

SMALL/F3 PERMANENT MAGNET SYNCHRONOUS SERIES GEAR MOTOR

小型/F3永磁同步系列齿轮减速电机



中大 实现自动化应用的无限可能

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15117万元，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12项，行业标准5项；授权专利107项，其中发明专利14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 151.17 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.

小型/F3永磁同步机型介绍 MODEL INTRODUCTION

■ 小型标准型 Small standard

机型/规格 Model/Specification		
功率/速比 Power/Speed ratio		
型号 Model	速比 Speed ratio	箱号-轴径-键 Box number axis diameter key
100W	3-50	1-18-5
	60-100	2-22-7
	110-200	2-22-7
	250-1800	3-28-7
200W	3-10	1-18-5
	15-30	2-22-7
	35-90	2-22-7
	100-200	3-28-7
250W	250-1800	4-32-10
	3-10	1-18-5
	15-30	2-22-7
	35-90	2-22-7
400W	100-200	3-28-7
	250-1800	4-32-10
	3-10	2-22-7
	15-35	3-28-7
550W	40-90	3-28-7
	100-200	4-32-10
	250-1800	5-40-10
	3-10	2-22-7
750W 1HP	15-25	3-28-7
	30-60	4-32-10
	70-120	4-32-10
	125-200	5-40-10
	250-1800	6-50-14
	3-10	3-28-7

■ 小型缩框型 Small scaled frame type

机型/规格 Model/Specification		
功率/速比 Power/Speed ratio		
型号 Model	速比 Speed ratio	箱号-轴径-键 Box number axis diameter key
100W	60-200	1-18-5
	250-1800	2-22-7
200W	15-30	1-18-5
	40-90	1-18-5
	100-200	2-22-7
200W	250-1800	3-28-7
	15-30	1-18-5
	40-90	1-18-5
	100-200	2-22-7
400W	250-1800	3-28-7
	15-30	2-22-7
	35-90	2-22-7
	100-200	3-28-7
550W	250-1800	4-32-10
	15-30	2-22-7
	35-90	2-22-7
	100-200	3-28-7
750W	250-1800	4-32-10
	30-60	3-28-7
	70-120	3-28-7
	125-200	4-32-10
	250-1800	5-40-10

■ F3标准型 Small standard

机型/规格 Model/Specification		
功率/速比 Power/Speed ratio		
型号 Model	速比 Speed ratio	轴径Shaft diameter
100W	5-60	20H/18A
	80-240	25H/22A
200W	5-60	25H/22A
	80-240	30H/28A
250W	5-60	25H/22A
	80-240	30H/28A
400W	5-60	30H/28A
	80-240	35H/32A
550W	5-60	30H/28A
	80-240	35H/32A
750W	5-60	35H/32A
	80-240	45H/40A

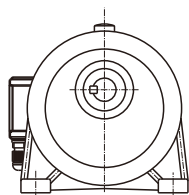
小型永磁同步型号说明方法

TYPE AND MOTOR MODEL

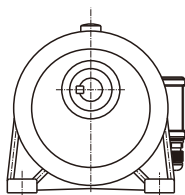
减速电机型号说明 Description Of Motor Model

PM	-	ZHN	100	-	SZ	60	-	G1	-	LD	-	Q1
①		②	③		④	⑤		⑥		⑦		⑧
① 永磁同步系列 Permanent magnet synchronous series												
② 箱体结构基本代号: ZHN (卧式)、ZVN (立式) Basic code for box structure; ZHN (Horizontal), ZVN (Vertical)												
③ 输出功率 Output power: 100W, 200W, 250W, 400W, 550W, 750W, 1100W, 1500W, 2200W, 3700W												
④ 电机的基本结构 Motor basic data: S: 三相电机 3-Phase motor Z: 缩框型减速电机 Light type duty (标准型省略 Standard type omit)												
⑤ 齿轮箱的减速比 Reduction ratio of gearbox: 3,5,10.....1800												
⑥ 出轴端看接线盒方位 (如图示) Terminal box direction from output shaft (As shown) G1: 左方向 Left G2: 右方向 Right G3: 上方向 Top G4: 下方向 Down												

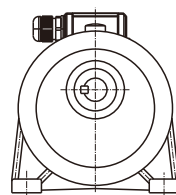
ZHN 型
ZHN Type



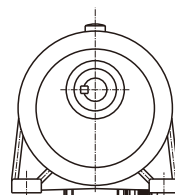
G1:左方向Left



G2:右方向Right

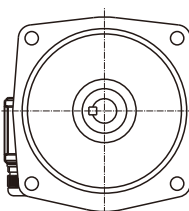


G3:上方向Top

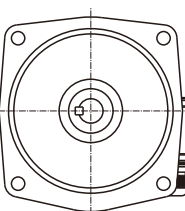


G4:下方向Down

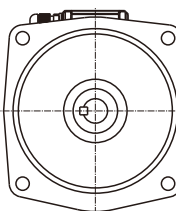
ZVN 型
ZVN Type



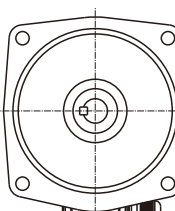
G1:左方向Left



G2:右方向Right

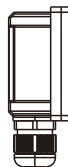


G3:上方向Top

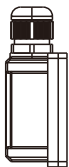


G4:下方向Down

⑦ 出轴端看引出线方位 (如图示) Lead direction from output shaft (As shown)
T: 向上 Top D: 向下 Down F: 向前 Forward B: 向后 Back L: 向左 Left R: 向右 Right



LD



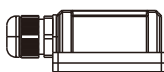
LT



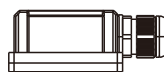
RD



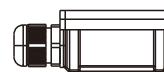
RT



TL



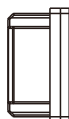
TR



DL



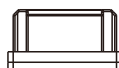
DR



LB



RB



TB



DB

小型永磁同步型号说明方法 TYPE AND MOTOR MODEL

⑧ 出厂标准安装形式：Standard installaion method

本公司出厂所有减速器适用如图安装形式

All of our company's reducer can be applied to the following kinds of installation method

图中Q1、Q4中注油孔方向为标准型

In the diagram, Q1, Q4, are our standard types of oil hole direction

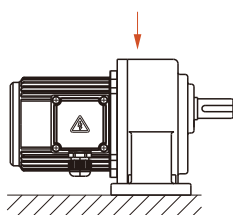
注油孔在特殊位置的，请特别告知，本公司将修改出气孔位置

Pls inform us if the location of oil hole is special, we will modify it

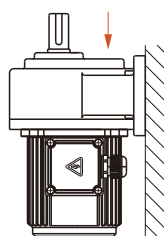
实际使用时，建议将注油孔中的堵油销拔出，以平衡减速箱内的压力

Pls pull out the pin of the oil plug to reduce the pressure in the gearbox during running

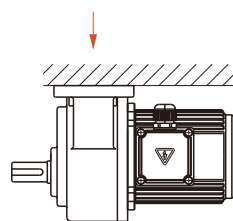
Q1 出气孔方向
Air hold direction



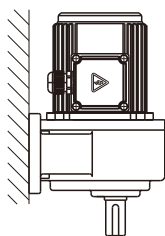
Q2 出气孔方向
Air hold direction



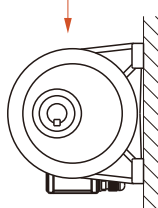
Q3 出气孔方向
Air hold direction



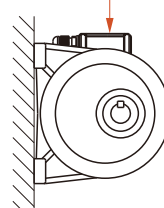
Q4 无出气孔
No oil filling hole



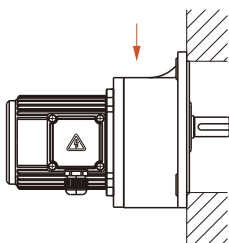
Q5 出气孔方向
Air hold direction



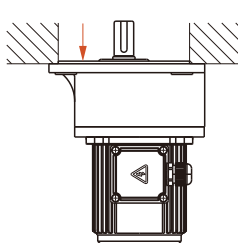
Q6 出气孔方向
Air hold direction



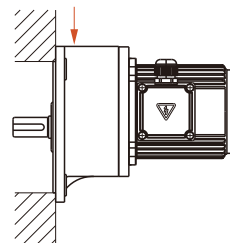
Q1 出气孔方向
Air hold direction



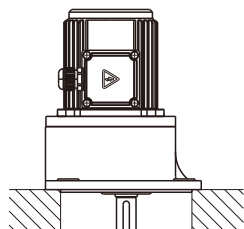
Q2 出气孔方向
Air hold direction



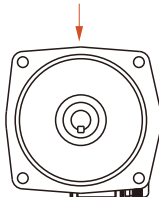
Q3 出气孔方向
Air hold direction



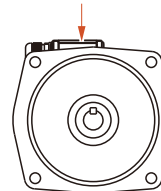
Q4 无出气孔
No oil filling hole



Q5 出气孔方向
Air hold direction



Q6 出气孔方向
Air hold direction



备注 Note:

订购变频电机时，请说明变频范围，减速电机的使用环境工作方式等。

For motors supplied by transducer please tell us detailed working modes and working ambient.

带刹车减速电机总长度需增加10mm。The total length of brake motors will be 10mm longer than standard motors.

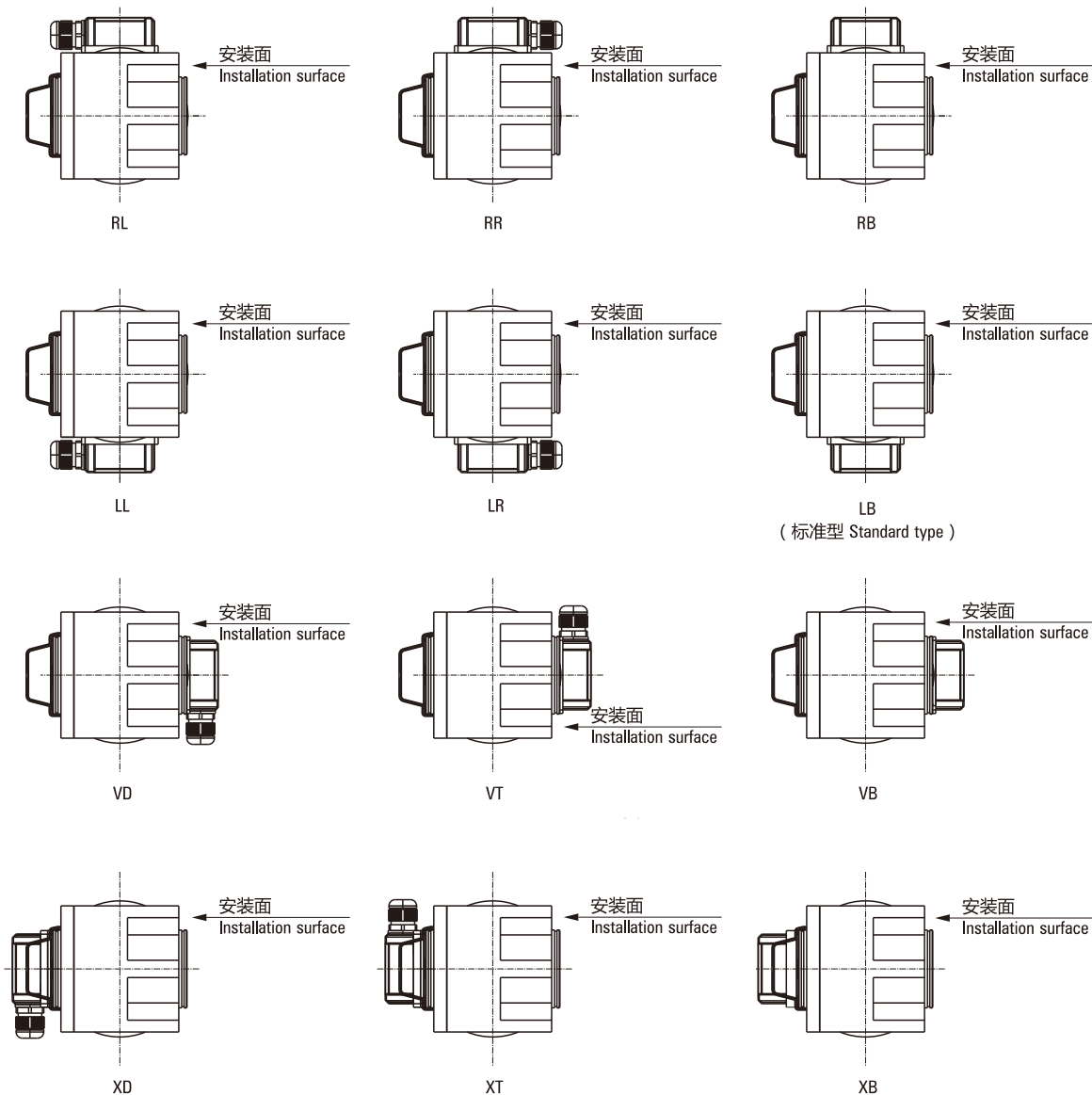
F3永磁同步型号说明方法

TYPE AND MOTOR MODEL

■ 减速电机型号说明 Description Of Motor Model

PM	-	ZDF3	-	25	H	30	LB	-	100	-	S
①		②		③	④	⑤	⑥		⑦		⑧
① 永磁同步系列 Permanent magnet synchronous series											
② F3系列 F3 series											
③ 出轴直径或孔径 Output shaft diameter or hole diameter											
④ 出轴类型：A实心轴，H空心轴，T双实心轴 Output shaft type: A solid shaft, H hollow shaft, T double solid spindle											
⑤ 减速比 Reduction ratio: 5, 7.5, 10 240											
⑥ 表示接线盒方向（标准型省略） Indicates the direction of the junction box (Omitted for standard models)											
⑦ 输出功率 Output power: 100W, 200W, 250W, 400W, 550W, 750W, 1100W, 1500W, 2200W											
⑧ S: 三相电机 3-Phase motor											

