

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

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	0.94	±8%	Ω
1.6	相间电感 Terminal inductance phase to phase	104	Typical	μH
1.7	速度常数 Speed constant	770	±10%	rpm/V
1.8	转矩常数 Torque constant	12.4	Typical	mNm/A
1.9	速度/转矩斜率 Speed/torque gradient	58	Typical	rpm/mNm

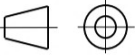

2. 齿轮箱参数 Gearhead data				
2.1	齿轮箱类型 Type of gearhead	Planetary gearhead		
2.2	轴承类型 Bearings type of gearhead	Ball bearing		
2.3	名义减速比 Nominal reduction ratio	111.2	Nominal	X:1
2.4	精确减速比 Absolute reduction ratio	357075/3211		
2.5	级数 Number of stages	3		
2.6	平均空载回差 Average backlash no load	1.2	Typical	°
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	15		V dc
3.2	空载转速 No load speed	107.9	±10%	rpm
3.3	空载电流 No load current	285	±50%	mA
3.4	额定转矩 Rated torque	1.6	Typical	Nm
3.5	额定电流 Rated current	1.44	±10%	A
3.6	额定转速 Rated speed	85.2	±10%	rpm
3.7	最大效率 Maximun efficiency	65.9	Typical	%
3.8	堵转转矩 Stall torque	17.6	Typical	Nm
3.9	堵转电流 Stall current	15.96	Typical	A
3.10	重量 Weight	216	±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				

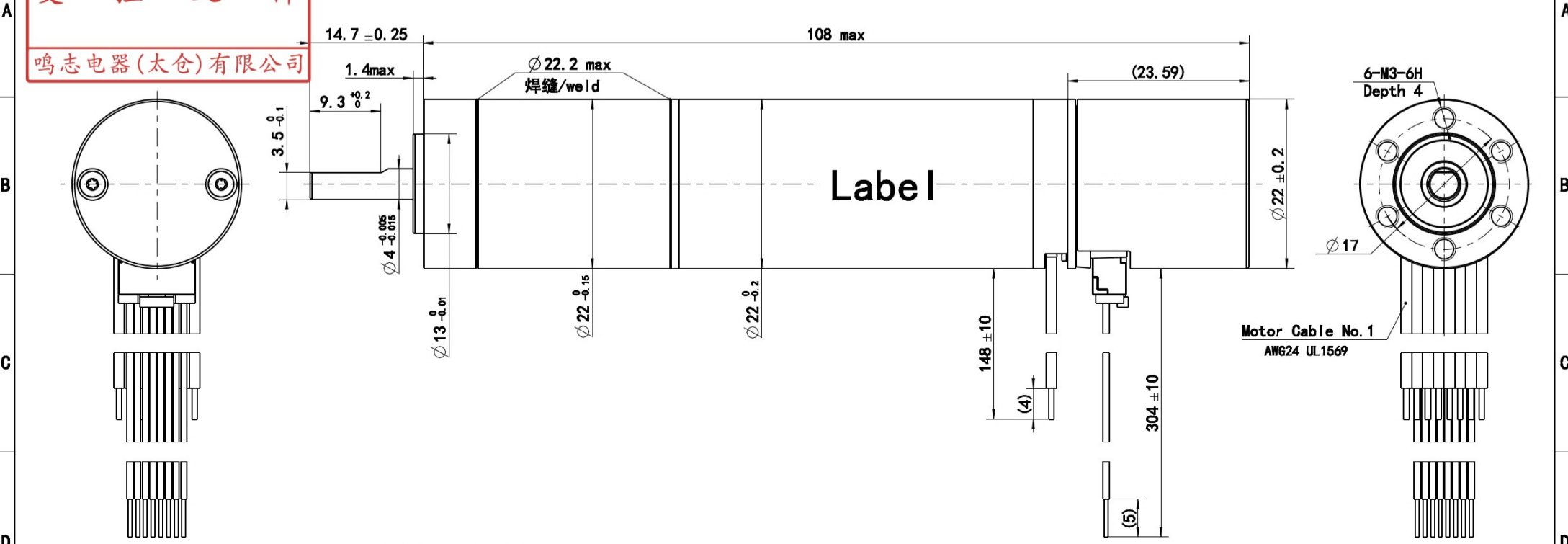
备注 Notes:

