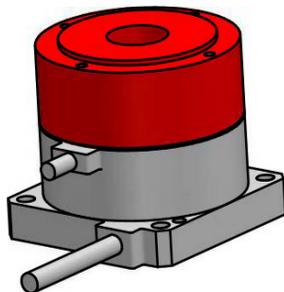


直驱力矩电机

Direct Drive Motor



精度高、响应快
High precision and fast response.
节能、发热量低
Energy saving and low calorific value.
能承受突变的外力
Able to withstand sudden external forces.
惯量匹配范围大
Large matching range of inertia.
简化机械设计, 缩小设备尺寸
Simplify mechanical design and reduce equipment size.

TPA-M-040系列规格

TPA-M-040 series specifications

性能参数 Performance parameter	单位 Unit	型号 Model
		TPA-M-040-038
连续转矩 Continuous torque	N.m	0.13
连续电流 Continuous current	A rms	0.63
最大转矩 Maximum torque	N.m	0.39
最大电流 Maximum current	A rms	1.9
转矩常数 Torque constant	Nm/Arms	0.21
电阻 Resistance	$\Omega(25^{\circ}\text{C})$	7.5
电感 Inductance	mH(25 $^{\circ}$ C)	1.5
极数 Number of poles	-	22
反电动势常数 Back emf constant	Vrms/rad/s	460
电机常数 Motor constant	Nm/ $\sqrt{\text{W}}$	0.6
转动惯量 Moment of inertia	Kg.m ²	5×10^{-6}
电机重量 Motor weight	Kg	0.075
最高转速 Maximum speed	rmp	500
定位精度 Positioning accuracy	Arc sec	-
重复精度 Repeatability	Arc sec	-
分辨率 Resolution	Counts/Rev	819200 (Counts/Rev)
最大轴向载荷 Maximum axial load	N	20
最大径向载荷 Maximum radial load	N.m	0.4
轴向偏摆 Axial deflection	μm	15 (10,5 or less)
径向偏摆 Radial deflection	μm	15 (10,5 or less)

注:【通用规格】

Note: General Specification

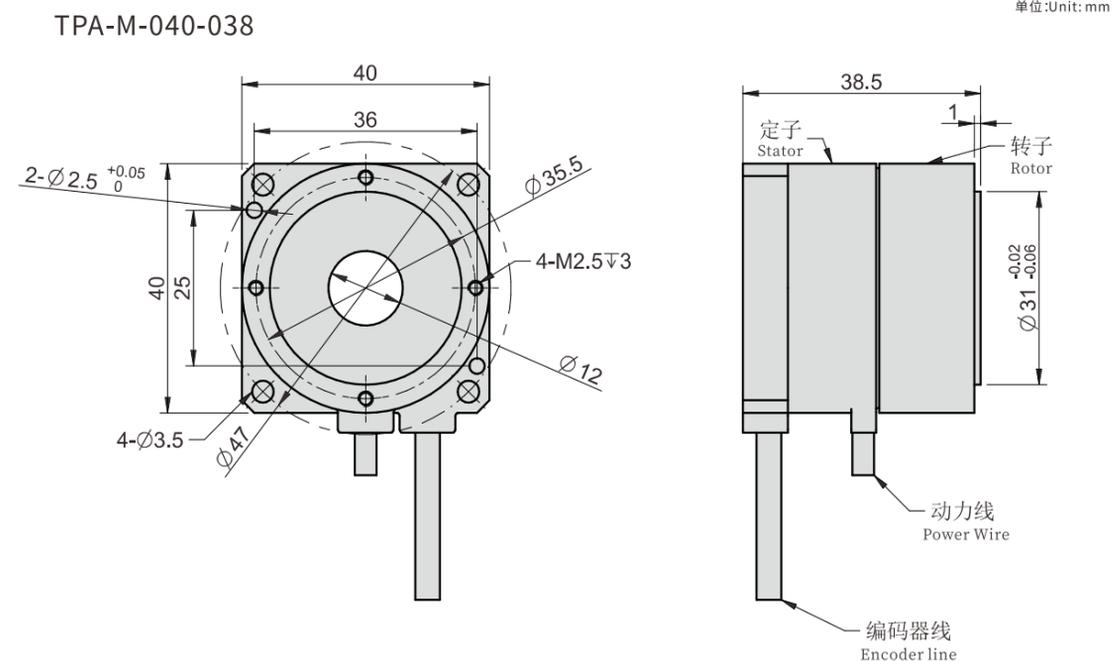
电机卷线部 绝缘等级:F类,
Motor winding part Insulation grade: Class F,
绝缘电阻: 10M Ω 以上(500VDC)
Insulation resistance: more than 10M Ω (500VDC)

绝缘耐压:60秒@1500V,
Withstand voltage: 60s @1500V

其他构造:内转子型, 励磁方式:三相
Other structures: inner rotor type, excitation mode: three-phase.

安装尺寸图

Installation dimension drawing



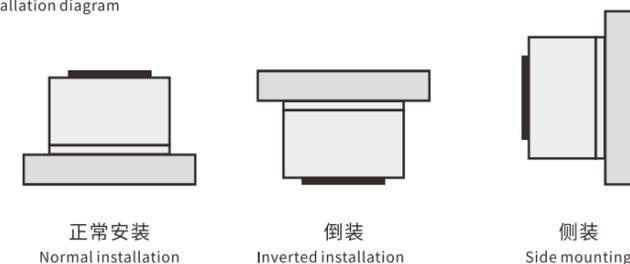
备注:

- 1、测量时环境温度为25 $^{\circ}$ C, 取决于散热环境。
- 2、括号内为可选跳动。
- 3、工作温度:0-40 $^{\circ}$ C (无结冰), 工作湿度10%RH-80%RH (无冷凝)。

Remarks:

1. When measured, the ambient temperature is 25 $^{\circ}$ C, which depends on the heat dissipation environment.
2. Optional beats in brackets.
3. Working temperature: 0-40 $^{\circ}$ C (without freezing), working humidity 10% RH-80% RH (without condensation).

安装示意图 Installation diagram



- HNR
- HCR
- HNB
- HCB
- HNT
- XYZ
- ONB
- OCB
- GCR
- GCB
- GCBS
- GCRS
- ESR
- EMR
- EHR
- KSR
- LNP
- DDR**
- 参考资料
Reference data