● 接线盒方向，详见下表 The direction of the junction box is shown in the table below

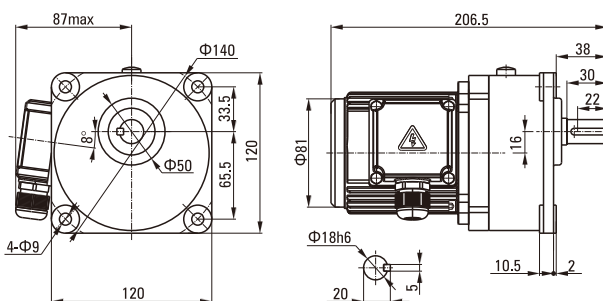
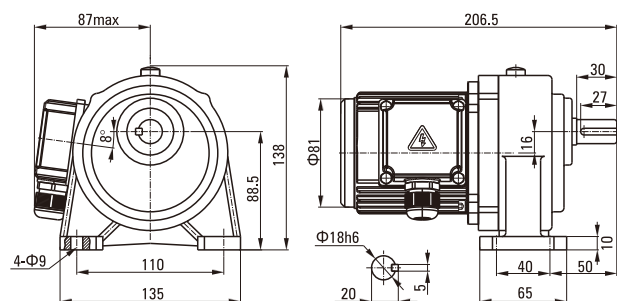


小型永磁100W手册 SMALL PERMANENT MAGNER 100W MANUAL

1#齿轮箱输出轴 $\Phi 18\text{mm}$ 外形尺寸 1# gearbox output shaft $\Phi 18\text{mm}$ external shaft

● 卧式 Horizontal type

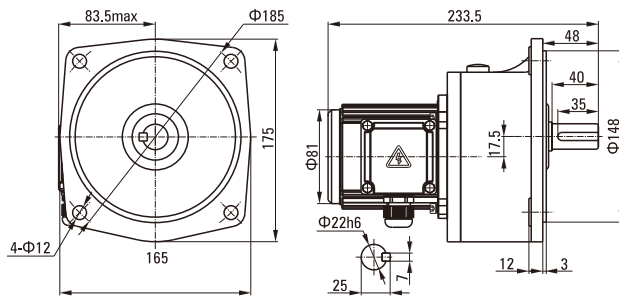
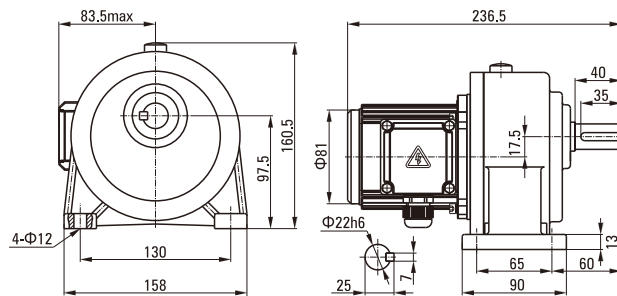
● 立式 Vertical type



2#齿轮箱输出轴 $\Phi 22\text{mm}$ 外形尺寸 2# gearbox output shaft $\Phi 22\text{mm}$ external shaft

● 卧式 Horizontal type

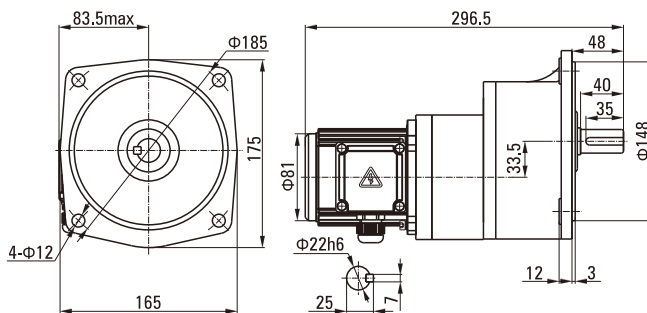
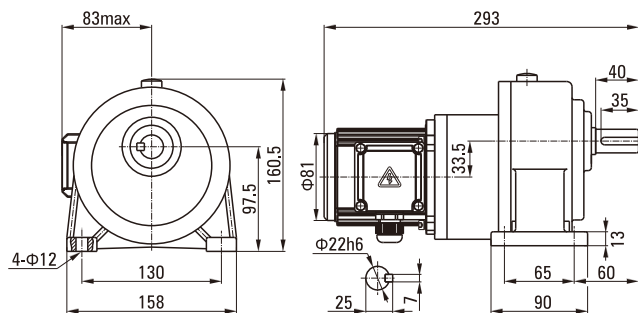
● 立式 Vertical type



1#+2#齿轮箱输出轴 $\Phi 22\text{mm}$ 外形尺寸 1# + 2# gearbox output shaft $\Phi 22\text{mm}$ external shaft

● 卧式 Horizontal type

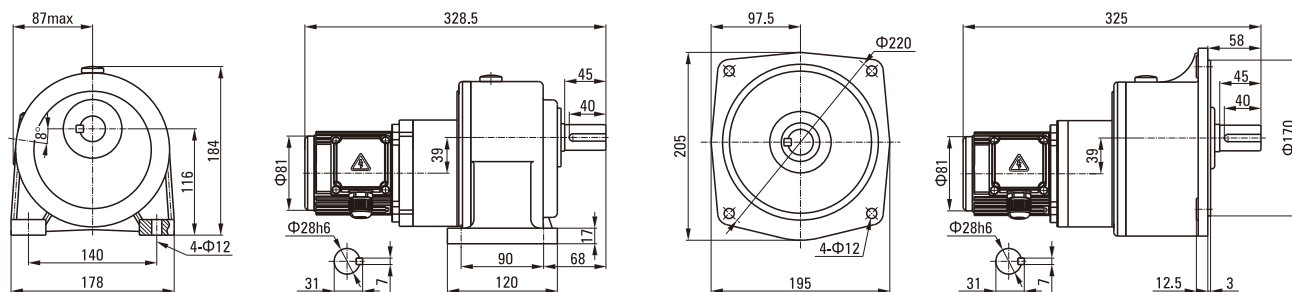
● 立式 Vertical type



■ 1#+3#齿轮箱输出轴 $\Phi 28\text{mm}$ 外形尺寸 1#+3# gearbox output shaft $\Phi 28\text{mm}$ external shaft

● 卧式 Horizontal type

● 立式 Vertical type



■ 参数表 Parameter table

光电机转速 Photomotor speed	型号 Model: 100W	电压 Voltage V	系统电流 System Current A	相电流 Phase current A	扭矩 Torque N.m	输出功率 Output power W	系统效率 System efficiency	带载启动 On load startup N.m
低速 Low speed (100rpm)		220	0.24	0.45	0.64	7	30.5	1.3
中低速 Medium and low speed (500rpm)		220	0.45	0.47	0.64	32	62.3	1.1
中高速 Medium to high speed (1000rpm)		220	0.81	0.53	0.64	37	71.9	0.8
高速 High speed (1500rpm)		220	1.08	0.47	0.64	101	76.8	0.8
最高速 Maximum speed (1800rpm)		220	1.21	0.51	0.64	122	82.1	0.8

*以上参数为中大C40控制器匹配测试数据 *The above parameters are the matching test data of Zhongda C40 controller

● 中大C40控制器优点 Advantages of Zhongda C40 controller:

1. 低速恒扭矩 Low speed constant torque
2. 具备矢量电磁刹车功能 Equipped with vector electromagnetic braking function
3. 重复定位精度高 High precision in repeated positioning
4. 长距离：支持驱动器与电机之间100米以内长距离安装
Long distance: Supports long-distance installation between the driver and motor within 100 meters

■ 输出轴容许扭矩 Permissible torque of output shaft

● 1#齿轮箱 Gearbox

单位 Unit: N.m

功率 Power	类型 Type	速比 speed ratio	3	5	10	15	20	25	30	40	45	50	60	70	80	90	100	120	140	160	180	200
100W	标准型 Standard type	扭矩 Torque	1.7	2.8	5.5	8.3	11.1	13.8	16.6	22	24.9	27.6	/	/	/	/	/	/	/	/	/	/
	缩框型 Shrink frame type		/	/	/	/	/	/	/	/	/	/	33.2	34	34	34	34	34	34	34	34	34

● 2#齿轮箱 Gearbox

单位 Unit: N.m

功率 Power	类型 Type	速比 speed ratio	3	5	10	15	20	25	30	40	45	50	60	70	80	90	100	120	140	160	180	200
100W	标准型 Standard type	扭矩 Torque	/	/	/	/	/	/	/	/	/	/	29.8	34.8	39.8	44.8	49.7	56.7	69.6	79.6	89.5	99.5

■ 高速比输出轴容许扭矩 Allowable torque of high-speed output shaft

● 1#+2#齿轮箱 Gearbox

单位 Unit: N.m

功率 Power	类型 Type	速比 speed ratio	250	300	350	400	450	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800
100W	缩框型 Shrink frame type	扭矩 Torque	100.7	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116	116

● 1#+3#齿轮箱 Gearbox

单位 Unit: N.m

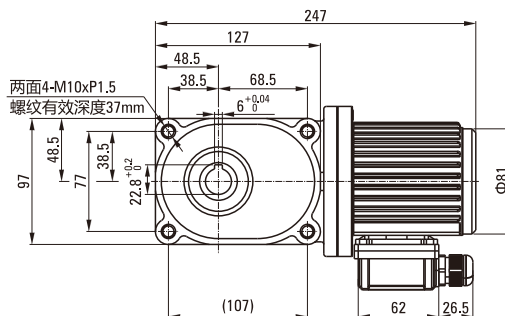
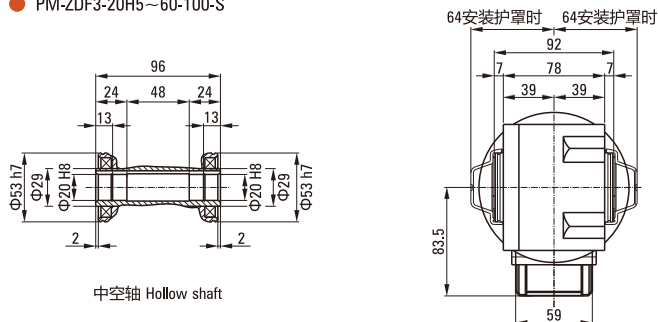
功率 Power	类型 Type	速比 speed ratio	250	300	350	400	450	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800
100W	标准型 Standard type	扭矩 Torque	100.7	112	112	112	112	112	229	229	229	229	229	229	229	229	229	229	229	229	229

F3永磁100W手册

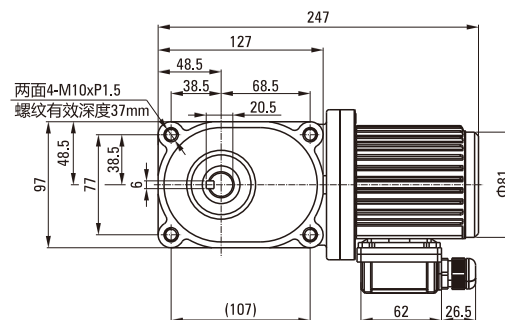
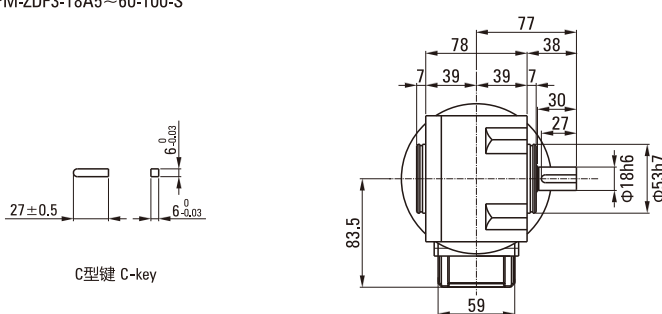
F3 PERMANENT MAGNER 100W MANUAL

20H/18A外形尺寸 20H/18A external shaft

PM-ZDF3-20H5~60-100-S

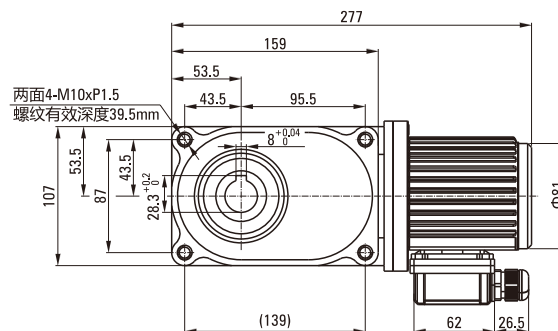
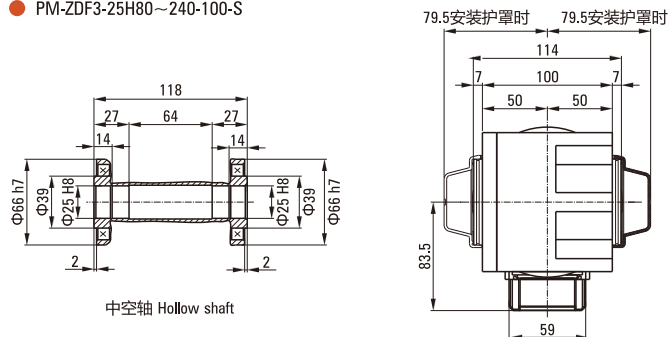


