

直流无刷无齿槽电机规格书
SLOTLESS BRUSHLESS DC MOTOR SPECIFICATIONS

受 控 文 件

鸣志电器(太仓)有限公司

ECU22048H48-S114+M16-1024+PG22M-0546

规格 Specifications		Values	Tolerance	Unit
1. 电机参数 Motor parameters				
1.1 轴承类型 Bearings type of motor	Ball bearing			
1.2 电机极数 Number of poles	2			
1.3 相数 Number of phases	3			
1.4 绝缘等级 Insulation class	F (155°C)			
1.5 相间电阻 Terminal resistance phase to phase	3.36	±8%		Ω
1.6 相间电感 Terminal inductance phase to phase	391	Typical		μH
1.7 速度常数 Speed constant	400	±10%		rpm/V
1.8 转矩常数 Torque constant	23.87	Typical		mNm/A
1.9 速度/转矩斜率 Speed/torque gradient	56	Typical		rpm/mNm

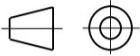
2. 齿轮箱参数 Gearhead data				
2.1 齿轮箱类型 Type of gearhead	Planetary gearhead			
2.2 轴承类型 Bearings type of gearhead	Ball bearing			
2.3 名义减速比 Nominal reduction ratio	545.84	Nominal	X:1	
2.4 精确减速比 Absolute reduction ratio	25616250/46930			
2.5 级数 Number of stages	4			
2.6 平均空载回差 Average backlash no load	1.35	Typical		°
2.7 旋转方向 Rotation direction(input/output)	=			
2.8 轴向间隙 Axial play	0~0.1			mm
2.9 径向间隙 Radial play[mm from flange]	≤0.1[10]			mm
2.10 最大轴向负载 Max. axial load(dynamic)	40			N
2.11 最大径向负载 Max. radial load[mm from flange]	60[10]			N
2.12 最大允许安装力 Max. force for press fits	100			N

规格 Specifications		Values	Tolerance	Unit
3. 整机常规特性 Overall General Data				
3.1 额定电压 Nominal voltage	30			V dc
3.2 空载转速 No load speed	22.2	±10%		rpm
3.3 空载电流 No load current	200	±50%		mA
3.4 额定转矩 Rated torque	2	Typical		Nm
3.5 额定电流 Rated current	0.33	±10%		A
3.6 额定转速 Rated speed	21	±10%		rpm
3.7 最大效率 Maximun efficiency	56.9	Typical		%
3.8 堵转转矩 Stall torque	81.43	Typical		Nm
3.9 堵转电流 Stall current	8.93	Typical		A
3.10 重量 Weight	209.5	±5%		g
3.11 使用温度范围 Ambient temperature	-40~+100			°C

4. 其他 Others				
4.1				
4.2				
4.3				
4.4				

备注 Notes:
· 所有参数均在20°C给定。大部分参数随温度变化。
All parameters are given at 20°C. Most of parameters will vary with temperature.
· 当电机固定在导热支架上时, 热阻通常可降低50%。
The thermal resistance can be typically decreased of 50% when motor is fixed on a thermally conductive support.
· 电机电气安全标准符合<GB/T 21418中6.6介电性能>的要求。
The electrical safety standard of the motor shall meet the requirements of <GB/T21418 6.6 Dielectric properties>.

Unit:mm
第一角画法
First angle method
未注线性与角度尺寸公差
Tolerances for linear and angular dimensions
without individual tolerance indications
GB/T 1804-m eqv ISO 2768-1:m
未注形状与位置尺寸公差
Geometrical tolerance for features without
individual tolerance indications
GB/T 1184-K eqv ISO 2768-2:K