TPA-M-062系列规格

TPA-M-062 series specifications

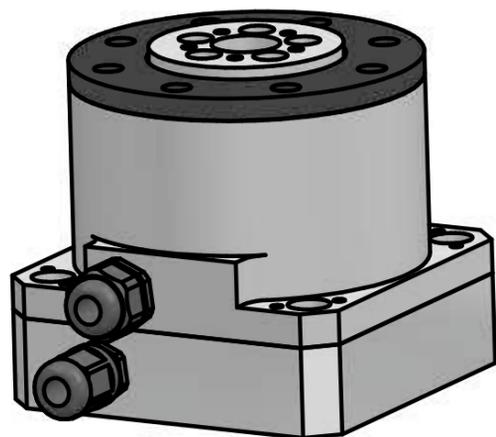
性能参数 Performance parameter	单位 Unit	型号 Model
		TPA-M-062-060
连续转矩 Continuous torque	N.m	0.40
连续电流 Continuous current	A rms	3.5
最大转矩 Maximum torque	N.m	1.20
最大电流 Maximum current	A rms	10
转矩常数 Torque constant	Nm/Arms	0.119
电阻 Resistance	$\Omega(25^{\circ}\text{C})$	1.9
电感 Inductance	mH(25 $^{\circ}$ C)	2.2
极数 Number of poles	-	6
反电动势常数@25 $^{\circ}$ C Back emf constant@25 $^{\circ}$ C	Vrms/rad/s	1.6
电机常数@25 $^{\circ}$ C Motor constant@25 $^{\circ}$ C	Nm/ $\sqrt{\text{W}}$	0.08
转动惯量 Moment of inertia	Kg.m ²	3.8 $\times 10^{-3}$
电机重量 Motor weight	Kg	0.80
电机直径 Motor diameter	mm	62
定位精度 Positioning accuracy	Arc sec	± 60
重复精度 Repeatability	Arc sec	± 5
最大机械允许转速 Maximum allowable speed of machinery	rmp	1200
最大轴向载荷 Maximum axial load	N	50
电气时间常数 Electrical time constant	ms	0.40
编码器线数 Encoder line number	lines/Rev	8192
编码器线数 Encoder line number	pulse/Rev	1048576

注:【通用规格】

Note: General Specification

电机卷线部 绝缘等级:F类, 绝缘耐压:60秒@1500V, 绝缘电阻:10M Ω 以上(500VDC)
 Motor winding part Insulation grade: Class F, Withstand voltage: 60s @1500V Insulation resistance: more than 10M Ω (500VDC)

其他构造:外转子型, 励磁方式:三相
 Other structures: Outer rotor type, excitation mode: three-phase.

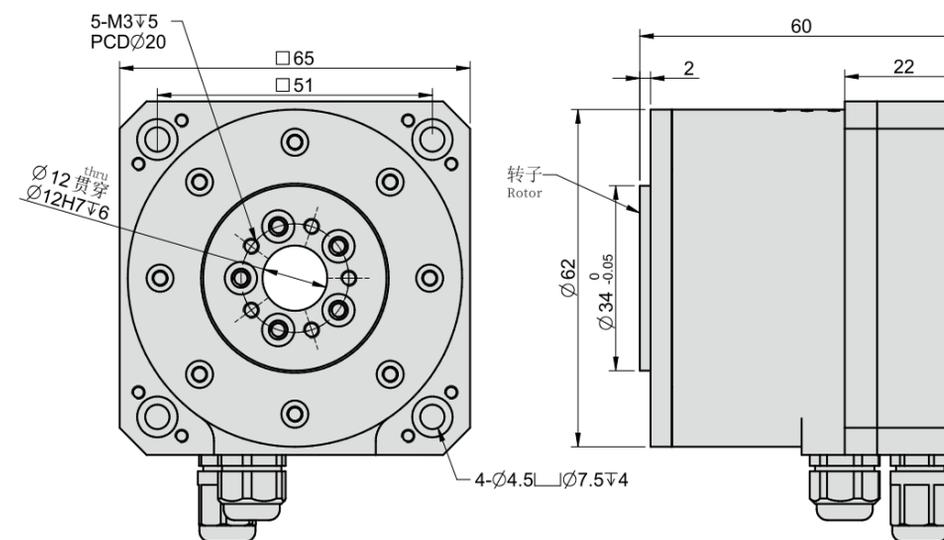


安装尺寸图

Installation dimension drawing

TPA-M-062-060

单位:Unit:mm



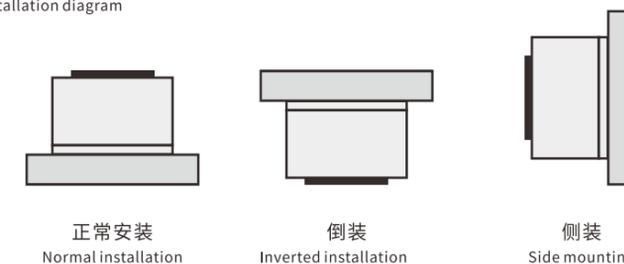
备注:

- 1、测量时环境温度为25 $^{\circ}$ C,取决于散热环境。
- 2、括号内为可选跳动。
- 3、工作温度:0-40 $^{\circ}$ C(无结冰),工作湿度10%RH-80%RH(无冷凝)。

Remarks:

1. When measured, the ambient temperature is 25 $^{\circ}$ C, which depends on the heat dissipation environment.
2. Optional beats in brackets.
3. Working temperature: 0-40 $^{\circ}$ C (without freezing), working humidity 10% RH-80% RH (without condensation).

安装示意图 Installation diagram



正常安装
Normal installation

倒装
Inverted installation

侧装
Side mounting

TPA-M-080系列规格

TPA-M-080 series specifications

性能参数 Performance parameter	单位 Unit	型号 Model	
		TPA-M-080-050	TPA-M-080-067
连续转矩 Continuous torque	N.m	0.6	1
连续电流 Continuous current	A rms	3.2	1.7
最大转矩 Maximum torque	N.m	1.9	3.5
最大电流 Maximum current	A rms	9.6	5.9
转矩常数 Torque constant	Nm/Arms	0.2	0.6
电阻 Resistance	$\Omega(25^{\circ}\text{C})$	1.2	3.8
电感 Inductance	mH(25 $^{\circ}\text{C}$)	1	2.5
极数 Number of poles	-	10	22
反电动势常数 Back emf constant	Vrms/rad/s	0.2	0.37
电机常数 Motor constant	Nm/ $\sqrt{\text{W}}$	0.1	0.21
转动惯量 Moment of inertia	Kg.m ²	1.5×10^{-4}	0.0021
电机重量 Motor weight	Kg	1.2	1.6
最高转速 Maximum speed	rmp	600	300
定位精度 Positioning accuracy	Arc sec	± 50	± 30
重复精度 Repeatability	Arc sec	± 2.5	± 2.5
分辨率 DPI	sin/cos, Lines/rev	5000 (sin/cos)	8192 (Lines/rev)
最大轴向载荷 Maximum axial load	N	50	200
最大径向载荷 Maximum radial load	N.m	-	10
轴向偏摆 Axial deflection	μm	30	30 (20,10 or less)
径向偏摆 Radial deflection	μm	30	30 (20,10 or less)

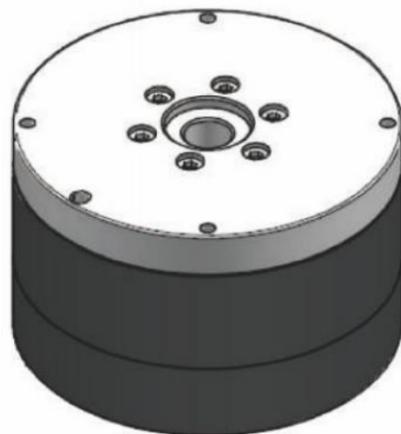
注：【通用规格】

Note: General Specification

电机卷线部 绝缘等级:F类,
Motor winding part Insulation grade: Class F,
绝缘电阻: 10M Ω 以上(500VDC)
Insulation resistance: more than 10M Ω (500VDC)

