

NIETZ

PLANETARY GEARBOX

行星减速器

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2023

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型号的阅读方法

PRODUCT NUMBER CODE

●电机 Motor

62 **B** **90** **-** **24** **P** **-** **30S**

① ② ③ ④ ⑤ ⑥

①	机座号 Code:	42:φ42mm 52:φ52mm 62:φ62mm 82:φ82mm
②	马达系列 Motor Series	B: 无刷直流 Brushless DC Motor D: 有刷直流 DC Motor
③	输出功率 :Rated Output(W)	例 (Example)90:90W
④	电源电压 Voltage	24:24V 36:36V 48:48V 220:220V
⑤	转轴形状 Motor Shaft	P: 行星减速器 Planetary Gearbox
⑥	转速 Speed	30S:3000RPM 18S:1800RPM

●减速机Reducer

PM **62** **-** **5.36** **S1**

① ② ③ ④

①	类型 type of pinion:	FPM: 行星齿轮减速器 Planetary Gear reducer
②	减速机的尺寸 Reducer frame size:	42:φ42mm 52:φ52mm 62:φ62mm 82:φ82mm
③	减速比 Gear Ratio:	例 (Example)5.36: 1:5.36
④	输出轴形式 Output Shaft Type	S1: 带键输出轴 Shaft With Key S2: 铣扁输出轴 Shaft With Milling Flat T: 定制输出轴 Special Require

●扭矩说明 Torque Description

- **额定扭矩 (T)**: 由使用系数为 1.0, 运行持续时间为每天 3 小时得出。
Rated torque(T): This is derived from a usage factor of 1.0 with a running duration of 3 hours per day
- **额定输出扭矩 TN**: 由电机扭矩乘以所需减速比乘以相应减速比的传动效率计算得出, $TN=TM \cdot i \cdot \eta$ 。
Rated output torque TN: Calculated by the transmission efficiency of the motor torque multiplied by the required reduction ratio
- **输出扭矩 TAB**: 由额定输出扭矩乘以使用系数计算得出, $TAB=TN \cdot KA$ 。
Output torque TAB: Calculated by multiplying the rated output torque by the usage factor
- **使用系数 Use factor (KA)**:

旋转方向 Rotate direction	负载 (冲击) Load(impact)	每天持续运行时间		
		3h	8h	24h
恒定 Constant	无 Not	1.0	1.1	1.3
	中度 Medium	1.2	1.3	1.5
	强 Strong	1.4	1.5	1.8
交替 Alternately	无 Not	1.3	1.4	1.6
	中度 Medium	1.6	1.7	1.9
	强 Strong	1.9	2.0	2.2

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● 性能参数 performance parameter

段数 Stage	噪音 Noise	效率 Efficiency	背隙 Backlash	径向负载 Permitted radial load	轴向负载 Permitted axial load	防护等级 Degree of protection	润滑方式 Lubrication type	工作温度 Operating temperature
1	≤52dB(A)	90%	0.90°	160N	50N	IP54	终身润滑 Lifetime lubrication	-20~+60(°C)
2		81%	0.95°	230N	80N			
3		73%	1.0°	450N	100N			

● 减速比 Ratio

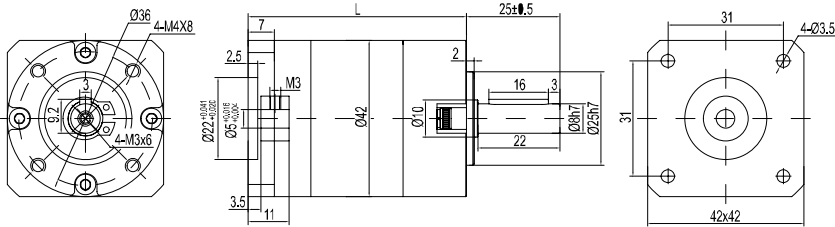
段数 Stage	1-Stage			2-Stage					
减速比 Ratio	3.71	5.18	6.75	13.7	19.2	25.0	35.0	45.6	
额定扭矩 Rated torque (N.m)	3.3	2.6	1.5	6.5	6.5	6.5	4.6	2.7	

段数 Stage	3-Stage								
减速比 Ratio	50.9	71.2	92.7	99.5	129.6	139	181.3	236.1	307.6
额定扭矩 Rated torque (N.m)	9	9	9	9	9	10	10	10	9

1. 噪音测试距离 1m，输入转速 3000rpm，减速比 6.75 时测得。
2. 瞬时可承受 1.5 倍额定扭矩。
3. 输入与输出方向为同相。
1. The noise test distance is 1m, the input speed is 3000rpm, and the deceleration ratio is measured at 6.75.
2. Instantaneous can withstand 1.5 times rated torque.
3. The input and output directions are in phase.

