

INTELLIGENT LOGISTICS POWER UNIT

智能物流动力单元

中大力德

中大力德



Zhongda Realizes the infinite possibility in automation application

宁波中大力德智能传动股份有限公司始创于1998年，是一家集电机驱动、微特电机、精密减速器、机器人结构本体及一体化智能执行单元的研发、制造、销售、服务于一体的国家高新技术企业。公司注册资本10400万元，分、子公司9家，员工1800余人，2017年8月在深交所主板上市，股票代码：002896。

公司系国家级高新技术企业，主导和参与起草国家标准10项，行业标准5项；授权专利107项，其中发明专利11项。拥有机械工业精密齿轮减速电机工程研究中心、浙江省级高新技术企业研究开发中心、浙江省级企业技术中心。

公司立足于智能化、自动化装备核心零部件设计和制造，为客户提供智能驱动解决方案。公司产品以其差异化和高性价比优势，广泛应用于工作母机、数控设备、工业机器人、智能物流、新能源、食品、包装、纺织、电子、医疗、通讯、农牧等机械装备领域。在替代进口产品的基础上，逐步参与国际竞争。

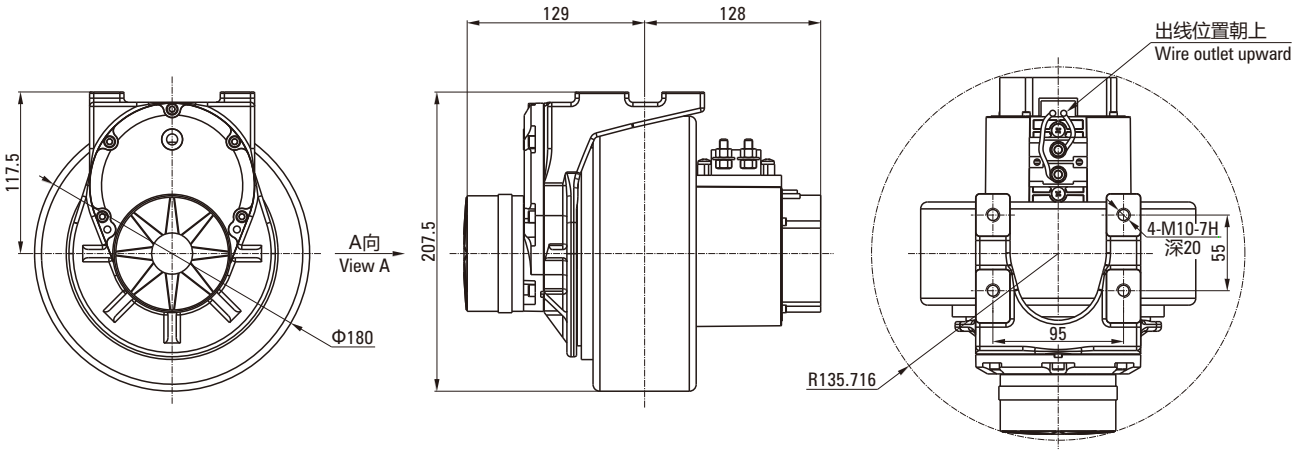
Ningbo Zhongda Leader Intelligent Transmission Co., Ltd. was founded in 1998. It is an electromechanical automation enterprise integrating R&D, manufacturing, sales and service of motor drives, micro motors, precision reducers and integrated products. It has 9 branches and subsidiaries, over 1,800 employees, and a registered capital of 104 million yuan. In August 2017, it was listed on the A-shares of the Shenzhen Stock Exchange (stock code 002896).

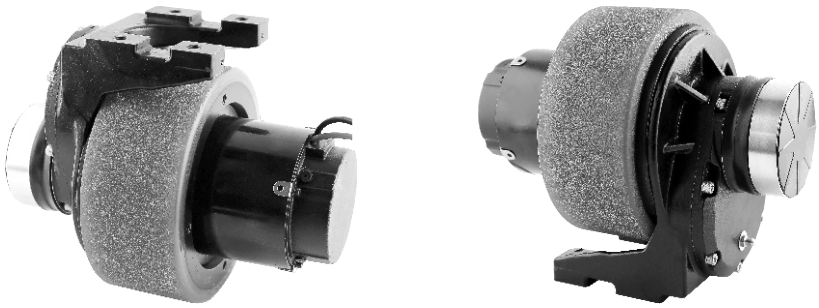
The company is a national-level high-tech enterprise, leading and participating in the drafting of 10 national standards and 5 industry standards, maintaining 107 patents and 11 invention patents. It's owning a Zhejiang-level enterprise R&D center.

The company is based on intelligent and automation equipment core component manufacturers and design solution providers. With its differentiated and cost- effective advantages, the company's products are widely used in industrial robots, intelligent logistics, new energy ，machine tools and other fields, as well as special machinery and equipment for food, packaging, textiles, electronics, and medical treatment. On the basis of realizing domestic substitution of imported products, gradually participate in international competition.nd medical treatment. On the basis of realizing domestic substitution of imported products, gradually participate in international competition.

180有刷驱动轮
180 BRUSHED DRIVE WHEEL

Z100D550-24A1-30S/ZH180-25-001





电机基本性能参数表 Motor Basic Parameter Table

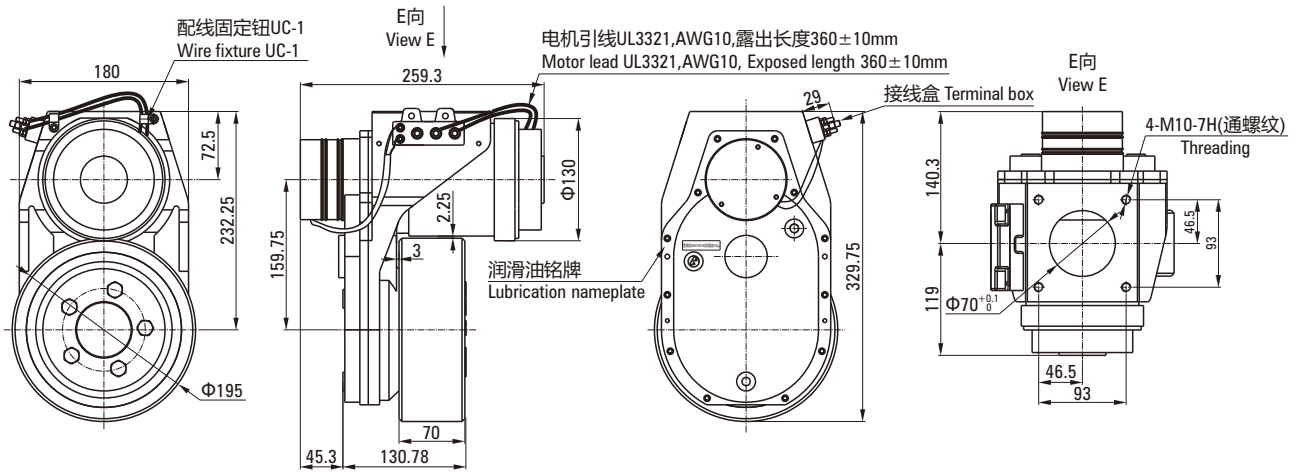
型号 Type	Z100D550-24A1-30S	防护等级 Protection grade	IP20
额定电压 Rated voltage	24V DC	减速器型号 Reducer model	ZD-ZH180-25-001
额定功率 Rated power	550W	减速器速比 Reduction ratio	25K /17K
额定电流 Rated current	30A±10%	刹车电压 Brake voltage	24V DC
额定转速 Rated speed	3000rpm±10%	刹车力矩 Brake torque	6N.m
额定力矩 Rated torque	1.75N.m	使用环境温度 Ambient temperature	-10℃～+40℃
空载电流 Noload current	≤6A	噪音 Noise	＜60dB(L＝100cm)
空载转速 Noload speed	3500rpm±10%	电机接线图 Wire diagram A向 view A	CW red + G/M black - 24VDC CCW red - G/M black + 24VDC
工作制 Work duty	S2(45min)		
绝缘电阻 Insulation resistance	＞20MΩ		
电刷寿命 Brush life	1200h		
电气强度 Electrical strength	660V/S		
绝缘等级 Insulation class	F		

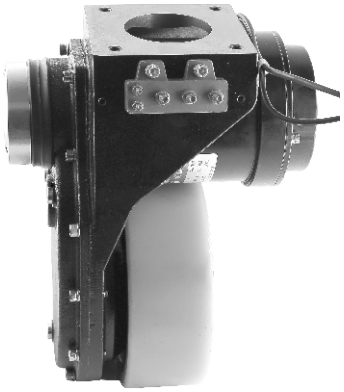
技术要求 Technical Requirement

- 电机基本参数如图所示；
  The basic parameters of the motor are shown in the table;
- 红色引线接正和黑色引接负，从刹车安装端看驱动轮顺时针转，引线位置对调，驱动轮的转向相反；
  The red lead is connected to the positive and the black lead is connected to the negative. Seen from the brake installation end, the drive wheel turns clockwise. When the lead position is reversed, the drive wheel turns in the opposite direction;
- 整机应能运转平稳，声音和谐，无杂音等不良；
  The whole machine should be able to run smoothly, the sound is harmonious, and there is no bad noise such as noise;
- 紧固件联接牢固，拧紧要到位，不得有打滑现象，要加涂螺纹胶；
  Fasteners are firmly connected, tightened in place, no slippage, and threaded glue should be applied;
- 轮子使用防滑轮。The wheels use non-slip wheels.

195卧式有刷
195 HORIZONTAL BRUSHED

Z130D650-24A1-26.5S/ZH-003







电机基本性能参数表 Motor Basic Parameter Table

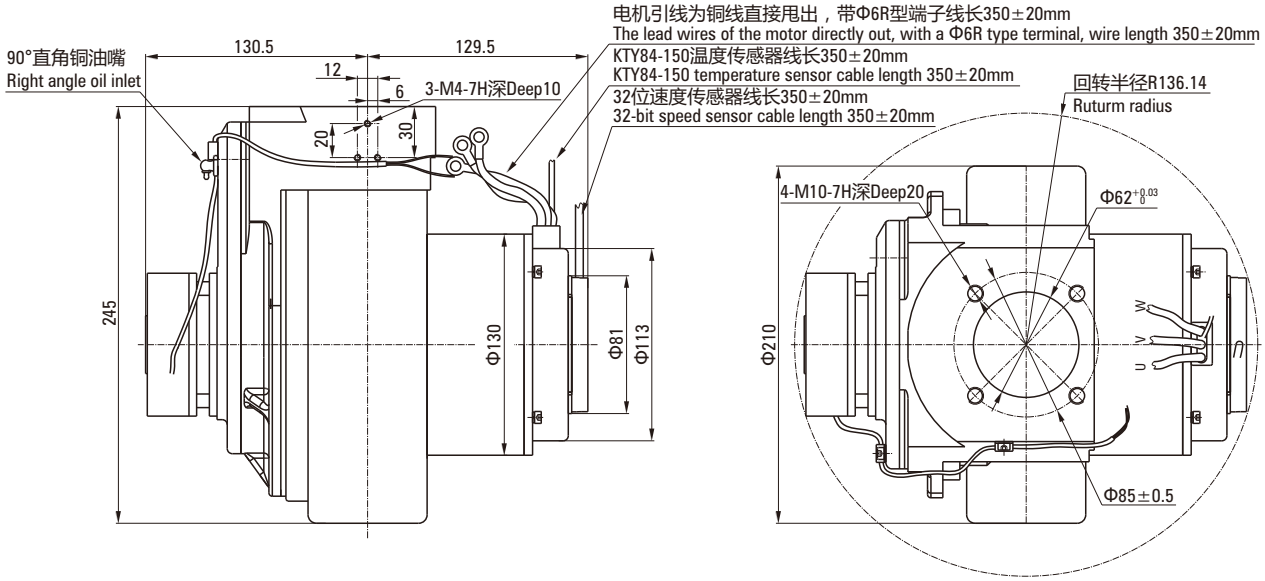
型号 Type	Z130D650-24A1-26.5S	防护等级 Protection grade	IP20
额定电压 Rated voltage	24V DC	减速器型号 Reducer model	ZH-003
额定功率 Rated power	650W	减速比 Ratio	24K
额定电流 Rated current	38A±10%	刹车电压 Brake voltage	24V DC
额定转速 Rated speed	2650±10%	刹车力矩 Brake torque	6N.m
额定力矩 Rated torque	2.34N.m	使用环境温度 Ambient temperature	-10℃～+40℃
空载电流 Noload current	≤11A	噪音 Noise	<65dB(A)(L=100cm)
空载转速 Noload speed	3000rpm±10%	电机接线图 Wire diagram	CW red + G/M black - 24VDC CCW red - G/M black + 24VDC
工作制 Work duty	S2(60min)		
绝缘电阻 Insulation resistance	>20MΩ		
电刷寿命 Brush life	1200h		
电气强度 Electrical strength	660V/S		
绝缘等级 Insulation class	F		

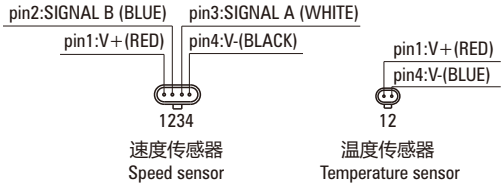
技术要求 Technical Requirement

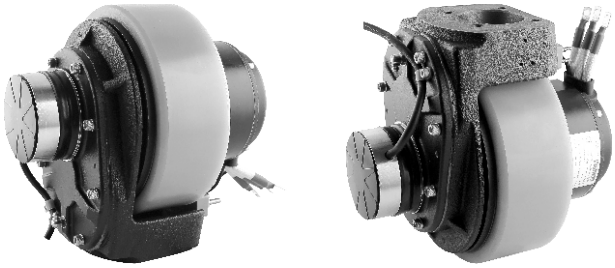
- 电机基本参数如图所示；
  The basic parameters of the motor are shown in the table;
- 红色引线接正和黑色引接负，从刹车安装端看驱动轮顺时针转，引线位置对调，驱动轮的转向相反；
  The red lead is connected to the positive and the black lead is connected to the negative. Seen from the brake installation end, the drive wheel turns clockwise. When the lead position is reversed, the drive wheel turns in the opposite direction;
- 整机应能运转平稳，声音和谐，无杂音等不良；
  The whole machine should be able to run smoothly, the sound is harmonious, and there is no bad noise such as noise;
- 紧固件联接牢固，拧紧要到位，不得有打滑现象，要加涂螺纹胶。
  Fasteners are firmly connected, tightened in place, no slippage, and threaded glue should be applied.

210低压交流卧式
210 LOW VOLTAGE AC HORIZONTAL

ZD-750W-S16V/NL24.68KL







电机基本性能参数表 Motor Basic Parameter Table

基本参数 Basic parameter	
型号 Type	ZDO-750W-S16V
功率 Power	0.75kW
电压 Voltage	16V
频率 Frequecncy	90Hz
电流 Current	41A
转速 Speed	2560r/min
工作制 Work duty	S2-60min
防护等级 Protection grade	IP42
绝缘等级 Insulation class	F

电机基本性能参数表 Motor Basic Parameter Table

其他参数 Other parameter	
减速器型号 Reducer type	NL24.68KL
减速器速比 Reduction ratio	24.685K/17K
刹车电压 Brake voltage	24V DC
刹车力矩 Brake torque	8.0N.m
使用环境温度 Ambient temperature	-10℃～+40℃
噪音 Noise	＜65dB(L=100cm)