绝缘耐压:60秒@1500V,
Withstand voltage: 60s @1500V

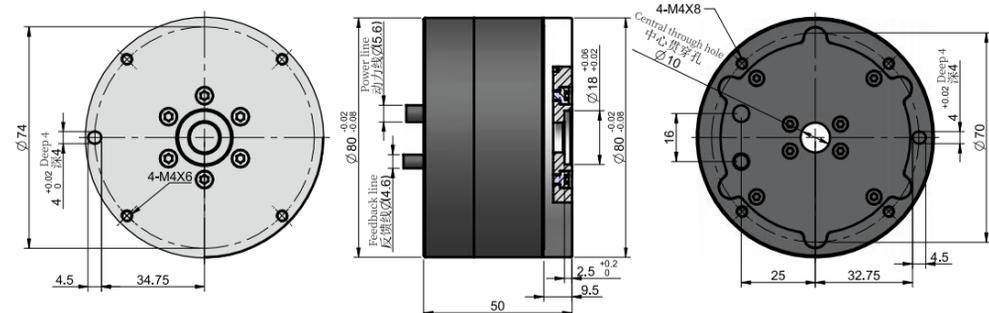
其他构造:内转子型, 励磁方式:三相
Other structures: inner rotor type, excitation mode: three-phase.



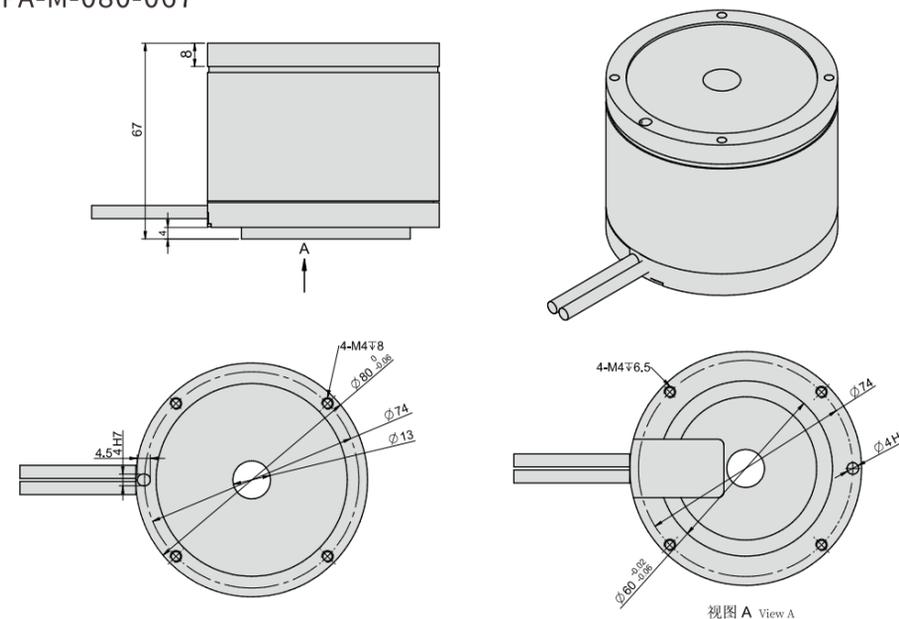
安装尺寸图

Installation dimension drawing

TPA-M-080-050



TPA-M-080-067



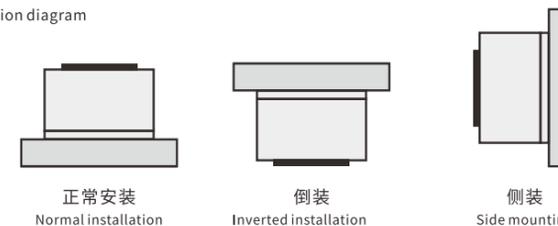
备注:

- 1、测量时环境温度为25 $^{\circ}\text{C}$,取决于散热环境。
- 2、括号内为可选跳动。
- 3、工作温度:0-40 $^{\circ}\text{C}$ (无结冰),工作湿度10%RH-80%RH(无冷凝)。

Remarks:

1. When measured, the ambient temperature is 25 $^{\circ}\text{C}$, which depends on the heat dissipation environment.
2. Optional beats in brackets.
3. Working temperature: 0-40 $^{\circ}\text{C}$ (without freezing), working humidity 10% RH-80% RH (without condensation).

安装示意图 Installation diagram



HNR
HCR
HNB
HCB
HNT
XYZ
ONB
OCB
GCR
GCB
GCBS
GCRS
ESR
EMR
EHR
KSR
LNP
DDR

参考资料
Reference data

TPA-M-112系列规格

TPA-M-112 series specifications

性能参数 Performance parameter	单位 Unit	型号 Model	
		TPA-M-112-065	TPA-M-112-085
连续转矩 Continuous torque	N.m	3	3
连续电流 Continuous current	A rms	2.5	2.5
最大转矩 Maximum torque	N.m	9	9
最大电流 Maximum current	A rms	7.5	7.5
转矩常数 Torque constant	Nm/Arms	1.2	1.2
电阻 Resistance	$\Omega(25^{\circ}\text{C})$	2.2	2.2
电感 Inductance	mH(25 $^{\circ}$ C)	1.8	1.8
极数 Number of poles	-	28	28
反电动势常数 Back emf constant	Vrms/rad/s	1	1
电机常数 Motor constant	Nm/ $\sqrt{\text{W}}$	0.6	0.6
转动惯量 Moment of inertia	Kg.m ²	0.002	0.003
电机重量 Motor weight	Kg	2.8	3
最高转速 Maximum speed	rmp	350	350
定位精度 Positioning accuracy	Arc sec	$\pm 30(\pm 10)$	± 40
重复精度 Repeatability	Arc sec	$\pm 2.5(\pm 1.2)$	± 2.5
分辨率 DPI	lines/Rev. sin/cos	8192 (lines/Rev)	11740 (sin/cos)
最大轴向载荷 Maximum axial load	N	2000	2000
最大径向载荷 Maximum radial load	N.m	40	40
轴向偏摆 Axial deflection	μm	15 (10,5 or less)	30
径向偏摆 Radial deflection	μm	15 (10,5 or less)	30

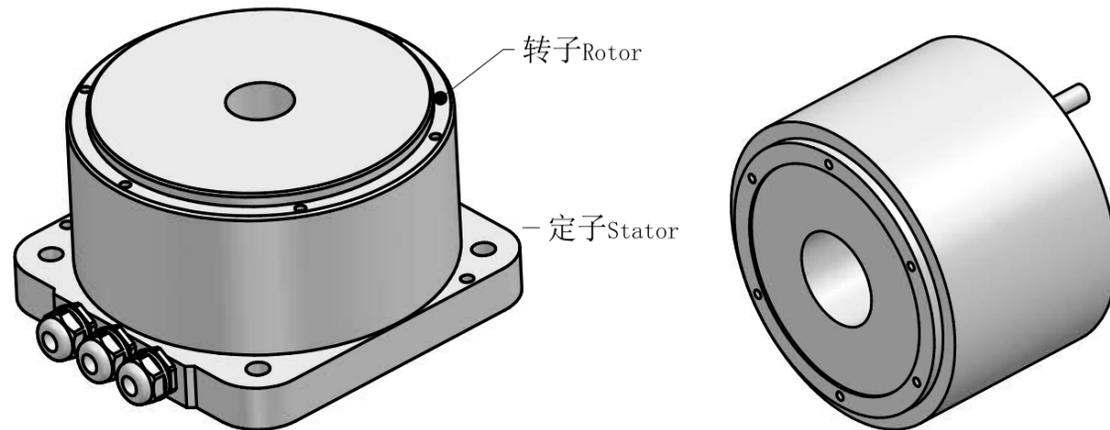
注:【通用规格】

Note: General Specification

电机卷线部 绝缘等级:F类,
Motor winding part Insulation grade: Class F,
绝缘电阻: 10M Ω 以上(500VDC)
Insulation resistance: more than 10M Ω (500VDC)

