristics

电机型号 Motor Model	电压 Voltage V	功率 Power W	空载电流 No load Current A	空载转速 No load Speed RPM	额定电流 Rated Current A	额定转速 Rated Speed RPM	额定扭矩 Rated Torque N.m	有否 Hall(Y/N)	电机寿命 Life(Hours)
2B15-24GN-30S	24	15	0.6	3500	1.1	3000	0.05	Both	> 5000
2B15-48GN-30S	48	15	0.3	3500	0.6	3000	0.05	Both	> 5000
2B15-220GN-30S	200 (AC)	15	0.15	3500	0.25	3000	0.05	Both	> 5000

● 减速箱减速比/性能对照表 Gear reduction ratio/performance comparison----F2B15-24GN-30S

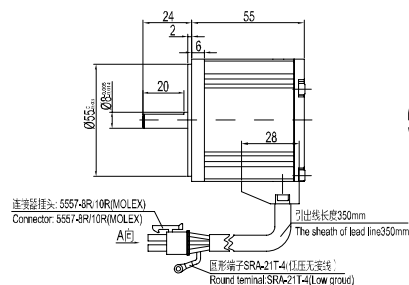
减速比 Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
转速 r/min Speed	1000	833	600	500	400	333	300	240	200	167	150	120	100	83	75	60	50	40	33	30	25	20	17	15
容许转矩 N.m Torque	0.12	0.14	0.19	0.23	0.29	0.35	0.39	0.48	0.58	0.7	0.7	0.87	1.05	1.25	1.39	1.74	1.89	2.36	2.84	3	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。
- 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.

● 尺寸图DIMENSIONAL DRAWING

● 圆轴电机

重量 Weight: 0.62kg



低压电机接线插孔对应信号说明
Low Voltage Wire Plughole Corresponding Single Explanation

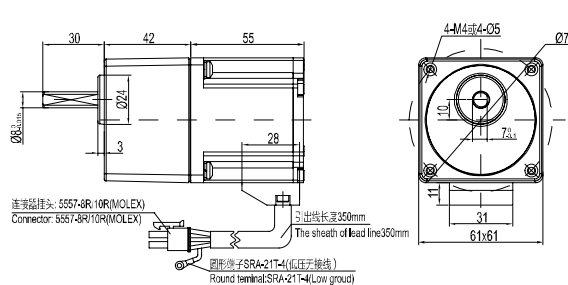
1	2	3	4	5	6	7	8
U	W	Fb	He	V	-	He	+
U	W	Fb	He	V	-	He	+

高压电机接线插孔对应信号说明
High Voltage Wire Plughole Corresponding Single Explanation

1	2	3	4	5	6	7	8	9	10
U	W	Fb	He	V	He	-	+	-	+
U	W	Fb	He	V	He	-	+	-	+

● 组合: 电机 + 标准齿轮箱

重量 Weight: 1.06kg



- 其中速比 3~18 可以做成短箱体，高度为 32mm
Gear ration 3~18, short case is possible, height of 32mm

无刷直流减速电机 BLDC GEAR MOTOR

25W 60mm



● 电机型号/性能List of motor characteristics

电机型号 Motor Model	电压 Voltage	功率 Power	空载电流 No load Current	空载转速 No load Speed	额定电流 Rated Current	额定转速 Rated Speed	额定扭矩 Rated Torque	有否 Hall(Y/N)	电机寿命 Life(Hours)
	V	W	A	RPM	A	RPM	N.m	/	H
2B25-24GN-30S	24	25	0.7	3600	1.7	3000	0.08	Both	> 5000
2B25-48GN-30S	48	25	0.4	3600	0.9	3000	0.08	Both	> 5000
2B25-220GN-30S	220 (AC)	25	0.15	3600	0.3	3000	0.08	Both	> 5000

● 减速箱减速比/性能对照表 Gear reduction ratio/performance comparison----F2B25-24GN-30S

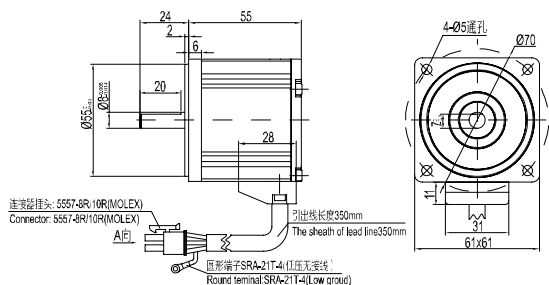
减速比 Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
转速 r/min Speed	1000	833	600	500	400	333	300	240	200	167	150	120	100	83	75	60	50	40	33	30	25	20	17	15
容许转矩 N.m Torque	0.19	0.23	0.32	0.39	0.48	0.58	0.64	0.81	0.97	1.16	1.16	1.45	1.74	2.09	2.58	2.9	3	3	3	3	3	3	3	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。
- 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.

● 尺寸图DIMENSIONAL DRAWING

● 圆轴电机

重量 Weight: 0.62kg



低压电机接线插孔对应信号说明
Low Voltage Wire Plughole Corresponding Single Explanation

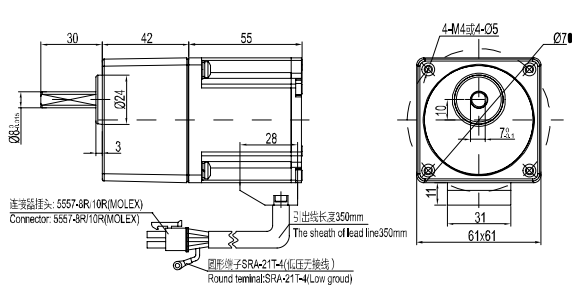
1	2	3	4	5	6	7	8
U	W	Fb	Hal	V	-	Hd	+
U	W	Fb	Hal	V	-	Hd	+

高压电机接线插孔对应信号说明
High Voltage Wire Plughole Corresponding Single Explanation

1	2	3	4	5	6	7	8	9	10
U	W	Hal	U	Hb	V	Hc	-	+	-
U	W	Hal	U	Hb	V	Hc	-	+	-

● 组合：电机 + 标准齿轮箱

重量 Weight: 1.06kg



- 其中速比 3~18 可以做成短箱体，高度为 32mm
Gear ration 3~18, short case is possible, height of 32mm

25W
70mm



电机型号 Motor Model	电压 Voltage	功率 Power	空载电流 No load Current	空载转速 No load Speed	额定电流 Rated Current	额定转速 Rated Speed	额定扭矩 Rated Torque	有否 Hall(Y/N)	电机寿命 Life(Hours)
	V	W	A	RPM	A	RPM	N.m	/	H
3B25-24GN-30S	24	25	0.7	3600	1.7	3000	0.08	Both	> 5000
3B25-18GN-30S	48	25	0.4	3600	0.9	3000	0.08	Both	> 5000
3B25-220GN-30S	220 (AC)	25	0.15	3600	0.3	3000	0.08	Both	> 5000

减速比 Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
转速 r/min Speed	1000	833	600	500	400	333	300	240	200	167	150	120	100	83	75	60	50	40	33	30	25	20	17	15
容许转矩 N.m Torque	0.19	0.23	0.32	0.39	0.48	0.58	0.64	0.81	0.97	1.05	1.16	1.45	1.74	2.09	2.32	2.9	3.15	3.94	4.73	5	5	5	5	5

无刷直流减速电机 BLDC GEAR MOTOR

40W 70mm



电机型号/性能List of motor characteristics

电机型号 Motor Model	电压 Voltage V	功率 Power W	空载电流 No load Current A	空载转速 No load Speed RPM	额定电流 Rated Current A	额定转速 Rated Speed RPM	额定扭矩 Rated Torque N.m	有否 Hall(Y/N)	电机寿命 Life(Hours) H
3B40-24GN-30S	24	40	0.7	3700	2.5	3000	0.13	Both	> 5000
4B40-48GN-30S	48	40	0.4	3700	1.3	3000	0.13	Both	> 5000
3B40-220GN-30S	220 (AC)	40	0.2	3700	0.5	3000	0.13	Both	> 5000

减速箱减速比/性能对照表 Gear reduction ratio/performance comparison----F3B40-24GN-30S

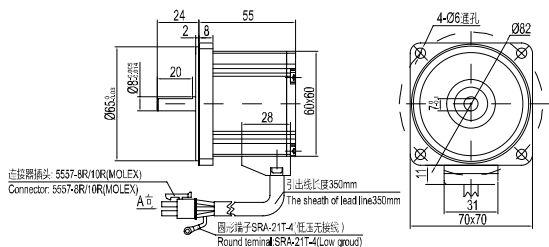
减速比 Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
转速 r/min Speed	1000	833	600	500	400	333	300	240	200	167	150	120	100	83	75	60	50	40	33	30	25	20	17	15
容许转矩 N.m Torque	0.31	0.37	0.52	0.62	0.77	0.93	1.03	1.29	1.55	1.67	1.86	2.32	2.79	3.35	3.72	4.65	5	5	5	5	5	5	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。
- 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.