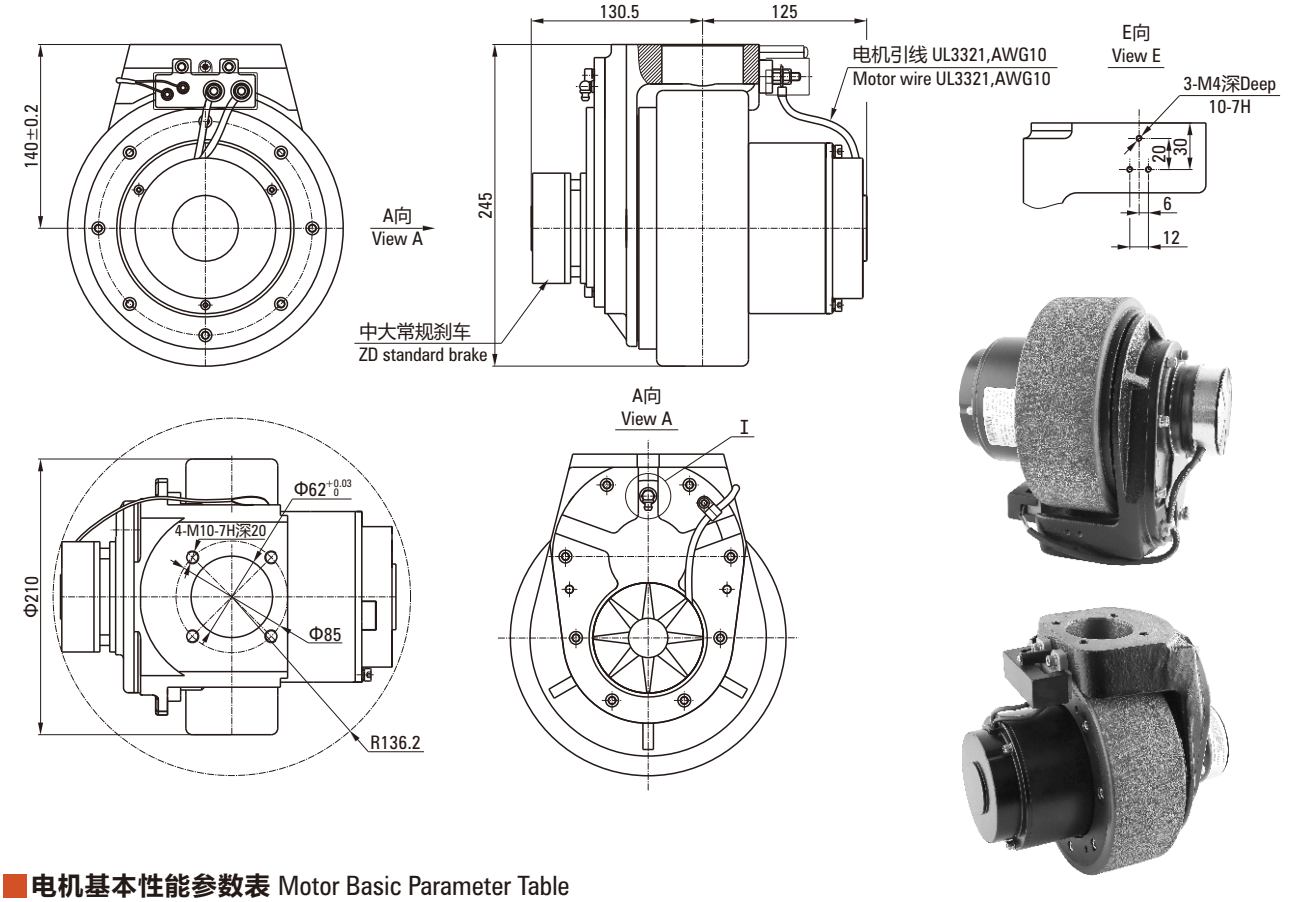
电气接口 Connection		
黑色AMP四芯插座接线示意 Black AMP 4-port terminal block connection		
①	VCC（黄色 YEL）	速度检测 Speed detection
②	OUT A（白色 WHT）	
③	OUT B（蓝色 BLU）	
④	GND（黑色 BLK）	
编码器位数 Encoder: 32位 bites		
黑色AMP两芯插座接线示意 Black AMP 2-port terminal block connection		
①	传感器 Sensor （+）（红色 RED）	温度检测 Temperature detection
②	传感器 Sensor （-）（蓝色 BLU）	
传感器型号 Sensor type: KTY84-150 (PHILIPS)		

判断产品合格 Qulified Product Guideline

- 产品通过客户提供驱动机能正常启动运行；
  The product can start and run normally through the driver provided by the customer；
- 产品无明显异音；
  The product has no obvious abnormal sound;
- 产品外观无明显划伤、磕碰等不良；
  The appearance of the product has no obvious scratches, bumps, etc.
- 如有追加条件，由销售订单说明。
  If there are additional conditions, it will be explained by the sales order.

210有刷
210 BRUSHED

Z130D650-24A1-26.5S-Q/NL-210-001



电机基本性能参数表 Motor Basic Parameter Table

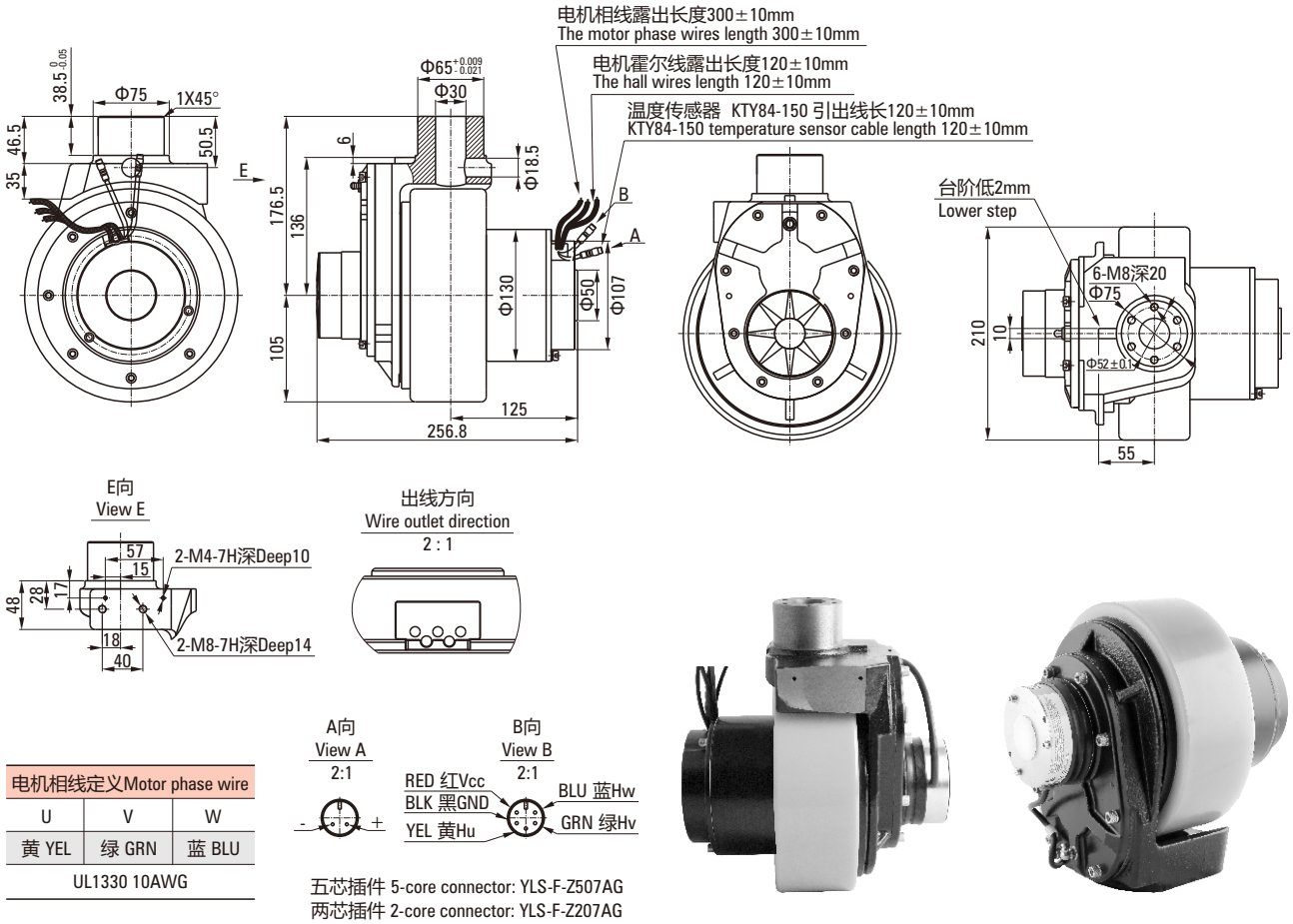
型号 Type	Z130D650-24A1-26.5S-Q	防护等级 Protection grade	IP44
额定电压 Rated voltage	24V DC	减速器型号 Reducer model	NL-210-001
额定功率 Rated power	650W	减速器速比 Reduction ratio	24.685K/17K
额定电流 Rated current	38A±10%	刹车电压 Brake voltage	24V DC
额定转速 Rated speed	2650rpm±10%	刹车力矩 Brake torque	6N.m
额定力矩 Rated torque	2.34N.m	使用环境温度 Ambient temperature	-10℃～+40℃
空载电流 Noload current	≤11A	噪音 Noise	<65dB(A)(L=100cm)
空载转速 Noload speed	3100rpm±10%	电机接线图 Wire diagram A向 view A	CW red + G/M 24VDC black - CCW red - G/M 24VDC black +
工作制 Work duty	S2(45min)		
绝缘电阻 Insulation resistance	>20MΩ		
电刷寿命 Brush life	1200h		
电气强度 Electrical strength	660V/S		
绝缘等级 Insulation class	F		

技术要求 Technical Requirement

- 电机基本参数如图所示；
  The basic parameters of the motor are shown in the table;
- 红色引线接正和黑色引接负，从刹车安装端看驱动轮顺时针转，引线位置对调，驱动轮的转向相反；
  The red lead is connected to the positive and the black lead is connected to the negative. Seen from the brake installation end, the drive wheel turns clockwise. When the lead position is reversed, the drive wheel turns in the opposite direction;
- 电刷工作寿命为1200个小时；
  The working life of the brush is 1200 hours;
- 电机外露螺钉采用不锈钢螺钉，包胶轮外露螺钉采用达克罗；
  The exposed screws of the motor use stainless steel screws, and the exposed screws of rubber wheel use dacromet screws;
- 诺力加强型，铭牌上用V003表示加强型。
  Nuoli enhanced type, "V003" on the nameplate indicates enhanced type.

210无刷
210 BRUSHLESS

Z130BLD1000-48A1-30S/JP-210-002



电机相线定义Motor phase wire		
U	V	W
黄 YEL	绿 GRN	蓝 BLU
UL1330 10AWG		

五芯插件 5-core connector: YLS-F-Z507AG
两芯插件 2-core connector: YLS-F-Z207AG

电机基本性能参数表 Motor Basic Parameter Table

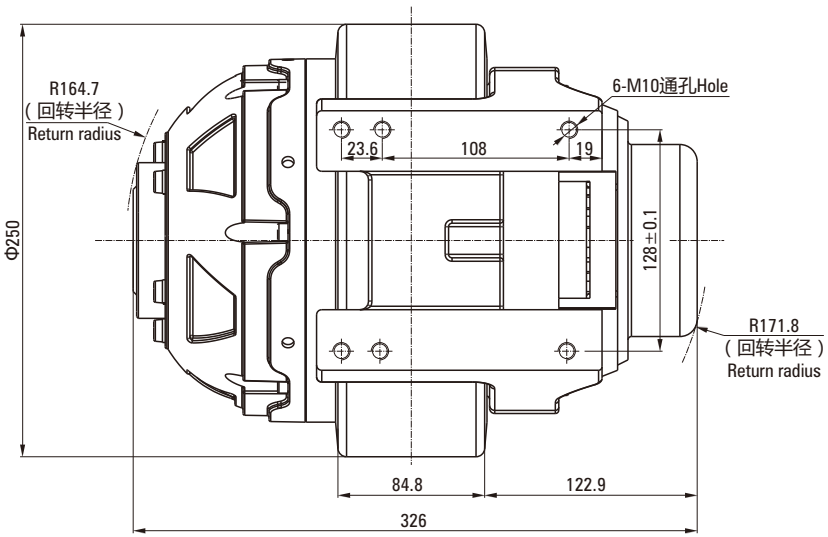
型号 Type	Z130BLD1000-48A1-30S	电刷寿命 Brush life	5000h
额定电压 Rated voltage	48V DC	电气强度 Electrical strength	660V/S
额定功率 Rated power	1000W	绝缘等级 Insulation class	B
额定电流 Rated current	28A±10%	防护等级 Protection grade	IP44
额定转速 Rated speed	3000rpm±10%	减速器型号 Reducer model	JP-210-002
额定力矩 Rated torque	3.18N.m	减速器速比 Reduction ratio	24.685K/17K
空载电流 Noload current	≤6A	刹车电压 Brake voltage	48V DC
空载转速 Noload speed	3800rpm±10%	刹车力矩 Brake torque	8N.m
工作制 Work duty	S2(60min)	使用环境温度 Ambient temperature	-10℃～+40℃
绝缘电阻 Insulation resistance	>20MΩ	噪音 Noise	<65dB(A)(L=100cm)

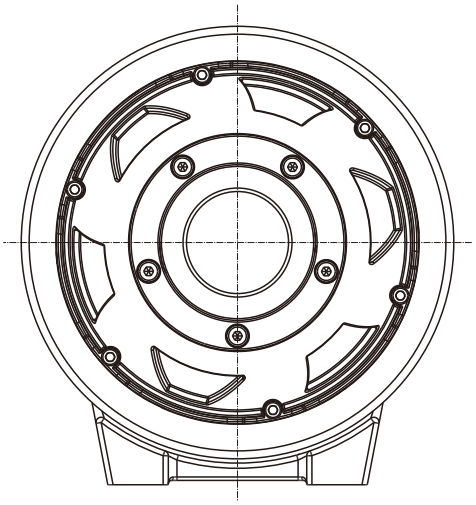
技术要求 Design Guide

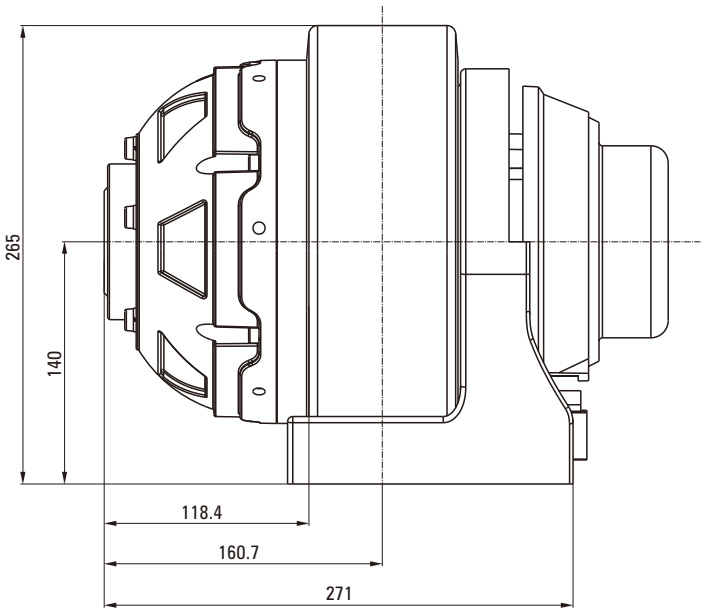
- 电机基本参数如表格中内容；
  The basic parameters of the motor are as in the table;
- 本产品符合GB/T21418-2008永磁无刷电动机系统通用技术条件（部分条件）；
  This product complies with GB/T21418-2008 permanent magnet brushless motor system general technical conditions (partial conditions);
- 铭牌贴在电机表面；
  The nameplate is attached to the surface of the motor;
- 装配整洁、电机运转平稳、声音和谐、无明显异音；
  The assembly is clean, the motor runs smoothly, the sound is harmonious, and there is no obvious abnormal sound;
- 电机后盖螺钉采用不锈钢螺钉，其余外露螺钉采用达克罗螺钉。
  The screws of the motor back cover are stainless steel screws, and the other exposed screws are dacromet screws.

洗地机专用卧式250有刷
FLOOR WASHER MACHINE HORIZONTAL 250 BRUSHED

Z114D750-36GN-30S-M/ZHX-250/Z114D750-24GN-30S-M/ZHX-250









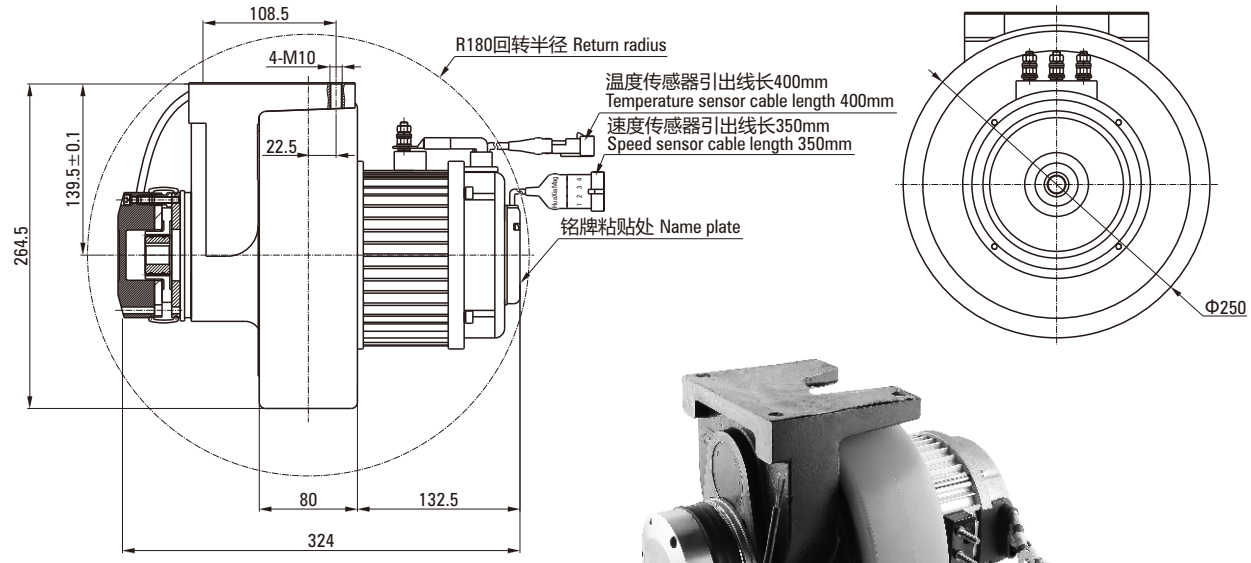


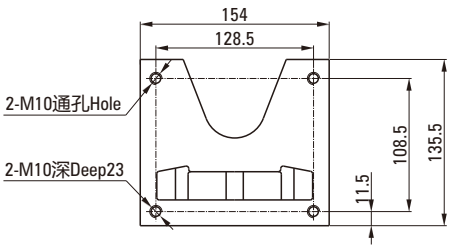
电机基本性能参数表 Motor Basic Parameter Table

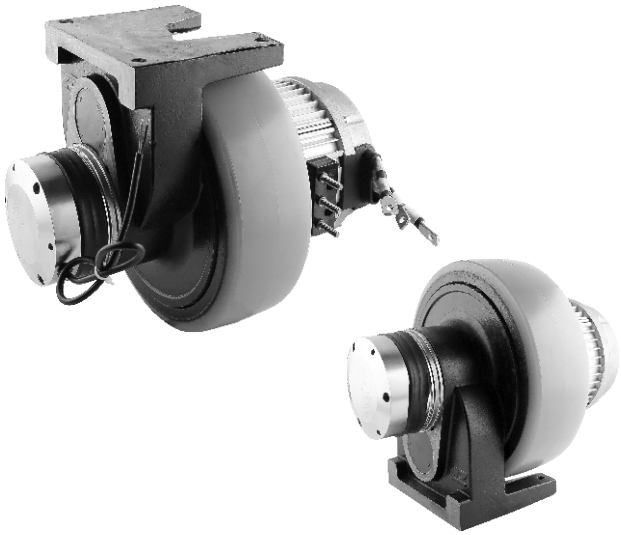
型号 Type	Z114D750-36GN-30S/Z114D-750-24GN-30S	防护等级 Protection grade	IP20
额定电压 Rated voltage	36V DC/24V DC	减速器型号 Reducer model	ZHX-250-001
额定功率 Rated power	750W	减速器速比 Reduction ratio	22K
额定电流 Rated current	28A/42A±10%	刹车电压 Brake voltage	36V DC/24V DC
额定转速 Rated speed	3000rpm±10%	刹车力矩 Brake torque	6N.m/8N.m
额定力矩 Rated torque	2.39N.m	使用环境温度 Ambient temperature	-10℃~+40℃
空载电流 Noload current	≤5A/7.5A	噪音 Noise	<60dB(L=100cm)
空载转速 Noload speed	3500rpm±10%	电机接线图 Wire diagram A向 view A 驱动轮旋转方向 Drive wheel rotation direction	CW red + G/M black - 36V/24VDC CCW red - G/M black + 36V/24VDC
工作制 Work duty	S2(45min)		
绝缘电阻 Insulation resistance	>20MΩ		
电刷寿命 Brush life	1200h		
电气强度 Electrical strength	660V/S		
绝缘等级 Insulation class	B		