批准 Approve

标准化 Standardize

工艺 Process Review

审核 Check

设计 Design

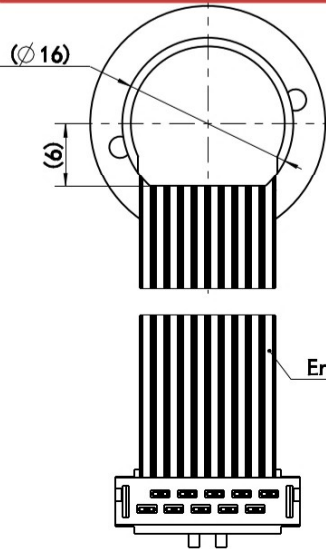
MOONS'
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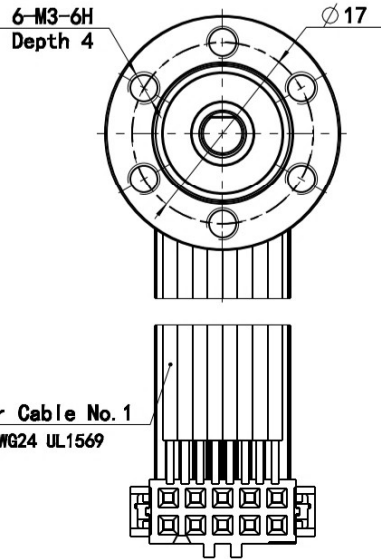
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REV.	版本记录 REVISION RECORD	DATE								

受 控 文 件

鸣志电器(太仓)有限公司



Encoder Cable



Motor Cable No.1
AWG24 UL1569

线束相对于前盖安装孔角度偏差: $\leq \pm 30^\circ$
Alignment of cable relative to front mounting holes: $\leq \pm 30^\circ$

Connection of Motor

Cable No.	信号/Signal	颜色/Color
1	U	棕/brown
2	V	红/red
3	W	橙/orange
4	V_{hall} 3~24 VDC	黄/yellow
5	GND	绿/green
6	Hall 1	蓝/blue
7	Hall 2	紫/voilet
8	Hall 3	灰/grey

铭牌 Label Detail



备注/Note:
1. 铭牌用激光标刻在电机机壳表面, 目视水平居中;
The label is laser engraved on the motor housing in middle.
2. 二维码为含整机型号、生产工单号和序列号。
The QR code includes motor model No., work order and serial No.

Unit:mm

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First angle method

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Sheet 2 of 3

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编码器信息 Encoder Informations

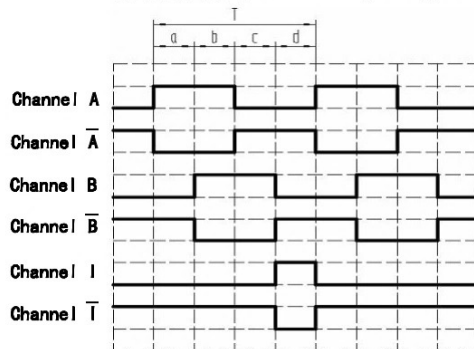
编码器参数 Encoder Parameter

1	工作原理类型 Working principle	Magnetic
2	信号记录类别 Signal record type	Incremental
3	每圈线数 Lines per turn	1024
4	通道数量 Number of channels	3

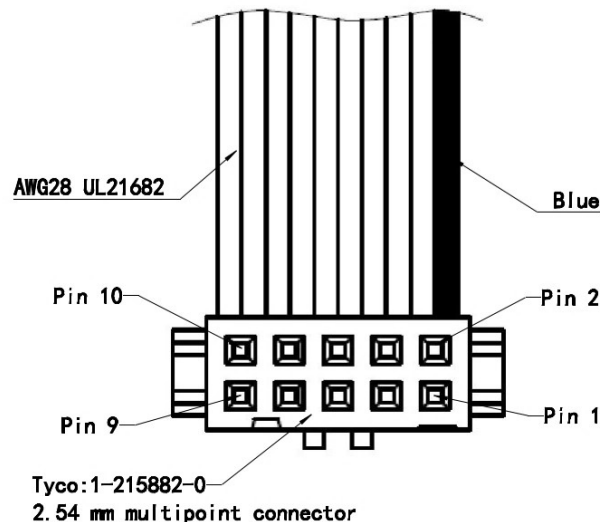
Connection of Encoder

Pin No.	信号/Signal
1	N. C
2	VCC 4.5V~5.5V
3	GND
4	N. C
5	Channel A
6	Channel A
7	Channel B
8	Channel B
9	Channel T
10	Channel I

编码器输出信号/Encoder Output Signal



Direction of rotation: CW (view from shaft end);
a, b, c, d = 90° ± 45°;
Index is aligned with angle commutation zero



备注 Notes:

- 连接器引脚1和4不可施加电压, 否则会损坏编码器;
The encoder will be damaged if applying voltage to pin1 & pin4 of the connector.
- 不允许以编码器线束着力来提起电机。
It is not allowed to lift the motor with the encoder cable.

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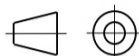
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