尺寸图 DIMENSIONAL DRAWING

圆轴电机

重量 Weight: 0.64kg



低压电机接线插孔对应信号说明
Low Voltage Wire Plughole Corresponding Single Explanation

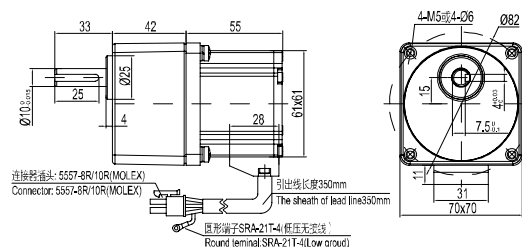
1	2	3	4	5	6	7	8
U	W	He	Ha	V	-	He	+
U	W	He	Ha	V	-	He	+

高压电机接线插孔对应信号说明
High Voltage Wire Plughole Corresponding Single Explanation

1	2	3	4	5	6	7	8	9	10
U	W	He	Ha	V	He	+	-	+	-
U	W	He	Ha	V	He	+	-	+	-

组合：电机 + 标准齿轮箱

重量 Weight: 1.2kg



- 其中速比 3~15 可以做短箱体，高度为 32mm
Gear ration 3~15 short case is possible, height of 32mm.
- 中间齿轮箱，高度 31mm。Decimal Gearhead, height of 31mm.

电动机外形与齿轮轴型相同，减速比 10。3GN10X

无刷直流减速电机 BLDC GEAR MOTOR

40W 80mm



● 电机型号/性能List of motor characteristics

电机型号 Motor Model	电压 Voltage V	功率 Power W	空载电流 No load Current A	空载转速 No load Speed RPM	额定电流 Rated Current A	额定转速 Rated Speed RPM	额定扭矩 Rated Torque N.m	有否 Hall(Y/N)	电机寿命 Life(Hours)
4B40-24GN-30S	24	40	0.7	3600	2.5	3000	0.13	Both	> 5000
4B40-48GN-30S	48	40	0.4	3600	1.3	3000	0.13	Both	> 5000
4B40-220GN-30S	220 (AC)	40	0.2	3600	0.5	3000	0.13	Both	> 5000

● 减速箱减速比/性能对照表 Gear reduction ratio/performance comparison----F4B40-24GN-30S

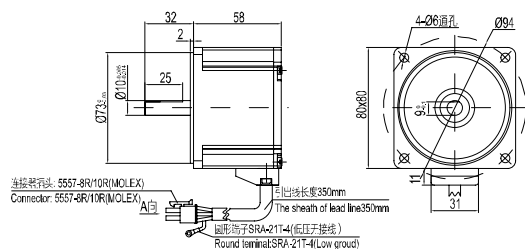
减速比 Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
转速 r/min Speed	1000	833	600	500	400	333	300	240	200	167	150	120	100	83	75	60	50	40	33	30	25	20	17	15
容许转矩 N.m Torque	0.31	0.37	0.52	0.62	0.77	0.93	1.03	1.29	1.55	1.86	2.06	2.32	2.79	3.35	3.72	4.65	5.04	6.3	7.59	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。
- 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.

● 尺寸图DIMENSIONAL DRAWING

● 圆轴电机

重量 Weight: 1.13kg



低压电机接线插孔对应信号说明
Low Voltage Wire Plughole Corresponding Single Explanation

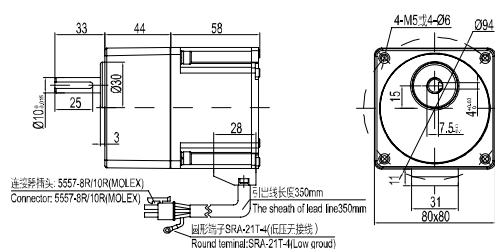
1	2	3	4	5	6	7	8
W	He	U	He	V	He	+	-
电源	地	正	地	负	地	+	-

高压电机接线插孔对应信号说明
High Voltage Wire Plughole Corresponding Single Explanation

1	2	3	4	5	6	7	8	9	10
W	He	U	He	V	He	+	-	+	-
电源	地	正	地	负	地	+	-	+	-

● 组合：电机 + 标准齿轮箱

重量 Weight: 1.86kg



- 其中速比 3~20 可以做成短箱体，高度为 32mm
Gear ratio 3~20 short case is possible, height of 32mm.
- 中间齿轮箱，高度 34mm。Decimal Gearhead, height of 34mm.
电动机外形与齿轮轴型相同，减速比 10。4GN10X

无刷直流减速电机 BLDC GEAR MOTOR

60W 80mm



● 电机型号/性能List of motor characteristics

电机型号 Motor Model	电压 Voltage V	功率 Power W	空载电流 No load Current A	空载转速 No load Speed RPM	额定电流 Rated Current A	额定转速 Rated Speed RPM	额定扭矩 Rated Torque N.m	有否 Hall(Y/N)	电机寿命 Life(Hours)
4B60-24GN-30S	24	60	0.8	3700	3.5	3000	0.19	Both	> 5000
4B60-48GN-30S	48	60	0.4	3700	1.8	3000	0.19	Both	> 5000
4B60-220GN-30S	220 (AC)	60	0.2	3700	0.75	3000	0.19	Both	> 5000

● 减速箱减速比/性能对照表 Gear reduction ratio/performance comparison----F4B60-24GN-30S

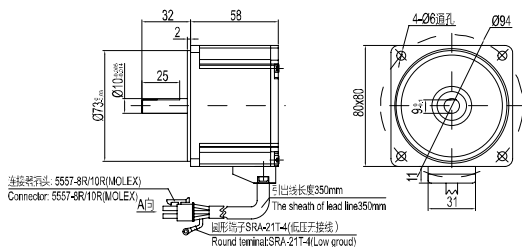
减速比 Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
转速 r/min Speed	1000	833	600	500	400	333	300	240	200	167	150	120	100	83	75	60	50	40	33	30	25	20	17	15
容许转矩 N.m Torque	0.46	0.56	0.77	0.93	1.16	1.39	1.55	1.93	2.32	2.78	3.09	3.49	4.18	5.02	5.58	6.97	7.56	8	8	8	8	8	8	8

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

● 尺寸图 DIMENSIONAL DRAWING

● 圆轴电机

重量 Weight: 1.13kg



低压电机接线插孔对应信号说明
Low Voltage Wire Plughole Corresponding Single Explanation

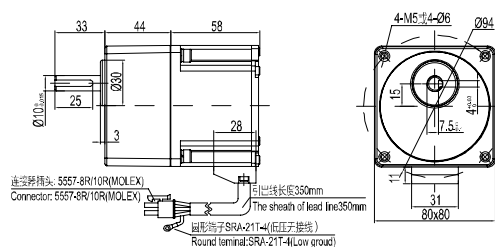
1	2	3	4	5	6	7	8
U	W	Hb	Hc	V	-	Hc	+
电源	电源	速度	速度	速度	速度	速度	速度

高压电机接线插孔对应信号说明
High Voltage Wire Plughole Corresponding Single Explanation

1	2	3	4	5	6	7	8	9	10
W	Hb	U	Hb	V	Hc	-	+	-	+
速度	速度	速度	速度	速度	速度	速度	速度	速度	速度

● 组合: 电机 + 标准齿轮箱

重量 Weight: 1.86kg



- 其中速比 3~20 可以做成短箱体，高度为 32mm
Gear ratio 3~20 short case is possible, height of 32mm.
- 中间齿轮箱，高度 34mm。Decimal Gearhead, height of 34mm.
- 电动机外形与齿轮轴型相同，减速比 10。4GN10X

无刷直流减速电机 BLDC GEAR MOTOR

200W
90mm



电机型号/性能List of motor characteristics

电机型号 Motor Model	电压 Voltage	功率 Power	空载电流 No load Current	空载转速 No load Speed	额定电流 Rated Current	额定转速 Rated Speed	额定扭矩 Rated Torque	有否 Hall(Y/N)	电机寿命 Life(Hours)
	V	W	A	RPM	A	RPM	N.m	/	H
86B200-24GU-30S	24	200	1.5	3500	10.5	3000	0.64	Both	> 5000
86B200-48GU-30S	48	200	0.8	3500	5.5	3000	0.64	Both	> 5000
86B200-220GU-30S	220(AC)	200	0.5	3500	2.3	3000	0.64	Both	> 5000

减速箱减速比/性能对照表 Gear reduction ratio/performance comparison----F86B200-24GN-30S

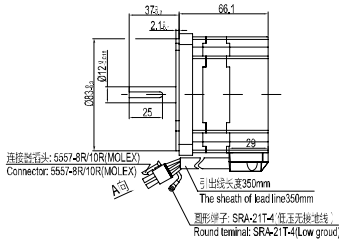
减速比 Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
转速 r/min Speed	1000	833	600	500	400	333	300	240	200	167	150	120	100	83	75	60	50	40	33	30	25	20	17	15
容许转矩 N.m Torque	1.55	1.86	2.58	3.09	3.87	4.64	5.27	6.45	7.74	9.28	9.3	11.6	13.9	16.7	18.6	20	20	20	20	20	20	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。
- 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.