250卧式低压交流
250 HORIZONTAL LOW VOLTAGE AC

ZD0-1.5kW-S16V-QDL250







电机基本性能参数表 Motor Basic Parameter Table

基本参数 Basic parameter	
型号 Type	ZD0-1500W-S16V/33V
功率 Power	1500W
电压 Voltage	16V/33V
频率 Frequecncy	85Hz
电流 Current	65A/33A
转速 Speed	2250r/min
工作制 Work duty	S2-60min
防护等级 Protection grade	IP42
绝缘等级 Insulation class	F

电机基本性能参数表 Motor Basic Parameter Table

其他参数 Other parameter	
减速器型号 Reducer type	ZH-001
减速器速比 Reduction ratio	31.428K
刹车电压 Brake voltage	24V DC/48V DC
刹车力矩 Brake torque	10.0N.m
使用环境温度 Ambient temperature	-10℃～+40℃
噪音 Noise	＜65dB(L=100cm)

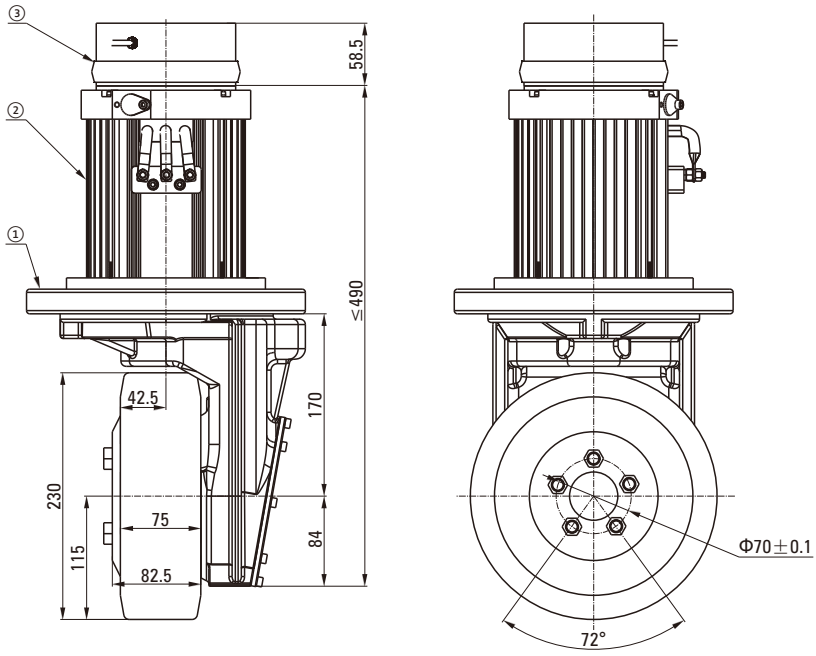
电气接口 Connection		
黑色AMP四芯插座接线示意 Black AMP 4-port terminal block connection		
①	VCC（黄色 YEL）	速度检测 Speed detection
②	OUT A（白色 WHT）	
③	OUT B（蓝色 BLU）	
④	GND（黑色 BLK）	
编码器位数 Encoder: 32位 bites		
黑色AMP两芯插座接线示意 Black AMP 2-port terminal block connection		
①	传感器 Sensor （+）（红色 RED）	温度检测 Temperature detection
②	传感器 Sensor （-）（蓝色 BLU）	
传感器型号 Sensor type: KTY84-150 (PHILIPS)		

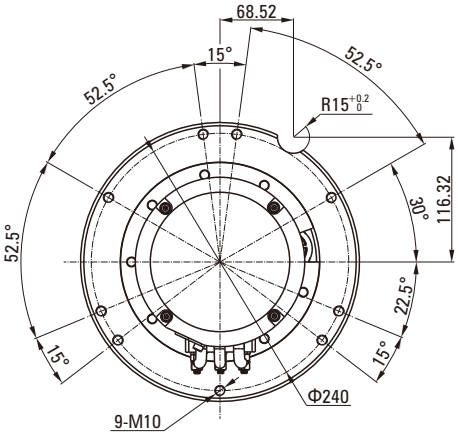
判断产品合格 Qulified Product Guideline

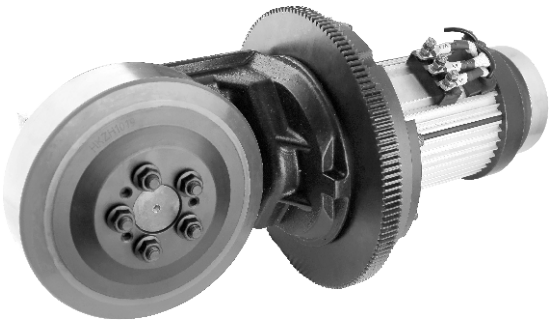
- 产品通过客户提供驱动机能正常启动运行；
  The product can start and run normally through the driver provided by the customer ;
- 产品无明显异音；
  The product has no obvious abnormal sound;
- 产品外观无明显划伤、磕碰等不良；
  The appearance of the product has no obvious scratches, bumps, etc.
- 如有追加条件，由销售订单说明。
  If there are additional conditions, it will be explained by the sales order.

立式230低压交流
230 VERTICAL LOW VOLTAGE AC

ZDL1.5KW-S16V/ZV230-004





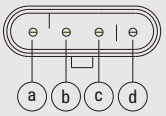




电机基本性能参数表 Motor Basic Parameter Table

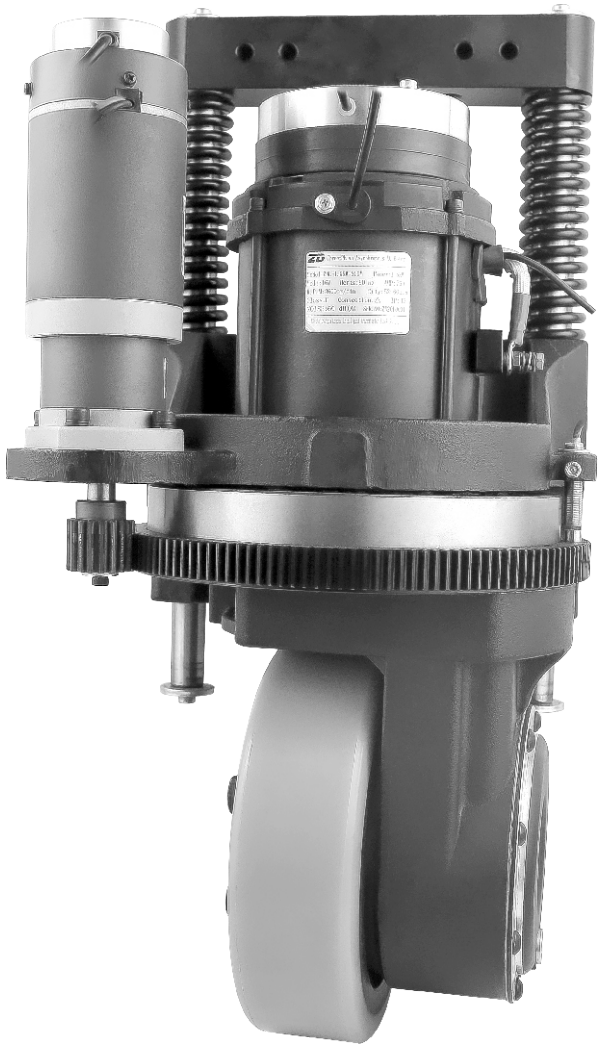
①减速驱动轮基本性能参数表 Geared drive wheel basic performance specs	
型号 Type	ZV-230-004
速比 Ratio	21.5K/25.59K
轮径 Wheel diameter	230mm
减速器额定承载 Reducer rated load	1300Kg
驱动轮输出扭矩 Drive wheel output torque	96.3N.m/114.6N.m
有无助力转向 Drived steer or not	无助力转向 No drived steer

③刹车基本性能参数表 Brake basic performance specs	
型号 Type	CDC-C10(24V15)16G
额定电压 Rated voltage	24V DC
额定功率 Rated power	30W
制动扭矩 Brake torque	16N.m
释放电压 Release voltage	> 1.5V DC
吸引电压 Clutch voltage	< 16.8V DC

②减速轮电机基本性能参数表 Table of basic performance parameters of gearbox motor		
型号 Type	ZDL-1.5KW-S16V	
额定电压 Rated voltage	16V/90Hz AC (控制器 Controler 24V DC)	
额定功率 Rated power	1.5KW	
额定电流 Rated current	76A	
额定转速 Rated speed	2590rpm	
额定力矩 Rated torque	5.5N.m	
工作制 Work duty	S2-60min	
绝缘等级 Insulation resistance	F	
防护等级 Protetion grade	IP42	
使用环境温度 Anbient temperature	-10℃～+40℃	
噪音 Noise	< 75dB(L=100cm)	
温控传感器 Temperature sensor	KTY84-150+黑色AMP两芯插座 Black AMP two core terminal seat	
编码器 Encoder	48位+黑色AMP四芯插座 48 bites+black AMP four core terminal seat	
	ⓐ	VCC（黄色 YEL）
	ⓑ	OUT A（白色 WHT）
	ⓒ	OUT B（蓝色 BLU）
	ⓓ	GND（黑色 BLK）
	速度检测 Speed sensor	

立式250低压交流
VERTICAL 250 LOW VOLTAGE AC

ZDL-1500W-S16V/ZV21-NL01

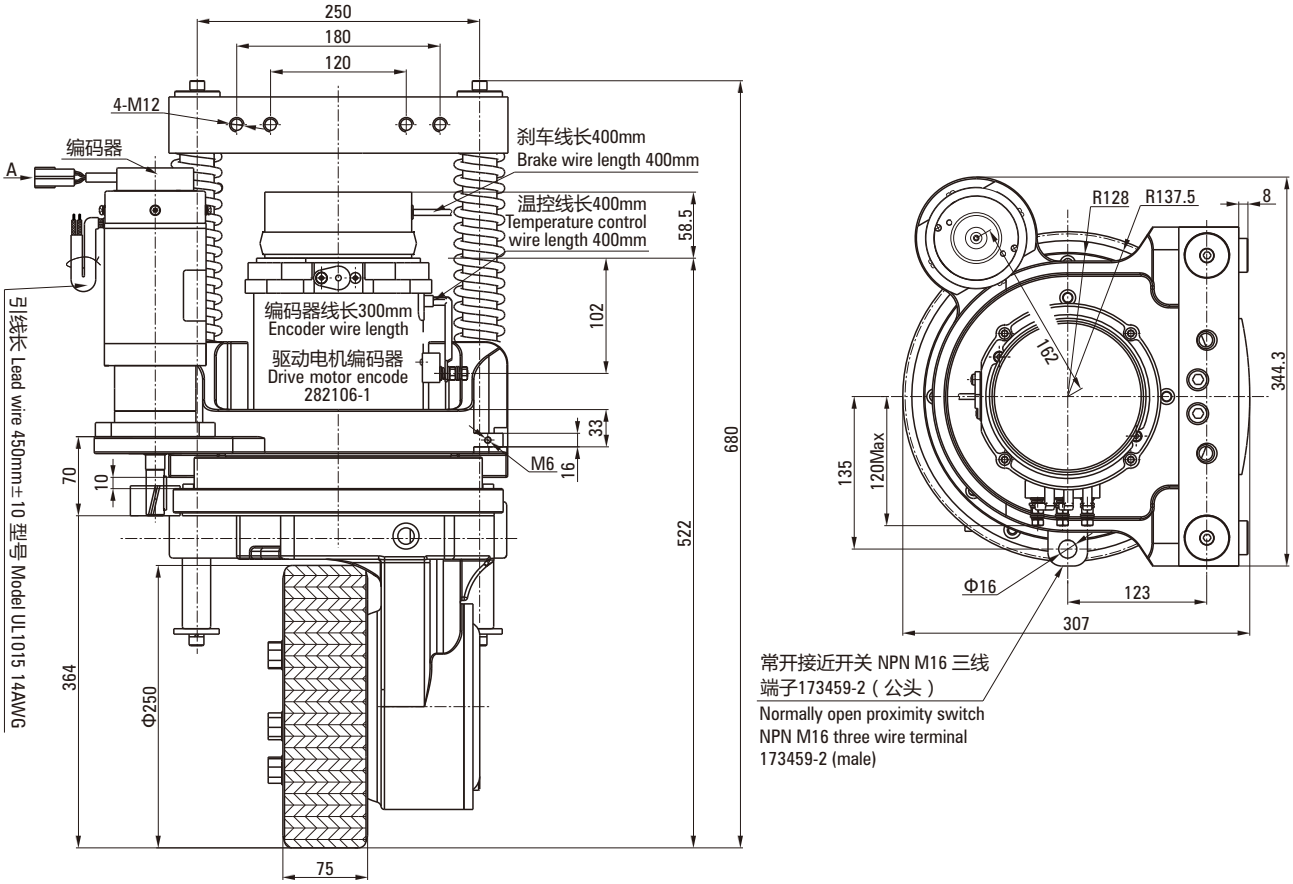


电机基本性能参数表 Motor Basic Parameter Table

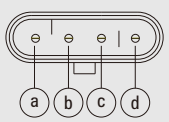
①助力转向电机基本性能参数表 Basic parameter			
型号 Type	ZD-CDY20190114001	齿轮箱与电机输出轴旋向 Gearbox direction	相同 Same as motor
额定电压 Rated voltage	24V DC		
额定功率 Rated power	400W	编码器 Encoder	64位 Bites
额定电流 Rated current	24A±10%	齿轮箱结构 Gearbox structure	一体式 Integrated
额定转速 Rated speed	3000rpm±10%	传动效率 Efficiency	81%
额定力矩 Rated torque	1.27N.m	齿轮箱额定力矩 Gearbox rated torque	35N.m
空载电流 Noload current	≤3.5A	齿轮箱最大力矩 Gearbox max torque	1.5倍于额定 1.5 x rated
空载转速 Noload speed	3600rpm±10%	使用环境温度 Ambient temperature	-10℃～+40℃
工作制 Work duty	S2(10分钟 10mins)	噪音 Noise	< 65dB(L=100cm)
绝缘电阻 Insulation resistance	>20MΩ	电机接线图 Wire diagram	CW: red +, G/M, black -, 24VDC CCW: red -, G/M, black +, 24VDC
电刷寿命 Brush life	2000h		
电气强度 Electrical strength	660V/S		
绝缘等级 Insulation class	B		
防护等级 Protection grade	IP20		
齿轮箱规格 Reducer model	82PN33.92K		
减速级数 Reduction stage	2		

立式250低压交流
VERTICAL 250 LOW VOLTAGE AC

ZDL-1500W-S16V/ZV21-NL01



电机基本性能参数表 Motor Basic Parameter Table

②驱动轮电机基本性能参数表 Table of basic performance parameters of gearbox motor	
型号 Type	ZDL-1500W-S16V-001-00001
额定电压 Rated voltage	16V/90Hz AC (控制器 Controler 24V DC)
额定功率 Rated power	1500W
额定电流 Rated current	76A
额定转速 Rated speed	2600rpm
额定力矩 Rated torque	5.5N.m
工作制 Work duty	S2-60min
绝缘等级 Insulation class	F
防护等级 Protection grade	IP42
使用环境温度 Ambient temperature	-10℃～+40℃
噪音 Noise	< 65dB(L=100cm)
温控传感器 Temperature sensor	KTY84-150+黑色AMP两芯插座 Black AMP two core terminal seat
编码器 Encoder	48位+黑色AMP四芯插座 48 bites+black AMP four core terminal seat
	ⓐ VCC（黄色 YEL）
	ⓑ OUT A（白色 WHT）
	ⓒ OUT B（蓝色 BLU）
	ⓓ GND（黑色 BLK）
	速度检测 Speed sensor