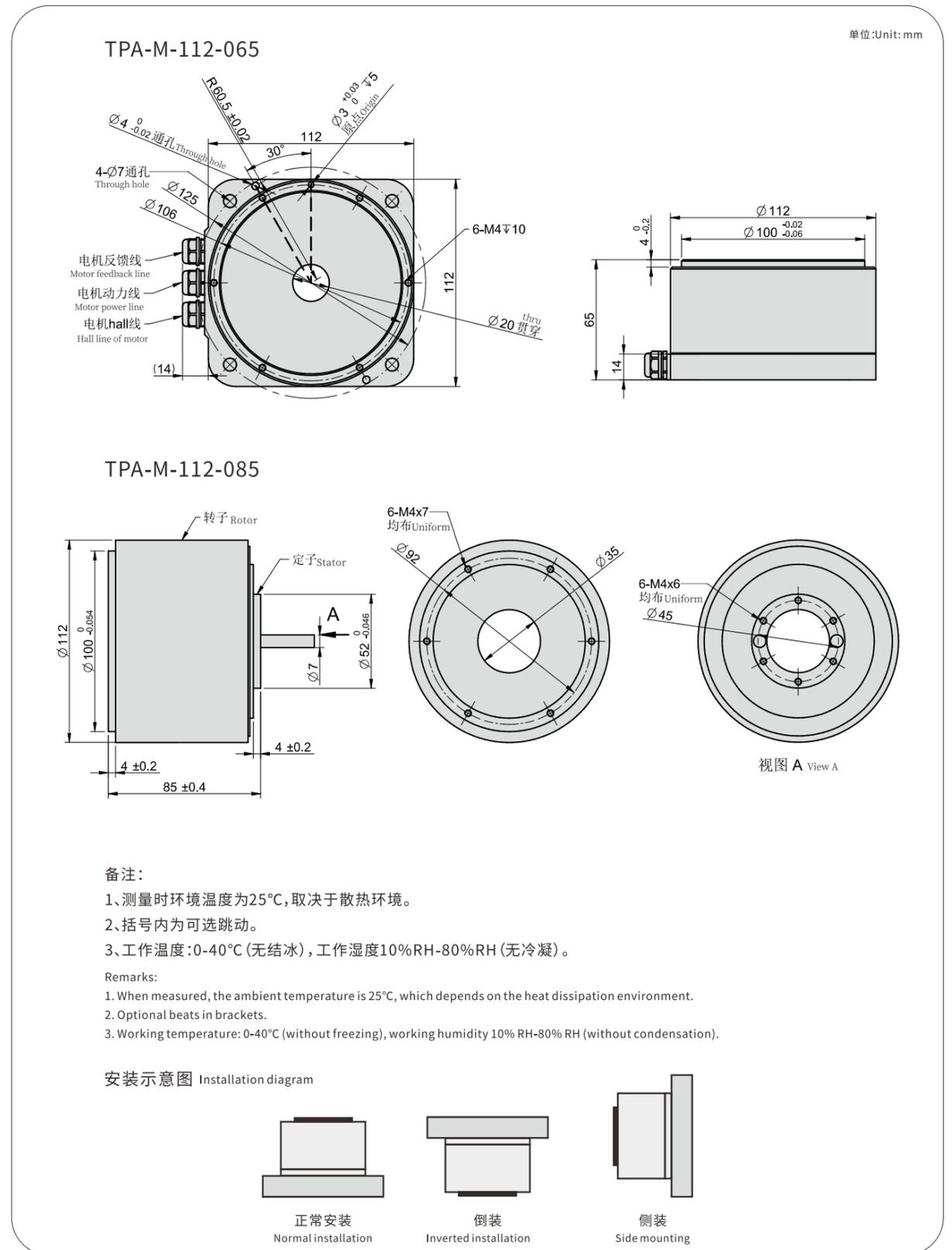
绝缘耐压:60秒@1500V,
Withstand voltage: 60s @1500V

其他构造:内转子型, 励磁方式:三相
Other structures: inner rotor type, excitation mode: three-phase.



安装尺寸图

Installation dimension drawing



HNR
HCR
HNB
HCB
HNT
XYZ
ONB
OCB
GCR
GCB
GCBS
GCRS
ESR
EMR
EHR
KSR
LNP
DDR

参考资料
Reference data

TPA-M-140系列规格

TPA-M-140 series specifications

性能参数 Performance parameter	单位 Unit	型号 Model	
		TPA-M-140-050	TPA-M-140-080
连续转矩 Continuous torque	N.m	6	10.5
连续电流 Continuous current	A rms	2.8	2.5
最大转矩 Maximum torque	N.m	16	30
最大电流 Maximum current	A rms	7.5	7.5
转矩常数 Torque constant	Nm/Arms	2.15	4.2
电阻 Resistance	$\Omega(25^{\circ}\text{C})$	3.24	6.5
电感 Inductance	mH(25 $^{\circ}$ C)	4.22	8
极数 Number of poles	-	28	28
反电动势常数 Back emf constant	Vrms/rad/s	2	3.4
电机常数 Motor constant	Nm/ $\sqrt{\text{W}}$	0.8	1.2
转动惯量 Moment of inertia	Kg.m ²	0.005	0.008
电机重量 Motor weight	Kg	3.4	5.7
最高转速 Maximum speed	rmp	600	350
定位精度 Positioning accuracy	Arc sec	$\pm 30(\pm 10)$	$\pm 30(\pm 10)$
重复精度 Repeatability	Arc sec	$\pm 2.5(\pm 1.2)$	$\pm 2.5(\pm 1.2)$
分辨率 DPI	lines/round	8192 (lines/round)	8192 (lines/round)
最大轴向载荷 Maximum axial load	N	1500	200
最大径向载荷 Maximum radial load	N.m	10	20
轴向偏摆 Axial deflection	μm	15 (8,5 or less)	15 (8,5 or less)
径向偏摆 Radial deflection	μm	15 (8,5 or less)	15 (8,5 or less)