PM-ZDF3-18A5~60-100-S

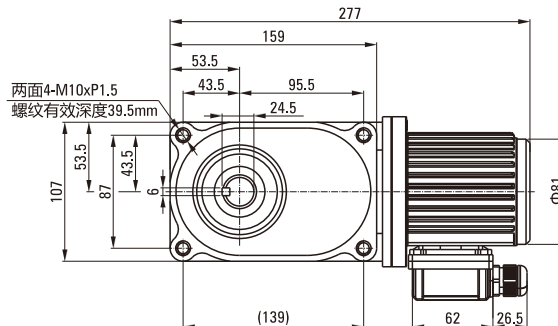
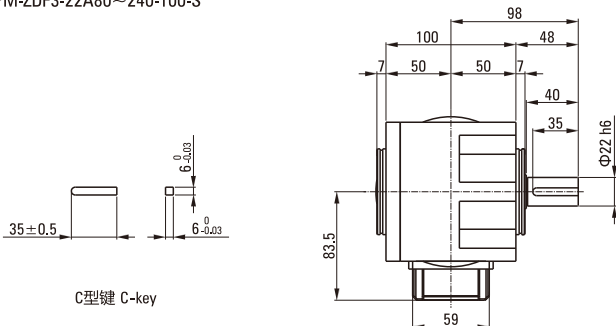


25H/22A外形尺寸 25H/22A external shaft

PM-ZDF3-25H80~240-100-S



PM-ZDF3-22A80~240-100-S



输出轴容许扭矩 Permissible torque of output shaft

单位 Unit: N.m

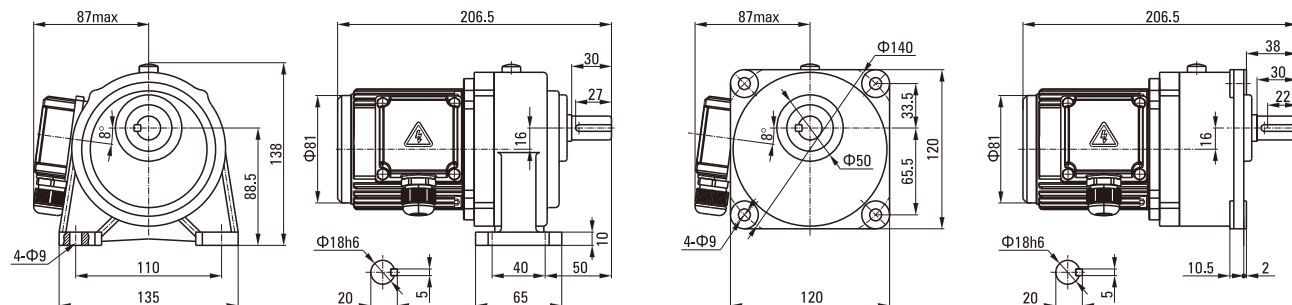
功率 Power	孔径/轴径 Aperture/Shaft diameter	速比 speed ratio	5	7.5	10	12	15	20	25	30	40	50	60	80	100	120	160	200	240
100W	20H/18A	扭矩 Torque	2.6	3.9	5.2	6.2	7.7	10.3	12.9	15.5	20.6	25.8	30.9	/	/	/	/	/	/
	25H/22A		/	/	/	/	/	/	/	/	/	/	/	37.1	46.4	55.7	74.3	92.8	101

小型永磁200W手册 SMALL PERMANENT MAGNER 200W MANUAL

1#齿轮箱输出轴 $\Phi 18\text{mm}$ 外形尺寸 1# gearbox output shaft $\Phi 18\text{mm}$ external shaft

● 卧式 Horizontal type

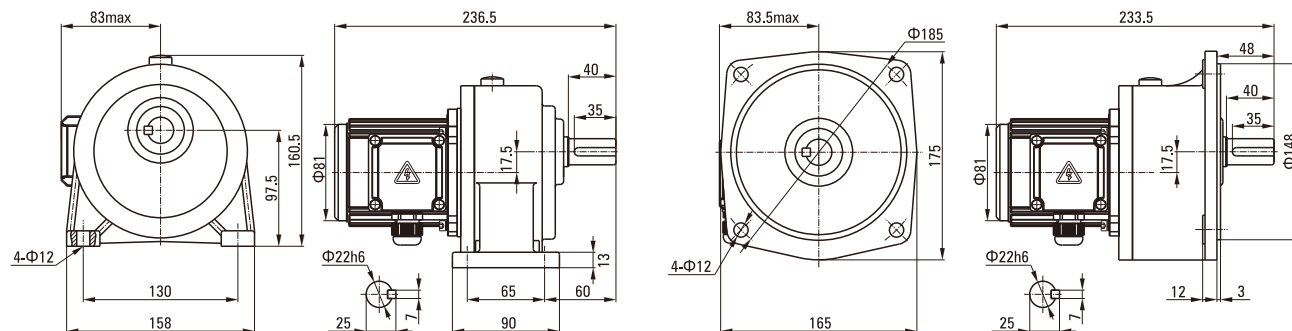
● 立式 Vertical type



2#齿轮箱输出轴 $\Phi 22\text{mm}$ 外形尺寸 2# gearbox output shaft $\Phi 22\text{mm}$ external shaft

● 卧式 Horizontal type

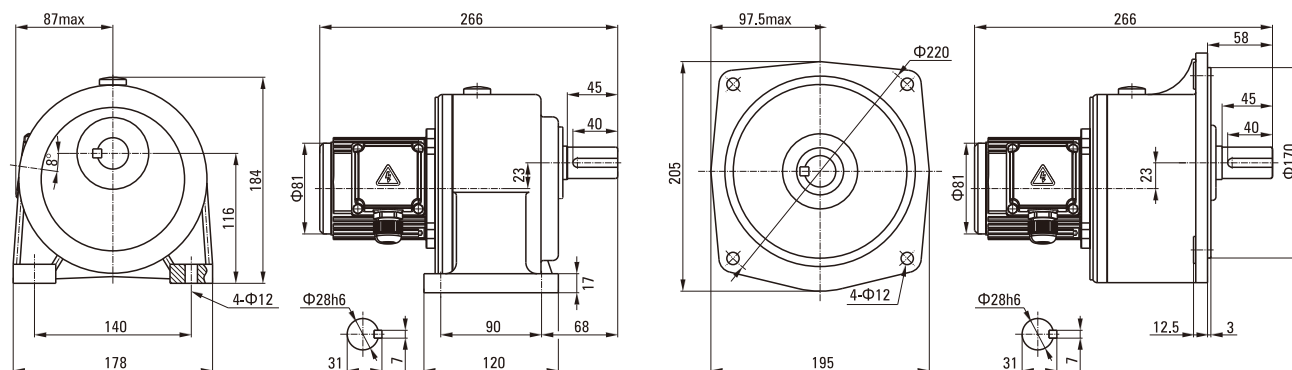
● 立式 Vertical type



3#齿轮箱输出轴 $\Phi 28\text{mm}$ 外形尺寸 3# gearbox output shaft $\Phi 28\text{mm}$ external shaft

● 卧式 Horizontal type

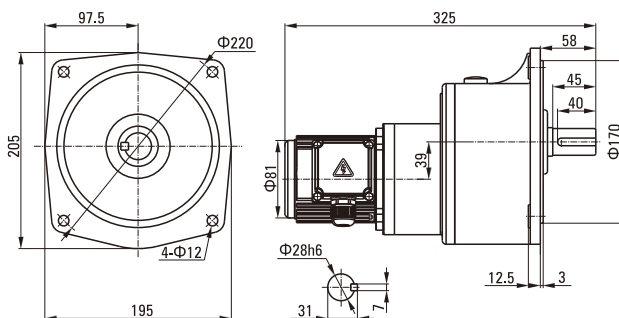
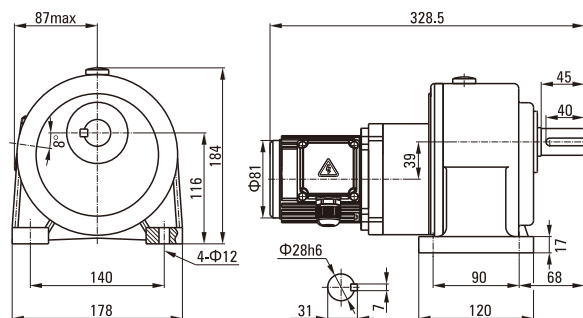
● 立式 Vertical type



1#+3#齿轮箱输出轴 $\Phi 28\text{mm}$ 外形尺寸 1# + 3# gearbox output shaft $\Phi 28\text{mm}$ external shaft

● 卧式 Horizontal type

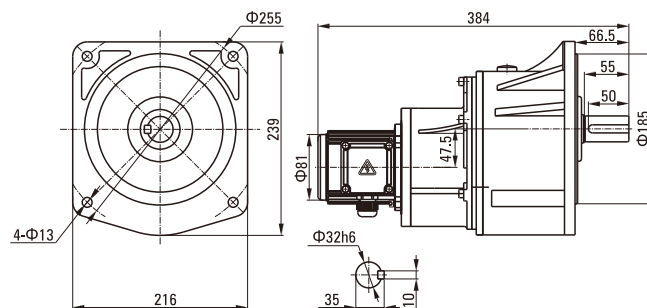
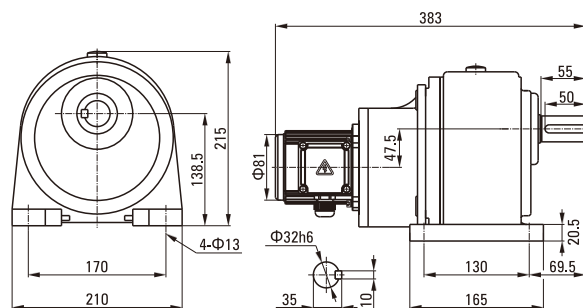
● 立式 Vertical type



2#+4#齿轮箱输出轴 $\Phi 28\text{mm}$ 外形尺寸 2# + 4# gearbox output shaft $\Phi 28\text{mm}$ external shaft

● 卧式 Horizontal type

● 立式 Vertical type



参数表 Parameter table

光电机转速 Photomotor speed	型号 Model: 200W	电压 Voltage V	系统电流 System Current A	相电流 Phase current A	扭矩 Torque N.m	输出功率 Output power W	系统效率 System efficiency	带载启动 On load startup N.m
低速 Low speed (100rpm)		220	0.6	0.84	1.27	13	33.4	2.2
中低速 Medium and low speed (500rpm)		220	0.87	0.88	1.27	67	66.4	2.1
中高速 Medium to high speed (1000rpm)		220	1.4	0.93	1.27	136	80.5	1.7
高速 High speed (1500rpm)		220	1.92	0.91	1.27	201	83.1	1.7
最高速 Maximum speed (1800rpm)		220	2.21	0.97	1.27	241	81.5	1.7

*以上参数为中大C40控制器匹配测试数据 *The above parameters are the matching test data of Zhongda C40 controller

● 中大C40控制器优点 Advantages of Zhongda C40 controller:

1. 低速恒扭矩 Low speed constant torque
2. 具备矢量电磁刹车功能 Equipped with vector electromagnetic braking function
3. 重复定位精度高 High precision in repeated positioning
4. 长距离：支持驱动器与电机之间100米以内长距离安装 Long distance: Supports long-distance installation between the driver and motor within 100 meters

■ **输出轴容许扭矩** Permissible torque of output shaft

● 1#齿轮箱 Gearbox

单位 Unit: N.m

[illegible]

● 2#齿轮箱 Gearbox

单位 Unit: N.m

功率 Power	类型 Type	速比 speed ratio	3	5	10	15	20	25	30	40	45	50	60	70	80	90	100	120	140	160	180	200
200W	标准型 Standard type	扭矩 Torque	/	/	/	15.5	20.6	25.8	30.9	41.3	46.4	51.6	55.7	65.0	74.3	83.5	/	/	/	/	/	/
	缩框型 Shrink frame type		/	/	/	/	/	/	/	/	/	/	/	/	/	/	92.8	111.4	116	116	116	116

● 3#齿轮箱 Gearbox

单位 Unit: N.m

功率 Power	类型 Type	速比 speed ratio	3	5	10	15	20	25	30	40	45	50	60	70	80	90	100	120	140	160	180	200
200W	标准型 Standard type	扭矩 Torque	/	/	/	/	/	/	/	/	/	/	/	/	/	/	92.8	111.4	130.0	148.5	167.1	185.7

■ 高速比输出轴容许扭矩 Allowable torque of high-speed output shaft

● 1#+3#**齿轮箱** Gearbox

单位 Unit: N.m

[illegible]

● 2#+4#**齿轮箱** Gearbox

单位 Unit: N.m

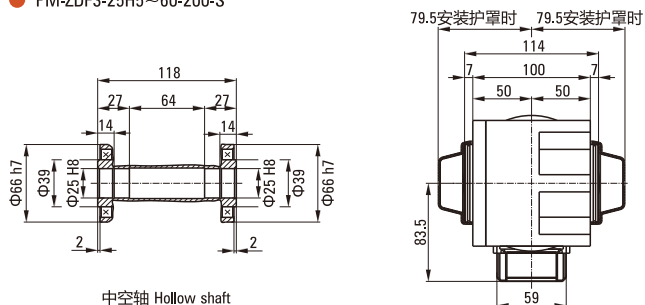
[illegible]

F3永磁200W手册

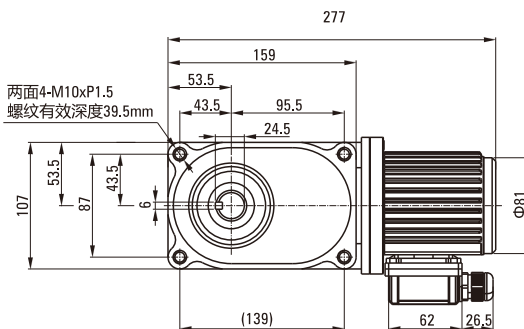
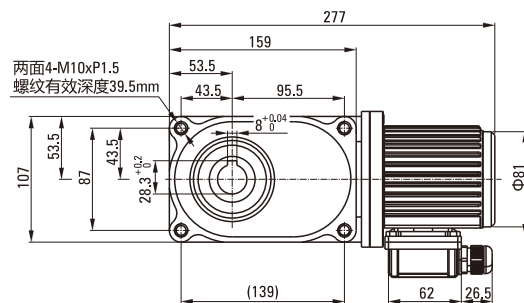
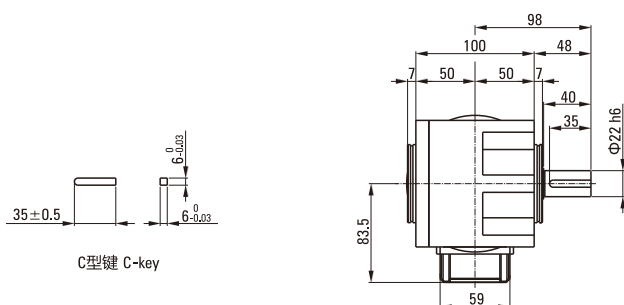
F3 PERMANENT MAGNER 200W MANUAL