● 外形尺寸图 Outline dimensions

减速器长度 Total length	1-Stage	2-Stage	3-Stage
L (mm)	44.8	58.7	69.5



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性能参数 performance parameter

段数 Stage	噪音 Noise	效率 Efficiency	背隙 Backlash	径向负载 Permitted radial load	轴向负载 Permitted axial load	防护等级 Degree of protection	润滑方式 Lubrication type	工作温度 Operating temperature
1	≤58dB(A)	90%	0.65°	240N	70N	IP54	终身润滑 Lifetime lubrication	-20~+60(°C)
2		81%	0.70°	360N	100N			
3		73%	0.75°	520N	150N			

减速比 Ratio

段数 Stage	1-Stage				2-Stage							
减速比 Ratio	3.65	5.36	6.55	8.63	13.3	19.6	24.6	30	35.1	46.2	56.5	
额定扭矩 Rated torque (N.m)	10	10	7.5	4.7	20	20	20	20	17	17	13	

段数 Stage	3-Stage											
减速比 Ratio	71.5	89.8	104.8	112.8	128	144.5	160.9	181.6	196.5	229.5	302.4	398.5
额定扭矩 Rated torque (N.m)	50	50	50	45	50	50	45	45	45	40	40	35

1. 噪音测试距离 1m，输入转速 3000rpm，减速比 8.63 时测得。

2. 瞬时可承受 1.5 倍额定扭矩。

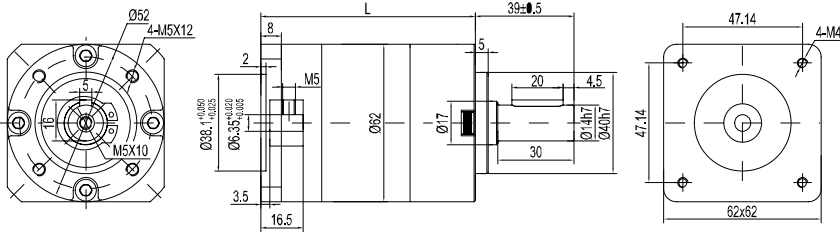
3. 输入与输出方向为同相。
1. The noise test distance is 1m, the input speed is 3000rpm, and the deceleration ratio is measured at 8.63.

2. Instantaneous can withstand 1.5 times rated torque.

3. The input and output directions are in phase.

外形尺寸图 Outline dimensions

减速器长度 Total length	1-Stage	2-Stage	3-Stage
L (mm)	65.2	84.4	100



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性能参数 performance parameter

段数 Stage	噪音 Noise	效率 Efficiency	背隙 Backlash	径向负载 Permitted radial load	轴向负载 Permitted axial load	防护等级 Degree of protection	润滑方式 Lubrication type	工作温度 Operating temperature
1	≤63dB(A)	90%	0.50°	400N	80N	IP54	终身润滑 Lifetime lubrication	-20~+60(°C)
2		81%	0.55°	600N	120N			
3		73%	0.60°	1000N	200N			

减速比 Ratio

段数 Stage	1-Stage				2-Stage							
减速比 Ratio	3.65	5.36	6.55	8.63	13.3	19.6	24.6	30	35.1	46.2	56.5	
额定扭矩 Rated torque (N.m)	25	25	16	10	44	44	40	40	35	35	27	

段数 Stage	3-Stage											
减速比 Ratio	71.5	89.8	104.8	112.8	128	144.5	160.9	181.6	196.5	229.5	302.4	398.5
额定扭矩 Rated torque (N.m)	120	120	120	110	120	120	110	110	90	97	97	65