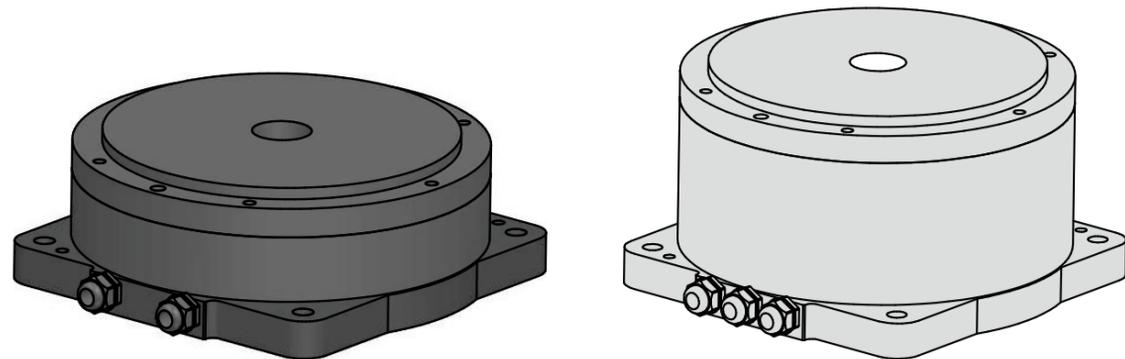
注:【通用规格】

Note: General Specification

电机卷线部 绝缘等级:F类,
Motor winding part Insulation grade: Class F,
绝缘电阻: 10M Ω 以上(500VDC)
Insulation resistance: more than 10M Ω (500VDC)

绝缘耐压:60秒@1500V,
Withstand voltage: 60s @1500V

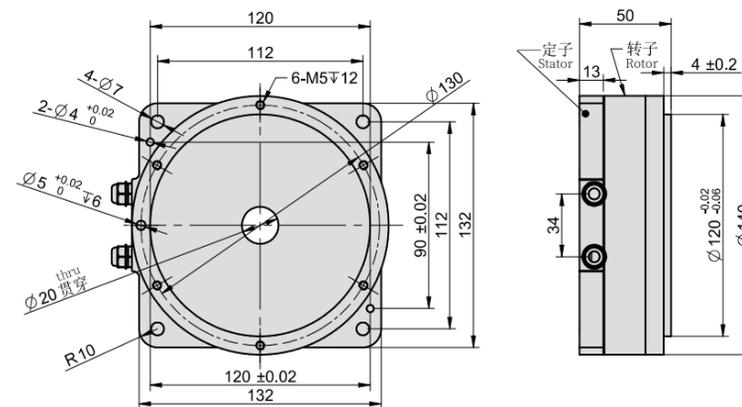
其他构造:内转子型, 励磁方式:三相
Other structures: inner rotor type, excitation mode: three-phase.



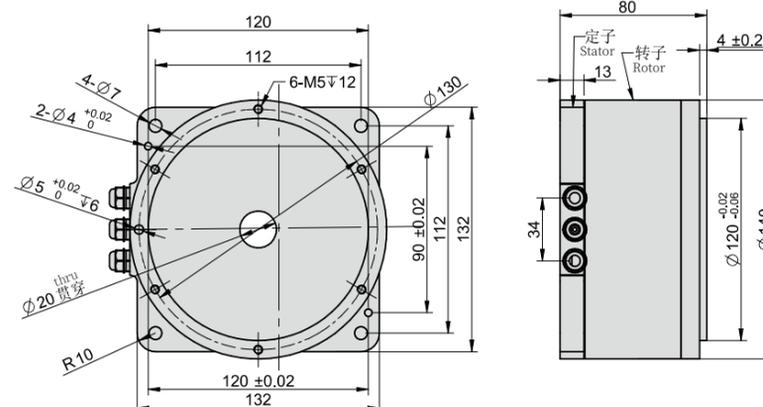
安装尺寸图

Installation dimension drawing

TPA-M-140-050



TPA-M-140-080



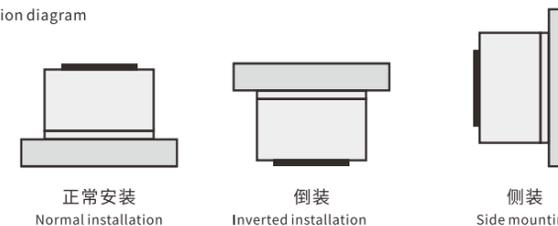
备注:

- 1、测量时环境温度为25 $^{\circ}$ C,取决于散热环境。
- 2、括号内为可选跳动。
- 3、工作温度:0-40 $^{\circ}$ C(无结冰),工作湿度10%RH-80%RH(无冷凝)。

Remarks:

1. When measured, the ambient temperature is 25 $^{\circ}$ C, which depends on the heat dissipation environment.
2. Optional beats in brackets.
3. Working temperature: 0-40 $^{\circ}$ C (without freezing), working humidity 10% RH-80% RH (without condensation).

安装示意图 Installation diagram



HNR

HCR

HNB

HCB

HNT

XYZ

ONB

OCB

GCR

GCB

GCBS

GCRS

ESR

EMR

EHR

KSR

LNP

DDR

参考资料

Reference data

TPA-M-170系列规格

TPA-M-170 series specifications

性能参数 Performance parameter	单位 Unit	型号 Model			
		TPA-M-170-050	TPA-M-170-095	TPA-M-170-125	TPA-M-170-155
连续转矩 Continuous torque	N.m	4.6	20	40	60
连续电流 Continuous current	A rms	1.4	2.5	2.5	2.5
最大转矩 Maximum torque	N.m	14	65	125	179
最大电流 Maximum current	A rms	4.2	7.5	7.5	7.5
转矩常数 Torque constant	Nm/Arms	3.3	8.7	16.7	23.8
电阻 Resistance	$\Omega(25^{\circ}\text{C})$	6	10	13.4	16.8
电感 Inductance	mH(25 $^{\circ}$ C)	7.5	17.4	32.0	56
极数 Number of poles	-	30	30	30	30
反电动势常数 Back emf constant	Vrms/rad/s	2.7	7.1	13.6	19.4
电机常数 Motor constant	Nm/ \sqrt{W}	2.1	1.8	3.2	6.1
转动惯量 Moment of inertia	Kg.m ²	0.0066	0.02	0.025	0.037
电机重量 Motor weight	Kg	3.7	11.7	14.5	20
最高转速 Maximum speed	rmp	450	190	150	120
定位精度 Positioning accuracy	Arc sec	$\pm 30(\pm 10)$	$\pm 30(\pm 10)$	$\pm 30(\pm 10)$	$\pm 30(\pm 10)$
重复精度 Repeatability	Arc sec	$\pm 2.5(\pm 1.2)$	$\pm 2.5(\pm 1.2)$	$\pm 2.5(\pm 1.2)$	$\pm 2.5(\pm 1.2)$
分辨率 DPI	L/Rev, lines/round	11740 (L/Rev)	11740 (lines/round)	11740 (lines/round)	11740 (lines/round)
最大轴向载荷 Maximum axial load	N	2000	4000	4000	4000
最大径向载荷 Maximum radial load	N.m	60	200	200	200
轴向偏摆 Axial deflection	μm	15 (8,5 or less)	15 (8,5 or less)	15 (8,5 or less)	15 (8, or less)
径向偏摆 Radial deflection	μm	15 (8,5 or less)	15 (8,5 or less)	15 (8,5 or less)	15 (8, or less)
电机重量 Motor weight	Kg	3.7	11.7	14.5	20