25H/22A外形尺寸 25H/22A external shaft

PM-ZDF3-25H5~60-200-S

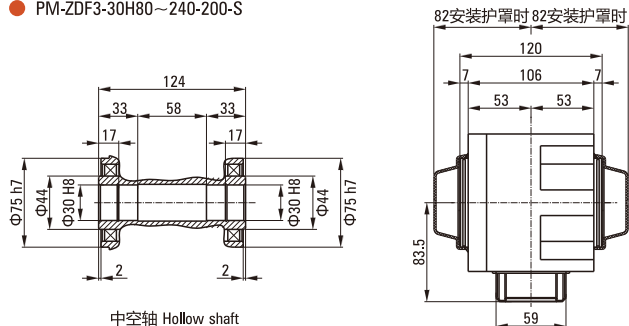


PM-ZDF3-22A5~60-200-S

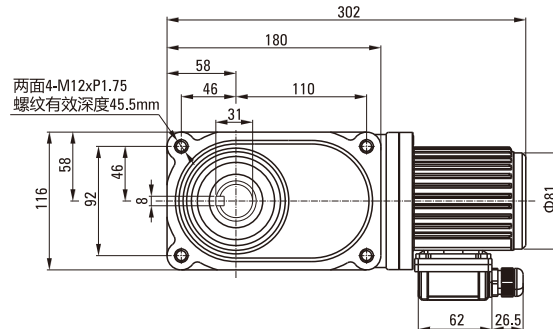
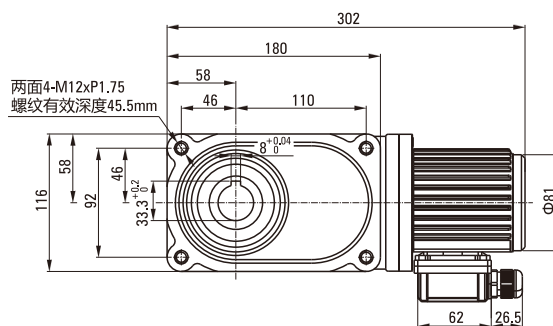
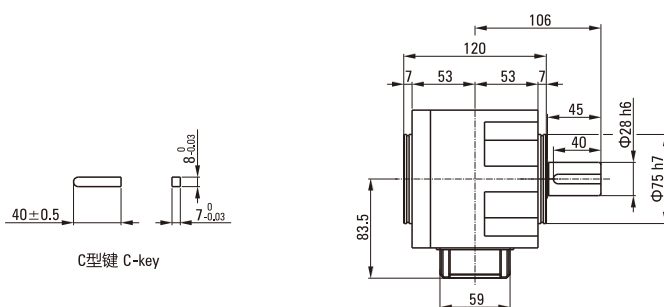


30H/28A外形尺寸 30H/28A external shaft

PM-ZDF3-30H80~240-200-S



PM-ZDF3-28A80~240-200-S



输出轴容许扭矩 Permissible torque of output shaft

单位 Unit: N.m

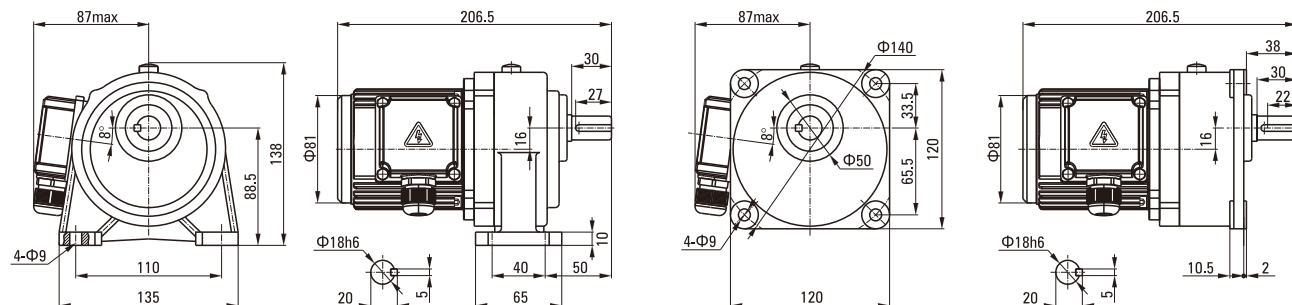
功率 Power	孔径/轴径 Aperture/Shaft diameter	速比 speed ratio	5	7.5	10	12	15	20	25	30	40	50	60	80	100	120	160	200	240
200W	25H/22A	扭矩 Torque	5.2	7.7	10.3	12.4	15.5	20.6	25.8	30.9	41.3	51.6	61.9	/	/	/	/	/	/
	30H/28A		/	/	/	/	/	/	/	/	/	/	/	74.3	92.8	111.4	148.5	184	184

小型永磁250W手册 SMALL PERMANENT MAGNER 250W MANUAL

1# 齿轮箱输出轴 $\Phi 18\text{mm}$ 外形尺寸 1# gearbox output shaft $\Phi 18\text{mm}$ external shaft

● 卧式 Horizontal type

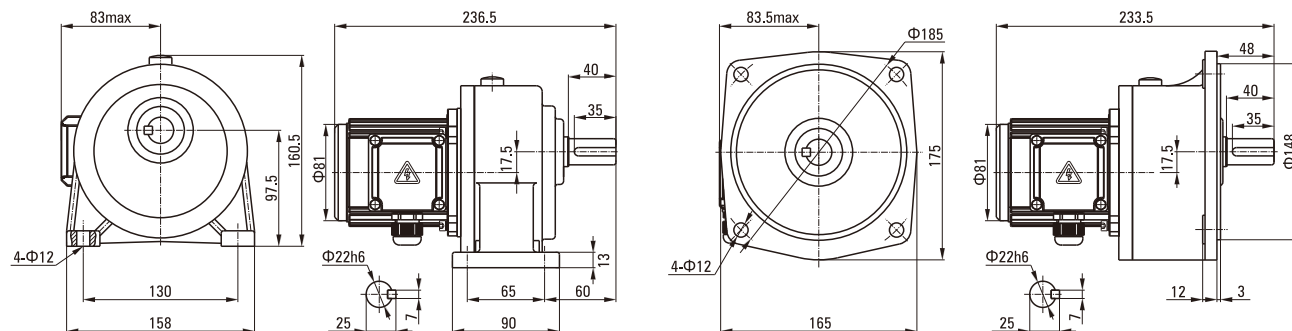
● 立式 Vertical type



2# 齿轮箱输出轴 $\Phi 22\text{mm}$ 外形尺寸 2# gearbox output shaft $\Phi 22\text{mm}$ external shaft

● 卧式 Horizontal type

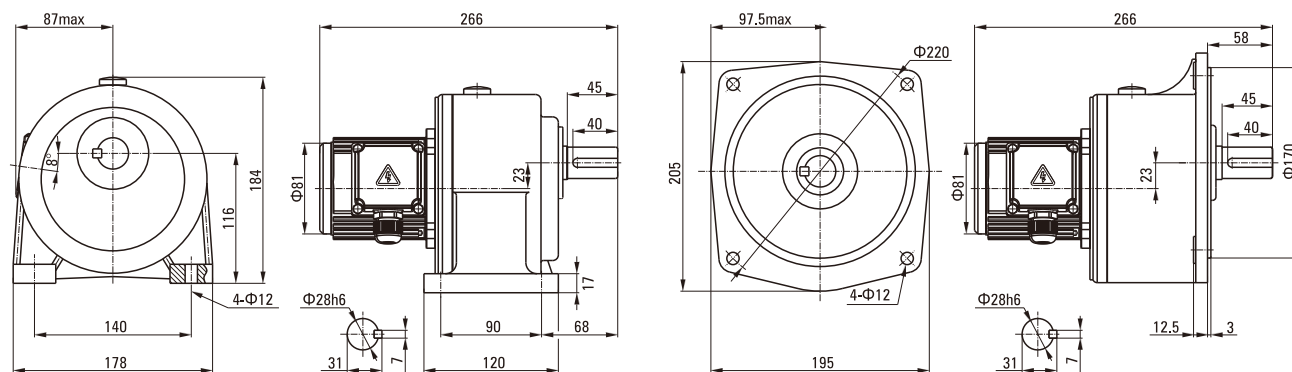
● 立式 Vertical type



3# 齿轮箱输出轴 $\Phi 28\text{mm}$ 外形尺寸 3# gearbox output shaft $\Phi 28\text{mm}$ external shaft

● 卧式 Horizontal type

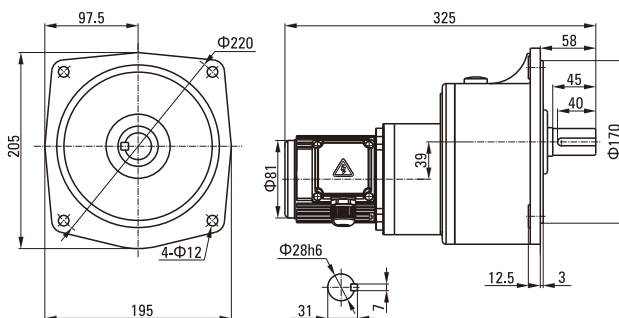
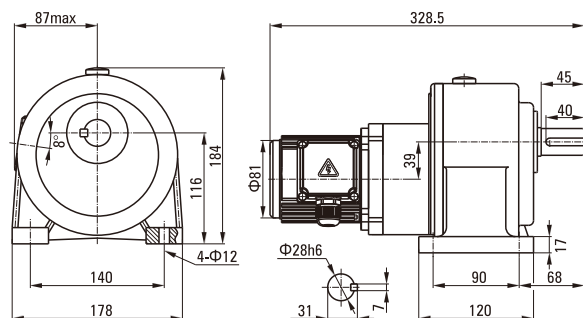
● 立式 Vertical type



1#+3#齿轮箱输出轴 $\Phi 28\text{mm}$ 外形尺寸 1# + 3# gearbox output shaft $\Phi 28\text{mm}$ external shaft

● 卧式 Horizontal type

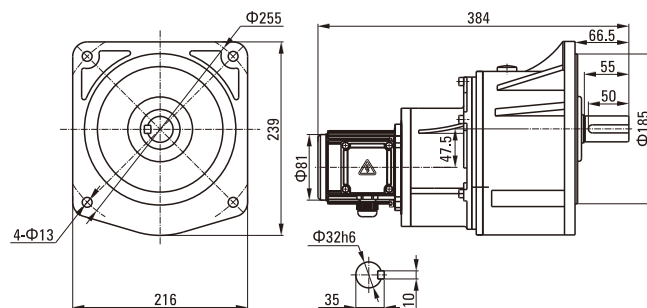
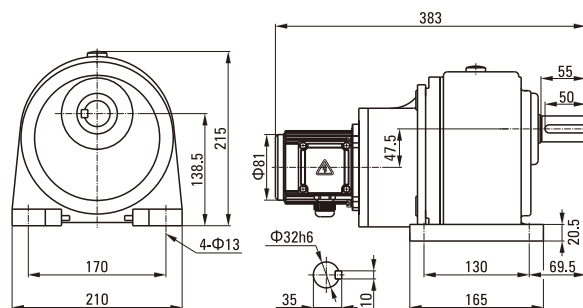
● 立式 Vertical type



2#+4#齿轮箱输出轴 $\Phi 28\text{mm}$ 外形尺寸 2# + 4# gearbox output shaft $\Phi 28\text{mm}$ external shaft

● 卧式 Horizontal type

● 立式 Vertical type



参数表 Parameter table

光电机转速 Photomotor speed	型号 Model: 250W	电压 Voltage V	系统电流 System Current A	相电流 Phase current A	扭矩 Torque N.m	输出功率 Output power W	系统效率 System efficiency	带载启动 On load startup N.m
低速 Low speed (100rpm)		220	0.5	1.13	1.56	18	30.8	3.2
中低速 Medium and low speed (500rpm)		220	1.03	1.12	1.56	82	67.5	3.2
中高速 Medium to high speed (1000rpm)		220	1.75	1.12	1.56	172	78.8	3.0
高速 High speed (1500rpm)		220	2.26	1.12	1.56	247	85.6	2.7
最高速 Maximum speed (1800rpm)		220	2.66	1.13	1.56	297	86.5	2.5

*以上参数为中大C40控制器匹配测试数据 *The above parameters are the matching test data of Zhongda C40 controller

● 中大C40控制器优点 Advantages of Zhongda C40 controller:

1. 低速恒扭矩 Low speed constant torque
2. 具备矢量电磁刹车功能 Equipped with vector electromagnetic braking function
3. 重复定位精度高 High precision in repeated positioning
4. 长距离：支持驱动器与电机之间100米以内长距离安装 Long distance: Supports long-distance installation between the driver and motor within 100 meters

单位 Unit: N.m

[illegible]

单位 Unit: N.m

功率 Power	类型 Type	速比 speed ratio	3	5	10	15	20	25	30	40	45	50	60	70	80	90	100	120	140	160	180	200
250W	标准型 Standard type	扭矩 Torque	/	/	/	19.3	25.8	32.3	38.7	51.6	46.4	58.0	69.6	81.2	92.8	104.4	/	/	/	/	/	/
	缩框型 Shrink frame type		/	/	/	/	/	/	/	/	/	/	/	/	/	/	116	116	116	116	116	116