尺寸图DIMENSIONAL DRAWING

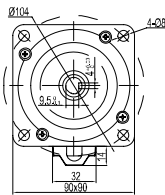
圆轴电机

重量 Weight: 1.6kg



低压电机接线插孔对应信号说明
Low Voltage Wire Plughole Corresponding Single Explanation

1	2	3	4	5	6	7	8
U	W	Hb	Ha	V	-	Hc	+
电机正转	电机反转	速度反馈	速度反馈	速度反馈	速度反馈	速度反馈	速度反馈

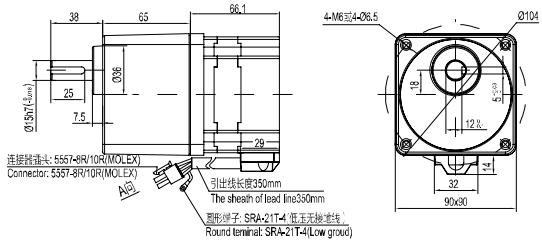


高压电机接线插孔对应信号说明
High Voltage Wire Plughole Corresponding Single Explanation

1	2	3	4	5	6	7	8	9	10
U	W	Ha	U	Hb	V	Hc	+	-	
电机正转	电机反转	速度反馈	速度反馈	速度反馈	速度反馈	速度反馈	速度反馈	速度反馈	速度反馈

组合：电机 + 标准齿轮箱

重量 Weight: 3.13kg



- 其中速比 3~20 可以做成短箱体，高度为 32mm
Gear ration3~20short case is possible, height of 32mm.
- 中间齿轮箱，高度 34mm。Decimal Gearhead, height of 34mm.
电动机外形与齿轮轴型相同，减速比 10。4GN10X

300W
90mm



电机型号 Motor Model	电压 Voltage	功率 Power	空载电流 No Load Current	空载转速 No Load Speed	额定电流 Rated Current	额定转速 Rated Speed	额定扭矩 Rated Torque	有否 Hall(Y/N)	电机寿命 Life(Hours)
	V	W	A	RPM	A	RPM	N.m	/	H
86B300-24GU-30S	24	300	2	3600	16.5	3000	0.96	Both	> 5000
86B300-48GU-30S	48	300	1	3600	8.5	3000	0.96	Both	> 5000
86B300-220GU-30S	220(AC)	300	0.9	3600	3.5	3000	0.96	Both	> 5000

[illegible]

- 其中速比 3~20 可以做成短箱体，高度为 32mm
Gear ratio 3~20 short case is possible, height of 32mm.
 - 中间齿轮箱，高度 34mm。Decimal Gearhead, height of 34mm.
- 电动机外形与齿轮轴型相同，减速比 10。4GN10X

**400W
90mm**



电机型号 Motor Model	电压 Voltage	功率 Power	空载电流 No Load Current	空载转速 No Load Speed	额定电流 Rated Current	额定转速 Rated Speed	额定扭矩 Rated Torque	有否 Hall(Y/N)	电机寿命 Life(Hours)
	V	W	A	RPM	A	RPM	N.m	/	H
86B400-24GU-30S	24	400	2.5	3600	21	3000	1.27	Both	> 5000
86B400-48GU-30S	48	400	1.3	3600	11	3000	1.27	Both	> 5000
86B400-220GU-30S	220(AC)	400	1	3600	4.5	3000	1.27	Both	> 5000

[illegible]

- 其中速比 3~20 可以做成短箱体，高度为 32mm
Gear ratio 3~20 short case is possible, height of 32mm.
- 中间齿轮箱，高度 34mm。Decimal Gearhead, height of 34mm.
电动机外形与齿轮轴型相同，减数比 10。4GN10X

**500W
90mm**



电机型号 Motor Model	电压 Voltage	功率 Power	空载电流 No load Current	空载转速 No load Speed	额定电流 Rated Current	额定转速 Rated Speed	额定扭矩 Rated Torque	有否 Hall(Y/N)	电机寿命 Life(Hours)
	V	W	A	RPM	A	RPM	N.m	/	H
86B500-24GU-30S	24	500	3	3700	27	3000	1.59	Both	> 5000
86B500-48GU-30S	48	500	1.5	3700	14	3000	1.59	Both	> 5000
86B500-220GU-30S	220(AC)	500	1	3700	5.5	3000	1.59	Both	> 5000

[illegible]

- 227

无刷直流减速电机 BLDC GEAR MOTOR

60W 90mm(GN)



● 电机型号/性能List of motor characteristics

电机型号 Motor Model	电压 Voltage	功率 Power	空载电流 No load Current	空载转速 No load Speed	额定电流 Rated Current	额定转速 Rated Speed	额定扭矩 Rated Torque	有否 Hall(Y/N)	电机寿命 Life(Hours)
	V	W	A	RPM	A	RPM	N.m	/	H
5B60-24GN-30S	24	60	0.8	3700	3.5	3000	0.19	Both	> 5000
5B60-48GN-30S	48	60	0.4	3700	1.8	3000	0.19	Both	> 5000
5B60-220GN-30S	220(AC)	60	0.2	3700	0.75	3000	0.19	Both	> 5000

● 减速箱减速比/性能对照表 Gear reduction ratio/performance comparison----F5B60-24GN-30S

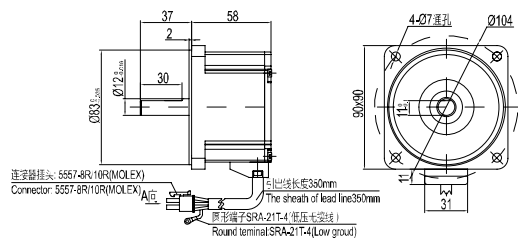
减速比 Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
转速 r/min Speed	1000	833	600	500	400	333	300	240	200	167	150	120	100	83	75	60	50	40	33	30	25	20	17	15
容许转矩 N.m Torque	0.46	0.56	0.77	0.93	1.16	1.39	1.55	1.93	2.32	2.51	2.79	3.49	4.18	5.02	5.04	6.3	7.56	9.45	10	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。
- 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.

● 尺寸图 DIMENSIONAL DRAWING

● 圆轴电机

重量 Weight: 1.72kg



低压电机接线插孔对应信号说明
Low Voltage Wire Plughole Corresp-onding Single Explanation

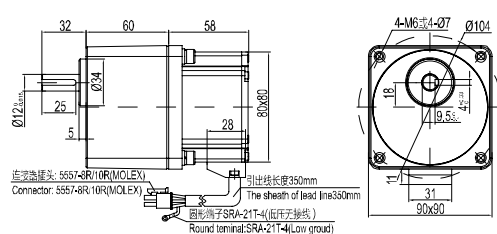
1	2	3	4	5	6	7	8
U	V	W	0	1	2	3	4

高压电机接线插孔对应信号说明
High Voltage Wire Plughole Corresp-onding Single Explanation

1	2	3	4	5	6	7	8	9	10
U	V	W	0	1	2	3	4	5	6

● 组合: 电机 + 标准齿轮箱

重量 Weight: 2.91kg



- 其中速比 3~20 可以做成短箱体，高度为 42mm
Gear ration 3~20 short case is possible, height of 42mm.
- 中间齿轮箱，高度 42mm。Decimal Gearhead, height of 42mm.
- 电动机外形与齿轮轴型相同，减速比 10。5GN10X

无刷直流减速电机 BLDC GEAR MOTOR

90W 90mm(GN)



● 电机型号/性能List of motor characteristics

电机型号 Motor Model	电压 Voltage	功率 Power	空载电流 No load Current	空载转速 No load Speed	额定电流 Rated Current	额定转速 Rated Speed	额定扭矩 Rated Torque	有否 Hall(Y/N)	电机寿命 Life(Hours)
	V	W	A	RPM	A	RPM	N.m	/	H
5B90-24GN-30S	24	90	0.9	3900	5.5	3000	0.29	Both	> 5000
5B90-48GN-30S	48	90	0.5	3900	2.8	3000	0.29	Both	> 5000
5B90-220GN-30S	220(AC)	90	0.3	3900	0.95	3000	0.29	Both	> 5000

● 减速箱减速比/性能对照表 Gear reduction ratio/performance comparison----F5B90-24GN-30S

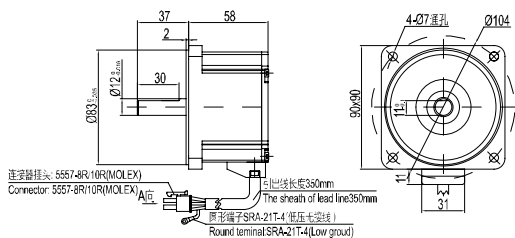
减速比 Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
转速 r/min Speed	1000	833	600	500	400	333	300	240	200	167	150	120	100	83	75	60	50	40	33	30	25	20	17	15
容许转矩 N.m Torque	0.7	0.84	1.16	1.39	1.74	2.09	2.32	2.9	3.48	3.76	4.18	5.23	6.27	7.53	7.56	9.45	10	10	10	10	10	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。
- 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.