③刹车基本性能参数表 Brake basic performance specs	
型号 Type	CDC-C10(24V15)16G
额定电压 Rated voltage	24V DC
额定功率 Rated power	30W
制动扭矩 Brake torque	16N.m
释放电压 Release voltage	> 1.5V DC
吸引电压 Clutch voltage	< 16.8V DC

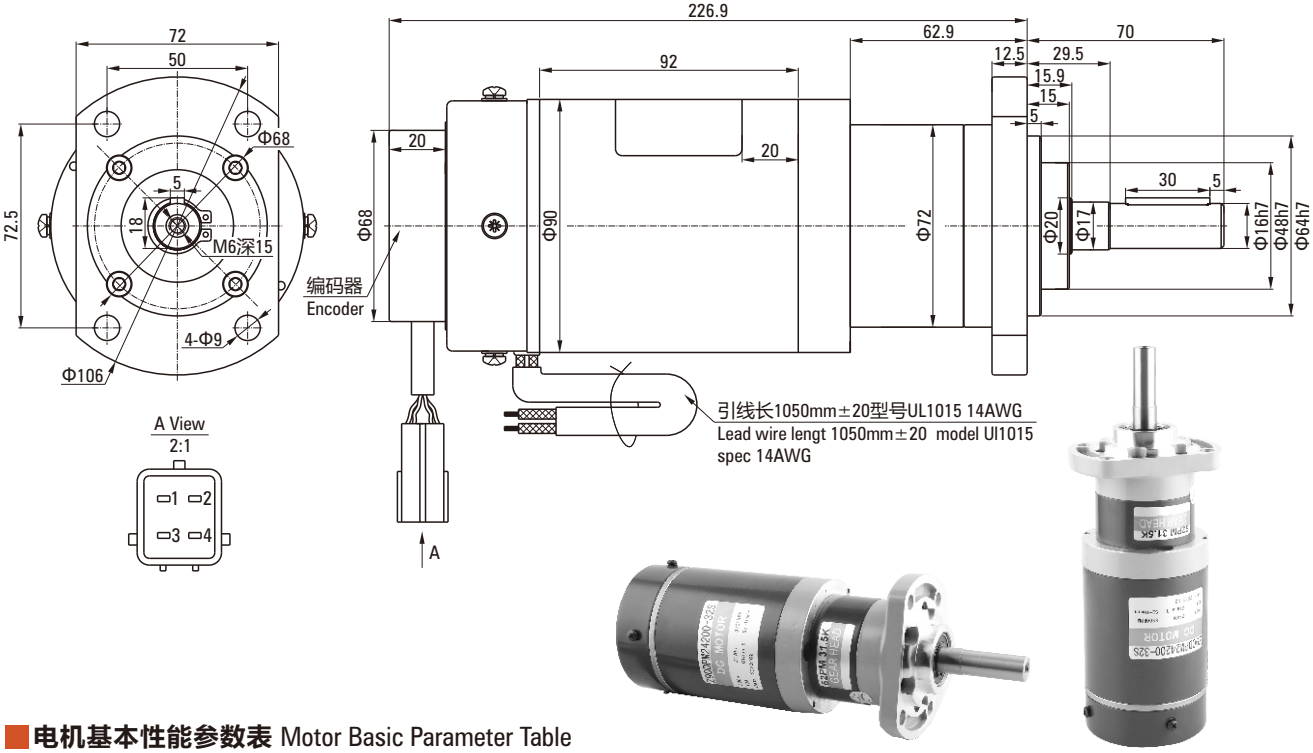
④减速驱动轮基本性能参数表 Geared drive wheel basic performance specs	
型号 Type	ZV-001
速比 Ratio	21:1
轮径 Wheel diameter	250mm

⑤助力转向齿轮基本性能参数表 Steer drive basic specs	
速比 Ratio	24:144

⑥驱动支架 Drive holder	
图号 Drawing number	-

90DP+72PN助力转向
90DP+72PN POWER STEERING

ZDXB-DC20201118



电机基本性能参数表 Motor Basic Parameter Table

型号 Type	Z90DPN24200-32S	齿轮箱与电机输出轴旋向 Gearbox direction	相同 Same as motor
额定电压 Rated voltage	24V DC		
额定功率 Rated power	200W	轴承型式 Bearing type	滚珠轴承 Ball bearing
额定电流 Rated current	13.0A±10%	齿轮箱结构 Gearbox structure	一体式 Integrated
额定转速 Rated speed	3200rpm±10%	传动效率 Efficiency	81%
额定力矩 Rated torque	0.597N.m	齿轮箱可承受最大力矩 Gearbox rated torque	12.1N.m
空载电流 Noload current	≤3.5A		
空载转速 Noload speed	3600rpm±10%	齿轮箱瞬间可承受最大力矩 Gearbox max torque	2倍于最大 2 x rated
工作制 Work duty	S2(10min)		
绝缘电阻 Insulation resistance	>20MΩ	使用环境温度 Ambient temperature	-10℃~+40℃
电刷寿命 Brush life	2000h	噪音 Noise	< 60dB(L=100cm)
电气强度 Electrical strength	660V/S	电机接线图 Wire diagram	CW: red +, G/M, black -, 24VDC CCW: red -, G/M, black +, 24VDC
绝缘等级 Insulation class	B		
防护等级 Protection grade	IP20		
齿轮箱规格 Gearbox spec	72PN24.975K		
减速级数 Reduction stage	2		

技术要求 Technical Requirement

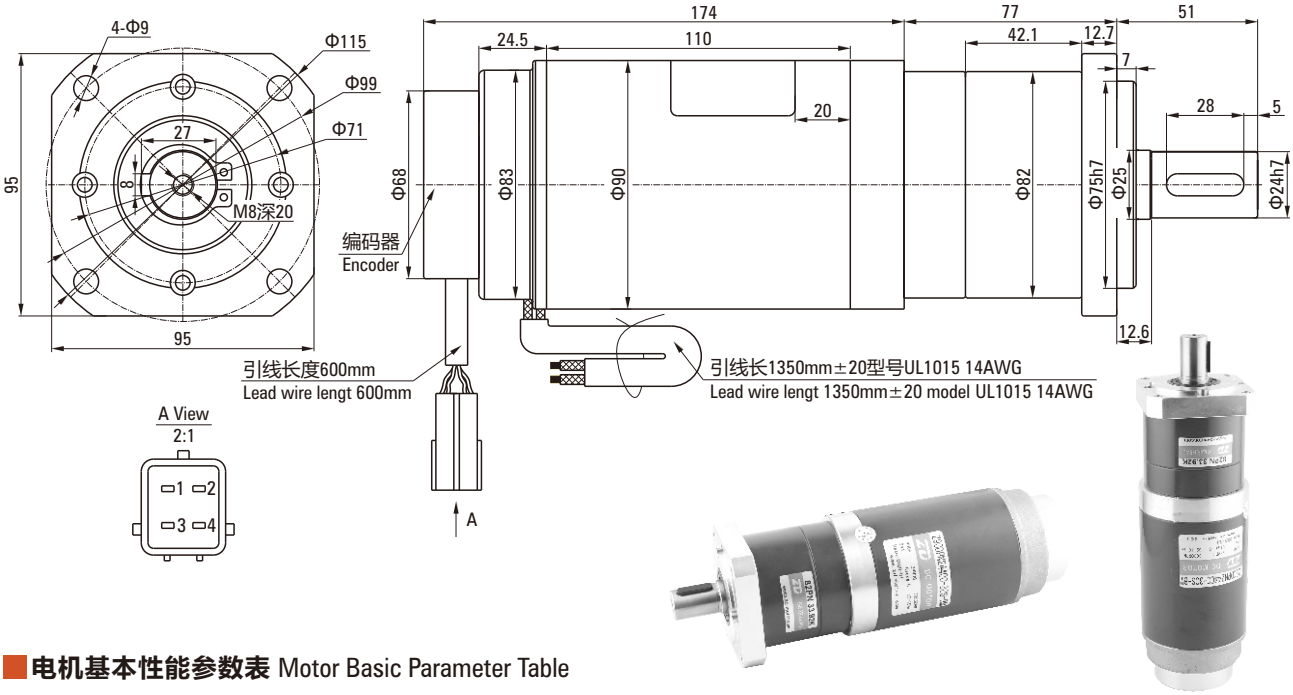
- 电机基本参数如图纸中的铭牌数据；
  Motor basic parameters are as nameplate in drawing shows;
- 红色引线接正和黑色引接负，从轴的伸出端看电机顺时针转，引线位置对调，电机的转向相反；
  The red lead is connected to the positive and the black lead is connected to the negative. Seen from the brake installation end, the drive wheel turns clockwise. When the lead position is reversed, the drive wheel turns in the opposite direction;
- 电刷工作寿命为2000个小时；The working life of the brush is 2000 hours;
- 引出线长度：1050mm±20，型号：UL1015，规格：AWG14、铭牌粘贴；
  Lead wire lengt: 1050mm±20, model: UI1015, spec: AWG14, the nameplate is sticky;
- 减速器配合螺钉要紧凑，固定前需涂抹螺纹防松胶；
  The reducer should be compact with screws, and threadproof anti-rosin should be applied before fixation;
- 电机配合用定位销和减速器表面配合用定位销均在光电机和整机装配测试完成之后。
  Screws of gearbox and motor should be firmly tightened and threaded glue should be appied before tightening.

64位编码器接线定义
64-bit Encoder Wiring Definition

序号 No.	颜色 Color	功能 Function
1	红色 Red	VCC+5V
2	黑色 Black	GND
3	蓝色 Blue	A相 Phase
4	黄色 Yellow	B相 Phase

90DP+82PN助力转向
90DP＋82PN POWER STEERING

Z90DPN24400-30S-BM/82PN33.92



电机基本性能参数表 Motor Basic Parameter Table

型号 Type	Z90DP24400-30S-BM	齿轮箱与电机输出轴旋向 Gearbox direction	相同 Same as motor
额定电压 Rated voltage	24V DC		
额定功率 Rated power	200W	轴承型式 Bearing type	滚动轴承 Ball bearing
额定电流 Rated current	24A±10%	齿轮箱结构 Gearbox structure	一体式 Integrated
额定转速 Rated speed	3200rpm±10%	传动效率 Efficiency	81%
额定力矩 Rated torque	1.27N.m	整机额定输出扭矩 Gearbox rated torque	35N.m
空载电流 Noload current	≤3.5A		
空载转速 Noload speed	3600rpm±10%	瞬间最大允许扭矩 Gearbox max torque	1.5倍于额定 1.5 x rated
工作制 Work duty	S2(10min)		
绝缘电阻 Insulation resistance	>20MΩ	使用环境温度 Ambient temperature	-10℃～+40℃
电刷寿命 Brush life	2000h	噪音 Noise	< 60dB(L=100cm)
电气强度 Electrical strength	660V/S	电机接线图 Wire diagram	CW red + G/M 24VDC black - CCW red - G/M 24VDC black +
绝缘等级 Insulation class	B		
防护等级 Protection grade	IP20		
齿轮箱规格 Gearbox spec	82PN33.92K		
减速级数 Reduction stage	2		

技术要求 Technical Requirement

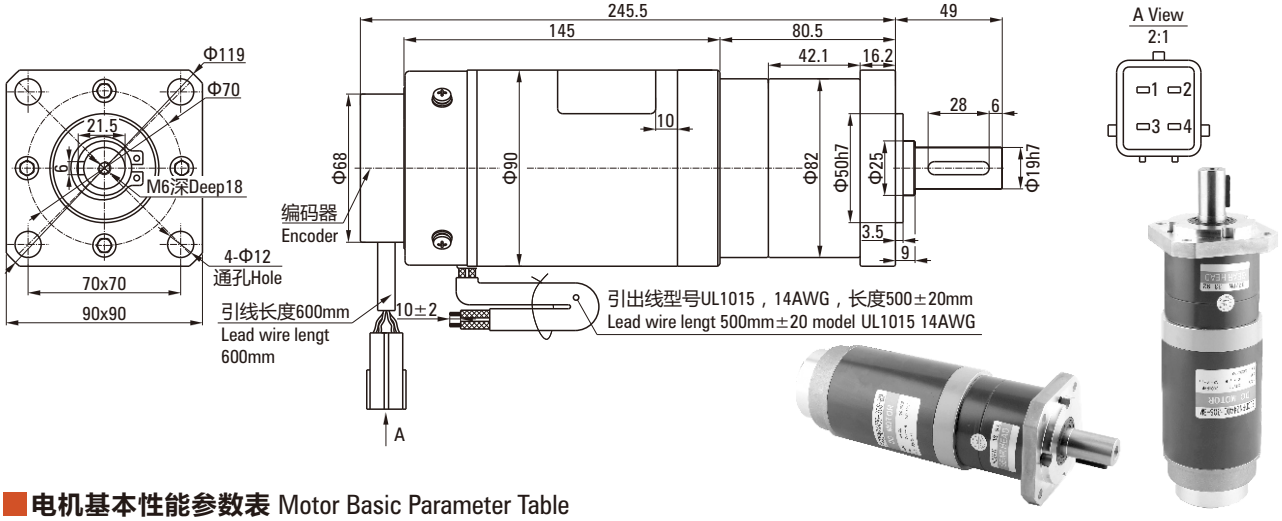
- 电机基本参数如图纸中的铭牌数据；Motor basic parameters are as nameplate in drawing shows;
- 红色引线接正和黑色引接负，从轴的伸出端看电机顺时针转，引线位置对调，电机的转向相反；The red lead is connected to the positive and the black lead is connected to the negative. Seen from the brake installation end, the drive wheel turns clockwise. When the lead position is reversed, the drive wheel turns in the opposite direction;
- 电刷工作寿命为2000个小时；The working life of the brush is 2000 hours;
- 引出线长度：1350mm±20，型号：UL1015，规格：AWG14、铭牌粘贴，如图所示，距离前端盖20mm处；Lead wire lengt: 1350mm±20, model: Ul1015, spec: AWG14、the nameplate is sticky, as shown in the figure, 20mm from the front cover;
- 减速器配合螺钉要紧凑，固定前需涂抹螺纹防松胶；Screws of gearbox and motor should be firmly tightened and threaded glue should be appied before tightening;
- 电机配合用定位销和减速器表面配合用定位销均在光电机和整机装配测试完成之后；Screws of gearbox and motor should be firmly tightened and threaded glue should be appied before tightening;
- 64位编码器外购，中大自行安装；64-bit encoder purchased, installde by ZD itself;
- 按客户要求使用中性铭牌。Use neutral nameplates according to customer requirements.