1. 噪音测试距离 1m，输入转速 3000rpm，减速比 8.63 时测得。

2. 瞬时可承受 1.5 倍额定扭矩。

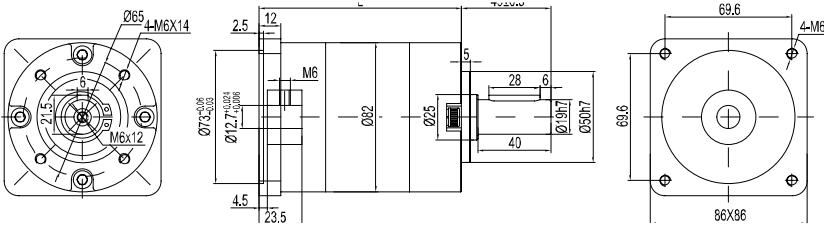
3. 输入与输出方向为同相。
1. The noise test distance is 1m, the input speed is 3000rpm, and the deceleration ratio is measured at 8.63.

2. Instantaneous can withstand 1.5 times rated torque.

3. The input and output directions are in phase.

外形尺寸图 Outline dimensions

减速器长度 Total length	1-Stage	2-Stage	3-Stage
L (mm)	86	111	131.9



有刷行星减速电机
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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	电机寿命 Life(Hours)
	V	W	A	RPM	A	RPM	N.m	H
42D25-24P-30S	24	25	0.6	3800	1.6	3000	0.08	> 2000
42D30-24P-30S	24	30	0.7	4000	2.0	3000	0.10	> 2000

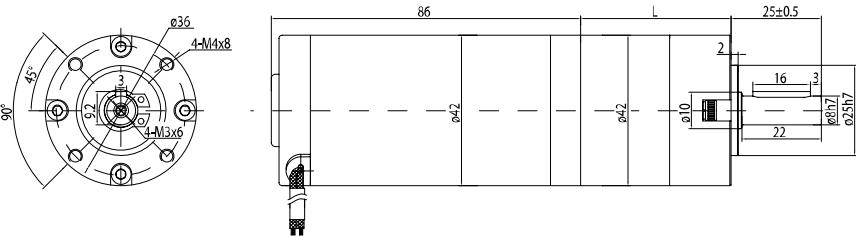
减速箱减速比/性能对照表 Gear reduction ratio/performance comparison---F42D30-24P-30S

F42D30-24P-30S

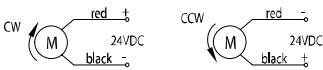
段数 Stage	1-Stage			2-Stage				
减速比 Ratio	3.71	5.18	6.75	13.7	19.2	25	35	45.6
转速 Speed(r/min)	809	579	444	219	156	120	86	66
额定扭矩 Torque (N.m)	0.27	0.37	0.48	0.9	1.2	1.6	2.3	2.9
段数 Stage	3-Stage							
减速比 Ratio	50.9	71.2	92.7	99.5	129.6	181.3	236.1	307.5
转速 Speed(r/min)	59	42	32	30	23	22	17	13
额定扭矩 Torque (N.m)	3.0	4.1	5.4	5.8	7.5	8.1	10	9

外形尺寸图 Outline dimensions

减速器长度 Total length	1-Stage	2-Stage	3-Stage
L (mm)	27.9	41.8	52.7
重量 weight(kg)	0.68	0.83	0.9



接线图Wiring Diagram



有刷行星减速电机

DC PLANETARY GEARBOX MOTOR

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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	电机寿命 Life(Hours)
	V	W	A	RPM	A	RPM	N.m	H
52D40-24P-30S	24	40	1.0	3500	2.5	3000	0.13	> 2000
52D60-24P-30S	24	60	1.2	3600	4.0	3000	0.19	> 2000

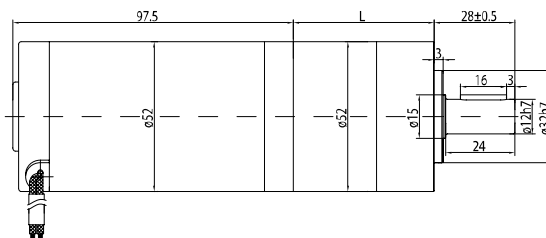
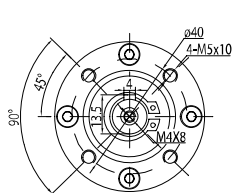
减速箱减速比/性能对照表 Gear reduction ratio/performance comparison---F52D40-24P-30S