单位 Unit: N.m

功率 Power	类型 Type	速比 speed ratio	3	5	10	15	20	25	30	40	45	50	60	70	80	90	100	120	140	160	180	200
250W	标准型 Standard type	扭矩 Torque	/	/	/	/	/	/	/	/	/	/	/	/	/	/	116	139.2	162.4	185.7	208.9	229.0

单位 Unit: N.m

[illegible]

单位 Unit: N.m

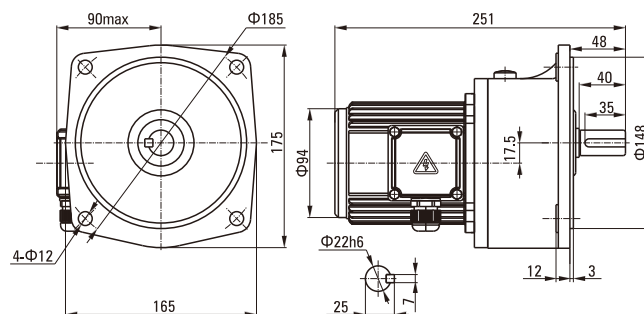
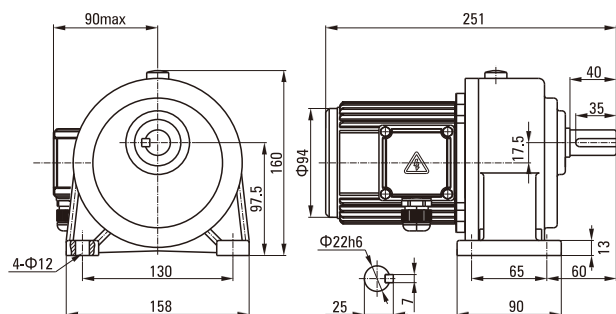
[illegible]

小型永磁400W手册 SMALL PERMANENT MAGNER 400W MANUAL

2# 齿轮箱输出轴 $\Phi 22\text{mm}$ 外形尺寸 2# gearbox output shaft $\Phi 22\text{mm}$ external shaft

● 卧式 Horizontal type

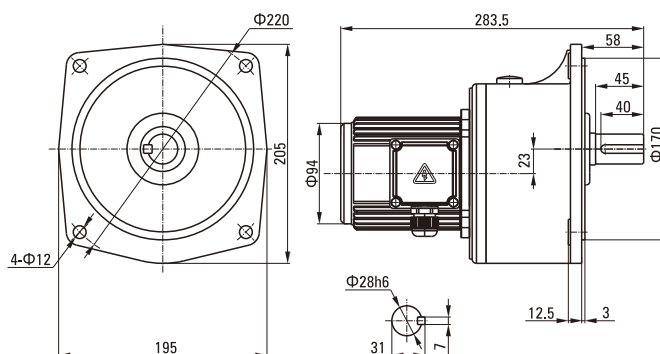
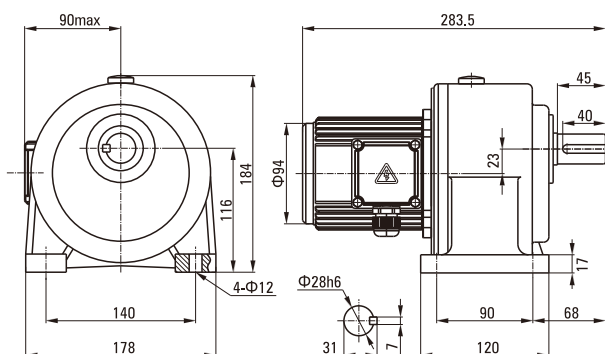
● 立式 Vertical type



3# 齿轮箱输出轴 $\Phi 28\text{mm}$ 外形尺寸 3# gearbox output shaft $\Phi 28\text{mm}$ external shaft

● 卧式 Horizontal type

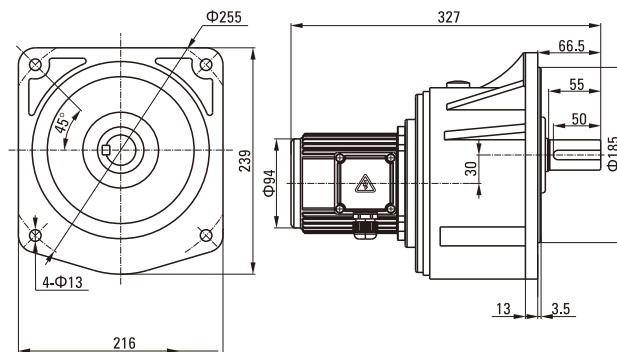
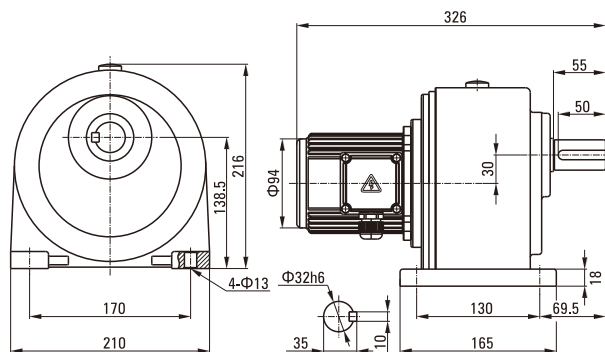
● 立式 Vertical type



4# 齿轮箱输出轴 $\Phi 32\text{mm}$ 外形尺寸 4# gearbox output shaft $\Phi 32\text{mm}$ external shaft

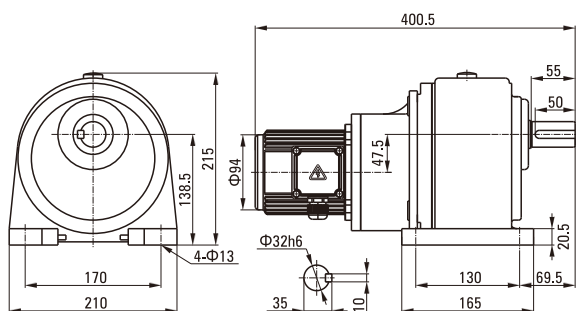
● 卧式 Horizontal type

● 立式 Vertical type

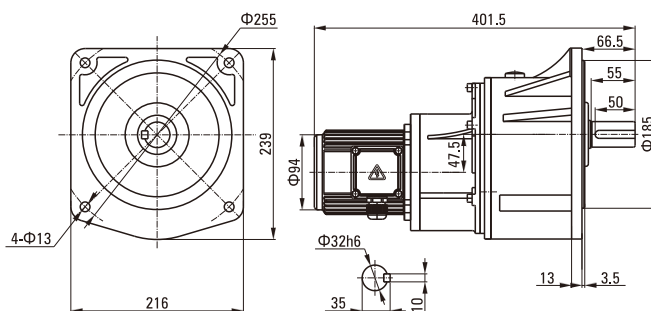


■ 2#+4#齿轮箱输出轴 $\Phi 32\text{mm}$ 外形尺寸 2# + 4# gearbox output shaft $\Phi 32\text{mm}$ external shaft

● 卧式 Horizontal type

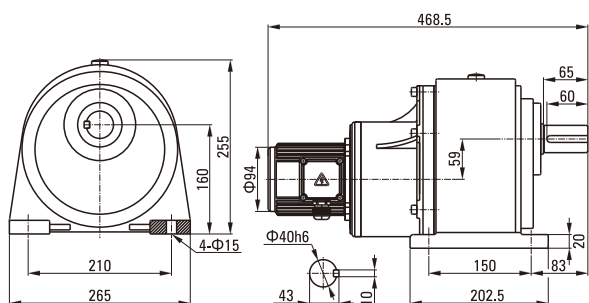


● 立式 Vertical type

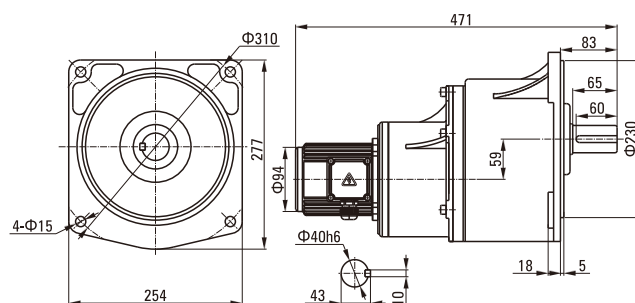


■ 3#+5#齿轮箱输出轴 $\Phi 40\text{mm}$ 外形尺寸 3# + 5# gearbox output shaft $\Phi 40\text{mm}$ external shaft

● 卧式 Horizontal type



● 立式 Vertical type



■ 参数表 Parameter table

光电机转速 Photomotor speed	型号 Model: 400W	电压 Voltage V	系统电流 System Current A	相电流 Phase current A	扭矩 Torque N.m	输出功率 Output power W	系统效率 System efficiency	带载启动 On load startup N.m
低速 Low speed (100rpm)		220	0.68	1.54	2.48	27	33.8	4.3
中低速 Medium and low speed (300rpm)		220	1.12	1.52	2.48	80	60.2	3.8
中速 Medium speed (600rpm)		220	1.73	1.53	2.48	157	73.9	3.9
中高速 Medium to high speed (900rpm)		220	2.36	1.62	2.48	234	78.5	3.7
高速 High speed (1500rpm)		220	3.09	1.65	2.48	319	80.1	3.9
最高速 Maximum speed (1500rpm)		220	3.58	1.65	2.48	392	83.3	3.9

*以上参数为中大C40控制器匹配测试数据 *The above parameters are the matching test data of Zhongda C40 controller

● 中大C40控制器优点 Advantages of Zhongda C40 controller:

1. 低速恒扭矩 Low speed constant torque
2. 具备矢量电磁刹车功能 Equipped with vector electromagnetic braking function
3. 重复定位精度高 High precision in repeated positioning
4. 长距离：支持驱动器与电机之间100米以内长距离安装 Long distance: Supports long-distance installation between the driver and motor within 100 meters

■ **输出轴容许扭矩** Permissible torque of output shaft

● 2#齿轮箱 Gearbox

单位 Unit: N.m

功率 Power	类型 Type	速比 speed ratio	3	5	10	15	20	25	30	40	45	50	60	70	80	90	100	120	140	160	180	200
400W	标准型 Standard type	扭矩 Torque	6.2	10.3	20.6	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	缩框型 Shrink frame type		/	/	/	30.9	41.3	51.6	61.9	82.5	92.8	103	103	103	103	103	/	/	/	/	/	/

● 3#齿轮箱 Gearbox

单位 Unit: N.m

功率 Power	类型 Type	速比 speed ratio	3	5	10	15	20	25	30	40	45	50	60	70	80	90	100	120	140	160	180	200
400W	标准型 Standard type	扭矩 Torque	/	/	/	30.9	41.3	51.6	61.9	82.5	92.8	103.1	111.4	130.0	148.5	167.1	/	/	/	/	/	/
	缩框型 Shrink frame type		/	/	/	/	/	/	/	/	/	/	/	/	/	/	185.7	222.8	229	229	229	229

● 4#齿轮箱 Gearbox

单位 Unit: N.m

功率 Power	类型 Type	速比 speed ratio	3	5	10	15	20	25	30	40	45	50	60	70	80	90	100	120	140	160	180	200
400W	标准型 Standard type	扭矩 Torque	/	/	/	/	/	/	/	/	/	/	/	/	/	/	185.7	222.8	259.9	297.0	334.2	371.3

■ 高速比输出轴容许扭矩 Allowable torque of high-speed output shaft

● 2#+4#**齿轮箱** Gearbox

单位 Unit: N.m

[illegible]

● 3#+5#齿轮箱 Gearbox

单位 Unit: N.m

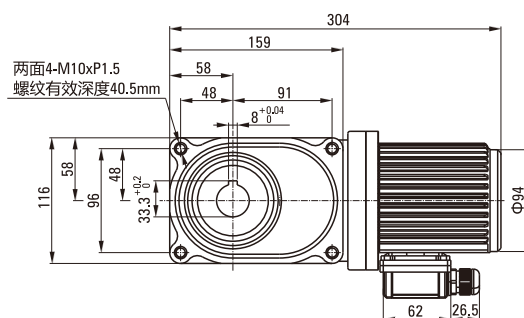
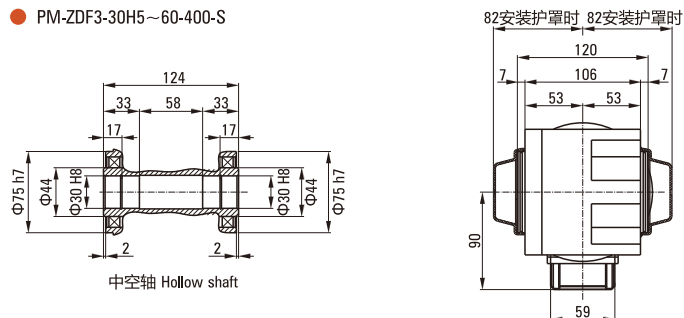
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F3永磁400W手册

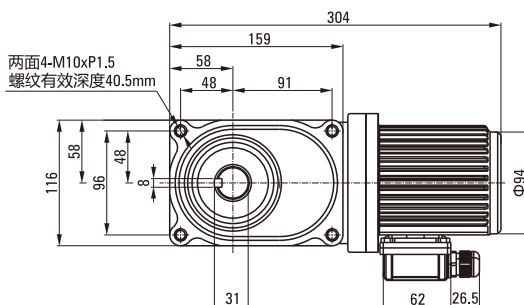
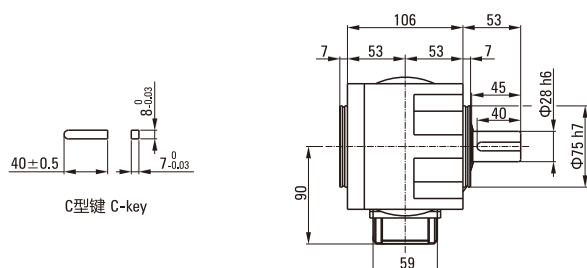
F3 PERMANENT MAGNER 400W MANUAL