64位编码器接线定义 64-bit Encoder Wiring Definition

序号 No.	颜色 Color	功能 Function
1	红色 Red	VCC+5V
2	黑色 Black	GND
3	蓝色 Blue	A相 Phase
4	黄色 Yellow	B相 Phase

90DP+82PN助力转向
90DP+82PN POWER STEERING

Z90DPN24200-32S-BM/82PN33.92



电机基本性能参数表 Motor Basic Parameter Table

型号 Type	Z90DP24200-32S-BM	齿轮箱与电机输出轴旋向 Gearbox direction	相同 Same as motor
额定电压 Rated voltage	24V DC		
额定功率 Rated power	200W	轴承型式 Bearing type	滚动轴承 Ball bearing
额定电流 Rated current	13A±10%	齿轮箱结构 Gearbox structure	一体式 Integrated
额定转速 Rated speed	3200rpm±10%	传动效率 Efficiency	81%
额定力矩 Rated torque	0.597N.m	整机额定输出扭矩 Gearbox rated torque	16.4N.m
空载电流 Noload current	≤3.5A		
空载转速 Noload speed	3600rpm±10%	瞬间最大允许扭矩 Gearbox max torque	1.5倍于额定 1.5 x rated
工作制 Work duty	S2(10min)		
绝缘电阻 Insulation resistance	>20MΩ	使用环境温度 Ambient temperature	-10℃～+40℃
电刷寿命 Brush life	2000h	噪音 Noise	< 60dB(L=100cm)
电气强度 Electrical strength	660V/S	电机接线图 Wire diagram	CW red + G/M black - 24VDC CCW red - G/M black + 24VDC
绝缘等级 Insulation class	B		
防护等级 Protection grade	IP20		
齿轮箱规格 Gearbox spec	82PN33.92K		
减速级数 Reduction stage	2		

电机基本性能参数表 Motor Basic Parameter Table

1	编码器 Encoder	ZDDC-BMQ-005	编码器64位 64-bit encoder
2	整机 Machine	Z90DPN24200-32S/82ZPN33.92K-OWZ-00100	-

技术要求 Technical Requirement

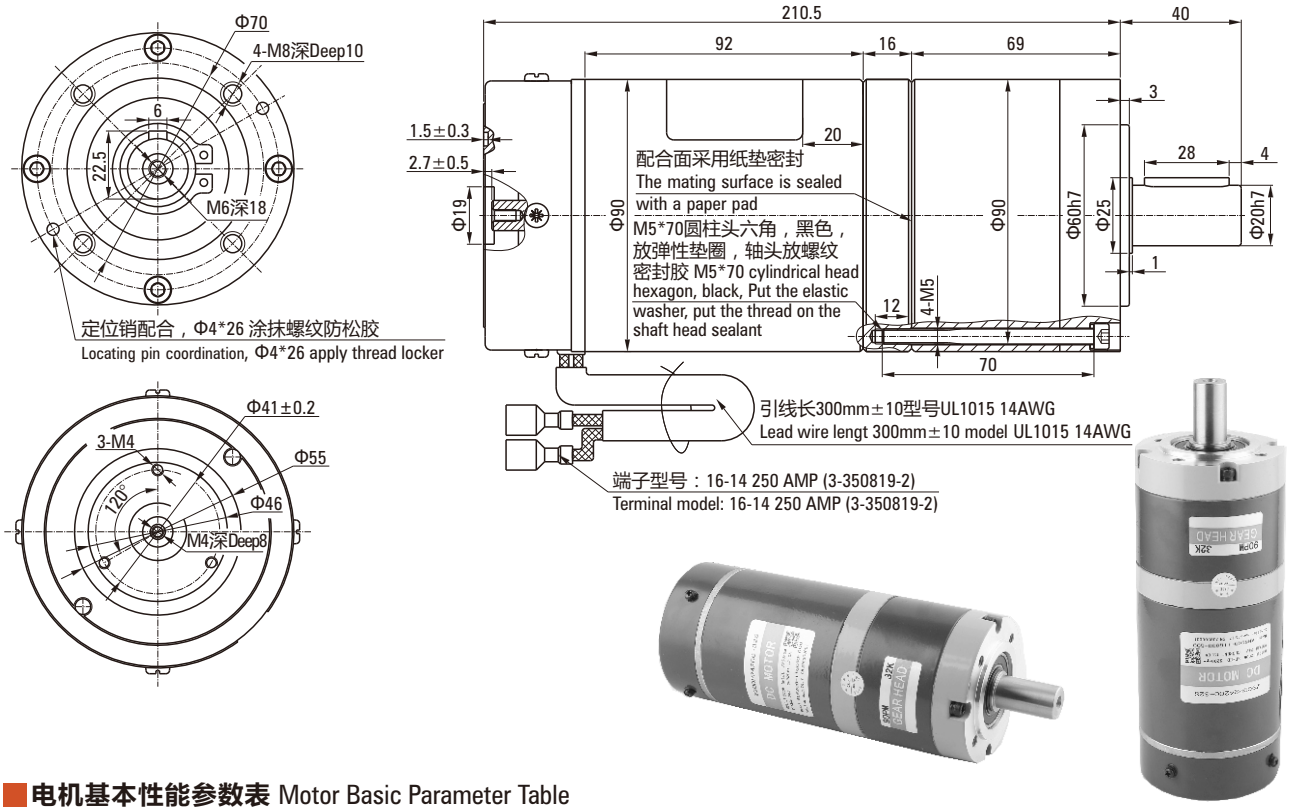
- 电机基本参数如图纸中的铭牌数据；
  Motor basic parameters are as nameplate in drawing shows;
- 红色引线接正和黑色引接负，从轴的伸出端看电机顺时针转，引线位置对调，电机的转向相反；The red lead is connected to the positive and the black lead is connected to the negative. Seen from the brake installation end, the drive wheel turns clockwise. When the lead position is reversed, the drive wheel turns in the opposite direction;
- 电刷工作寿命为2000个小时；The working life of the brush is 2000 hours;
- 引出线长度：500mm±20，型号：UL1015，规格：AWG14、铭牌粘贴。如图所示，距离前端盖20mm处；
  Lead wire lengt: 1350mm±20, model: UI1015, spec: AWG14, nameplate position is as the picture shows, 20mm from the front cover;
- 减速器配合螺钉要紧凑，固定前需涂抹螺纹防松胶；
  Screws of gearbox and motor should be firmly tightened and threaded glue should be appied before tightening;
- 电机配合用定位销和减速器表面配合用定位销均在光电机和整机装配测试完成之后；
  Insert dowel pin of motor and gearbox seperately after testing motor and machine;
- 64位编码器外购，中大自行安装。
  64-bit encoder purchased, installde by ZD itself.

64位编码器接线定义 64-bit Encoder Wiring Definition

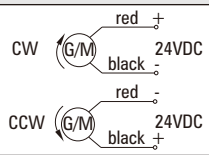
序号 No.	颜色 Color	功能 Function
1	红色 Red	VCC+5V
2	黑色 Black	GND
3	蓝色 Blue	A相 Phase
4	黄色 Yellow	B相 Phase

90DP+90PM助力转向
90DP＋90PM POWER STEERING

12441418W



电机基本性能参数表 Motor Basic Parameter Table

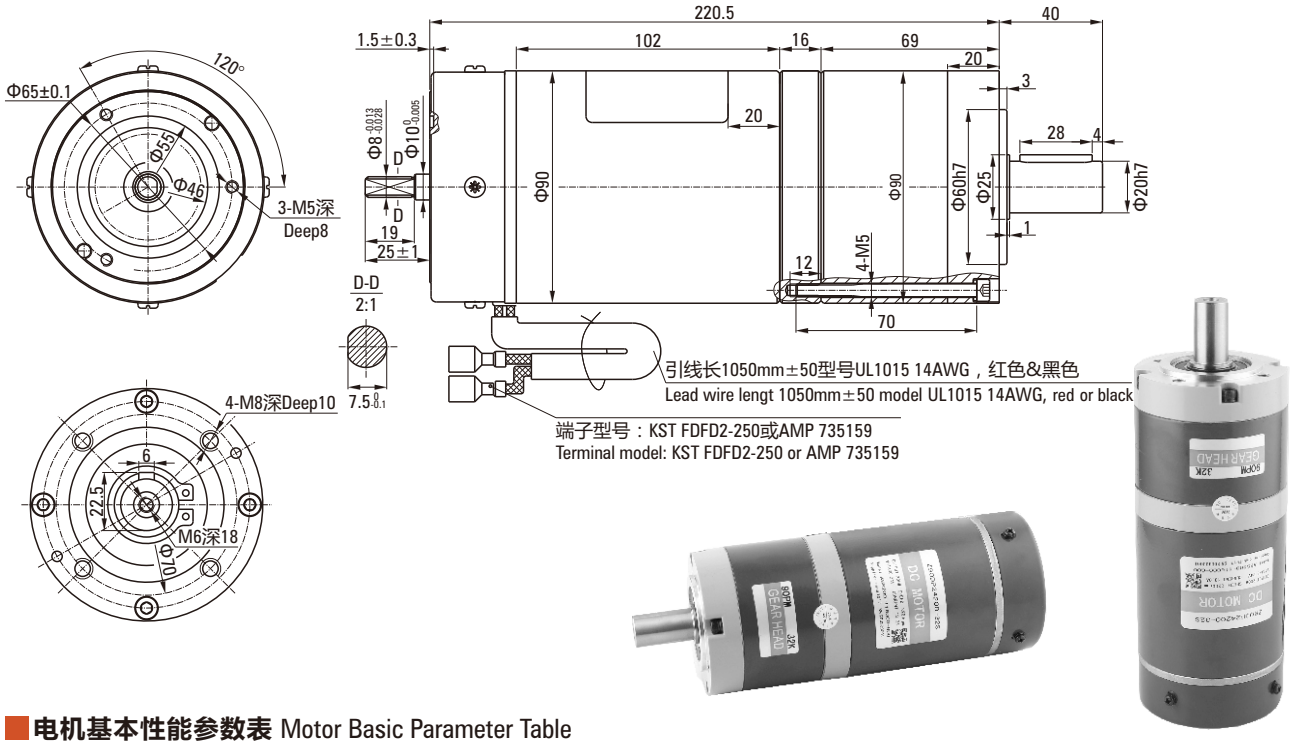
型号 Type	Z90DP24200-32S	齿轮箱与电机输出轴旋向 Gearbox direction	相同 Same as motor
额定电压 Rated voltage	24V DC		
额定功率 Rated power	200W	轴承型式 Bearing type	滚动轴承 Ball bearing
额定电流 Rated current	13A±10%	齿轮箱结构 Gearbox structure	一体式 Integrated
额定转速 Rated speed	3200rpm±10%	传动效率 Efficiency	94%
额定力矩 Rated torque	0.597N.m	齿轮箱输出力矩 Gearbox output torque	17.954N.m
空载电流 Noload current	≤3.5A	齿轮箱额定力矩 Gearbox rated torque	120N.m
空载转速 Noload speed	3600rpm±10%	齿轮箱最大力矩 Gearbox max torque	2倍于额定 2 x rated
工作制 Work duty	S2(10min)		
绝缘电阻 Insulation resistance	>20MΩ	使用环境温度 Ambient temperature	-10℃～+40℃
电刷寿命 Brush life	2000h	噪音 Noise	< 60dB(L=100cm)
电气强度 Electrical strength	660V/S	电机接线图 Wire diagram	
绝缘等级 Insulation class	B		
防护等级 Protection grade	IP20		
齿轮箱规格 Gearbox spec	90PM32K		
减速级数 Reduction stage	2		

技术要求 Technical Requirement

- 电机基本参数如图纸中的铭牌数据；
  Motor basic parameters are as nameplate in drawing shows;
- 红色引线接正和黑色引接负，从轴的伸出端看电机顺时针转，引线位置对调，电机的转向相反；
  The red lead is connected to the positive and the black lead is connected to the negative. Seen from the output shaft, motor turns clockwise. When the lead position is reversed, the motor turns in the opposite direction;
- 电刷工作寿命为2000个小时；The working life of the brush is 2000 hours;
- 引出线长度：300mm±10，型号：UL1015，规格：AWG14、铭牌粘贴。如图所示，距离前端盖20mm处；
  Lead wire length: 300mm±50, model: Ul1015, spec: AWG14, nameplate position is as the picture shows, 20mm from the front cover;
- 减速器配合螺钉要紧凑，固定前需涂抹螺纹防松胶；
  Screws of gearbox and motor should be firmly tightened and threaded glue should be appied before tightening;
- 电机配合用定位销和减速器表面配合用定位销均在光电机和整机装配测试完成之后；
  Insert dowel pin of motor and gearbox seperately after testing motor and machine;
- 电机及整机所有性能测试完成后压装端子，端子应能承受5KG拉力，1分钟内不得有脱落或松动等不良现象发生。
  Connect terminal to lead wire after testing motor and machine. terminal should be able to support 5kgs pull and won't drop or loosen in 1min.

90DP+90PM助力转向
90DP+90PM POWER STEERING

Z90DPM24400-32S/90ZPM32K



电机基本性能参数表 Motor Basic Parameter Table

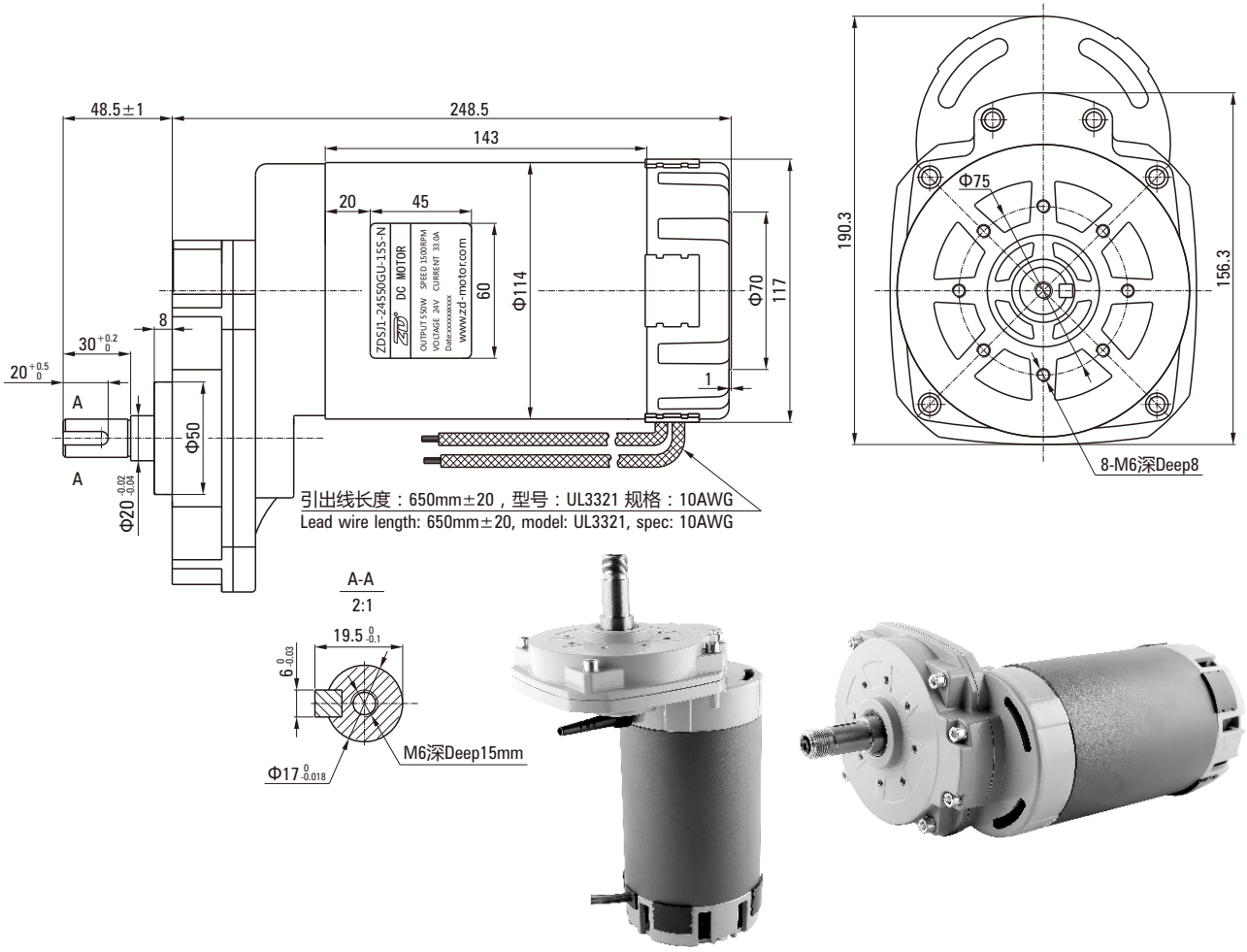
型号 Type	Z90DPM24400-32S	齿轮箱与电机输出轴旋向 Gearbox direction	相同 Same as motor
额定电压 Rated voltage	24V DC		
额定功率 Rated power	400W	轴承型式 Bearing type	滚珠轴承 Ball bearing
额定电流 Rated current	24A±10%	齿轮箱结构 Gearbox structure	一体式 Integrated
额定转速 Rated speed	3200rpm±10%	传动效率 Efficiency	81%
额定力矩 Rated torque	1.19N.m	齿轮箱输出力矩 Gearbox output torque	30.5N.m
空载电流 Noload current	≤5.0A	齿轮箱额定力矩 Gearbox rated torque	120N.m
空载转速 Noload speed	3700rpm±10%	齿轮箱最大力矩Gearbox max torque	2倍于额定 2 x rated
工作制 Work duty	S2(10min)		
绝缘电阻 Insulation resistance	>20MΩ	使用环境温度 Ambient temperature	-10℃～+40℃
电刷寿命 Brush life	1500h	噪音 Noise	< 60dB(L=100cm)
电气强度 Electrical strength	660V/S	电机接线图 Wire diagram	CW: red +, black -, 24VDC; CCW: red -, black +, 24VDC
绝缘等级 Insulation class	B		
防护等级 Protection grade	IP20		
齿轮箱规格 Gearbox spec	90PM32K		
减速级数 Reduction stage	2		

技术要求 Technical Requirement

- 电机基本参数如图纸中的铭牌数据；
  Motor basic parameters are as nameplate in drawing shows;
- 红色引线接正和黑色引接负，从轴的伸出端看电机顺时针转，引线位置对调，电机的转向相反；
  The red lead is connected to the positive and the black lead is connected to the negative. Seen from the output shaft,motor turns clockwise. When the lead position is reversed,the motor turns in the opposite direction;
- 电刷工作寿命为1500个小时；The working life of the brush is 1500 hours;
- 引出线长度：1050mm±50，型号：UL1015，规格：AWG14、铭牌粘贴。如图所示，距离前端盖20mm处；
  Lead wire length:1050mm±50, model: Ul1015, spec: AWG14, nameplate position is as the picture shows, 20mm from the front cover;
- 减速器配合螺钉要紧凑，固定前需涂抹螺纹防松胶；
  Gaerbox screws should be firmly tightened and threaded glue should be appied before tightening;
- 电机配合用定位销和减速器表面配合用定位销均在光电机和整机装配测试完成之后；
  Insert dowel pin of motor and gearbox seperately after testing motor and machine;
- 电机及减速器配合螺钉要紧凑，固定前需涂抹螺纹防松胶。
  Screws of gearbox and motor should be firmly tightened and threaded glue should be appied before tightening.