- 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 	批准 Approve			 This document is released for information only. Its reproduction in whole or in part or its dissemination to third parties is prohibited. All trademarks and registered trademarks appearing on this document are the property of their respective owners.
			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	标准化 Standardize			
			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	工艺 Process Review			
A1	EC:23-1920 修改1处	2023. 11. 11		审核 Check			
A0	原始版本 Original revision	2022. 10. 25		设计 Design			
REV.	版本记录 REVISION RECORD	DATE	UNLESS OTHERWISE SPECIFIED	NAMES	SIGNATURE	DATE	Drawing No: 4611180000646 Rev. A1 SCALE: 1:1 Sheet 1 of 3

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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

MOONS'

Motor No. ECU22048H24-S115
 Encoder No. P22-S17B
 Gearbox No. PG22M-0111
 Work order XXXXXXXX YYYY

Serial No. QR Code

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.

线束相对于前盖安装孔角度偏差: ≤±30°
 Alignment of cable relative to front mounting holes: ≤±30°

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MOONS'
 moving in better ways

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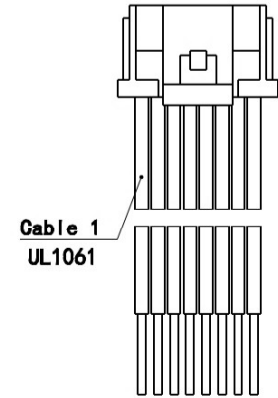
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编码器信息 Encoder Informations

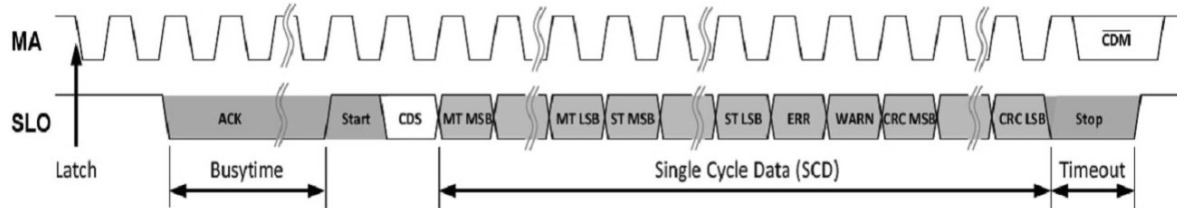
编码器参数 Encoder Parameter	
1	工作原理类型 Working principle Magnetic
2	信号记录类别 Signal record type Absolute Multiturn
3	每圈步数 Steps per turn 131072
4	单圈分辨率 Single-turn resolution 17 Bits
5	圈数 Number of revolutions 16 Bits (65536)
6	时钟频率 Clock rate 0.08-10 MHz
7	超时时间 Time out 18 μs
8	接口最小周期时间 Min Interface Cycle Time 50 μs
9	信号通讯协议 Signal protocol BiSS C
10	信号编码类别 Output code Binary

Connection of Encoder (30 AWG)

Cable No.	信号/Signal	颜色/Color
1	GND	蓝/Blue
2	Preset(default 0 position value)	橙/Orange
3	Config(UART)	黑/Black
4	Data + (SLO+)	绿/Green
5	Data - (SLO-)	黄/Yellow
6	CLOCK - (MA-)	白/White
7	CLOCK + (MA+)	棕/Brown
8	VCC(4.5 Vdc - 5.5 Vdc)	红/Red



通讯帧结构 Communication frame structure



备注 Notes:

- 编码器线缆无连接器; The cable of encoder without connector.
- 连接线"Preset"在不使用时需要保持绝缘; Cable "Preset" should be insulated when not in use.
- 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.

• Preset

- "预设" 引脚用于对应系统机械位置来调节编码器位置值; The preset function can be used to adapt the encoder position to the mechanical alignment of the system.
- 通过执行"预设", 编码器的单圈和多圈位置被设置为所需的预设值; By performing a preset, the actual position value of the encoder (both, singleturn and multiturn) is set to the desired preset value.
- "预设" 可通过硬件和软件触发。 The preset can be triggered via hardware or software.

• Config

- "配置" 引脚用于串行数据通信, 可在组装后对编码器进行校准和测试。 The config pin is used for serial data communication. Via this interface an optional re-calibration and WIEGAND pulse testing of the kit encoder can be conducted after motor installation.

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