● 尺寸图DIMENSIONAL DRAWING

● 圆轴电机

重量 Weight: 1.72kg



低压电机接线插孔对应信号说明
Low Voltage Wire Plughole Corresponding Single Explanation

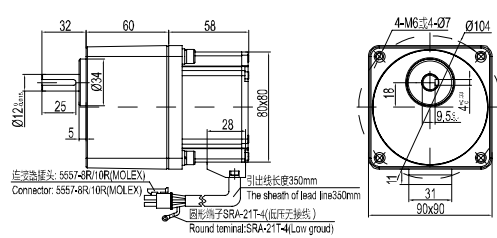
1	2	3	4	5	6	7	8
W	V	U	Y	N	+	-	0
直流	交流	直流	交流	直流	交流	直流	交流

高压电机接线插孔对应信号说明
High Voltage Wire Plughole Corresponding Single Explanation

1	2	3	4	5	6	7	8	9	10
W	V	U	Y	N	+	-	0	+	-
直流	交流	直流	交流	直流	交流	直流	交流	直流	交流

● 组合：电机 + 标准齿轮箱

重量 Weight: 2.91kg



- 其中速比 3~20 可以做成短箱体，高度为 42mm
Gear ratio 3~20 short case is possible, height of 42mm.
- 中间齿轮箱，高度 42mm。Decimal Gearhead, height of 42mm.
- 电动机外形与齿轮轴型相同，减速比 10。5GN10X

无刷直流减速电机 BLDC GEAR MOTOR

90W
90mm(GU)



● 电机型号/性能List of motor characteristics

电机型号 Motor Model	电压 Voltage	功率 Power	空载电流 No load Current	空载转速 No load Speed	额定电流 Rated Current	额定转速 Rated Speed	额定扭矩 Rated Torque	有否 Hall(Y/N)	电机寿命 Life(Hours)
	V	W	A	RPM	A	RPM	N.m	/	H
55B90-24GU-30S	24	90	0.9	3900	5.5	3000	0.29	Both	> 5000
55B90-48GU-30S	48	90	0.5	3900	2.8	3000	0.29	Both	> 5000
55B90-220GU-30S	220(AC)	90	0.3	3900	0.95	3000	0.29	Both	> 5000

● 减速箱减速比/性能对照表 Gear reduction ratio/performance comparison----F55B90-24GU-30S

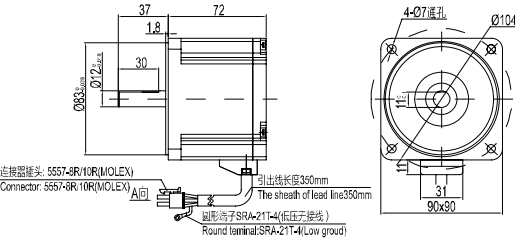
减速比 Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
转速 r/min Speed	1000	833	600	500	400	333	300	240	200	167	150	120	100	83	75	60	50	40	33	30	25	20	17	15
容许转矩 N.m Torque	0.70	0.84	1.16	1.39	1.74	2.09	2.35	2.61	3.14	3.76	3.78	4.73	5.67	6.81	7.56	9.45	11.35	14.18	15.47	17.19	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。
- 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.

● 尺寸图DIMENSIONAL DRAWING

● 圆轴电机

重量 Weight: 2.48kg



低压电机接线插孔对应信号说明
Low Voltage Wire Plughole Corresponding Single Explanation

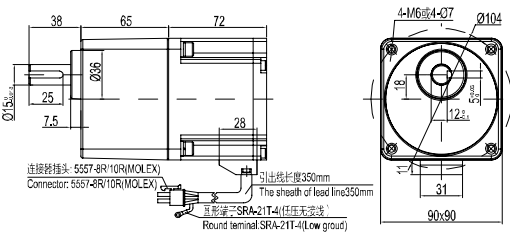
1	2	3	4	5	6	7	8
U	W	H	b	H	V	-	H
+	+	+	+	+	+	+	+

高压电机接线插孔对应信号说明
High Voltage Wire Plughole Corresponding Single Explanation

1	2	3	4	5	6	7	8	9	10
W	H	U	H	V	H	b	+	+	+
+	+	+	+	+	+	+	+	+	+

● 组合：电机 + 标准齿轮箱

重量 Weight: 4.01kg



- 中间齿轮箱，高度 42mm。Decimal Gearhead, height of 42mm.
- 电动机外形与齿轮轴型相同，减速比 10。5GN10X

无刷直流减速电机 BLDC GEAR MOTOR

120W 90mm(GU)



● 电机型号/性能List of motor characteristics

电机型号 Motor Model	电压 Voltage	功率 Power	空载电流 No load Current	空载转速 No load Speed	额定电流 Rated Current	额定转速 Rated Speed	额定扭矩 Rated Torque	有否 Hall(Y/N)	电机寿命 Life(Hours)
	V	W	A	RPM	A	RPM	N.m	/	H
55B120-24GU-30S	24	120	0.9	3600	6.5	3000	0.38	Both	> 5000
55B120-48GU-30S	48	120	0.5	3600	3.5	3000	0.38	Both	> 5000
55B120-220GU-30S	220(AC)	120	0.3	3600	1.3	3000	0.38	Both	> 5000

● 减速箱减速比/性能对照表 Gear reduction ratio/performance comparison----F55B120-24GU-30S

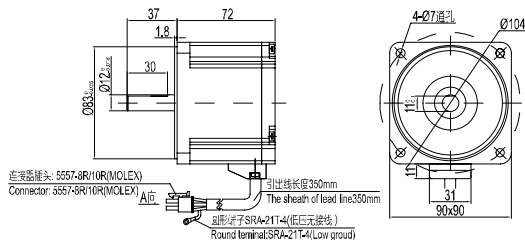
减速比 Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
转速 r/min Speed	1000	833	600	500	400	333	300	240	200	167	150	120	100	83	75	60	50	40	33	30	25	20	17	15
容许转矩 N.m Torque	0.93	1.11	1.55	1.86	2.32	2.78	3.08	3.49	4.18	5.02	5.04	6.30	7.56	9.08	10.08	12.61	15.13	18.91	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。
- 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.

● 尺寸图 DIMENSIONAL DRAWING

● 圆轴电机

重量 Weight: 2.48kg

低压电机接线插孔对应信号说明
Low Voltage Wire Plughole Corresp-onding Single Explanation

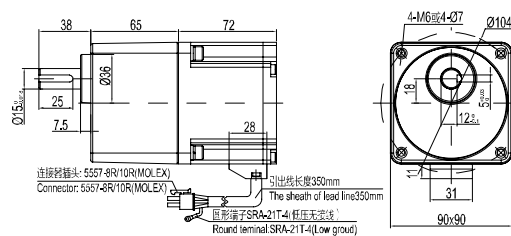
1	2	3	4	5	6	7	8
U	W	H	+	V	-	+	-
U	W	H	+	V	-	+	-

高压电机接线插孔对应信号说明
High Voltage Wire Plughole Corresp-onding Single Explanation

1	2	3	4	5	6	7	8	9	10
U	W	H	+	V	-	+	-	+	-
U	W	H	+	V	-	+	-	+	-

● 组合: 电机 + 标准齿轮箱

重量 Weight: 4.01kg



- 中间齿轮箱，高度 42mm。Decimal Gearhead, height of 42mm.
- 电动机外形与齿轮轴型相同，减数比 10。5GN10X

无刷直流减速电机 BLDC GEAR MOTOR

200W
90mm(GU)



● 电机型号/性能List of motor characteristics

电机型号 Motor Model	电压 Voltage	功率 Power	空载电流 No load Current	空载转速 No load Speed	额定电流 Rated Current	额定转速 Rated Speed	额定扭矩 Rated Torque	有否 Hall(Y/N)	电机寿命 Life(Hours)
	V	W	A	RPM	A	RPM	N.m	/	H
55B200-24GU-30S	24	200	1.4	4100	10.5	3000	0.64	Both	> 5000
55B200-48GU-30S	48	200	0.7	4100	5.5	3000	0.64	Both	> 5000
55B200-220GU-30S	220(AC)	200	0.4	4100	2.3	3000	0.64	Both	> 5000

● 减速箱减速比/性能对照表 Gear reduction ratio/performance comparison----F55B220-24GU-30S

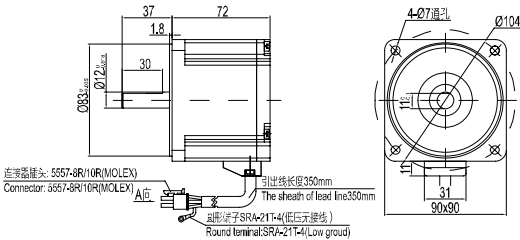
减速比 Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
转速 r/min Speed	1000	833	600	500	400	333	300	240	200	167	150	120	100	83	75	60	50	40	33	30	25	20	17	15
容许转矩 N.m Torque	1.55	1.86	2.58	3.09	3.87	4.64	5.18	5.81	6.97	8.37	8.4	10.51	12.61	15.13	16.81	20	20	20	20	20	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。
- 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.

● 尺寸图DIMENSIONAL DRAWING

● 圆轴电机

重量 Weight: 2.48kg



低压电机接线插孔对应信号说明
Low Voltage Wire Plughole Corresp-onding Single Explanation

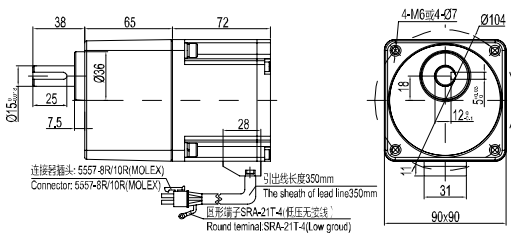
1	2	3	4	5	6	7	8
W	V	U	Hz	+	-	+	-
接地	零	火	线	地	线	地	线

高压电机接线插孔对应信号说明
High Voltage Wire Plughole Corresp-onding Single Explanation

1	2	3	4	5	6	7	8	9	10
W	V	U	Hz	+	-	+	-	+	-
接地	零	火	线	地	线	地	线	地	线

● 组合：电机 + 标准齿轮箱

重量 Weight: 4.01kg



- 中间齿轮箱，高度 42mm。Decimal Gearhead, height of 42mm.
- 电动机外形与齿轮轴型相同，减数比 10。5GN10X

200W
104mm



电机型号 Motor Model	电压 Voltage	功率 Power	空载电流 No load Current	空载转速 No load Speed	额定电流 Rated Current	额定转速 Rated Speed	额定扭矩 Rated Torque	有否 Hall(Y/N)	电机寿命 Life(Hours)
	V	W	A	RPM	A	RPM	N.m	/	H
6B200-24GU-30S	24	200	2	3400	11	3000	0.64	Both	> 5000
6B200-48GU-30S	48	200	1	3400	5.5	3000	0.64	Both	> 5000
6B200-220GU-30S	220(AC)	200	0.5	3400	2.3	3000	0.64	Both	> 5000