洗地机刷盘
GROUND WASHING MACHINE BRUSH

ZDSJ1-24550GU-15S-N-0WX-00001



电机基本性能参数表 Motor Basic Parameter Table

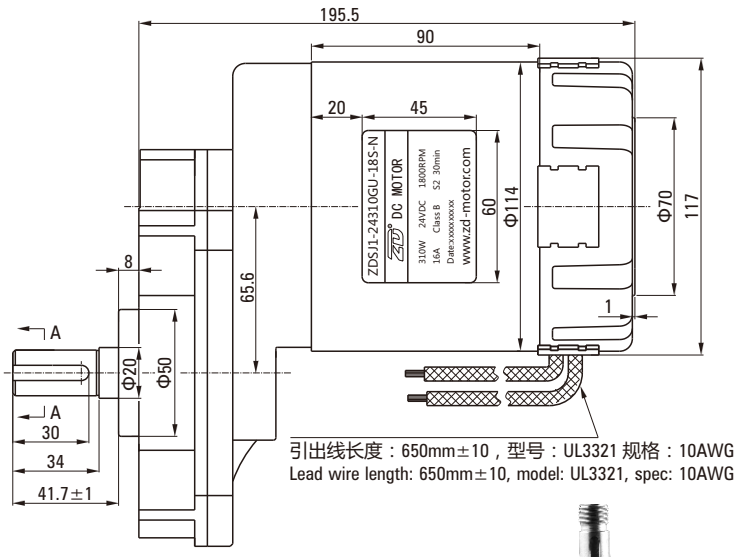
型号 Type	ZDSJ1-24550GU-15S-N-00001	防护等级 Protection grade	IP00
额定电压 Rated voltage	24V DC	使用环境温度 Ambient temperature	-10℃～+40℃
额定功率 Rated power	550W	噪音 Noise	<65dB(L=100cm)
额定电流 Rated current	33A	速比 Ratio	10 : 1
额定转速 Rated speed	1500rpm±10%	齿轮箱允许最大连续运转扭矩 Gearbox rated torque	31.5N.m
额定力矩 Rated torque	3.5N.m		
空载电流 Noload current	≤5.5A	传动效率 Efficiency	90%
空载转速 Noload speed	1900rpm±10%	电机接线图 Wire diagram	CW red + G/M black - 24VDC CCW red - G/M black + 24VDC
工作制 Work duty	S1		
绝缘电阻 Insulation resistance	>20MΩ		
电刷寿命 Brush life	1500h		
电气强度 Electrical strength	660V/S		
绝缘等级 Insulation class	B		

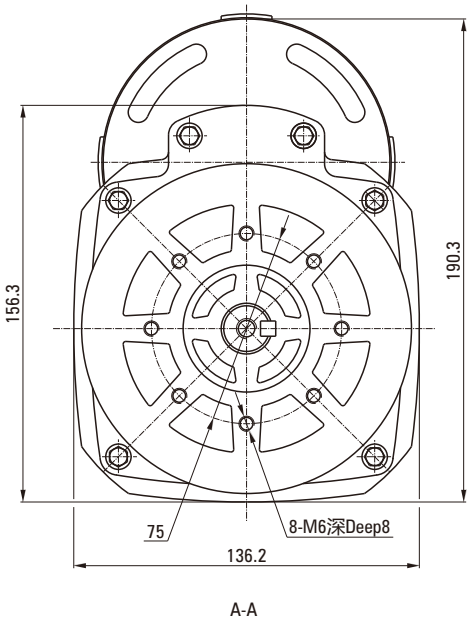
技术要求 Technical Requirement

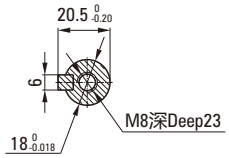
- 电机基本参数如参数表所示；
  Motor basic parameters are as the parameter table shows;
- 当红色引线接正黑色引接时负，从轴的伸出端看整机逆时针转，引线位置对调整机的转向相反；
  The red lead is connected to the positive and the black lead is connected to the negative. Seen from the output shaft, motor turns clockwise. When the lead position is reversed, the motor turns in the opposite direction;
- 电刷工作寿命为1500个小时；The working life of the brush is 1500 hours;
- 出轴部分键配C型6*6*20；Key at the output shaft C-shape 6*6*20;
- 引出线长度：650mm±10，型号：UL3321，规格：10AWG。Lead wire length: 650mm±50, model: UL3321, spec: 10AWG.

洗地机刷盘
GROUND WASHING MACHINE BRUSH

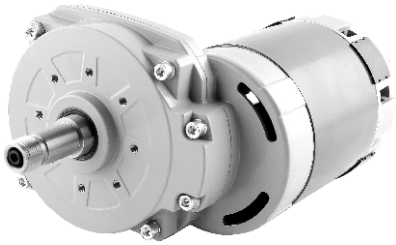
ZDSJ1-24310GU-18S-N/JMYJ-001-OWZ-00100











电机基本性能参数表 Motor Basic Parameter Table

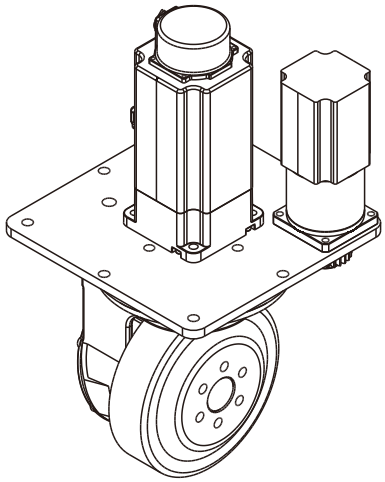
型号 Type	ZDSJ-24310GU-18S-N	防护等级 Protection grade	IP00
额定电压 Rated voltage	24V DC	使用环境温度 Ambient temperature	-10℃～+40℃
额定功率 Rated power	310W	噪音 Noise	＜60dB(L＝100cm)
额定电流 Rated current	16A	速比 Ratio	10 : 1
额定转速 Rated speed	1800rpm±10%	整机额定输出扭矩 Rated output speed	14.8N.m
额定力矩 Rated torque	1.64N.m		
空载电流 Noload current	≤4A	传动效率 Efficiency	90%
空载转速 Noload speed	2300rpm±10%	电机接线图 Wire diagram	CW G/M red + black - 24VDC CCW G/M red - black + 24VDC
工作制 Work duty	S2-30min		
绝缘电阻 Insulation resistance	＞20MΩ		
电刷寿命 Brush life	1000h		
电气强度 Electrical strength	660V/S		
绝缘等级 Insulation class	B		

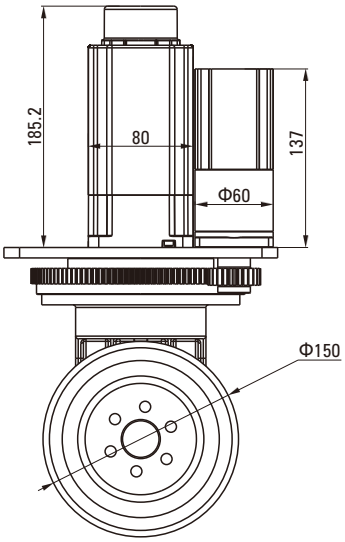
技术要求 Technical Requirement

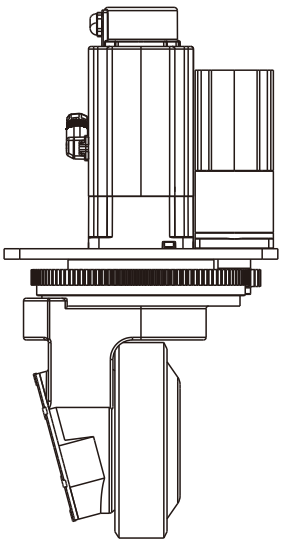
- 电机基本参数如参数表所示；
  Motor basic parameters are as the parameter table shows;
- 当红色引线接正黑色引接时负，从轴的伸出端看整机逆时针转，引线位置对调整机的转向相反；
  The red lead is connected to the positive and the black lead is connected to the negative. Seen from the output shaft, motor turns clockwise. When the lead position is reversed, the motor turns in the opposite direction;
- 电刷工作寿命为1000个小时；The working life of the brush is 1000 hours;
- 引出线长度：650mm±20，型号：UL1015，规格：10AWG。
  Lead wire length: 650mm±20, model: UL1015, spec: 10AWG.

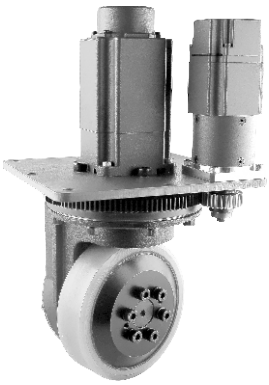
150立式舵轮
150 VERTICAL STEERING WHEEL

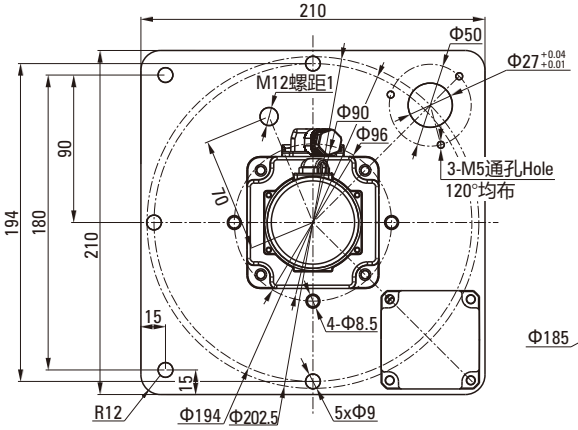
ZD-150LAGV-55.47-750-48-404-0001

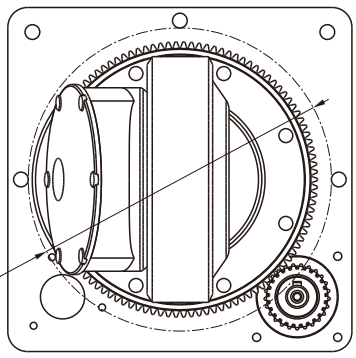












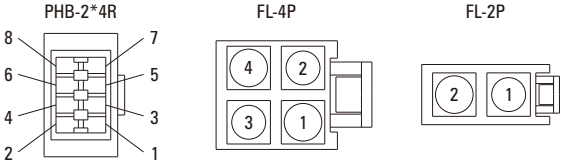
电机基本性能参数表 Motor Basic Parameter Table

舵轮驱动电机基本性能参数表 Table of basic performance parameters of steering wheel drive motor	
额定电压 Rated voltage	48V DC
额定功率 Rated powe	400W/750W
额定电流 Rated current	20A
额定转速 Rated speed	3000rpm
额定力矩 Rated torque	2.38N.m
工作制 Working day	S2 (60min)
绝缘等级 Insulation grade	F
防护等级 Level of protection	IP65
减速比 Deceleration ratio	22.5
制动扭矩 The brake torque	6N.m
编码器 Encoder	2500线磁编 2500-line magnetic braiding
使用环境温度 Use ambient temperature	0~40℃
噪音 Noise	≤58dB (A) L=1m
制动器电压V Brake voltage	24

转向电机参数表 Steering motor parameter table	
额定电压 Rated voltage	48V DC
额定功率 Rated power	200W
额定转速 Rated speed	3000rpm
额定力矩 Rated torque	-
减速比 Deceleration ratio	40
编码器 Encoder	绝对值编码器 Absolute value encoder
转向速度 (Deg/sec) To speed	90-120DEG/SEC

整机参数表Whole unit parameter table	
回转半径 Rotation radius	92.5
线速度m/min Linear velocity	62.8
轮子可承受正压力kg	600
牵引力N Tractive force	580

从电机侧定义 Defined From The Motor Side



编码器引出线颜色定义 Encoder outgoing line color definition

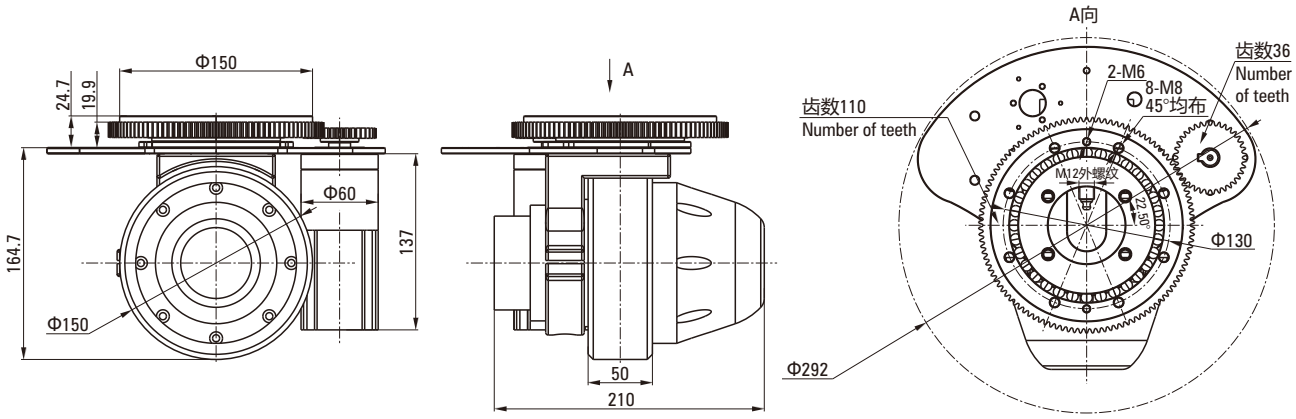
SD+	SD-	5V	GND	E+	E-	PE
蓝色	黄色	红色	黑色-	棕色	白色	屏蔽
1	2	3	4	5	6	7

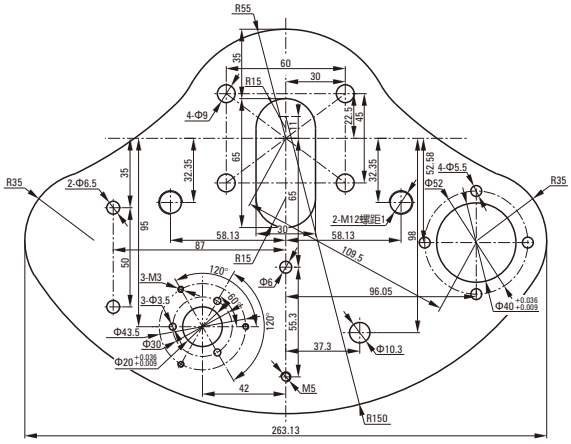
动力线、刹车线引出线颜色定义 Color definition of power line and brake line outgoing line

动力线引出线颜色定义	U	V	W	PE	动力线引出线颜色定义	刹车+	刹车-
	黄色	红色	黑色-	棕色		细黑	细黑
	1	2	3	4		1	2

150卧式舵轮
150 HORIZONTAL STEERING WHEEL

ZD-150WAGV-59.44-400-48-404-0001





安装法兰示意图
Schematic diagram of flange installation



电机基本性能参数表 Motor Basic Parameter Table

舵轮驱动电机基本性能参数表 Table of basic performance parameters of steering wheel drive motor	
额定电压 Rated voltage	48V DC
额定功率 Rated powe	400W/750W
额定电流 Rated current	20A
额定转速 Rated speed	2650rpm
额定力矩 Rated torque	1.44N.m
工作制 Working day	S2 (60min)
绝缘等级 Insulation grade	F
防护等级 Level of protection	IP65
减速比 Deceleration ratio	21
制动扭矩 The brake torque	6N.m
编码器 Encoder	2500线磁编 2500-line magnetic braiding
使用环境温度 Use ambient temperature	0~40℃
噪音 Noise	≤58dB (A) L=1m
制动器电压V Brake voltage	24

转向电机参数表 Steering motor parameter table	
额定电压 Rated voltage	48V DC
额定功率 Rated power	200W
额定转速 Rated speed	3000rpm
额定力矩 Rated torque	-
减速比 Deceleration ratio	40
编码器 Encoder	绝对值编码器 Absolute value encoder
转向速度 (Deg/sec) To speed	90-120DEG/SEC

整机参数表Whole unit parameter table	
回转半径 Rotation radius	146
线速度m/min Linear velocity	59.44
轮子可承受正压力kg Wheels can withstand positive pressure	600
牵引力N Tractive force	327

● 驱动电机编码器线引出线定义 Drive motor encoder line lead line definition

VCC	GND	A+	A-	B+	B-	Z+	Z-	U+	U-	V+	V-	W+	W-	NC
红	黑	蓝	蓝黑	绿	绿黑	黄	黄黑	棕	棕黑	灰	灰黑	白	白黑	屏蔽

● 动力线连接器接线规格 Power wire connector wiring specifications

绕组引线 Winding leads	U红	V白	W黑	Pe黄绿
插头编号 Plug number	1	2	3	4

● 驱动电机电源线引出线定义 Drive motor power cord lead line definition

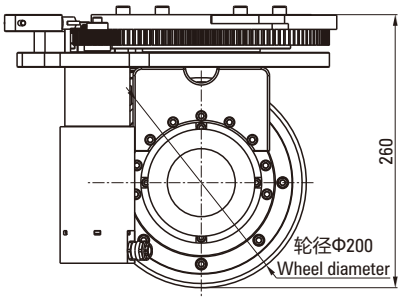
引线颜色 Leader Color	黄	绿	蓝	黄绿
引线定义 Down-lead define	U	V	W	PE

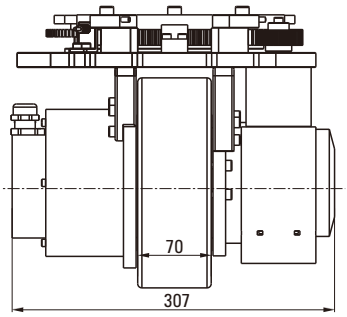
● 编码器连接器接线规格 Encoder connector wiring specifications