段数 Stage	1-Stage			2-Stage					
减速比 Ratio	3.71	5.18	6.75	13.7	19.2	25	28.9	35	45.6
转速 Speed(r/min)	809	579	444	219	156	120	104	86	66
额定扭矩 Torque (N.m)	0.43	0.59	0.77	1.4	2.0	2.6	3.0	3.6	4.7

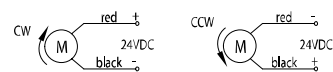
段数 Stage	3-Stage											
减速比 Ratio	50.9	58.9	71.2	82.3	92.7	99.5	115.1	124	149.9	181.3	236.1	307.5
转速 Speed(r/min)	59	51	42	36	32	30	26	24	20	17	13	9.8
额定扭矩 Torque (N.m)	4.7	6.1	7.3	8.5	9.6	10.3	11.9	12.8	15.5	18.7	17.0	16.5

外形尺寸图 Outline dimensions

减速器长度 Total length	1-Stage	2-Stage	3-Stage
L (mm)	32.4	48.9	61.3
重量 weight(kg)	1.11	1.33	1.51



接线图Wiring Diagram



有刷行星减速电机
DC PLANETARY GEARBOX MOTOR

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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	电机寿命 Life(Hours)
	V	W	A	RPM	A	RPM	N.m	H
62D60-24P-30S	24	60	0.65	3500	3.3	3000	0.19	> 2000
62D90-24P-30S	24	90	0.85	3700	5.1	3000	0.29	> 2000

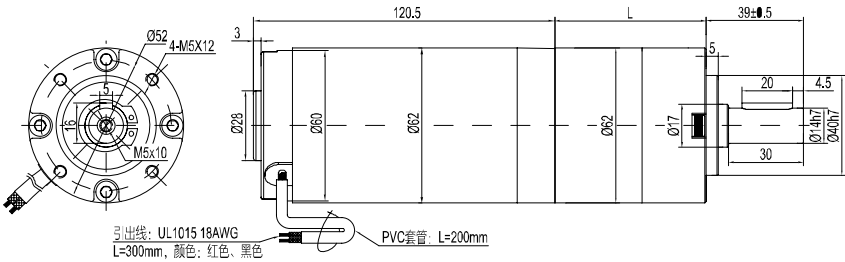
减速箱减速比/性能对照表 Gear reduction ratio/performance comparison---F62D60-24P-30S

段数 Stage	1-Stage				2-Stage							
减速比 Ratio	3.65	5.36	6.55	8.63	13.3	19.6	24.6	30	35.1	46.2	56.5	
转速 Speed(r/min)	822	560	458	348	226	153	122	100	85	65	53	
额定扭矩 Torque (N.m)	0.63	0.92	1.13	1.48	2.1	3.0	3.8	4.6	5.4	7.1	8.7	

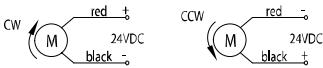
段数 Stage	3-Stage											
减速比 Ratio	71.5	89.8	104.8	112.8	128	144.5	160.9	181.6	196.5	229.5	302.5	398.5
转速 Speed(r/min)	42	33	29	27	23	21	19	17	15	13	9.9	7.5
额定扭矩 Torque (N.m)	10	13	15	16	18	20	22	25	27	32	40	35

外形尺寸图 Outline dimensions

减速器长度 Total length	1-Stage	2-Stage	3-Stage
L (mm)	41.3	60.5	76.2
重量 weight(kg)	1.82	2.18	2.46



接线图Wiring Diagram



有刷行星减速电机
DC PLANETARY GEARBOX MOTOR

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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	电机寿命 Life(Hours)
	V	W	A	RPM	A	RPM	N.m	H
62D60-24P-30S	24	120	1.50	3350	6.6	3000	0.38	> 2000
62D90-24P-30S	24	180	1.00	3450	5.0	3000	0.57	> 2000

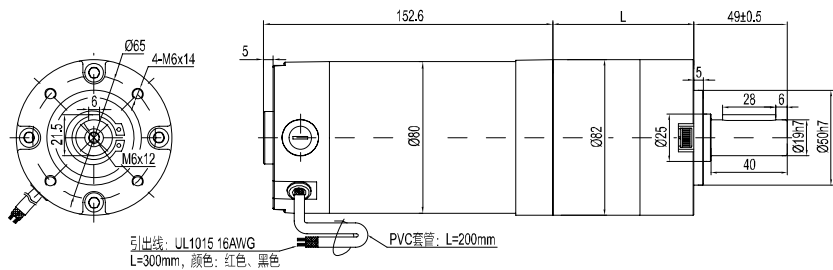
减速箱减速比/性能对照表 Gear reduction ratio/performance comparison---F82B200-24P-30S