减速比 Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
转速 r/min Speed	1000	833	600	500	400	333	300	240	200	167	150	120	100	83	75	60	50	40	33	30	25	20	17	15
容许转矩 N.m Torque	1.55	1.86	2.58	3.09	3.87	4.64	5.18	5.81	6.97	8.37	8.4	10.51	12.61	15.13	16.81	21.01	25.21	31.52	37.82	40	40	40	40	40

无刷直流减速电机
BLDC GEAR MOTOR

400W
104mm



● 电机型号/性能List of motor characteristics

电机型号 Motor Model	电压 Voltage	功率 Power	空载电流 No load Current	空载转速 No load Speed	额定电流 Rated Current	额定转速 Rated Speed	额定扭矩 Rated Torque	有否 Hall(Y/N)	电机寿命 Life(Hours)
	V	W	A	RPM	A	RPM	N.m	/	H
6B400-24GU-30S	24	400	3.2	3600	21	3000	1.27	Both	> 5000
6B400-48GU-30S	48	400	1.6	3600	11	3000	1.27	Both	> 5000
6B400-220GU-30S	220(AC)	400	0.7	3600	4.5	3000	1.27	Both	> 5000

● 减速箱减速比/性能对照表 Gear reduction ratio/performance comparison----F6B400-24GU-30S

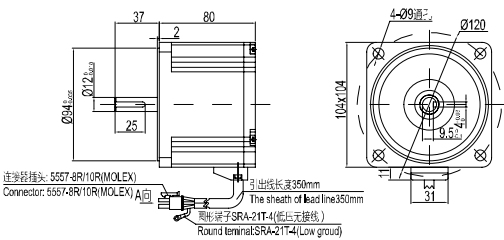
减速比 Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
转速 r/min Speed	1000	833	600	500	400	333	300	240	200	167	150	120	100	83	75	60	50	40	33	30	25	20	17	15
容许转矩 N.m Torque	3.09	3.71	5.16	6.19	7.74	9.28	10.28	11.62	13.94	16.73	16.81	21.01	25.21	30.25	33.62	40	40	40	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。
- 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.

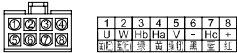
● 尺寸图DIMENSIONAL DRAWING

● 圆轴电机

重量 Weight: 3.3kg

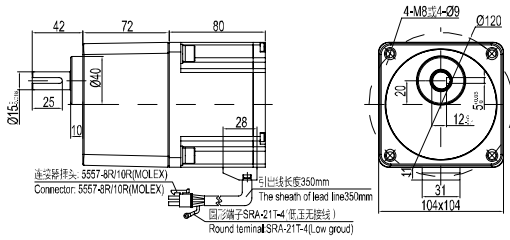


低压电机接线插孔对应信号说明
Low Voltage Wire Plughole Corresponding Single Explanation

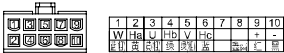


● 组合：电机 + 标准齿轮箱

重量 Weight: 5.36kg



高压电机接线插孔对应信号说明
High Voltage Wire Plughole Corresponding Single Explanation



无刷直流减速电机 BLDC GEAR MOTOR

750W 120mm



● 电机型号/性能List of motor characteristics

电机型号 Motor Model	电压 Voltage V	功率 Power W	空载电流 No load Current A	空载转速 No load Speed RPM	额定电流 Rated Current A	额定转速 Rated Speed RPM	额定扭矩 Rated Torque N.m	有否 Hall(Y/N)	电机寿命 Life(Hours) H
7B750-24GU-30S	24	750	5	3600	39	3000	2.39	Both	> 5000
7B750-48GU-30S	48	750	2.5	3600	20	3000	2.39	Both	> 5000
7B750-220GU-30S	220(AC)	750	1.5	3600	7.5	3000	2.39	Both	> 5000

● 减速箱减速比/性能对照表 Gear reduction ratio/performance comparison----F7B750-24GU-30S

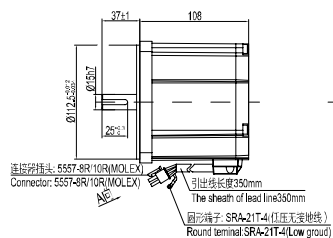
减速比 Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
转速 r/min Speed	1000	833	600	500	400	333	300	240	200	167	150	120	100	83	75	60	50	40	33	30	25	20	17	15
容许转矩 N.m Torque	5.81	6.97	9.68	11.62	14.52	17.42	19.36	21.78	26.13	31.4	31.4	39.2	47.04	56.45	62.72	78.4	94.08	100	100	100	100	100	100	100

- 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.

● 尺寸图DIMENSIONAL DRAWING

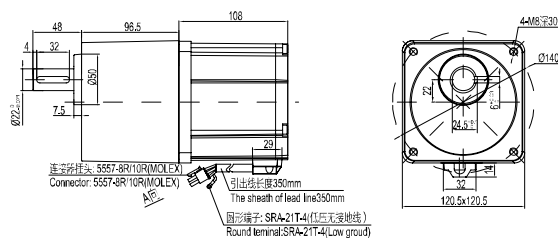
● 圆轴电机

重量 Weight: 3.3kg



● 组合: 电机 + 标准齿轮箱

重量 Weight: 5.36kg



低压电机接线插孔对应信号说明
Low Voltage Wire Plughole Corresponding Single Explanation

1	2	3	4	5	6	7	8
U	W	Hb	Hb	V	-	Hc	+
0V	12V	0V	12V	0V	12V	0V	12V

高压电机接线插孔对应信号说明
High Voltage Wire Plughole Corresponding Single Explanation

1	2	3	4	5	6	7	8	9	10
W	Hb	U	Hb	V	Hc	+	-	0V	12V
0V	12V	0V	12V	0V	12V	0V	12V	0V	12V

低压内置式无刷驱动器
LOW-VOLTAGE BUILT-IN BRUSHLESS DRIVER

BLD系列
series



●型号说明 BA SERIES EXPLANATION

	BLD.	C20	-	120	L	R	C
	①	②		③	④	⑤	⑥
①	类型		BLD: 无刷电机驱动器				
②	版本		C20: C20 系列				
③	功率		120: 最大输出功率 120W				
④	电压		L: DC24V-48V				
⑤	功能		R: RS485 通讯				
⑥	功能		C: CAN 通讯				

●订购说明 NOTE

- BLB 系列产品参考国外优秀产品外形设计，是 FTG 常规通用控制器。是大众客户适合零配的产品系列。此系列产品使用方便，结构合理紧凑。BX 系列安装方式卧式安装和直立安装。
- BLB 系列的防护等级为 IP20。
- BLB 系列的使用寿命为 8000 小时。此寿命的定义为在目前样本册所述的规定电流范围内，若在实际应用中超出电流范围而造成控制器问题，FTG 将不予质保。
- BLB 系列的产品颜色为黑色，黑色层是通过喷塑形成黑色裹体。包装为单个包装。设计一定的承重。在运输过程中造成产品质量问题由 FTG 负责。客户需在拿到货物七天内做出快速反应。
- BLB 产品的使用均在样本册规定的范围内，客户在使用前请详细阅读使用说明。保修按国家 GB 标准定义予以保修。保修期内的产品，在规定的技术条件下使用所损坏的控制器有 FTG 负责保修。七天内正确使用且损坏的控制器，FTG 无条件更换控制器。
- BLB 系列的控制器均为外置系列。
- BLB series is a standard common controller of us. It comes from tens of years experience in production and research.It's easy to use and have compact structure.There're 2 ways of assembly, horizontal and vertical.
- Protection class:IP20
- The life time of FBLB cotroller is 8000 hours which is used under specified current in our catalog. We won't take charge of the damage if customers use it in a bigger current.
- BLB is black which is plastic coated.It's single package. FTG company will take charge of damage during transport. Customer needs to response the issue in 7days after they receive it.
- Customer needs to use the product according to the manual/Instruction of catalog. Please read the note there carefully before you use. We support guarantee as GB rules.FTG company will change the controller for you if it fails in 7 days in right way of use.