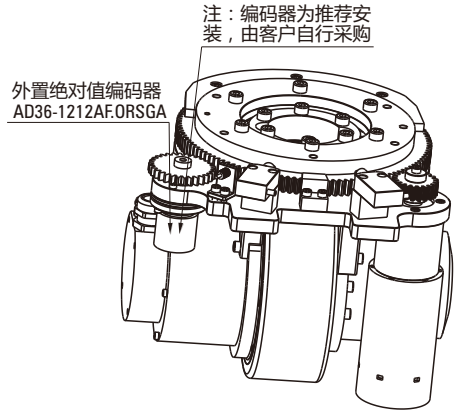
引线颜色 Leader Color	蓝色	黄色	红色	黑色	黑色
公针定义 Male needle definition	485+	485-	5V	GND	PE
排列编号 Arrange number	4	5	7	8	3

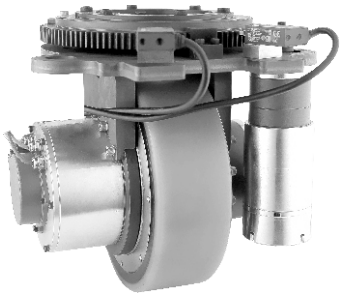
200卧式舵轮
200 HORIZONTAL STEERING WHEEL

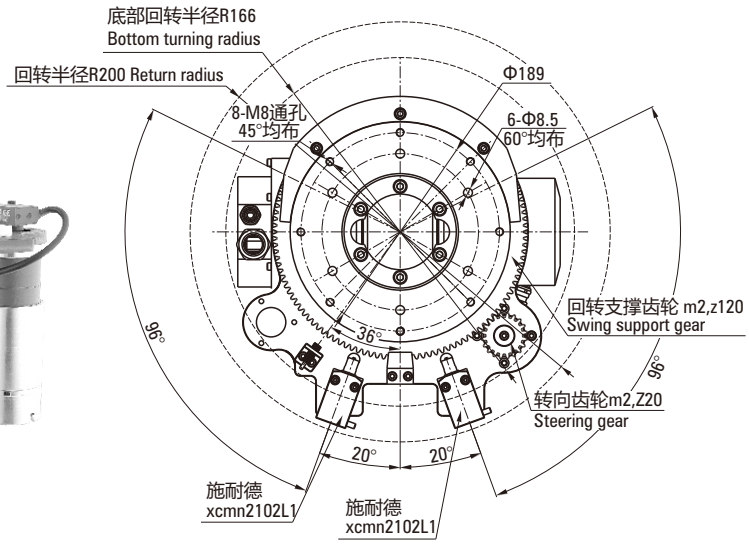
ZD-200AGV24-602-0006













电机基本性能参数表 Motor Basic Parameter Table

舵轮驱动电机基本性能参数表 Table of basic performance parameters of steering wheel drive motor	
额定电压 Rated voltage	48V DC
额定功率 Rated powe	1500W
额定电流 Rated current	35A
额定转速 Rated speed	3000rpm
额定力矩 Rated torque	4.775N.m
工作制 Working day	S2 (60min)
绝缘等级 Insulation grade	F
防护等级 Level of protection	IP54
减速比 Deceleration ratio	24
制动扭矩 The brake torque	8N.m
编码器 Encoder	增量型2500线光编
使用环境温度 Use ambient temperature	0~40℃
噪音 Noise	≤58dB (A) L=1m
制动器电压V Brake voltage	48

转向电机参数表 Steering motor parameter table	
额定电压 Rated voltage	48V DC
额定功率 Rated power	400W
额定转速 Rated speed	3000rpm
额定力矩 Rated torque	28.93N.M
减速比 Deceleration ratio	28.05
编码器 Encoder	增量型2500线 Incremental 2500 line
转向速度 (Deg/sec) To speed	106.95

整机参数表Whole unit parameter table	
回转半径 Rotation radius	207.5
线速度m/min Linear velocity	78.5
轮子可承受正压力kg Wheels can withstand positive pressure	1500
牵引力N Tractive force	928

● 驱动电机编码器线引出线定义 Drive motor encoder line lead line definition

VCC	GND	A+	A-	B+	B-	Z+	Z-	U+	U-	V+	V-	W+	W-	NC
红	黑	蓝	蓝黑	绿	绿黑	黄	黄黑	棕	棕黑	灰	灰黑	白	白黑	屏蔽

● 驱动电机电源线引出线定义 Drive motor power cord lead line definition

引线颜色 Leader Color	黄	绿	蓝	黄绿
引线定义 Down-lead define	U	V	W	PE

● 转向电机编码器线引出线定义 Definition of encoder lead of steering motor

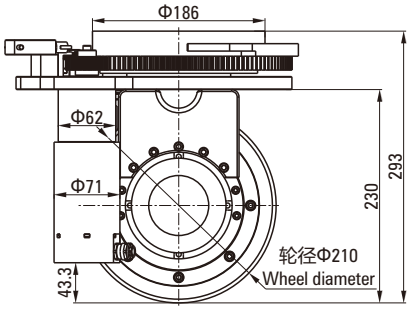
VCC	GND	A+	A-	B+	B-	Z+	Z-	U+	U-	V+	V-	W+	W-	NC
红	黑	蓝	蓝黑	绿	绿黑	黄	黄黑	棕	棕黑	灰	灰黑	白	白黑	屏蔽

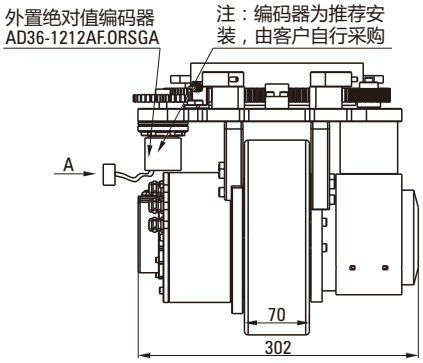
● 转向电机电源线引出线定义 Definition of steering motor power line lead out

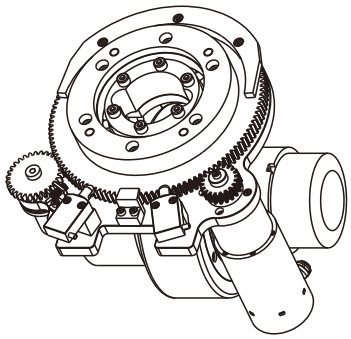
引线颜色 Leader Color	黄	绿	蓝	黄绿
引线定义 Down-lead define	U	V	W	PE

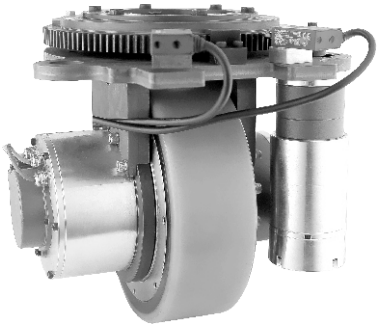
210卧式舵轮
210 HORIZONTAL STEERING WHEEL

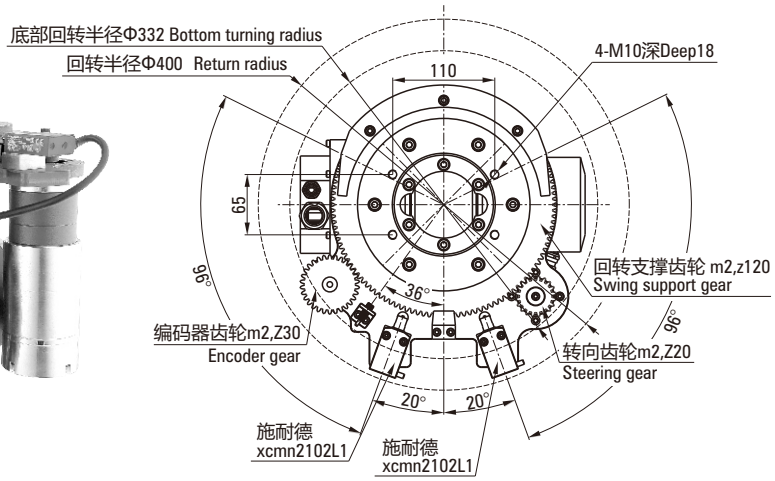
ZD-210WAGV-82.425-400-48-404-0001



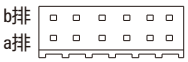








A向端子定义
A-direction terminal definition



电机基本性能参数表 Motor Basic Parameter Table

舵轮驱动电机基本性能参数表 Table of basic performance parameters of steering wheel drive motor	
额定电压 Rated voltage	48V DC
额定功率 Rated powe	1500W
额定电流 Rated current	35A
额定转速 Rated speed	3000rpm
额定力矩 Rated torque	4.775N.m
工作制 Working day	S2 (60min)
绝缘等级 Insulation grade	F
防护等级 Level of protection	IP54
减速比 Deceleration ratio	24
制动扭矩 The brake torque	8N.m
编码器 Encoder	增量型2500线光编
使用环境温度 Use ambient temperature	0~40℃
噪音 Noise	≤58dB (A) L=1m
制动器电压V Brake voltage	48

转向电机参数表 Steering motor parameter table	
额定电压 Rated voltage	48V DC
额定功率 Rated power	400W
额定转速 Rated speed	3000rpm
额定力矩 Rated torque	28.93N.M
减速比 Deceleration ratio	28.05
编码器 Encoder	增量型2500线 Incremental 2500 line
转向速度 (Deg/sec) To speed	106.95

整机参数表Whole unit parameter table	
回转半径 Rotation radius	200
线速度m/min Linear velocity	82.425
轮子可承受正压力kg Wheels can withstand positive pressure	1500
牵引力N Tractive force	884

驱动电机编码器线引出线定义 Drive motor encoder line lead line definition

VCC	GND	A+	A-	B+	B-	Z+	Z-	U+	U-	V+	V-	W+	W-	NC
红	黑	蓝	蓝黑	绿	绿黑	黄	黄黑	棕	棕黑	灰	灰黑	白	白黑	屏蔽

转向电机编码器线引出线定义 Definition of encoder lead of steering motor

VCC	GND	A+	A-	B+	B-	Z+	Z-	U+	U-	V+	V-	W+	W-	NC
红	黑	蓝	蓝黑	绿	绿黑	黄	黄黑	棕	棕黑	灰	灰黑	白	白黑	屏蔽

驱动电机电源线引出线定义 Drive motor power cord lead line definition

引线颜色 Leader Color	黄	绿	蓝	黄绿
引线定义 Down-lead define	U	V	W	PE

转向电机电源线引出线定义 Definition of steering motor power line lead out

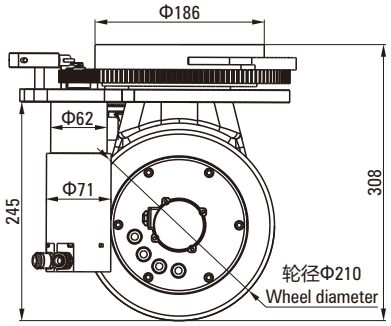
引线颜色 Leader Color	黄	绿	蓝	黄绿
引线定义 Down-lead define	U	V	W	PE

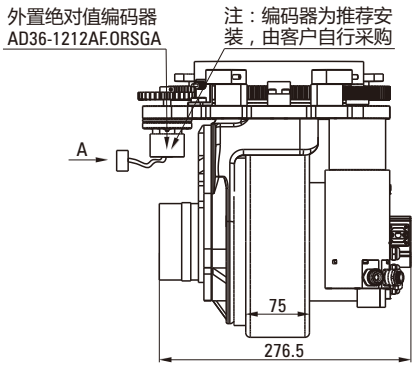
外置编码器引出线定义 External encoder lead line definition

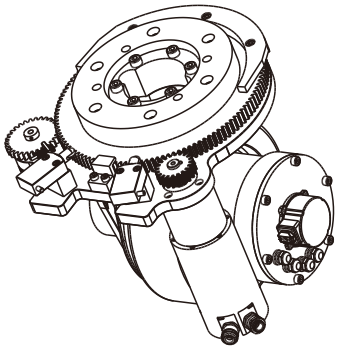
颜色	灰	白绿	黑	红兰	绿	紫	白	黄	灰粉	棕	棕绿	粉
管脚	a1	a2	a3	a4	a5	a6	b1	b2	b3	b4	b5	b6
引线定义	数据	A+	0V传感	B+	时钟	5V传感	直流5V	时钟	B-	0V(U)	A-	数据

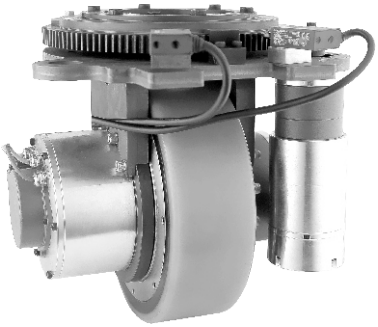
210常规伺服舵轮
210 CONVENTIONAL SERVO STEERING WHEEL

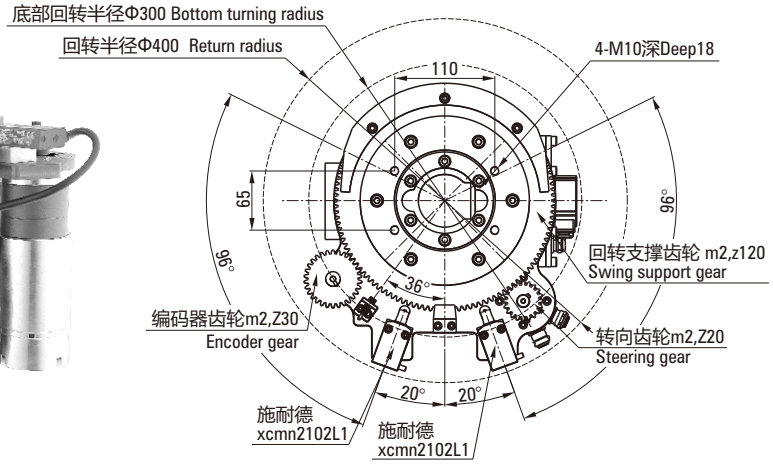
ZD-210AGV-80.178-1500-48-404-0001



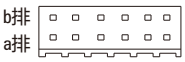








A向端子定义
A-direction terminal definition



电机基本性能参数表 Motor Basic Parameter Table

舵轮驱动电机基本性能参数表 Table of basic performance parameters of steering wheel drive motor	
额定电压 Rated voltage	48V DC
额定功率 Rated powe	1500W
额定电流 Rated current	39A
额定转速 Rated speed	3000rpm
额定力矩 Rated torque	4.775N.m
工作制 Working day	S2 (60min)
绝缘等级 Insulation grade	B
防护等级 Level of protection	IP44
减速比 Deceleration ratio	24.685
制动扭矩 The brake torque	8N.m
编码器 Encoder	-
使用环境温度 Use ambient temperature	-10～40℃
噪音 Noise	≤65dB (A) L=1m
制动器电压V Brake voltage	48

转向电机参数表 Steering motor parameter table	
额定电压 Rated voltage	48V DC
额定功率 Rated power	400W
额定转速 Rated speed	3000rpm
额定力矩 Rated torque	28.93N.M
减速比 Deceleration ratio	28.05
编码器 Encoder	增量型2500线 Incremental 2500 line
转向速度 (Deg/sec) To speed	106.95

整机参数表Whole unit parameter table	
回转半径 Rotation radius	142
线速度m/min Linear velocity	80.14
轮子可承受正压力kg Wheels can withstand positive pressure	1500
牵引力N Tractive force	909

● **驱动电机编码器线引出线定义** Drive motor encoder line lead line definition

VCC	GND	A+	A-	B+	B-	Z+	Z-	U+	U-	V+	V-	W+	W-	NC
红	黑	蓝	蓝黑	绿	绿黑	黄	黄黑	棕	棕黑	灰	灰黑	白	白黑	屏蔽

● **驱动电机电源线引出线定义** Drive motor power cord lead line definition

引线颜色 Leader Color	黄	绿	蓝
引线定义 Down-lead define	U	V	W

● **转向电机编码器线引出线定义** Definition of encoder lead of steering motor

VCC	GND	A+	A-	B+	B-	Z+	Z-	U+	U-	V+	V-	W+	W-	NC
红	黑	蓝	蓝黑	绿	绿黑	黄	黄黑	棕	棕黑	灰	灰黑	白	白黑	屏蔽