段数 Stage	1-Stage				2-Stage							
减速比 Ratio	3.65	5.36	6.55	8.63	13.3	19.6	24.6	30	35.1	46.2	56.5	
转速 Speed(r/min)	822	560	458	348	226	153	122	100	85	65	53	
额定扭矩 Torque (N.m)	1.3	1.8	2.3	3.0	4	6	8	9	11	14	17	

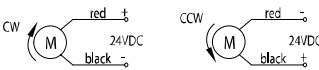
段数 Stage	3-Stage											
减速比 Ratio	71.5	89.8	104.8	112.8	128	144.5	160.9	181.6	196.5	229.5	302.5	398.5
转速 Speed(r/min)	42	33	29	27	23	21	19	17	15	13	9.9	7.5
额定扭矩 Torque (N.m)	20	25	29	31	36	40	45	51	90	97	97	65

外形尺寸图 Outline dimensions

减速器长度 Total length	1-Stage	2-Stage	3-Stage
L (mm)	49.4	74.4	95.4
重量 weight(kg)	3.42	4.24	4.93



接线图Wiring Diagram



无刷行星减速电机 BRUSHLESS PLANETARY GEARBOX MOTOR

PM42 BRUSHLESS无刷



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
42B25-24P-30S	24	25	0.5	3300	1.7	3000	0.08		> 5000
42B30-24P-30S	24	30	0.6	3400	2.1	3000	0.10		> 5000

减速箱减速比/性能对照表 Gear reduction ratio/performance comparison---F42B30-24P-30S

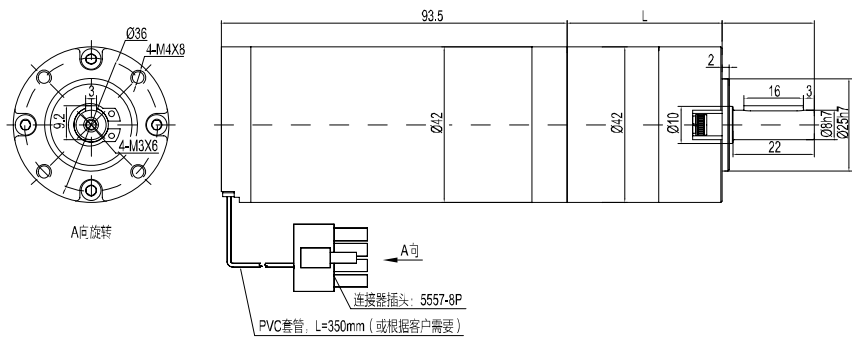
段数 Stage	1-Stage			2-Stage					
减速比 Ratio	3.71	5.18	6.75	13.7	19.2	25	35	45.6	
转速 Speed(r/min)	809	579	444	219	156	120	86	66	
额定扭矩 Torque (N.m)	0.32	0.45	0.58	1.1	1.5	1.9	2.7	3.5	

段数 Stage	3-Stage								
减速比 Ratio	50.9	71.2	92.7	99.5	129.6	139.2	181.3	236.1	307.5
转速 Speed(r/min)	59	42	32	30	23	22	17	13	9.8
额定扭矩 Torque (N.m)	3.5	5.0	6.5	6.9	9.0	9.7	10.0	10.0	9.0

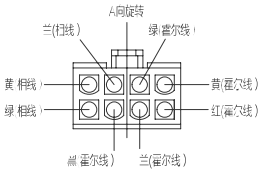
外形尺寸图 Outline dimensions---F42B30-24P-30S

减速器长度 Total length	1-Stage	2-Stage	3-Stage
L (mm)	27.9	41.8	52.7
重量 weight(kg)	0.68	0.83	0.9

接线图 Wiring Diagram



相线定义 U V W 引出线颜色 线规	电机引出线 (柜)			信号引出线(线)			
	+	-	Ha	Hb	Hc		
	黄	绿	蓝	红	黑	黄	绿
	20AWG			26AWG			