BLD SERIES

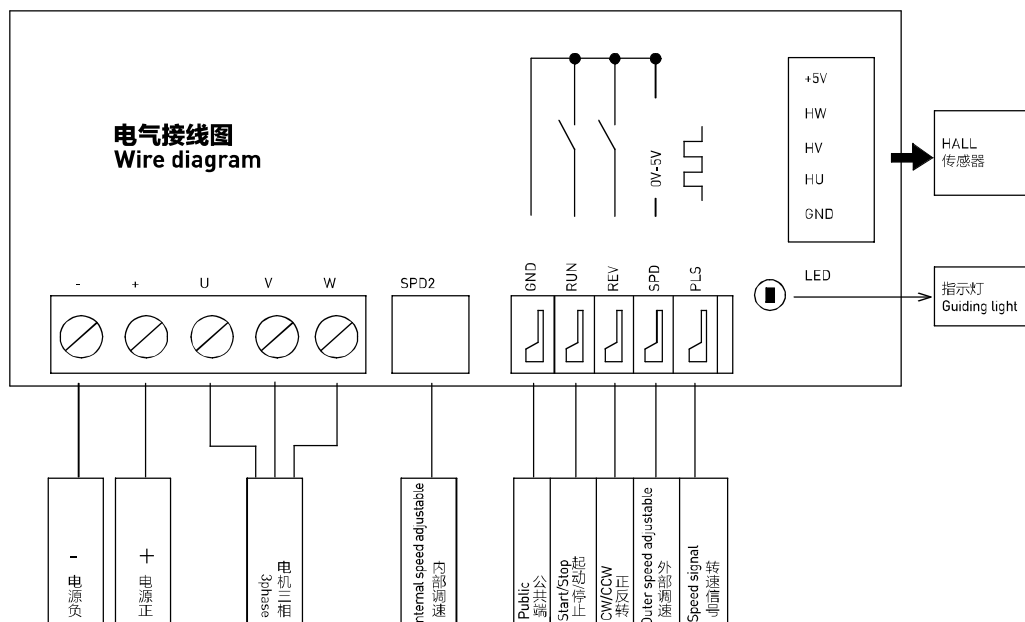


● 12v-24vDC 8A控制板使用说明 12v-24vDC 8A CONTROL BOARD EXPLANATION

● 工作电压范围：11V-28V。● 工作电流：持续 MAX=8A (24V 供电)；过流保护值：9A (24V 供电) ● 最高电气转速：24 万转 (无 HALL 模式)；6 万转 (HALL 模式)；
 ● 速度控制模式：开环控制或闭环控制 (由板上的选择开关可设定)。● 调速方式 1：内部电位器 (即 SPD2) 调速，逆时针转动则减速，顺时针则加速。● 调速方式 2：外部电位器调速，在 "SPD" 与 "GND" 之间加 10K-20K 的电位器；或者在 "SPD" 端外加 0-5V 电压调速，速度与电压值成正比。调速时，两种方式同时起作用，并取两者中的信号大者。若只需要调速方式 1，则需将 "SPD" 与 "GND" 短接。若只需要调速方式 2，则需将内部电位器逆时针转到最小。● 启动 / 停止："RUN" 与 "GND" 短接即启动，断开，则关机。● 正 / 反转："REV" 与 "GND" 短接即反转，断开，则正转。● 转速信号输出："PLS" 为转速脉冲信号输出，每转 (电气转速)，输出 3 个脉冲，脉冲幅值为 +5V。(注：转子转速与电气转速的关系：转子转速 = 电气转速 ÷ 电机磁极对数)。● 保护功能：过流保护，过温保护，低压或过压保护，电机堵转保护，启动保护等。

● Voltage: 11V-28V。● Current: Cont. MAX=8A (12V/24V), Current protection: 9A (12V/24V) ● Max electric speed: 240000 rpm (no HALL); 60000rpm (HALL);
 ● Speed control model: open loop or close loop control (switch to select) ● Speed adjustable way: 1. Internal potentiometer (spd2), reduce speed by rotating ccw and increase in CW.
 ● Speed adjustable way 2: Outer potentiometer. Add a potentiometer between "SPD" and "GND", or add a 0~5v power supply to adjust speed outer of "SPD". It's linear between speed and voltage. Normally, we select 1 which has a better result from above 2 ways. Please make a short circuit between "SPD" and "GND" if need way 1 only. If need way 2 only, please rotate internal potentiometer to minimum in CCW. ● Start/Stop: Start if make a short circuit between "RUN" and "GND". Stop if open. ● CW/CCW: CCW if make a short circuit between "REV" and "GND". CW if open. ● Speed signal: "PLS" is pulse output. 3 pulse 1rpm. Pulse amplitude is +5V. (Note: Rotor speed = electric speed/poles(pairs)) ● Protection function: Current protection, thermal protection, voltage protection, motor stall protection, starting protection, etc.

● 接线 Connection: EMBED AutoCAD. Drawing.16。



注：当使用 HALL 模式（适于传感器为 120° 相位）时，由于 H A L L 三相的接线必须要与电机的三相接线相对应，故可先接好 H A L L 的 5 根线（+ 5 V 和地 G N D 不可接错），然后接电机的三相线，若工作不正常，则更改电机线的接线组合，共用 6 种组合，总有一种组合是对的。上电时，控制器自动识别有无 HALL 模式，当检测到 H A L L 线已接好，则按 H A L L 模式工作，否则按无 H A L L 模式工作。

Note: When use Hall model (suitable for 120° phase of sensor) You need to connect 5 wires of HALL first (don't make wrong connection of +5v and GND) and then connect 3 wires of motor, as 3 phase of Hall and 3 phase of motor must correspond to each other. If motor works abnormally, please modify connection of motor wire, 6 connections totally. When power on, controller will recognize if has a hall or not. In case Hall wire is connected, motor works in Hall model, or works without Hall.

●故障指示，当出现异常情况时，指示灯会闪烁显示，闪烁不同次数，对应不同故障，具体如下：

Failure indication: Guiding lights explanation.

指示灯闪烁次数 Flashing times	检查内容 Item failure	故障原因 Reason
1 次 1	过流 Current	电机工作电流过大 Too big current
2 次 2	电压异常 Voltage	电压过低或过高 Voltage is too low or too high
3 次 3	MOS管过温 Temp. of MOS pipe	功率管温度超过110℃ Temperature of power tube is above 110℃
4 次 4	起动失败 Start issue	电机不能正常起动 Can't start normally
5 次 5	硬件故障 Hardware issue	MOS管损坏或驱动IC损坏 MOS tube is broken or IC of driver is broken
6 次 6	电机缺相 Phase lost	电机三相未接好或某相断开 Connection of motor wire issue

注意事项：电源正负不可接反，否则会烧控制器！

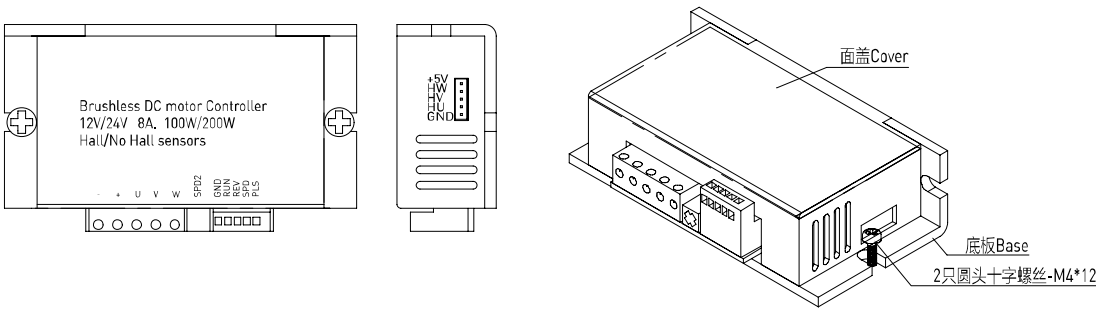
Note: Please don't cross connection of + and - wire. Or controller is burnt down.

●图示说明（产品尺寸按实际图纸）

Illustration (product size according to actual drawing)

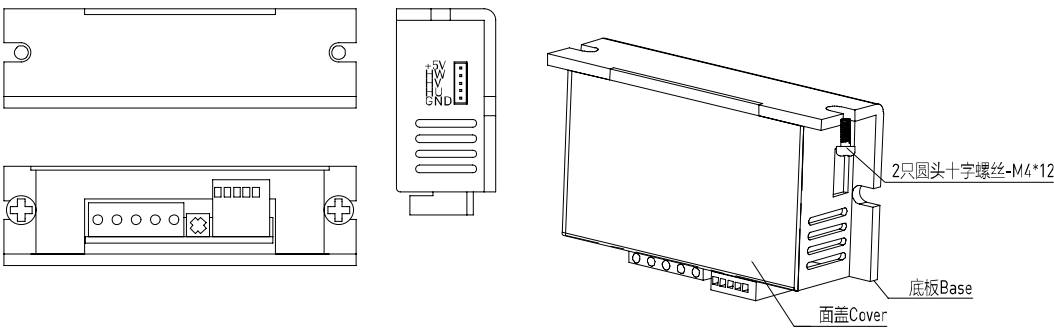
卧式安装：(2只圆头十字螺丝-M4*12)

Horizontal Assembly



立式安装：(2只圆头十字螺丝-M4*12)

Vertical Assembly



低压内置式无刷驱动器

LOW-VOLTAGE BUILT-IN BRUSHLESS DRIVER

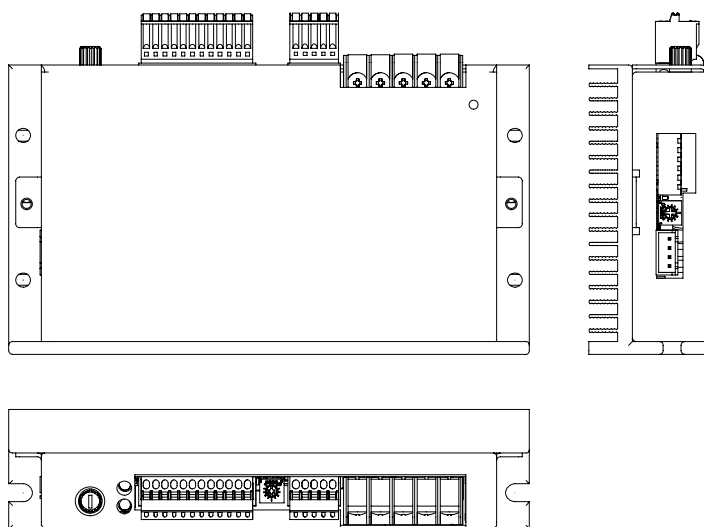
BLD 系列
series

 无刷直流减速电机
BLDC GEAR MOTOR


● 型号说明 BA SERIES EXPLANATION

	BLD.	C20	-	400	LR
	①	②		③	④
①	类型	BLD: 无刷电机驱动器			
②	版本	C20: C20 系列			
③	功率	400: 最大输出功率 400W			
④	属性	L: 低压 DC24V~48V, H: 高压 AC220V, D: 带数字显示, R: 带 485 通讯			

● 图示说明 Outline Dimension (产品尺寸按实际图纸 product size according to actual drawing)



● 安装方式: 壁挂式安装

How to Install: Wall-hanging

● 环境要求 Requirements of Environment

环境温度 Environment Temperature	-10° C~+40° C(无结露) -10° C~+40° C(No condensation)
环境湿度 Environment Humidity	85%以下(无结露) Less than 85% (No condensation)
海拔高度 Altitude	1000米以下 Lower than 1000 m
环境振动 Environmental Vibration	不施加连续振动或过度冲击 No continuous vibration or over impact
保护等级 Protection Degree	IP20

注: 请勿在爆炸环境、可燃性气体环境、腐蚀性环境、接触水的场所、可燃物旁使用。以防发生爆炸、受伤、火灾!