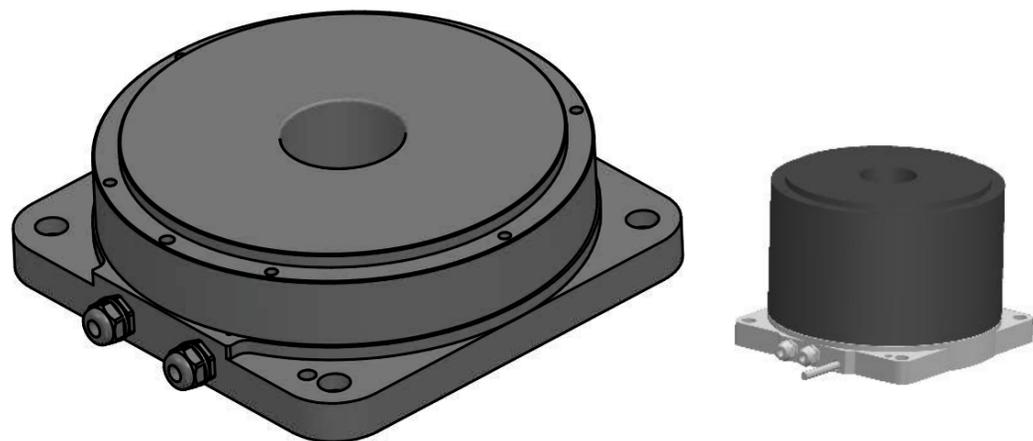
注：【通用规格】

Note: General Specification

电机卷线部 绝缘等级:F类,
Motor winding part Insulation grade: Class F,
绝缘电阻: 10M Ω 以上(500VDC)
Insulation resistance: more than 10M Ω (500VDC)

绝缘耐压:60秒@1500V,
Withstand voltage: 60s @1500V

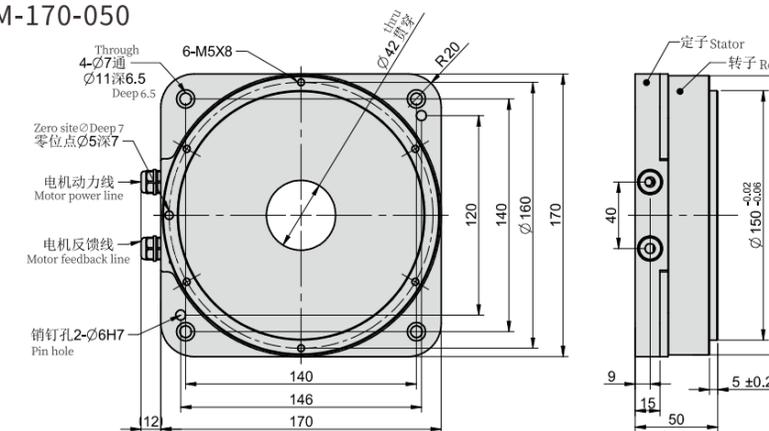
其他构造:内转子型, 励磁方式:三相
Other structures: inner rotor type, excitation mode: three-phase.



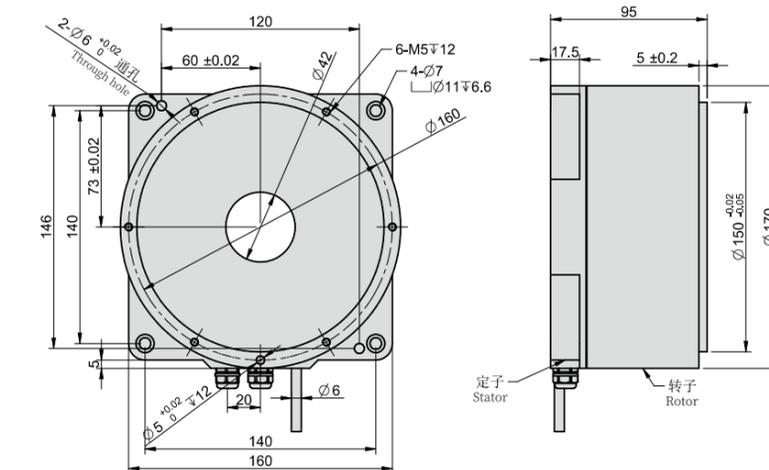
安装尺寸图

Installation dimension drawing

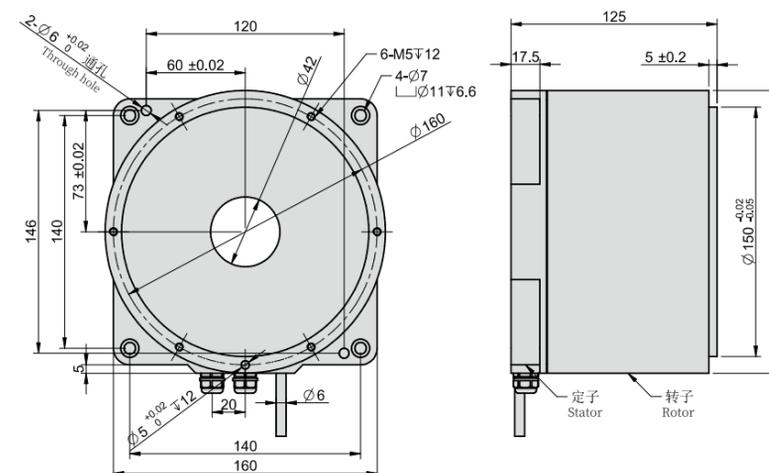
TPA-M-170-050



TPA-M-170-095



TPA-M-170-125



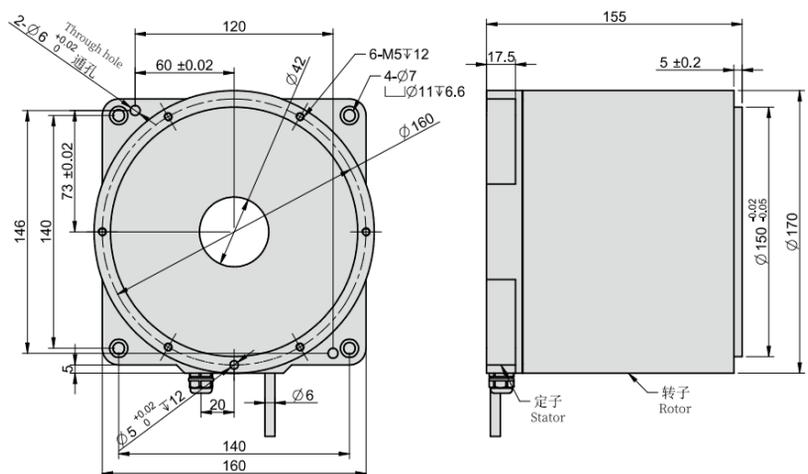
- HNR
- HCR
- HNB
- HCB
- HNT
- XYZ
- ONB
- OCB
- GCR
- GCB
- GCBS
- GCRS
- ESR
- EMR
- EHR
- KSR
- LNP
- DDR**

参考资料
Reference data

安装尺寸图
Installation dimension drawing

TPA-M-170-155

单位:Unit: mm



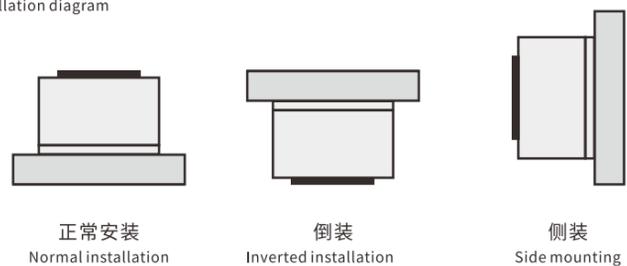
备注:

- 1、测量时环境温度为25°C,取决于散热环境。
- 2、括号内为可选跳动。
- 3、工作温度:0-40°C(无结冰),工作湿度10%RH-80%RH(无冷凝)。

Remarks:

1. When measured, the ambient temperature is 25°C, which depends on the heat dissipation environment.
2. Optional beats in brackets.
3. Working temperature: 0-40°C (without freezing), working humidity 10% RH-80% RH (without condensation).