无刷行星减速电机 BRUSHLESS PLANETARY GEARBOX MOTOR

PM52 BRUSHLESS无刷



电机型号/性能List of motor characteristics

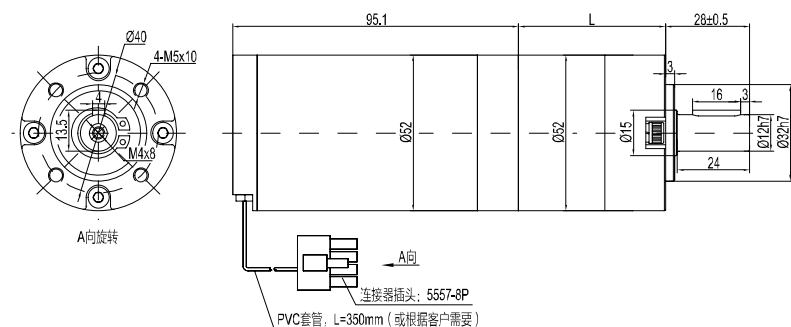
电机型号 Motor Model	电压 Voltage	功率 Power	空载电流 No load Current	空载转速 No load Speed	额定电流 Rated Current	额定转速 Rated Speed	额定扭矩 Rated Torque	有否 Hall(Y/N)	电机寿命 Life(Hours)
	V	W	A	RPM	A	RPM	N.m	/	H
52B40-24P-30S	24	40	0.7	3400	2.5	3000	0.13		> 5000
52B60-24P-30S	24	60	0.8	3600	2.5	3000	0.19		> 5000

减速箱减速比/性能对照表 Gear reduction ratio/performance comparison---F52B40-24P-30S

段数 Stage	1-Stage			2-Stage						
减速比 Ratio	3.71	5.18	6.75	13.7	19.2	25	28.9	35	45.6	
转速 Speed(r/min)	809	579	444	219	156	120	104	86	66	
额定扭矩 Torque (N.m)	0.43	0.59	0.77	1.4	2.0	2.6	3.0	3.6	4.7	
段数 Stage	3-Stage									
减速比 Ratio	50.9	58.9	71.2	82.3	92.7	99.5	115.1	124	149.9	181.3
转速 Speed(r/min)	59	51	42	36	32	30	26	24	20	17
额定扭矩 Torque (N.m)	4.7	6.1	7.3	8.5	9.6	10.3	11.9	12.8	15.5	18.7

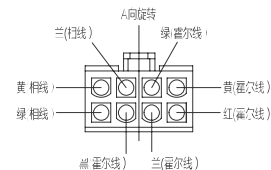
外形尺寸图 Outline dimensions---F52B40-24P-30S

减速器长度 Total length	1-Stage	2-Stage	3-Stage
L (mm)	32.4	48.9	61.3
重量 weight(kg)	1.11	1.33	1.51



接线图 Wiring Diagram

电机引出线 (柜)	信号引出线(灯)						
相线定义	U	V	W	+	-	Ha	Hb
引出线颜色	黄	绿	蓝	红	黑	黄	绿
线规	20AWG			26AWG			



无刷行星减速电机 BRUSHLESS PLANETARY GEARBOX MOTOR

PM62 BRUSHLESS无刷



● 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
62B60-24P-30S	24	60	0.7	3500	3.5	3000	0.19		> 5000
62B90-24P-30S	24	90	0.8	3800	5.0	3000	0.29		> 5000

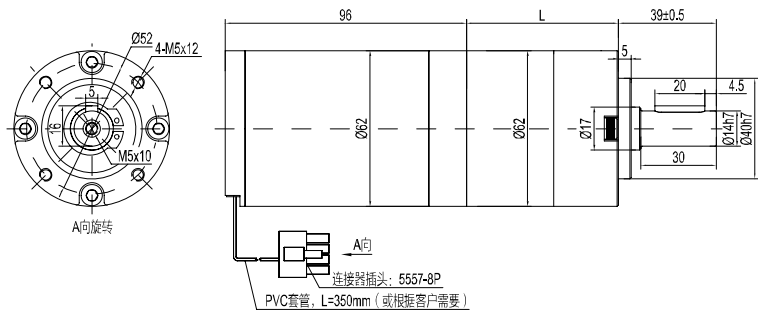
● 减速箱减速比/性能对照表 Gear reduction ratio/performance comparison---F62B60-24P-30S