Note: To prevent explosion, injury and fire, please do not use in explosive environments, flammable gas, corrosive environments and anywhere easy to get wet or around combustibles.

● 功能特点 Features

宽电压输入 Free Voltage Input	24V~48V
宽电流输出 Free Current Output	3.0A~15A 可通过旋钮调节限流输出值 3.0A~15A Adjusting output current limit value via the knob
多种运行方式 Operation Mode	开环、闭环 (控制精度 $\pm 0.5\%$) Open loop, closed loop (control accuracy $\pm 0.5\%$)
多种命令给定 Command Setting	多功能输入端子控制 (支持 NPN、PNP 输入) 485 标准 Modbus RTU 通讯控制 外置键盘控制 Multi-function input terminal control (support for NPN input & PNP input) 485 standard Modbus RTU communication control External keyboard control
多种速度给定 Speed Setting	内置旋钮、外部模拟电压或 PWM(0~5V)、通讯给定、键盘给定、多段速度、简易 PLC 控制 Internal control knob, external analog voltage or PWM (0~5V), communication setting, keyboard setting, multi-stage speed control, simplified PLC control
加 / 减速度控制 Acceleration / Deceleration Control	0.3s~10s 可通过旋钮调节、通讯调节和键盘调节 0.3s~10s Adjusting by knob, communication and keyboard
电子刹车功能 Electronic Brake	实现快速电磁制动 Fast electromagnetic braking
多功能输入接口 Multi-function Input Interface	5 个数字量输入 (支持 NPN 和 PNP) 用户可通过键盘自定义为: 正转、反转、点动、自由停止、电子刹车、多段速度等多种功能输入 5 digital inputs (support for NPN & PNP), setting via keyboard: forward rotating, reverse rotating, inching, free stop, electronic brake, multi-stage speed, etc.
多功能输出接口 Multi-function Output Interface	2 个数字量输出 (开路集电极输出) 用户可通过键盘自定义为: 运行中、故障、速度输出、过载预警、虚拟端子输出等多种功能输出 2 digital output (open collector output), setting via keyboard: running, error, speed output, overload warning, virtual terminal output, etc.
完善的故障检测及保护功能 Error Indication & Protection	欠压、过压、过流、过载、堵转、短路、缺相等多种故障检测 故障发生后, 驱动器根据故障类型进行相应的保护动作 故障信息可通过 LED 灯或键盘进行显示 Show the error information by LED or keyboard after the protection for the error indication, such as: under voltage, over voltage, over current, over load, locked rotor, short circuit, phase shortage etc.

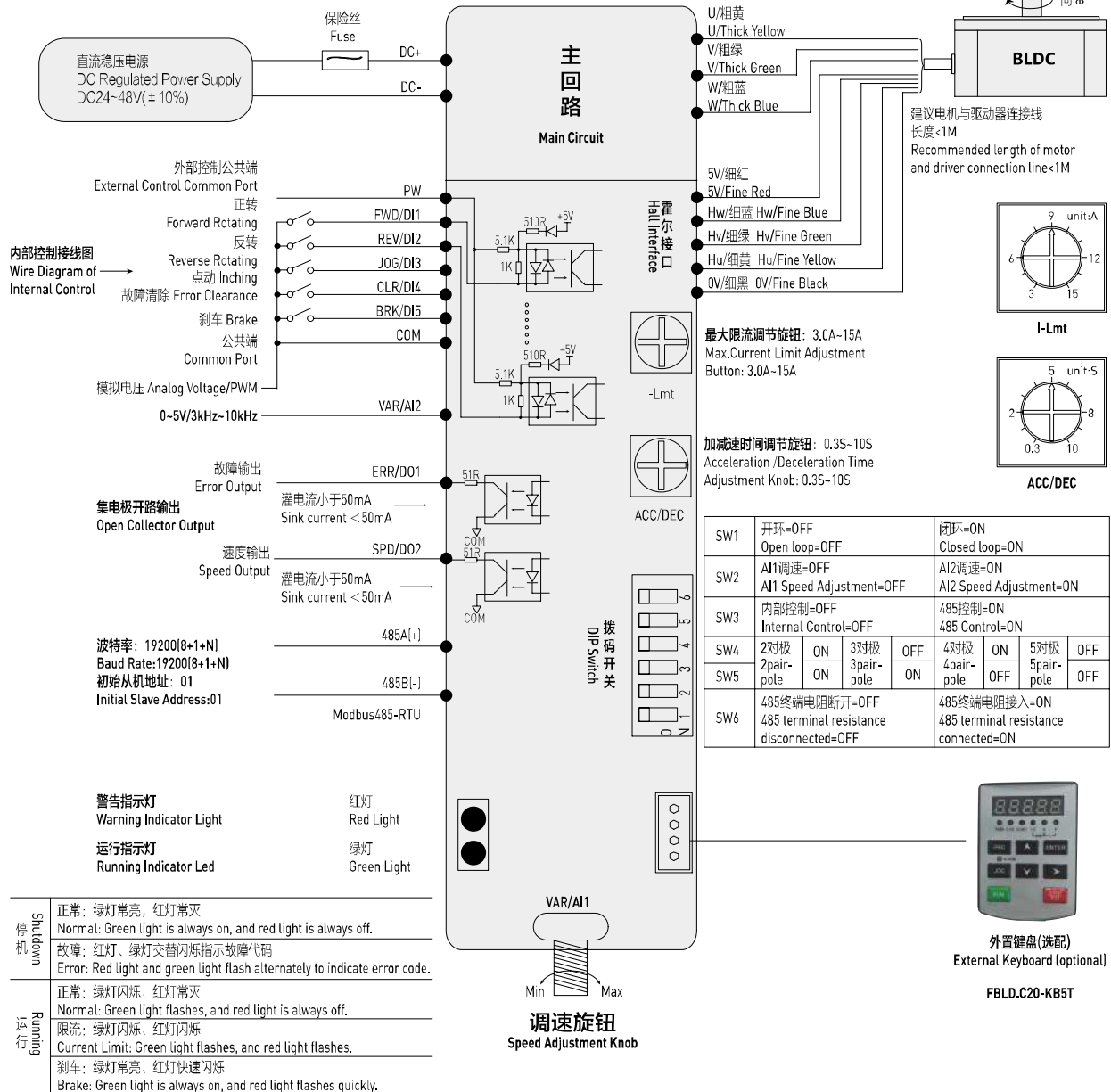
注: 键盘控制、多功能输入、多功能输出、多段速度、简易 PLC 需选购键盘配件方可使用

Note: Keyboard control, multi-function input, multi-function output, multi-stage speed control, simplified PLC control could be realized with an external keyboard.

● 连接运行 Connect & Running

注：请确保电源功率大于电机额定功率 2 倍以上！

Note: Please ensure that the power supply is over 2 time



●故障与维护 Error and Maintenance

当驱动器检测到故障后，会将停机，并通过 LED(红、绿) 或外置键盘指示故障代码，用户可根据故障代码进行排查检修。

The driver will stop once it detects an error and indicates the error code through LED (red, green) or external keyboard at the same time; users can make trouble-shooting according to the error code.