安装示意图 Installation diagram



MEMO

HNR
HCR
HNB
HCB
HNT
XYZ
ONB
OCB
GCR
GCB
GCBS
GCRS
ESR
EMR
EHR
KSR
LNP
DDR
参考资料 Reference data

TPA-M-224系列规格

TPA-M-224 series specifications

性能参数 Performance parameter	单位 Unit	型号 Model	
		TPA-M-224-042	TPA-M-224-062
连续转矩 Continuous torque	N.m	14	35
连续电流 Continuous current	A rms	2.2	2.2
最大转矩 Maximum torque	N.m	42	105
最大电流 Maximum current	A rms	6.6	6.6
转矩常数 Torque constant	Nm/Arms	6.4	16
电阻 Resistance	$\Omega(25^{\circ}\text{C})$	8.4	13.9
电感 Inductance	mH(25 $^{\circ}$ C)	15.5	46
极数 Number of poles	-	40	40
反电动势常数 Back emf constant	Vrms/rad/s	5.2	10.76
电机常数 Motor constant	Nm/ $\sqrt{\text{W}}$	2.6	5.6
转动惯量 Moment of inertia	Kg.m ²	0.018	0.02
电机重量 Motor weight	Kg	5.5	8.9
最高转速 Maximum speed	rmp	450	200
定位精度 Positioning accuracy	Arc sec	$\pm 30(\pm 15)$	$\pm 30(\pm 10)$
重复精度 Repeatability	Arc sec	$\pm 2.5(\pm 1.2)$	$\pm 2.5(\pm 1.2)$
分辨率 DPI	L/rev, lines/rev	11740 (L/rev)	16384 (lines/rev)
最大轴向载荷 Maximum axial load	N	2000	2000
最大径向载荷 Maximum radial load	N.m	60	200
轴向偏摆 Axial deflection	μm	15 (8 or less)	15 (8 or less)
径向偏摆 Radial deflection	μm	15 (8 or less)	15 (8 or less)

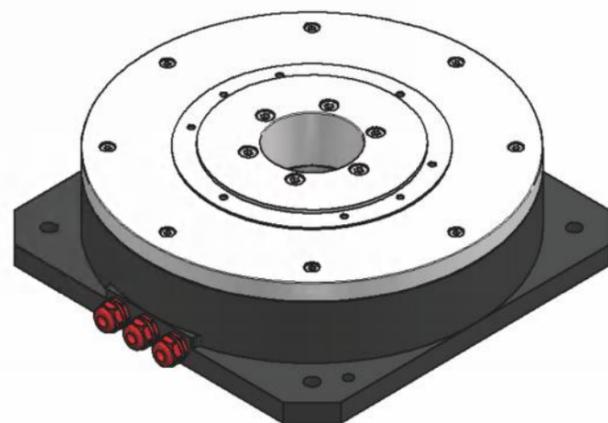
注:【通用规格】

Note: General Specification

电机卷线部 绝缘等级:F类,
Motor winding part Insulation grade: Class F,
绝缘电阻: 10M Ω 以上(500VDC)
Insulation resistance: more than 10M Ω (500VDC)

绝缘耐压:60秒@1500V,
Withstand voltage: 60s @1500V

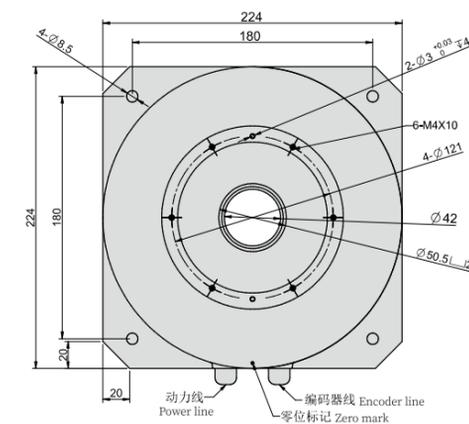
其他构造:内转子型, 励磁方式:三相
Other structures: inner rotor type, excitation mode: three-phase.



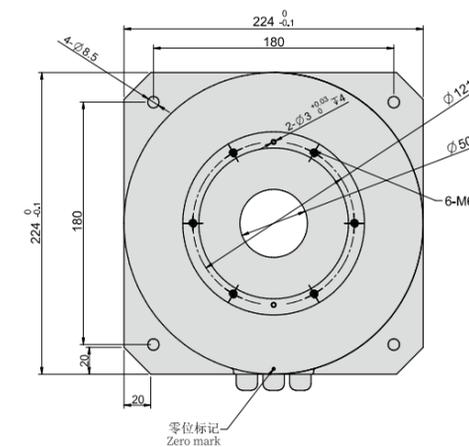
安装尺寸图

Installation dimension drawing

TPA-M-224-042



TPA-M-224-062



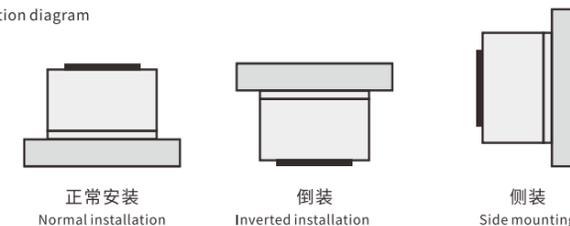
备注:

- 1、测量时环境温度为25 $^{\circ}$ C,取决于散热环境。
- 2、括号内为可选跳动。
- 3、工作温度:0-40 $^{\circ}$ C(无结冰),工作湿度10%RH-80%RH(无冷凝)。

Remarks:

1. When measured, the ambient temperature is 25 $^{\circ}$ C, which depends on the heat dissipation environment.
2. Optional beats in brackets.
3. Working temperature: 0-40 $^{\circ}$ C (without freezing), working humidity 10% RH-80% RH (without condensation).