段数 Stage	1-Stage				2-Stage							
减速比 Ratio	3.65	5.36	6.55	8.63	13.3	19.6	24.6	30	35.1	46.2	56.5	
转速 Speed(r/min)	822	560	458	348	226	153	122	100	85	65	53	
额定扭矩 Torque (N.m)	0.63	0.92	1.13	1.48	2.1	3.0	3.8	4.6	5.4	7.1	8.7	

段数 Stage	3-Stage											
减速比 Ratio	71.5	89.8	104.8	112.8	128	144.5	160.9	181.6	196.5	229.5	302.5	398.5
转速 Speed(r/min)	42	33	29	27	23	21	19	17	15	13	9.9	7.5
额定扭矩 Torque (N.m)	10	13	15	16	18	20	22	25	27	32	40	35

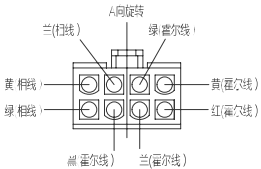
● 外形尺寸图 Outline dimensions---F62B60-24P-30S

减速器长度 Total length	1-Stage	2-Stage	3-Stage
L (mm)	41.3	60.5	76.2
重量 weight(kg)	1.82	2.18	2.46



● 接线图Wiring Diagram

相线定义	电机引出线 (柜)			信号引出线(灯)			
	U	V	W	+	-	Ha	Hb
引出线颜色	黄	绿	蓝	红	黑	黄	绿
线规	20AWG			26AWG			



无刷行星减速电机

BRUSHLESS PLANETARY GEARBOX MOTOR

PM82

BRUSHLESS无刷



电机型号/性能List of motor characteristics

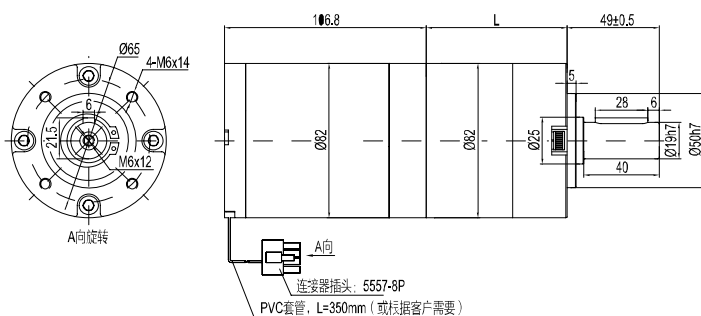
电机型号 Motor Model	电压 Voltage	功率 Power	空载电流 No load Current	空载转速 No load Speed	额定电流 Rated Current	额定转速 Rated Speed	额定扭矩 Rated Torque	有否 Hall(Y/N)	电机寿命 Life(Hours)
	V	W	A	RPM	A	RPM	N.m	/	H
82B200-24P-30S	24	200	1.5	4200	10.5	3000	0.64		> 5000
82B300-36P-30S	36	300	1.8	4700	16	3000	0.96		> 5000

减速箱减速比/性能对照表 Gear reduction ratio/performance comparison---F82B200-24P-30S

段数 Stage	1-Stage				2-Stage							
减速比 Ratio	3.65	5.36	6.55	8.63	13.3	19.6	24.6	30	35.1	46.2	56.5	
转速 Speed(r/min)	822	560	458	348	226	153	122	100	85	65	53	
额定扭矩 Torque (N.m)	2.1	3.1	3.8	4.9	7	10	13	15	18	24	29	
段数 Stage	3-Stage											
减速比 Ratio	71.5	89.8	104.8	112.8	128	144.5	160.9	181.6	196.5	229.5	302.5	398.5
转速 Speed(r/min)	42	33	29	27	23	21	19	17	15	13	9.9	7.5
额定扭矩 Torque (N.m)	33	42	49	52	59	67	75	84	90	97	97	65

外形尺寸图 Outline dimensions---F82B200-24P-30S

减速器长度 Total length	1-Stage	2-Stage	3-Stage
L (mm)	49.4	74.4	95.4
重量 weight(kg)	3.42	4.24	4.93



接线图 Wiring Diagram

相线定义	电机引出线 (柜)			信号引出线(线)			
	U	V	W	+	-	Ha	Hb
引出线颜色	黄	绿	蓝	红	黑	黄	绿
线规	16AWG			26AWG			