故障码 Fault code	故障名称 The name of the fault	故障原因 The cause of the failure	故障指示 Fault indication	处理方法 Processing method
1	硬件加速过流 Hardware accelerated overcurrent	0 绿 1 红 0 Green 1 Red	1. 加减速过快 2. 电压偏低 3. 驱动器功率偏小 4. 突加负载 5. 相间短路 6. 外部存在强干扰源 1. Acceleration and deceleration are too fast 2. The voltage is low 3. The driver power is small 4. Sudden load 5. Short circuit between phases 6. There are strong interference sources outside	1. 增大加减速时间 2. 检查输入电压 3. 选择大功率驱动器 4. 检查负载是否正常 5. 检查 / 更换电缆或电机 6. 检查是否存在强干扰源 1. Increase the acceleration and deceleration time 2. Check the input voltage 3. Choose a high-power driver 4. Check whether the load is normal 5. Inspection/replacement of cables or motors 6. Check whether there are strong interference sources
2	硬件减速过流 Hardware slowdown overcurrent	0 绿 2 红 0 Green 2 Red		
3	硬件恒速过流 Hardware constant speed overcurrent	0 绿 3 红 0 Green 3 Red		
4	软件加速过流 Software accelerates overcurrent	0 绿 4 红 0 Green 4 Red		
5	软件减速过流 Software slows down overcurrent	0 绿 5 红 0 Green 5 Red		
6	软件恒速过流 Software constant speed overcurrent	1 绿 1 红 1 Green 1 Red		
7	加速时过压 Overvoltage during acceleration	1 绿 2 红 1 Green 2 Red	1. 输入电压偏高 2. 快速正反转切换 3. 被外力拖动，处于发电状态 1. The input voltage is high 2. Fast forward and reverse switching 3. Dragged by external forces, it is in the state of power generation	1. 检查电源电压 2. 增加正反转切换时间 3. 增加外部制动装置 1. Check the power supply voltage 2. Increase the forward and reverse switching time 3. Add external brake device
8	减速时过压 Overpressure when decelerating	1 绿 3 红 1 Green 3 Red		
9	恒速时过压 Overvoltage at constant speed	1 绿 4 红 1 Green 4 Red		
10	母线欠压故障 Bus undervoltage fault	1 绿 5 红 1 Green 5 Red	1. 电源电压偏低 2. 加速过快，外部电源保护 3. 供电电压跌落 4. 驱动器硬件异常 1. The power supply voltage is low 2. Acceleration is too fast, external power protection 3. The power supply voltage drops 4. The drive hardware is abnormal	1. 检查电源输入 2. 增加加速时间 3. 故障复位 4. 寻求技术支持 1. Check the power input 2. Increase acceleration time 3. Fault reset 4. Seek technical support
11	电机过载 The motor is overloaded	2 绿 1 红 2 Green 1 Red	1. 电源电压过低 2. 电机功率过大 3. 电机堵转或负载突变 1. The power supply voltage is too low 2. The motor power is too large 3. Motor stall or load mutation	1. 检查电源输入 2. 设置电机额定电流 3. 减小负载检查电机及机械 1. Check the power input 2. Set the rated current of the motor 3. Reduce the load to check the motor and machinery
12	驱动器过载 The drive is overloaded	2 绿 2 红 2 Green 2 Red	1. 电源电压过低 2. 加速度时间过快 3. 负载过大 1. The power supply voltage is too low 2. The acceleration time is too fast 3. The load is too large	1. 检查电源输入 2. 增加加速时间 3. 更换大一档控制器 1. Check the power input 2. Increase acceleration time 3. Replace the large first-gear controller
13	霍尔故障 Hall failure	2 绿 3 红 2 Green 3 Red	1. 霍尔断线 2. 外部存在强干扰源 1. Hall disconnection 2. There are strong interference sources outside	1. 检查霍尔连接线 2. 检查是否存在强干扰源 1. Check the Hall cable 2. Check whether there are strong interference sources
14	堵转故障 Locked-rotor failures	2 绿 4 红 2 Green 4 Red	1. 负载过大 2. 电机卡死 1. The load is too large 2. The motor is stuck	1. 检查电机机械连接 2. 检查电机连接线 1. Check the mechanical connection of the motor 2. Check the motor connection cable
19	电流检测故障 Current Error	3 绿 4 红 3 Green 4 Red	1. 驱动器硬件损坏 1. Driver Hardware Broken	1. 更换驱动器 1. Change the driver
27	参数存储故障 Data Storage Error	5 绿 2 红 5 Green 2 Red	1. 达到单次上电擦写次数 1. Reach to the MAX quantity for Power-up Clear(PUC)	1. 重新上电 1. Power-on Again
29	过流反馈故障 Error of Over-current Feedback	5 绿 4 红 5 Green 4 Red	1. 驱动器硬件损坏 1. Driver Hardware Broken	1. 更换驱动器 1. Replace the drive
30	输出缺相故障 Error of Lack Input Phase	5 绿 5 红 5 Green 5 Red	1. U/V/W 输出缺相 2. 驱动器硬件损坏 1. U/V/W Lack Input Phase 2. Driver Hardware Broken	1. 检查 U/V/W 是否连接牢靠 2. 更换驱动器 1. Check if U/V/W are correctly connect- ed 2. Change the driver

低压内置式无刷驱动器

LOW-VOLTAGE BUILT-IN BRUSHLESS DRIVER

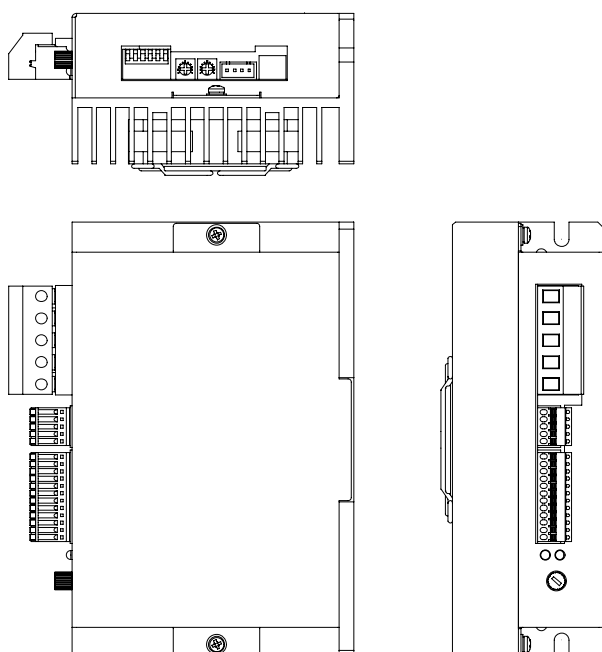
BLD 系列
series

 无刷直流减速电机
BLDC GEAR MOTOR


●型号说明 BA SERIES EXPLANATION

	BLD.	C20	-	800	LRC
	①	②		③	④
①	类型	BLD: 无刷电机驱动器			
②	版本	C20: C20 系列			
③	功率	800: 最大输出功率 800W			
④	属性	L: 低压 DC24V~48V, H: 高压 AC220V, D: 带数字显示, R: 带 485 通讯, C: 带 CAN 通讯			

●图示说明Outline Dimension (产品尺寸按实际图纸product size according to actual drawing)



●安装方式: 壁挂式安装

How to Install: Wall-hanging

●环境要求 Requirements of Environment

环境温度 Environment Temperature	-10℃~+40℃(无凝结) -10℃~+40℃(No condensation)
环境湿度 Environment Humidity	85% 以下(无结露) Less than 85% (No condensation)
海拔高度 Altitude	1000 米以下 Lower than 1000 m
环境振动 Environmental Vibration	不施加连续振动或过度冲击 No continuous vibration or over impact
保护等级 Protection Degree	IP20

注: 请勿在爆炸环境、可燃性气体环境、腐蚀性环境、接触水的场所、可燃物旁使用。以防发生爆炸、受伤、火灾!

Note: To prevent explosion, injury and fire, please do not use in explosive environments, flammable gas, corrosive environments and anywhere easy to get wet or around combustibles.

● 功能特点 Features

宽电压输入 Free Voltage Input	24V~48V(±20%)
宽电流输出 Free Current Output	3.0A~27A 可通过旋钮调节限流输出值 3.0A~27A Adjusting output current limit value via the knob
多种运行方式 Operation Mode	开环、闭环 (控制精度 ±0.5%) Open loop, closed loop (control accuracy ±0.5%)
多种命令给定 Command Setting	多功能输入端子控制 (支持 NPN、PNP 输入) 485Modbus RTU、CAN Modbus、CANopen 通讯控制、 外置键盘控制 Multi-function input terminal control (support for NPN input & PNP input) 485 Modbus RTU, CAN Modbus, CANopen communication control External keyboard control
多种速度给定 Speed Setting	内置旋钮、外部模拟电压或 PWM(0~5V)、高速脉冲 HDI、通讯给定、键盘给定、多段速度、简易 PLC 控制 Built-in Knob, External Analog Voltage or PWM (0~5V), High Speed Pulse HDI, Communication setting, Keyboard setting, Multi-stage speed control, Simplified PLC control
加 / 减速度控制 Acceleration/ Deceleration Control	0.3s~10s 可通过旋钮调节、通讯调节和键盘调节 0.3s~10s Adjusting by knob, communication and keyboard
电子刹车功能 Electronic Brake	实现快速电磁制动 Fast electromagnetic braking
多功能输入接口 Multi-function Input Interface	5 个数字量输入 (支持 NPN 和 PNP) 用户可通过键盘自定义为: 正转、反转、点动、自由停止、电子刹车、多段速度等多种功能输入 5 digital inputs (support for NPN & PNP), setting via keyboard: forward rotating, reverse rotating, inching, free stop, electronic brake, multi-stage speed, etc.
多功能输出接口 Multi-function Output Interface	2 个数字量输出 (开路集电极输出) 用户可通过键盘自定义为: 运行中、故障、速度输出、过载预警、虚拟端子输出等多种功能输出 2 digital output (open collector output), setting via keyboard: running, error, speed output, overload warning, virtual terminal output, etc.
完善的故障检测及保护功能 Error Indication & Protection	欠压、过压、过流、过载、堵转、短路、缺相等多种故障检测 故障发生后, 驱动器根据故障类型进行相应的保护动作 故障信息可通过 LED 灯或键盘进行显示 Show the error information by LED or keyboard after the protection for the error indication, such as: under voltage, over voltage, over current, over load, locked rotor, short circuit, phase shortage etc.

注: 键盘控制、多功能输入、多功能输出、多段速度、简易 PLC 需选购键盘配件方可使用

Note: Keyboard control, multi-function input, multi-function output, multi-stage speed control, simplified PLC control could be realized with an external keyboard.

● 连接运行 Connect & Running

注：请确保电源功率大于电机额定功率 2 倍以上！

Note: Please ensure that the power supply is over 2 time