30H/28A外形尺寸 30H/28A external shaft

PM-ZDF3-30H5~60-400-S

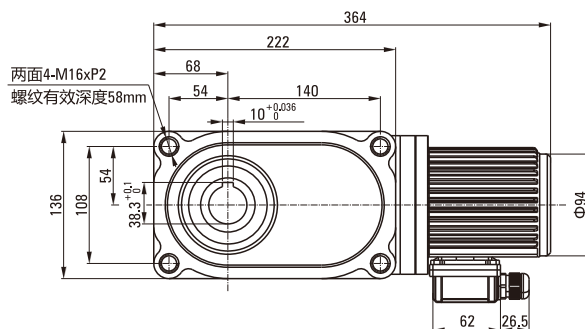
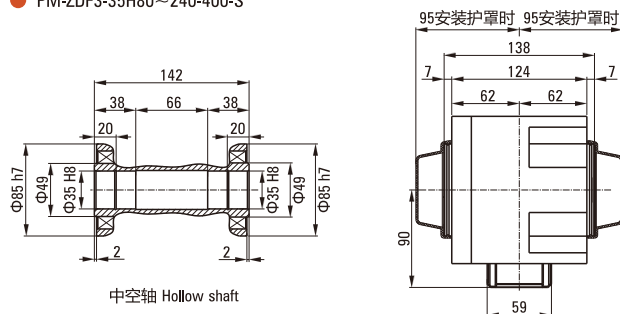


PM-ZDF3-28A5~60-400-S

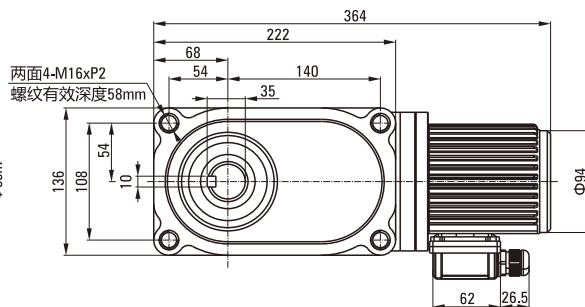
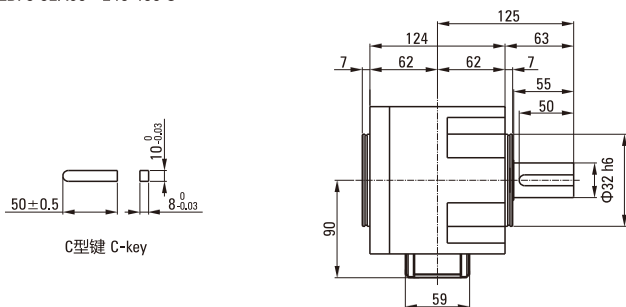


35H/32A外形尺寸 35H/32A external shaft

PM-ZDF3-35H80~240-400-S



PM-ZDF3-32A80~240-400-S



输出轴容许扭矩 Permissible torque of output shaft

单位 Unit: N.m

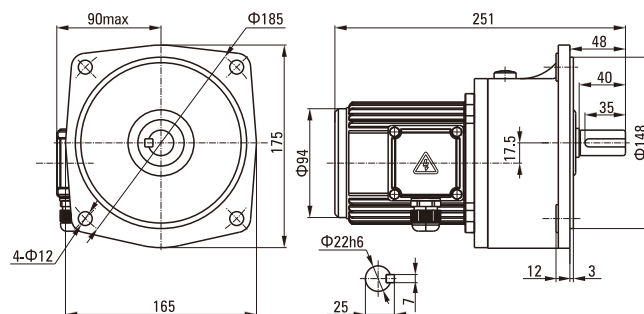
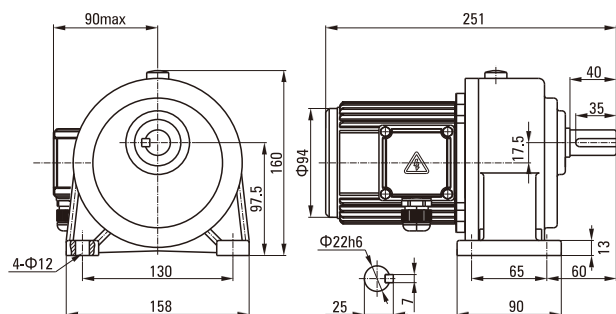
功率 Power	孔径/轴径 Aperture/Shaft diameter	速比 speed ratio	5	7.5	10	12	15	20	25	30	40	50	60	80	100	120	160	200	240
400W	30H/28A	扭矩 Torque	10.3	15.5	20.6	24.8	30.9	41.3	51.6	61.9	82.5	103.1	123.8	/	/	/	/	/	/
	35H/32A		/	/	/	/	/	/	/	/	/	/	/	148.5	185.7	222.8	270	270	270

小型永磁550W手册 SMALL PERMANENT MAGNER 550W MANUAL

2# 齿轮箱输出轴 $\Phi 22\text{mm}$ 外形尺寸 2# gearbox output shaft $\Phi 22\text{mm}$ external shaft

● 卧式 Horizontal type

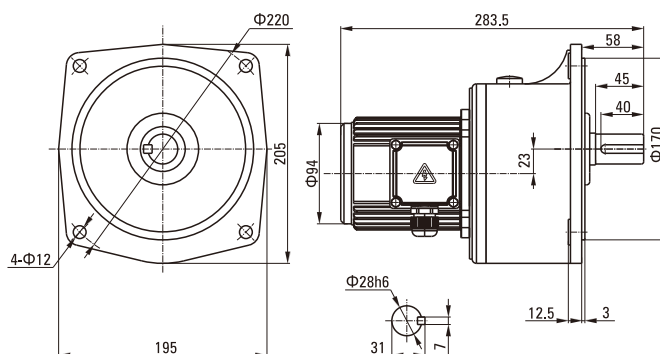
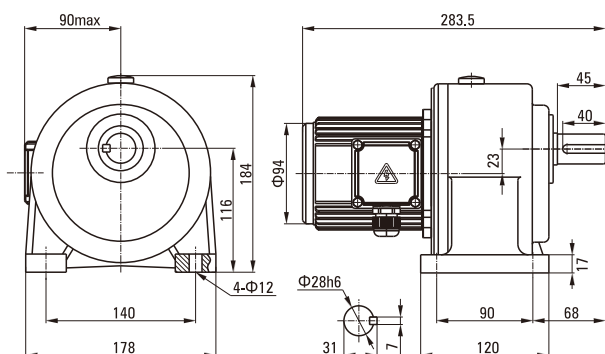
● 立式 Vertical type



3# 齿轮箱输出轴 $\Phi 28\text{mm}$ 外形尺寸 3# gearbox output shaft $\Phi 28\text{mm}$ external shaft

● 卧式 Horizontal type

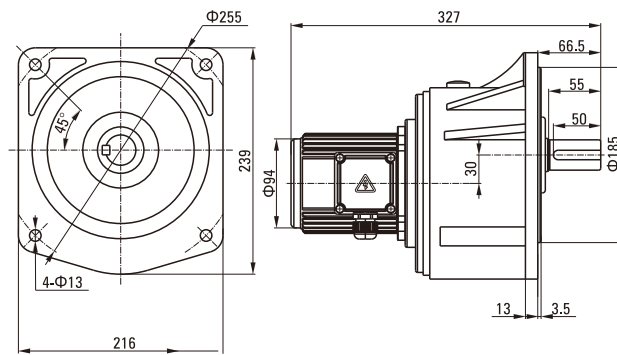
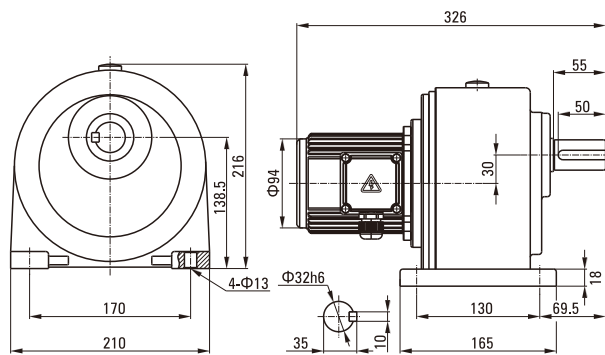
● 立式 Vertical type



4# 齿轮箱输出轴 $\Phi 32\text{mm}$ 外形尺寸 4# gearbox output shaft $\Phi 32\text{mm}$ external shaft

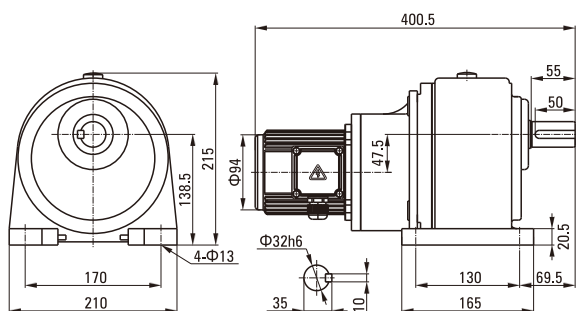
● 卧式 Horizontal type

● 立式 Vertical type

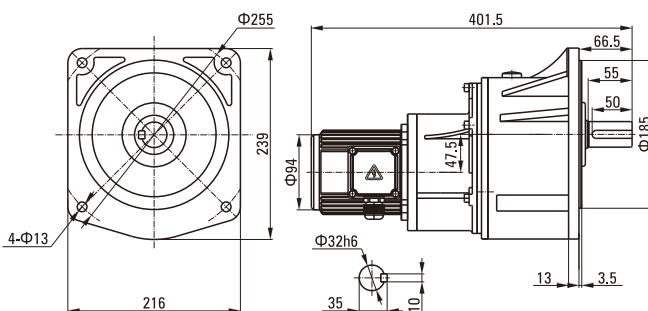


2#+4#齿轮箱输出轴 $\Phi 32\text{mm}$ 外形尺寸 2# + 4# gearbox output shaft $\Phi 32\text{mm}$ external shaft

● 卧式 Horizontal type

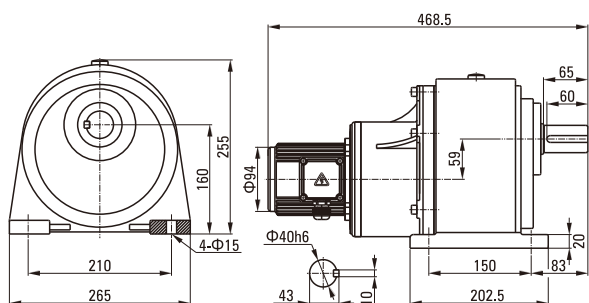


● 立式 Vertical type

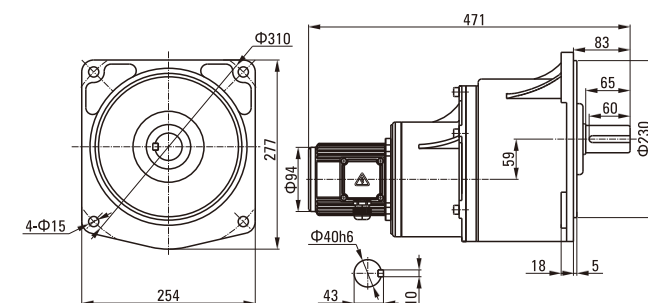


3#+5#齿轮箱输出轴 $\Phi 40\text{mm}$ 外形尺寸 3# + 5# gearbox output shaft $\Phi 40\text{mm}$ external shaft

● 卧式 Horizontal type



● 立式 Vertical type



参数表 Parameter table

光电机转速 Photomotor speed	型号 Model: 550W	电压 Voltage V	系统电流 System Current A	相电流 Phase current A	扭矩 Torque N.m	输出功率 Output power W	系统效率 System efficiency	带载启动 On load startup N.m
低速 Low speed (100rpm)		220	0.81	1.98	3.51	37	39.5	6.1
中低速 Medium and low speed (300rpm)		220	1.35	1.97	3.51	110	68.8	5.7
中速 Medium speed (600rpm)		220	2.11	1.94	3.51	221	84.2	6.1
中高速 Medium to high speed (900rpm)		220	3.13	1.96	3.51	337	83.5	5.2
高速 High speed (1500rpm)		220	3.76	1.96	3.51	427	87.2	5.4
最高速 Maximum speed (1500rpm)		220	5.07	2.13	3.51	611	88.5	5.5

*以上参数为中大C40控制器匹配测试数据 *The above parameters are the matching test data of Zhongda C40 controller

● 中大C40控制器优点 Advantages of Zhongda C40 controller:

1. 低速恒扭矩 Low speed constant torque
2. 具备矢量电磁刹车功能 Equipped with vector electromagnetic braking function
3. 重复定位精度高 High precision in repeated positioning
4. 长距离：支持驱动器与电机之间100米以内长距离安装 Long distance: Supports long-distance installation between the driver and motor within 100 meters

单位 Unit: N.m

功率 Power	类型 Type	速比 speed ratio	3	5	10	15	20	25	30	40	45	50	60	70	80	90	100	120	140	160	180	200
550W	标准型 Standard type	扭矩 Torque	8.5	14.2	28.4	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	缩框型 Shrink frame type		/	/	/	42.5	56.7	70.9	85.1	103	103	103	103	103	103	103	/	/	/	/	/	/