安装示意图 Installation diagram



单位:Unit:mm

HNR
HCR
HNB
HCB
HNT
XYZ
ONB
OCB
GCR
GCB
GCBS
GCRS
ESR
EMR
EHR
KSR
LNP
DDR

参考资料
Reference data

TPA-M-263系列规格

TPA-M-263 series specifications

性能参数 Performance parameter	单位 Unit	型号 Model		
		TPA-M-263-113	TPA-M-263-138	TPA-M-263-188
连续转矩 Continuous torque	N.m	95	150	250
连续电流 Continuous current	A rms	7.10	7.10	7.10
最大转矩 Maximum torque	N.m	190	300	500
最大电流 Maximum current	A rms	14.20	14.20	14.20
转矩常数 Torque constant	Nm/Arms	13.4	21.9	35.2
电阻 Resistance	$\Omega(25^{\circ}\text{C})$	3.40	4.20	6.70
电感 Inductance	mH(25 $^{\circ}$ C)	10.80	13.90	22.80
极数 Number of poles	-	40	40	40
反电动势常数 Back emf constant	Vrms/rad/s	10.90	17.80	28.70
电机常数 Motor constant	Nm/ \sqrt{W}	3	7.9	7.9
转动惯量 Moment of inertia	Kg.m ²	0.13	0.16	0.21
电机重量 Motor weight	Kg	23.8	35	48
最高转速 Maximum speed	rmp	150	200	100
定位精度 Positioning accuracy	Arc sec	$\pm 25(\pm 10)$	$\pm 30(\pm 10)$	$\pm 30(\pm 10)$
重复精度 Repeatability	Arc sec	$\pm 2.5(\pm 1.2)$	$\pm 2.5(\pm 1.2)$	$\pm 2.5(\pm 1.2)$
分辨率 DPI	Lines/rev	16384 (Lines/rev)	16384 (Lines/rev)	16384 (Lines/rev)
最大轴向载荷 Maximum axial load	N	4000	4000	4000
最大径向载荷 Maximum radial load	N.m	400	400	400
轴向偏摆 Axial deflection	μm	20 (15,8 or less)	20 (15,8 or less)	20 (15,8 or less)
径向偏摆 Radial deflection	μm	20 (15,8 or less)	20 (15,8 or less)	20 (15,8 or less)
电机重量 Motor weight	Kg	23.8	35	48

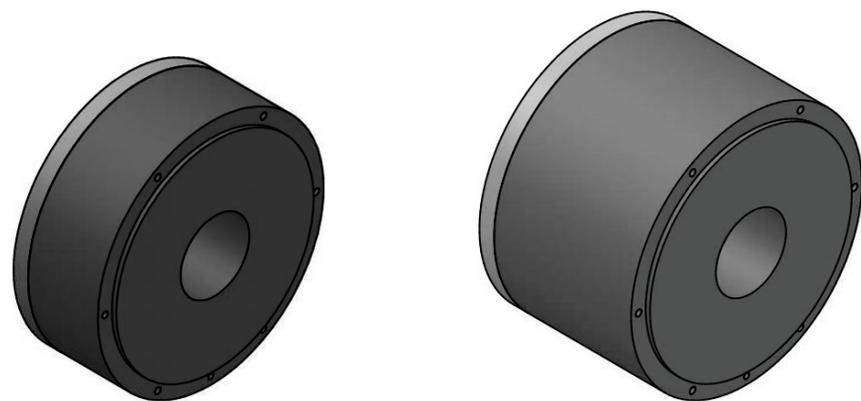
注:【通用规格】

Note: General Specification

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Motor winding part Insulation grade: Class F,
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绝缘耐压:60秒@1500V,
Withstand voltage: 60s @1500V

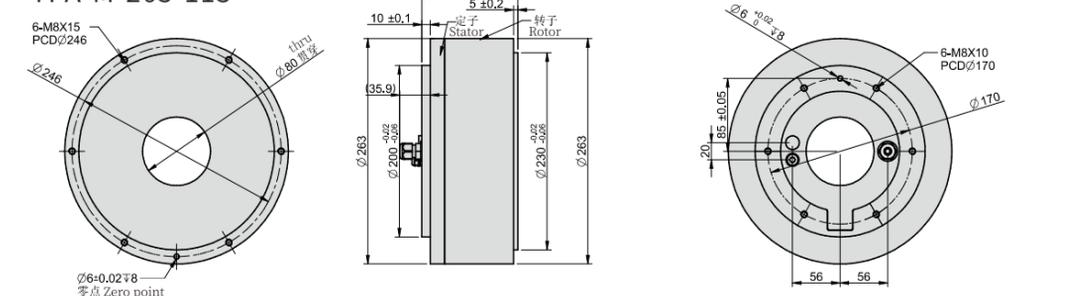
其他构造:内转子型, 励磁方式:三相
Other structures: inner rotor type, excitation mode: three-phase.



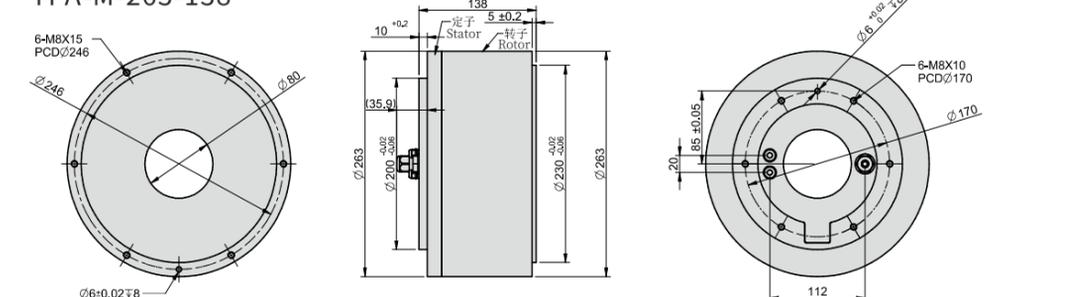
安装尺寸图

Installation dimension drawing

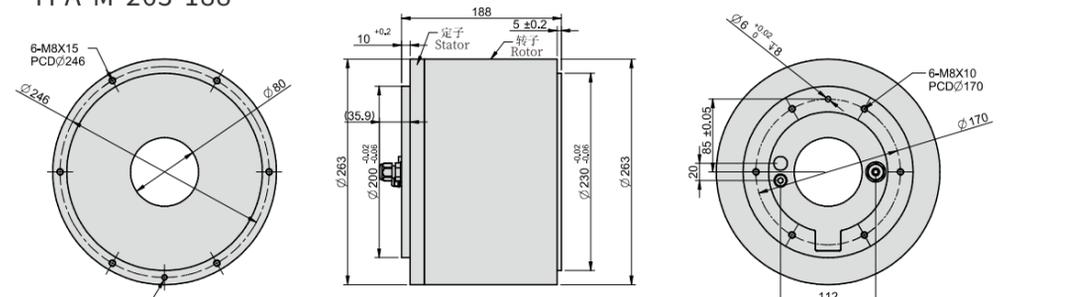
TPA-M-263-113



TPA-M-263-138



TPA-M-263-188



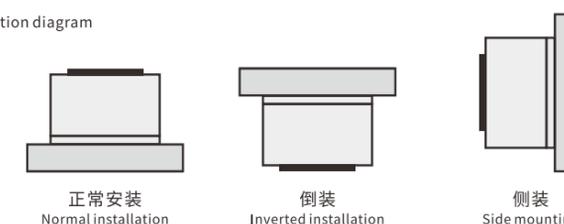
备注:

- 1、测量时环境温度为25 $^{\circ}$ C,取决于散热环境。
- 2、括号内为可选跳动。
- 3、工作温度:0-40 $^{\circ}$ C(无结冰),工作湿度10%RH-80%RH(无冷凝)。

Remarks:

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