● **转向电机电源线引出线定义** Definition of steering motor power line lead out

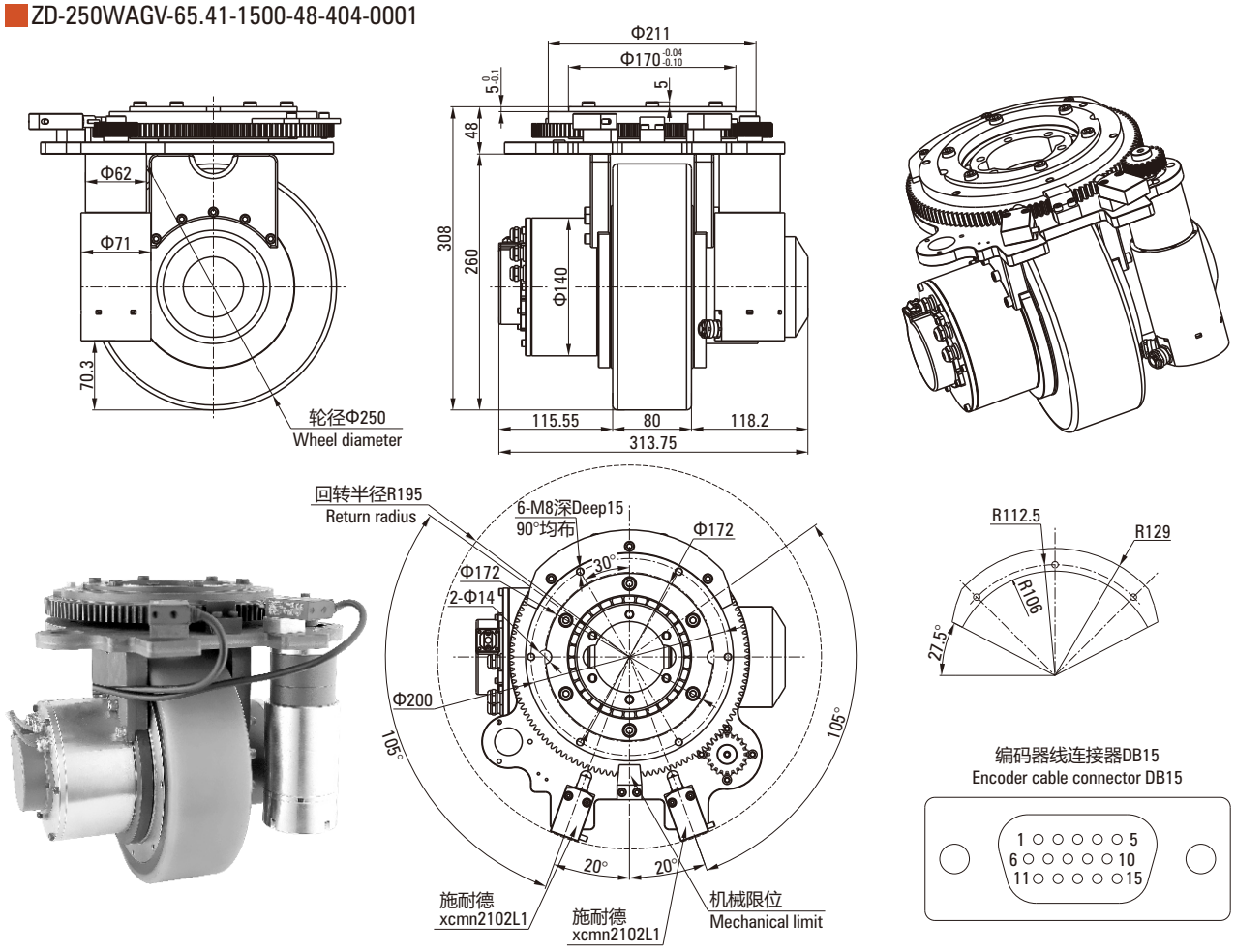
引线颜色 Leader Color	黄	绿	蓝
引线定义 Down-lead define	U	V	W

● **外置编码器引出线定义** External encoder lead line definition

颜色	灰	白绿	黑	红兰	绿	紫	白	黄	灰粉	棕	棕绿	粉
管脚	a1	a2	a3	a4	a5	a6	b1	b2	b3	b4	b5	b6
引线定义	数据	A+	0V传感	B+	时钟	5V传感	直流5V	时钟	B-	0V(U)	A-	数据

250卧式舵轮
250 HORIZONTAL STEERING WHEEL

ZD-250WAGV-65.41-1500-48-404-0001



电机基本性能参数表 Motor Basic Parameter Table

舵轮驱动电机基本性能参数表 Table of basic performance parameters of steering wheel drive motor	
额定电压 Rated voltage	48V DC
额定功率 Rated powe	1500W
额定电流 Rated current	35A
额定转速 Rated speed	3000rpm
额定力矩 Rated torque	4.775N.m
工作制 Working day	S2 (60min)
绝缘等级 Insulation grade	F
防护等级 Level of protection	IP54
减速比 Deceleration ratio	30
制动扭矩 The brake torque	8N.m
编码器 Encoder	增量型2500线光编
使用环境温度 Use ambient temperature	0~40℃
噪音 Noise	≤58dB (A) L=1m
制动器电压V Brake voltage	48

转向电机参数表 Steering motor parameter table	
额定电压 Rated voltage	48V DC
额定功率 Rated power	400W
额定转速 Rated speed	3000rpm
额定力矩 Rated torque	28.93N.M
减速比 Deceleration ratio	28.05
编码器 Encoder	增量型2500线 Incremental 2500 line
转向速度 (Deg/sec) To speed	106.95

整机参数表Whole unit parameter table	
回转半径 Rotation radius	200
线速度m/min Linear velocity	78.5
轮子可承受正压力kg Wheels can withstand positive pressure	1500
牵引力N Tractive force	928

● 驱动电机编码器线引出线定义 Drive motor encoder line lead line definition

VCC	GND	A+	A-	B+	B-	Z+	Z-	U+	U-	V+	V-	W+	W-	NC
红	黑	蓝	蓝黑	绿	绿黑	黄	黄黑	棕	棕黑	灰	灰黑	白	白黑	屏蔽
1	2	8	13	7	12	6	11	4	5	10	15	9	14	金属环

● 转向电机编码器线引出线定义 Definition of encoder lead of steering motor

VCC	GND	A+	A-	B+	B-	Z+	Z-	U+	U-	V+	V-	W+	W-	NC
红	黑	蓝	蓝黑	绿	绿黑	黄	黄黑	棕	棕黑	灰	灰黑	白	白黑	屏蔽
1	2	8	13	7	12	6	11	4	5	10	15	9	14	金属环

● 驱动电机电源线引出线定义 Drive motor power cord lead line definition

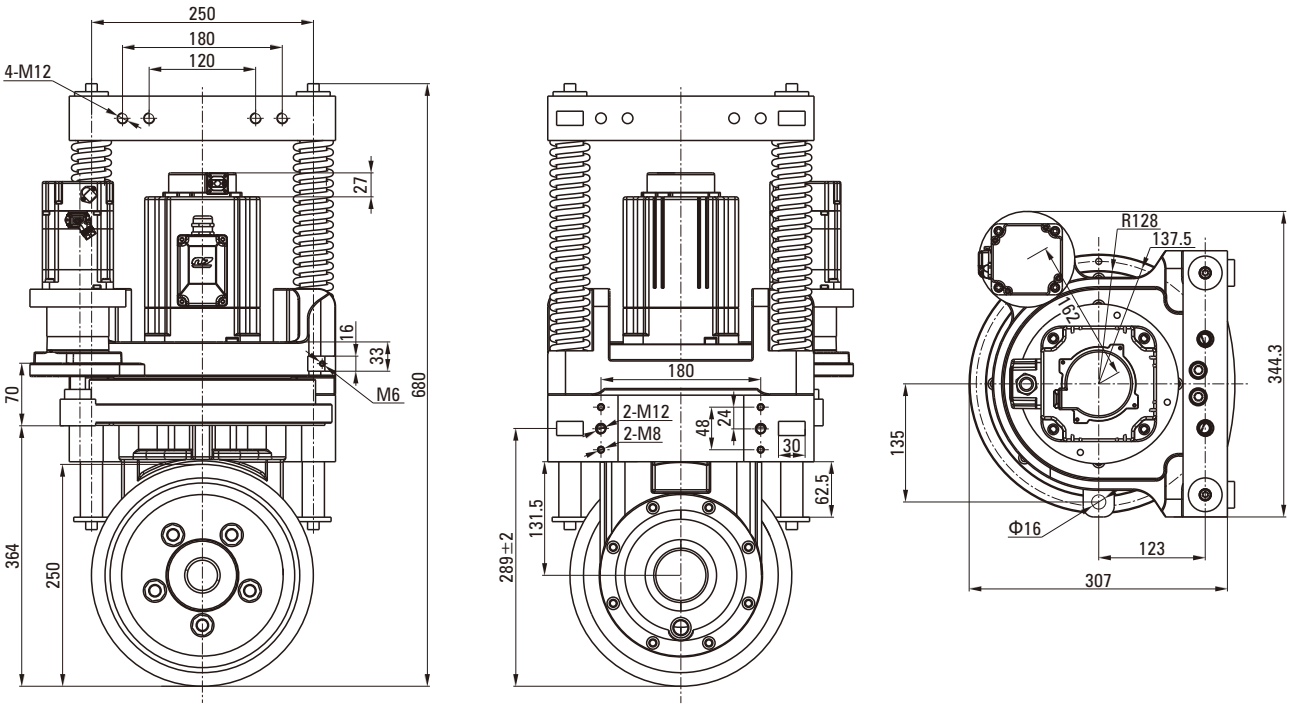
引线颜色 Leader Color	黄	绿	蓝	黄绿
引线定义 Down-lead define	U	V	W	PE

● 转向电机电源线引出线定义 Definition of steering motor power line lead out

引线颜色 Leader Color	黄	绿	蓝	黄绿
引线定义 Down-lead define	U	V	W	PE

250立式伺服驱动轮
250 VERTICAL SERVO DRIVE WHEEL

ZDSF130YM150-30M2M48/ZV21-0010



电机基本性能参数表 Motor Basic Parameter Table

舵轮驱动电机基本性能参数表 Table of basic performance parameters of steering wheel drive motor	
额定电压 Rated voltage	48V DC
额定功率 Rated powe	1500W
额定电流 Rated current	38A
额定转速 Rated speed	3000rpm
额定力矩 Rated torque	4.7N.m
工作制 Working day	S2 (60min)
绝缘等级 Insulation grade	F
防护等级 Level of protection	IP54
减速比 Deceleration ratio	21
制动扭矩 The brake torque	8N.m
编码器 Encoder	增量型2500线光编
使用环境温度 Use ambient temperature	-10℃~40℃
噪音 Noise	≤65dB (A) L=1m
制动器电压V Brake voltage	24

转向电机参数表 Steering motor parameter table	
额定电压 Rated voltage	48V DC
额定功率 Rated power	400W
额定转速 Rated speed	3000rpm
额定力矩 Rated torque	1.27N.M
减速比 Deceleration ratio	24.975
编码器 Encoder	增量型2500线 Incremental 2500 line
转向速度 (Deg/sec) To speed	90DEG/SEC

整机参数表Whole unit parameter table	
回转半径 Rotation radius	210
线速度m/min Linear velocity	112.2
轮子可承受正压力kg Wheels can withstand positive pressure	1500
牵引力N Tractive force	666.7

驱动电机编码器线引出线定义 Drive motor encoder line lead line definition

VCC	GND	A+	A-	B+	B-	Z+	Z-	U+	U-	V+	V-	W+	W-	NC
红	黑	蓝	蓝黑	绿	绿黑	黄	黄黑	棕	棕黑	灰	灰黑	白	白黑	屏蔽
1	2	8	13	7	12	6	11	4	5	10	15	9	14	金属环

转向电机编码器线引出线定义 Definition of encoder lead of steering motor

VCC	GND	A+	A-	B+	B-	Z+	Z-	U+	U-	V+	V-	W+	W-	NC
红	黑	蓝	蓝黑	绿	绿黑	黄	黄黑	棕	棕黑	灰	灰黑	白	白黑	屏蔽
1	2	8	13	7	12	6	11	4	5	10	15	9	14	金属环

驱动电机电源线引出线定义 Drive motor power cord lead line definition

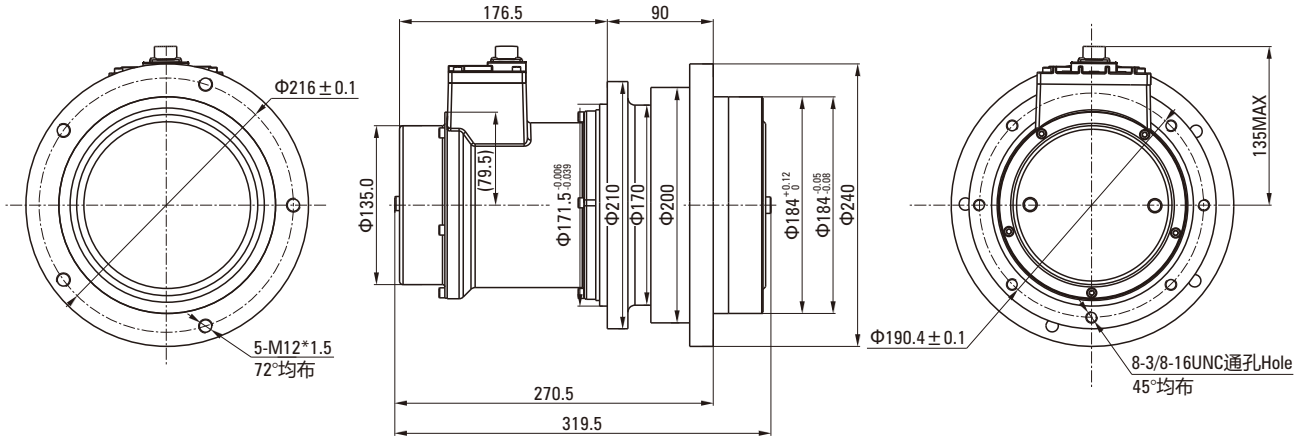
引线颜色 Leader Color	黄	绿	蓝	黄绿
引线定义 Down-lead define	U	V	W	PE

转向电机电源线引出线定义 Definition of steering motor power line lead out

引线颜色 Leader Color	黄	绿	蓝	黄绿
引线定义 Down-lead define	U	V	W	PE

380AGV
380 AGV

ZD0-800W-S15V-380AGV51.4-001-0001



THREE-PHASE ASYNCHRONOUS AC MOTOR

Model: ZD0-800W-S15V Power: 800W
Volt: 15 V Hertz: 72Hz AMP: 45 A
R.P.M: 2075 r/min Duty: S2-60min
Class: F Connection: △ IP: 67
NOISE: 65 dB (A) SER.NO: ZD22E0001

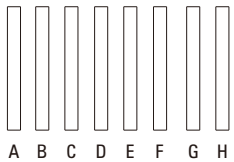
www.zd-motor.com

技术要求 Technical Requirement:

- 整机运转灵活，无杂音，外表无缺陷；
  The whole machine operates flexibly without noise and defects;
- 适用环境温度-20℃+至60℃。
  Applicable ambient temperature: -20℃+to 60℃.

电机基本性能参数表 Motor Basic Parameter Table

电机基本性能参数表 Basic parameter	
型号 Type	ZD0-800W-S15V
功率 Powe	800W
电压 Voltage	15V
频率 Frequecncy	72HZ
电流 Current	45A
转速 Speed	2075r/min
工作制 Work duty	S2-60min
防护等级 Level of protection	IP67
绝缘等级 Insulation class	F



8芯接头示意图 Schematic diagram of 8-core connector		
Ⓐ	OUT A（白色 WHT）	速度检测 Speed detection
Ⓑ	OUT B（蓝色 BLU）	
Ⓒ	VCC（黄色 YEL）	
Ⓓ	GND（黑色 BLK）	
编码器位数 Encoder: 48位 bites		
刹车接线示意Brake wiring diagram		
Ⓔ	刹车线 Brake line （+）	-
Ⓕ	刹车线 Brake line （-）	
温度传感器接线示意 Wiring diagram of temperature sensor		
Ⓖ	传感器 Sensor （+）（红色 RED）	温度检测 Temperature detection
Ⓗ	传感器 Sensor （-）（蓝色 BLU）	

减速器参数表 Table of reducer parameters	
型号 Type	380AGV51.4K
减速比 Reduction ratio	51.4:1
减速级数 Deceleration progression	2级
齿轮箱额定扭矩 Gearbox rated torque	300N.m
瞬时最大扭矩 Instantaneous maximum torque	600N.m
空载转速 No load speed	40.36rpm
噪音 Noise	≤65dB (L=1m)

刹车参数表 Brake parameter table	
额定电压 Rated voltage	24V DC
额定功率 Rated power	28W
制动扭矩 The brake torque	25N.m

技术要求 Technical Requirement

- 电机基本参数如表格中内容；
  The basic parameters of the motor are shown in the table;
- 本产品符合GB-T 7344-2015交流伺服电动机通用技术条件（部分条件）；
  This product meets the general technical conditions (part of the conditions) of GB-T 7344-2015 AC servo motor;
- 装配整洁、电机运转平稳、声音和谐、无明显异音；
  Clean assembly, stable motor operation, harmonious sound, no obvious different sound;
- 电机整机颜色及配件（引出线及螺钉等）按中大标准。
  The color and accessories of the motor (lead wire and screws, etc.) according to the standard of CUHK.

CATALOGUE



PLANETARY GEAR BOX
ZB/ZE系列
高精度行星减速机

中大力德



PLANETARY GEAR BOX
ZDR/ZDGF(S)系列
高精度行星减速机

中大力德



PLANETARY GEAR BOX
ZDE/ZDF/ZDWE/ZDWF/ZDS系列
高精度行星减速机

中大力德



AC & DC GEAR MOTOR
微型交、直流减速电动机

中大力德



AC & DC RIGHT ANGLE GEAR MOTOR
交、直流直角轴减速电动机

中大力德



SMALL AC GEAR MOTOR
小型交流平行轴齿轮减速电机

中大力德

中大力德

INTELLIGENT LOGISTICS POWER UNIT

宁波中大力德智能传动股份有限公司
NINGBO ZHONGDA LEADER INTELLIGENT TRANSMISSION CO.,LTD.
地址：浙江省慈溪高新技术产业开发区新兴一路185号
Add： NO.185 1st Xinxing Road,New Industrial Zone, Cixi City, Zhejiang, China.

宁波中大创远精密传动设备有限公司
ZHONGDA CHUANGYUAN PRECISE TRANSMISSION EQUIPMENT CO.,LTD.
地址：浙江省宁波杭州湾新区金慈路159号
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E-mail: manager@zd-motor.com
E-mail: trade@zd-motor.com

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