单位 Unit: N.m

功率 Power	类型 Type	速比 speed ratio	3	5	10	15	20	25	30	40	45	50	60	70	80	90	100	120	140	160	180	200
550W	标准型 Standard type	扭矩 Torque	/	/	/	42.5	56.7	70.9	85.1	113.5	127.6	141.8	153.2	178.7	204.2	229	/	/	/	/	/	/
	缩框型 Shrink frame type		/	/	/	/	/	/	/	/	/	/	/	/	/	/	229	229	229	229	229	229

单位 Unit: N.m

功率 Power	类型 Type	速比 speed ratio	3	5	10	15	20	25	30	40	45	50	60	70	80	90	100	120	140	160	180	200
550W	标准型 Standard type	扭矩 Torque	/	/	/	/	/	/	/	/	/	/	/	/	/	/	255.3	306.3	357.4	408.4	459.5	510.5

单位 Unit: N.m

[illegible]

单位 Unit: N.m

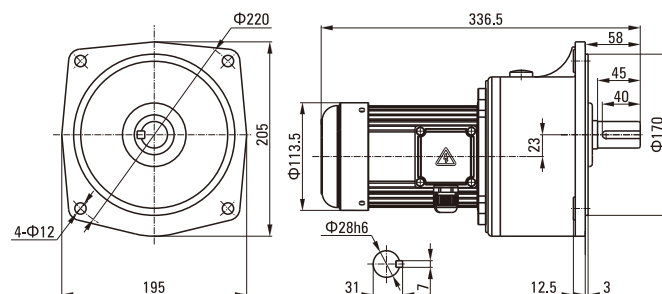
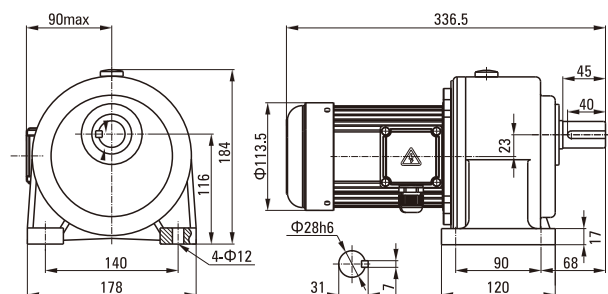
[illegible]

小型永磁750W手册 SMALL PERMANENT MAGNER 750W MANUAL

3# 齿轮箱输出轴 $\Phi 28\text{mm}$ 外形尺寸 3# gearbox output shaft $\Phi 28\text{mm}$ external shaft

● 卧式 Horizontal type

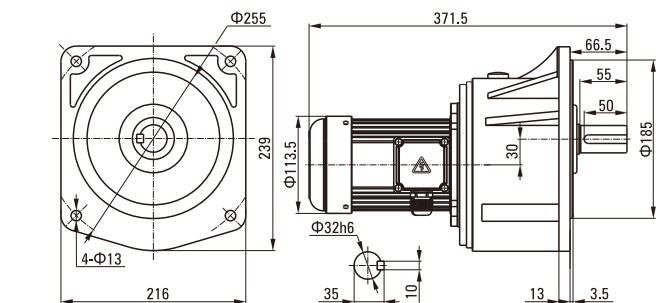
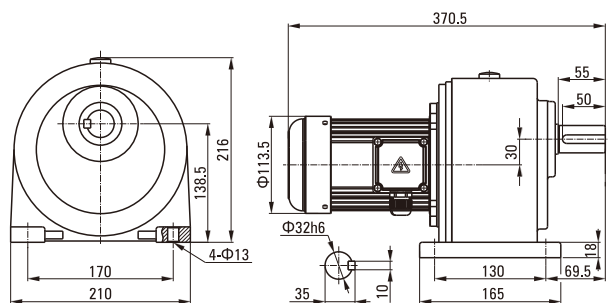
● 立式 Vertical type



4# 齿轮箱输出轴 $\Phi 32\text{mm}$ 外形尺寸 4# gearbox output shaft $\Phi 32\text{mm}$ external shaft

● 卧式 Horizontal type

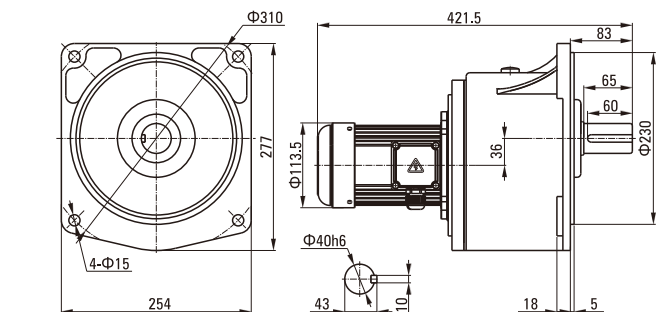
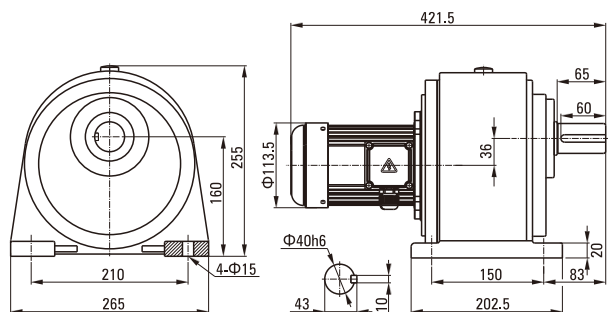
● 立式 Vertical type



5# 齿轮箱输出轴 $\Phi 40\text{mm}$ 外形尺寸 5# gearbox output shaft $\Phi 40\text{mm}$ external shaft

● 卧式 Horizontal type

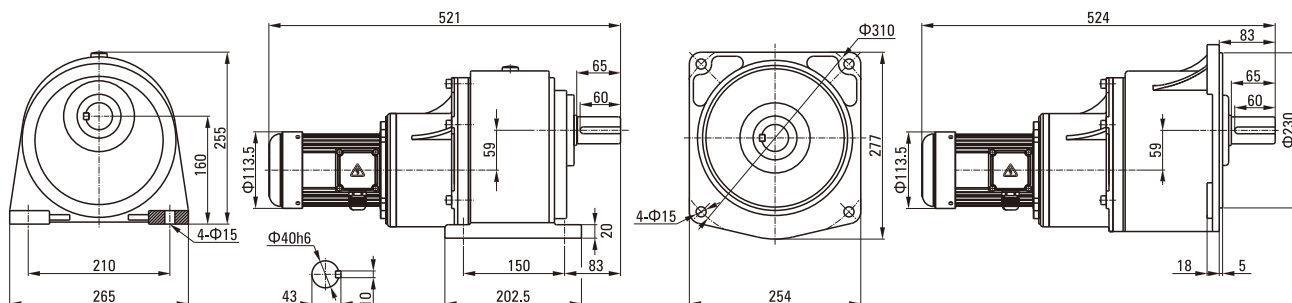
● 立式 Vertical type



3#+5#齿轮箱输出轴Φ40mm外形尺寸 3#+5# gearbox output shaft Φ40mm external shaft

● 卧式 Horizontal type

● **立式** Vertical type



参数表 Parameter table

光电机转速 Photomotor speed	型号 Model: 750W	电压 Voltage V	系统电流 System Current A	相电流 Phase current A	扭矩 Torque N.m	输出功率 Output power W	系统效率 System efficiency	带载启动 On load startup N.m
低速 Low speed (100rpm)		220	1.08	2.63	4.77	51	40.9	8.1
中低速 Medium and low speed (300rpm)		220	1.79	2.64	4.77	149	68.0	7.6
中速 Medium speed (600rpm)		220	2.98	2.66	4.77	383	80.1	6.8
中高速 Medium to high speed (900rpm)		220	4.09	2.62	4.77	456	83.5	6.9
高速 High speed (1500rpm)		220	5.12	2.63	4.77	605	86.4	6.7
最高速 Maximum speed (1500rpm)		220	6.18	2.77	4.77	753	87.6	6.4

*以上参数为中大C40控制器匹配测试数据 *The above parameters are the matching test data of Zhongda C40 controller

● **中大C40控制器优点** Advantages of Zhongda C40 controller:

- | | |
|---|---|
| 1. 低速恒扭矩 Low speed constant torque | 4. 长距离：支持驱动器与电机之间100米以内长距离安装
Long distance: Supports long-distance installation between the driver and motor within 100 meters |
| 2. 具备矢量电磁刹车功能 Equipped with vector electromagnetic braking function | |
| 3. 重复定位精度高 High precision in repeated positioning | |

■ **输出轴容许扭矩** Permissible torque of output shaft

● 3#齿轮箱 Gearbox

单位 Unit: N.m

[illegible]

● 4#齿轮箱 Gearbox

单位 Unit: N.m

功率 Power	类型 Type	速比 speed ratio	3	5	10	15	20	25	30	40	45	50	60	70	80	90	100	120	140	160	180	200
750W	标准型 Standard type	扭矩 Torque	/	/	/	/	/	/	116	139.2	156.6	174	208.9	243.7	278.5	313.3	348.1	417.7	/	/	/	/
	缩框型 Shrink frame type		/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	417.7	487.3	518	518	518

● 5#齿轮箱 Gearbox

单位 Unit: N.m

功率 Power	类型 Type	速比 speed ratio	3	5	10	15	20	25	30	40	45	50	60	70	80	90	100	120	140	160	180	200
750W	标准型 Standard type	扭矩 Torque	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	487.3	557	626.6	696.7

■ 高速比输出轴容许扭矩 Allowable torque of high-speed output shaft

● 3# + 5# 齿轮箱 Gearbox

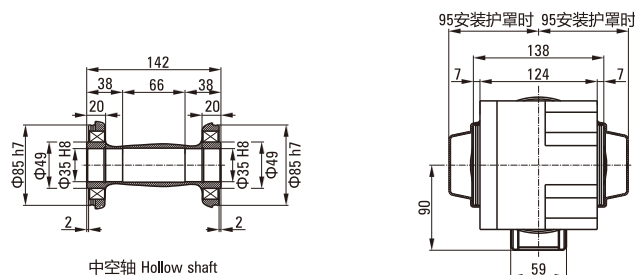
单位 Unit: N.m

[illegible]

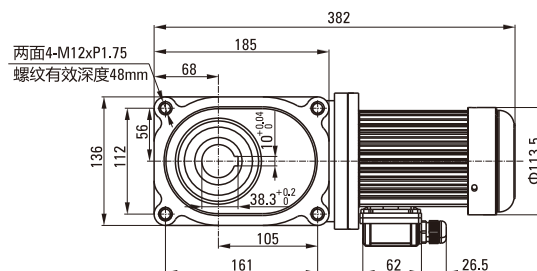
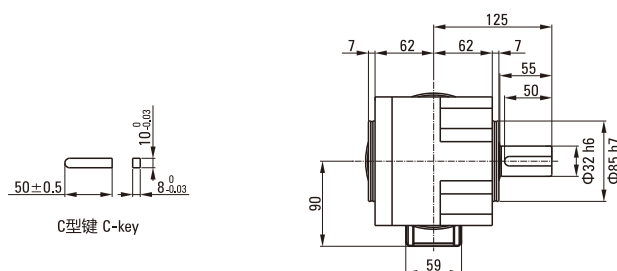
F3永磁750W手册 F3 PERMANENT MAGNER 750W MANUAL

35H/32A外形尺寸 35H/32A external shaft

PM-ZDF3-35H5~60-750-S

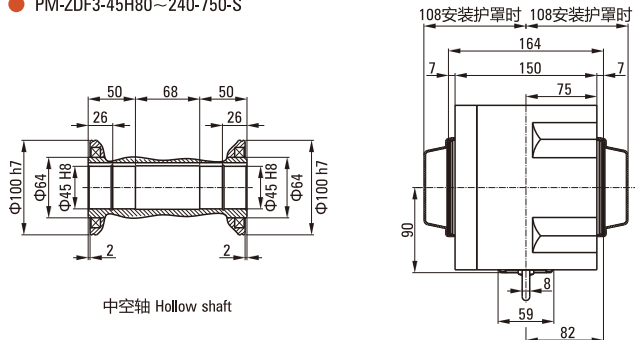


PM-ZDF3-32A5~60-750-S

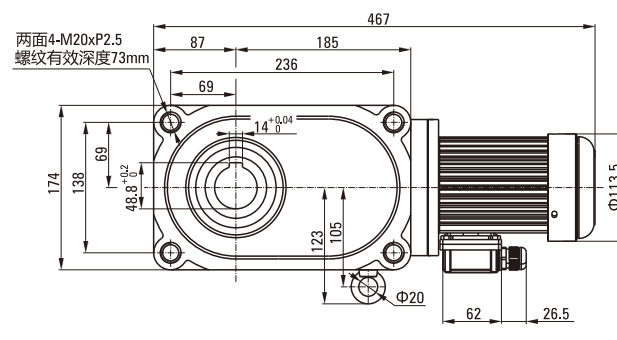
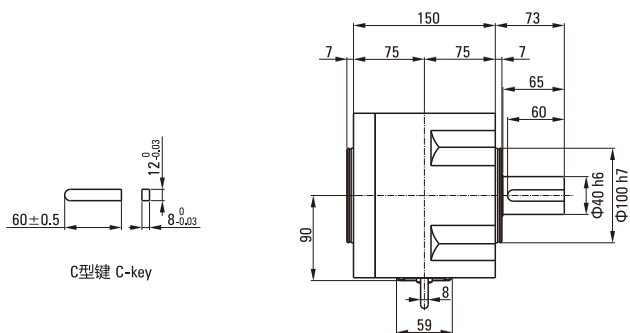


45H/40A外形尺寸 45H/40A external shaft

PM-ZDF3-45H80~240-750-S



PM-ZDF3-40A80~240-750-S



输出轴容许扭矩 Permissible torque of output shaft

单位 Unit: N.m

功率 Power	孔径/轴径 Aperture/Shaft diameter	速比 speed ratio	5	7.5	10	12	15	20	25	30	40	50	60	80	100	120	160	200	240
750W	35H/32A	扭矩 Torque	19.3	29	38.7	46.4	58	77.4	96.7	116	154.7	193.4	232.1	/	/	/	/	/	/
	45H/40A		/	/	/	/	/	/	/	/	/	/	/	278.5	348.1	417.7	554	554	554

C40系列无感变频驱动器

C40 SERIES NON-INDUCTIVE VARIABLE FREQUENCY DRIVE

Z DRV • C40 — 400 L — R
① ② ③ ④ ⑤ ⑥

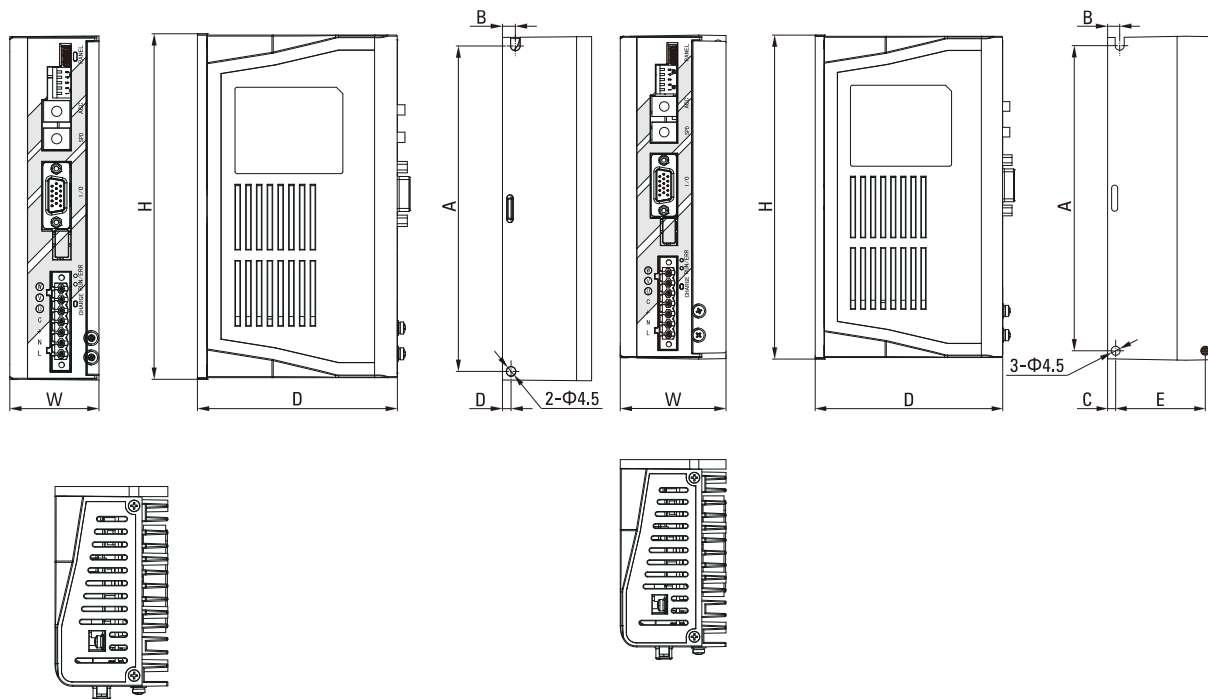
①	公司名称缩写 Company name abbreviation	Z: 中大力德 ZHONGDA LEADER
②	产品类型 Product type	DRV: 驱动器及相关产品 Drivers and related products
③	产品系列 Product series	C40: 面板式无感驱动器系列 Panel type non-inductive driver series C40: 内置式无感驱动器系列 Built-in non-inductive driver series
④	功率等级 Power level	低压 Low pressure: 120:120W 200:200W 400:400W 800:800W 高压 High pressure: 120:120W 200:200W 400:400W 750:750W 1100:1100W 1500:1500W 2200:2200W
⑤	电源类型 Power supply type	S1: 单相 Single-phase AC110V/50Hz~60Hz L: DC24V~DC48V S2: 单相 Single-phase AC220V/50Hz~60Hz L2: DC24V T2: 三相 Three-phase AC220V/50Hz~60Hz L3: DC36V T3: 三相 Three-phase AC380V/50Hz~60Hz L4: DC48V
⑥	功能码 Function code	D: 带数字显示 With digital display B: 带制动/刹车功能 With braking function C: 带CanOpen通讯功能 With CanOpen communication function R: 带485通讯功能 With 485 communication function P: 带脉冲输入控制 With pulse input control F: 带脉冲分频输出 With pulse frequency division output

C40系列无感变频驱动器特点

Features of C40 series non-inductive variable frequency drive

- 只需三根电动力线：从根本上避免电机编码器线或霍尔信号线的连接不可靠、信号被干扰等问题，可有效提升系统的可靠性。
Only three motor power lines are needed: fundamentally avoiding problems such as unreliable connection of motor encoder lines or Hall signal lines and signal interference, which can effectively improve the reliability of the system.
- 无需电机编码器或霍尔传感器：采用高性能无位置传感器方案，实现电机的正弦波FOC矢量控制，节省了编码器或霍尔的线束和端子，有效降低系统的整体成本。
No need for motor encoder or Hall sensor: Adopting a high-performance position sensorless solution, achieving sine wave FOC vector control of the motor, saving the wiring harness and terminals of the encoder or Hall, effectively reducing the overall cost of the system.
- 低速性能好：优秀的速度闭环控制性能，最低转速可达20rpm，调速比可以与带编码器电机驱动器相媲美。
Good low-speed performance: Excellent speed closed-loop control performance, with a minimum speed of up to 20rpm, and a speed ratio comparable to motor drives with encoders.
- 支持大负载带载启动：最大允许150%电机额定负载转矩条件下带载启动；如需更大负载转矩条件下带载启动，可与我司沟通产品定制事宜。
Support heavy load on-load starting: maximum allowable on-load starting at 150% of the rated load torque of the motor; If you need to start with load under higher load torque conditions, you can communicate with our company about product customization matters.
- 支持超长距离电机控制：本产品与电机间三相动力线的最长允许距离为100米如需支持更长距离，可与我司沟通产品定制事宜。
Support for ultra long distance motor control: The maximum allowable distance for the three-phase power line between this product and the motor is 100 meters. If you need to support a longer distance, you can communicate with our company about product customization matters.
- 速度波动小：额定转速条件下速度波动大约为1%优异的稳速性能可以媲美带编码器电机，满足绝大部分应用的需求。
Low speed fluctuation: Under rated speed conditions, the speed fluctuation is about 1%, and the excellent speed stability performance can be comparable to motors with encoders, meeting the needs of the vast majority of applications.
- 可支持超高速电机：支持电机最高转速可达30000rpm，如需支持更高电机转速，可与我司沟通定制。
Can support ultra high speed motors: supports a maximum motor speed of up to 30000 rpm. If you need to support higher motor speeds, you can communicate with our company for customization.
- 适用性强：拥有强大的电机参数自动识别功能。本产品与各个厂商各类无霍尔直流无刷电机、无编码器永磁同步电机均可适配。
Strong applicability: With powerful automatic recognition function for motor parameters, this product can be compatible with various manufacturers of Hall free DC brushless motors and encoder free permanent magnet synchronous motors.
- 具有制动电路，可以快速启停。
Equipped with a braking circuit that can quickly start and stop.

■ 产品尺寸图 Product dimension drawing



型号 Model	外形尺寸(mm) Overall dimensions			安装尺寸 Installation dimensions		
	W	H	D	A	B	C
ZDRV.C40-400S2-BR	41.5	159.5	93	151.5	6	4

型号 Model	外形尺寸(mm) Overall dimensions			安装尺寸 Installation dimensions			
	W	H	D	A	B	D	E
ZDRV.C40-750S2-BR	52.5	159.5	93	151.5	6	4	44.5

■ 输入输出接口 Input/output interface

● ZDRV.C40-400S2-BR

引脚编号 Pin number	引脚名称 Pin name	引脚功能 Pin function
1	AIN+	模拟量输入正 Analog input positive
2	AIN-	模拟量输入负, 和12脚GND短接 Analog input negative, short circuited with 12 pin GND
3	DO1	数字量信号输出 Digital signal output
4	DI1	数字量信号输入
5	DI2	数字量信号输入
6	485+	485信号正 485 signal positive
7	485-	485信号负 485 signal negative
8	DO2	数字量信号输出 Digital signal output
9	COM+	数字量信号输入公共端 Digital signal input common terminal
10	DI3	数字量信号输入 Digital signal input
11	+5V	5V电源输出正 5V power output positive
12	GND	5V电源GND 5V power supply GND
13	COM-	数字量信号输出公共端 Digital signal output common terminal
14	DI4	数字量信号输入
15	DI5	数字量信号输入

引脚编号 Pin number	引脚名称 Pin name	引脚功能 Pin function
7	W	电机动力电源输出端 Motor power supply output terminal
6	V	
5	U	
4	B	外接制动电阻输出 External braking resistor output
3	P	
2	N	电源输入 220VAC Power input 220VAC
1	L	

规格 Specifications

型号参数 Model parameters		C40无感变频驱动器 non-inductive variable frequency drive						
		C40-120L	C40-200L-R	C40-400L-R	C40-120S2	C40-200S2-BR	C40-400S2-BR	C40-750S2-BR
额定输入电压 Rated input voltage		24V/48V			AC220V (±20%)			
输出电流 Output current	额定电流 (rms) Rated current	6Arms	7.5Arms	15Arms (注1)	0.6Arms	1.4Arms	2.8Arms	4.3Arms
	峰值电流 (peak) Peak current	16.8Ap	21Ap	42Ap	1.7Ap	4Ap	8Ap	12.2Ap
编码器 Encoder		无 No						
能耗制动 Energy consumption braking		外接制动电阻，制动电压通过软件设置 External braking resistor, braking voltage set through software						
过压报警电压 Overvoltage alarm voltage		DC65V以上 Above			DC390V以上 Above			
欠压报警电压 Under voltage alarm voltage		DC18V以下 Below			DC200V以下 Below			
过载时间 Overload time		2倍过载， 最大持续20s 2 times overload, maximum duration of 20 seconds	2倍过载，最大持续10s 2 times overload, maximum duration of 10 seconds		1.5~2倍倍过载， 持续时间3~15s 1.5 to 2 times overload, lasting for 3 to 15 seconds	2倍过载，最大持续10s 2 times overload, maximum duration of 10 seconds		2倍过载， 最大持续15s 2 times overload, maximum duration of 15 seconds
冷却方式 Cooling method		自然冷却 Free cooling	辅助散热、自然冷却 Auxiliary heat dissipation, Free cooling		自然冷却 Free cooling			风冷 Forced air cooling
通用功能 General functions	数字量输入 Digital input	2路DI 2-way DI	4路DI 4-way DI	5路DI 5-way DI	2路DI 2-way DI	4路DI 4-way DI		
	数字量输入功能 Digital input function	120W: 两路DI一路DO，DI1使能，DI2反转，DO故障输出； 120W: Two DI and one DO, DI1 enabled, DI2 reversed, DO fault output; 400W: 正反转、正反转点动、多段速、自有停车、故障复位、电子刹车、外部故障输入、正反转限位； 400W: forward and reverse rotation, forward and reverse jog, multi speed, self parking, fault reset, electronic brake, external fault input, forward and reverse rotation limit;						
	模拟量输入 Analog input	/	外部模拟电压 (0~10V) External analog voltage		/	外部模拟电压 (0~10V) External analog voltage		
	模拟量输入功能 Analog input function	/	模拟量速度控制 Analog speed control		/	模拟量速度控制 Analog speed control		
	数字量输出 Digital output	1路DO 1-way DO	2路DO 2-way DO		1路DO 1-way DO	2路DO 2-way DO		
	保护功能 Protection function	过流、过载、短路、过温、欠压、过压等 Overcurrent, overload, short circuit, overtemperature, undervoltage, overvoltage, etc						
	上位机 Upper computer	可使用485通讯连接电脑上位机软件，设置参数，抓取波形，程序升级 Can use 485 communication to connect to computer upper computer software, set parameters, capture waveforms, and upgrade programs						
	蓝牙 Bluetooth	无 No						
总线控制 Bus control	Modbus/RS485	无 No	最大支持115.2K波特率，可使用 Modbus RTU协议与控制器通讯 Supports a maximum baud rate of 115.2K and can communicate with the controller using the Modbus RTU protocol		无 No	最大支持115.2K波特率，可使用Modbus RTU 协议与控制器通讯 Supports a maximum baud rate of 115.2K and can communicate with the controller using the Modbus RTU protocol		
	CANopen	无 No						
使用环境 Usage environment	工作温度 Working temperature	-25~40℃；40度以上降额使用 Derating usage above 40 degrees Celsius						
	存储温度 Storage temperature	-10℃~70℃						
	湿度 Humidity	90%RH以下，不结露 Below 90% RH, without condensation						
	防护等级 Protection level	IP20						
	安装方式 Installation method	垂直或水平安装 Vertical or horizontal installation						
	海拔 Height	1000米以下，工作海拔在1000米以上时，每上升100米，需降额1.5%使用，最高工作海拔4000米 When the working altitude is above 1000 meters and below 1000 meters, a derating of 1.5% is required for every 100 meters increase. The maximum working altitude is 4000 meters						
	气压 Pressure	86kpa~106kpa						

● 注1: 未加辅助散热可到12Arms

Note 1: Without auxiliary heat dissipation, it can reach 12Arms



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GEAR REDUCER**
精密谐波齿轮减速器

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**CYCLOIDAL PIN WHEEL
PRECISION REDUCER**
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**AC MOTOR SPEED CONTROLLER
BRUSHLESS DC MOTOR DRIVER**
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DC BRUSHLESS GEAR MOTOR
微型永磁无刷齿轮减速机

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HIGH EFFICIENCY BRUSHLESS MOTOR CATALOGUE

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