MYACTUATOR RMD-X V3 Series Brushless DC Servo Motor Dual Encoder Instruction Manual

Contents

MYACTUATOR

MYACTUATOR RMD-X V3 Series Brushless DC Servo Motor Dual Encoder

Product Information

Specifications:

- Compact Size, Lightweight Design
- High Integration for various industries
- Hollow helical gear reducer with transmission accuracy up to 5-7arc
- High precision planetary reduction gear for stable high-speed operation
- Encoder with multi-turn angle for accurate control and uninterrupted performance
- New V3.0 Debugging Software for real-time data waveform display and simple control
- Supports installation of a second encoder for higher control accuracy
- Superior hardness for durability under various working conditions
- High torque capability for precise control over heavy loads

Product Usage Instructions

Installation:
Follow the manufacturer’s guidelines to install the servo motor securely in your application. Ensure proper alignment and connection to the power source.

Debugging with V3.0 Software:
Use the provided V3.0 Debugging Software to tune parameters,test functionality, and upgrade firmware. Monitor real-time data and control status on your PC for efficient troubleshooting.

Encoder Installation:
If needed, install a second encoder for higher control accuracy,especially in robotic arm applications. Follow the instructions for proper installation and calibration.

Thermal Balance Point:
Consider the provided thermal balance point data for setting the rated working range based on ambient temperature and heat dissipation conditions to ensure optimal performance.

Applications:
Utilize the servo motor in various applications such as industrial machinery, robotics, and automotive systems for reliable and precise motion control.

Frequently Asked Questions (FAQ)

Q: Can the servo motor be used in high-speed applications?
A: Yes, the servo motor is designed for high-speed operation with stable performance.

Q: Is it necessary to install a second encoder?
A: Installing a second encoder is optional but recommended for applications requiring higher control accuracy, such as robotic arms.

Q: How can I ensure proper thermal management for the servo motor?
A: Follow the thermal balance point guidelines provided in the manual to set the rated working range based on ambient temperature and heat dissipation conditions.

RMD-X V3 Series Product Manual
Compact Size, Lightweight Design, High Integration
The RMD-X V3 series servo motors meet the different demand for motor solutions in various industries. With their reduced dimensions and weight, these motors offer significant advantages in terms of space utilization and overall system efficiency.

Precise Control, Lower Noise, Faster Speeds
Designed to meet the demands of industries, these motors offer unparalleled performance and reliability. Experience a quieter working environment as our servo motors boast significantly reduced noise levels. Whether you're in manufacturing or automation, these motors will keep up with your high-speed requirements without compromising precision.

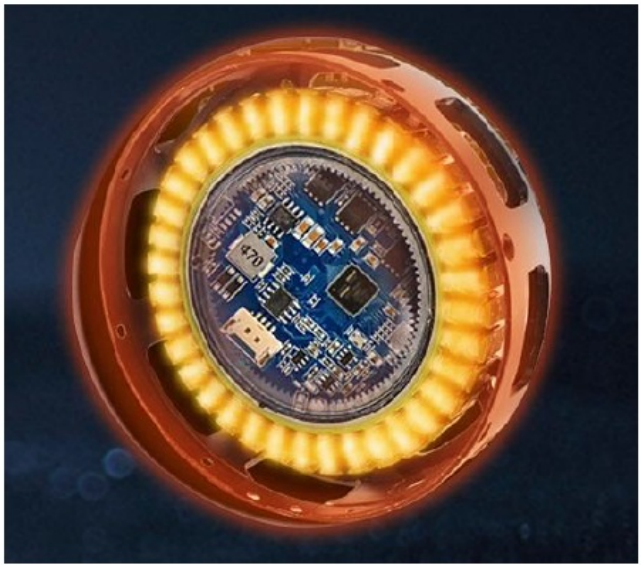
Worried about overheating? Rest assured that our servo motors are engineered to minimize heat generation. This not only prolongs their lifespan but also enhances safety by preventing potential malfunctions due to excessive heat buildup.

Hollow helical gear reducer
Transmission accuracy up to 5-7arc
Some Motors Adopt:
X8-H 1:6
X8 PRO-H 1:6
X6-H 1:6

High precision planetary
reduction gear
Precise transmission
Stable High-speed Operation

Recording Function

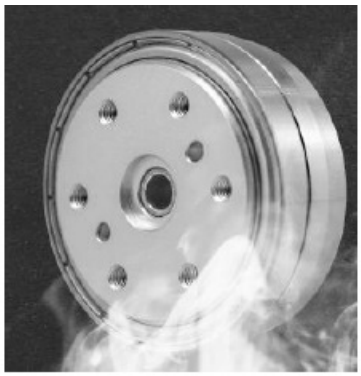
Encoder with multi-turn angle, mechanical positioning for accurate control. Gone are the worries of power outages affecting your control systems, providing uninterrupted performance when you need it most.
Whether you're in manufacturing, robotics, or any industry that requires precise control over motion and position, our Servo Motor can meet your expectations. Its unrivaled accuracy allows for seamless integration into a wide range of applications.

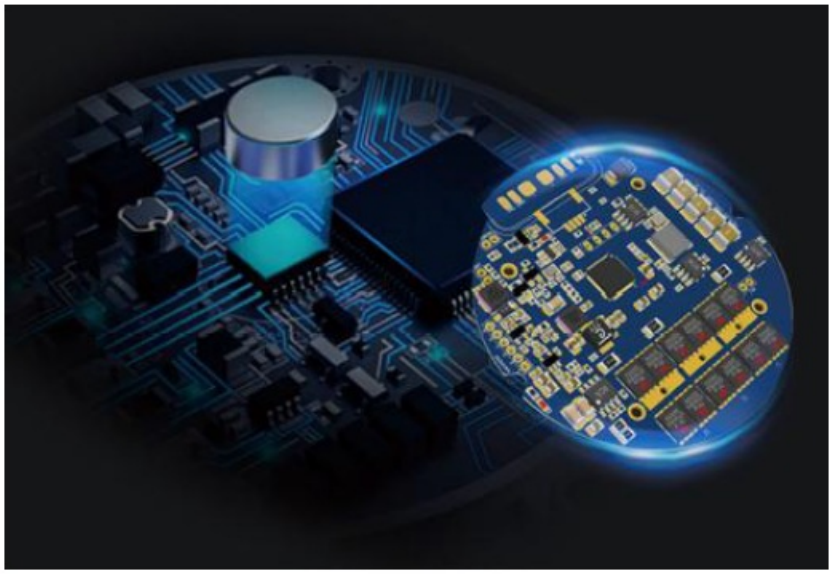


New V3.0 Debugging Software, Real-time Date Waveform Display Simple Control: Tuning parameters, testing, firmware upgrade. Graphic reading of real-time data. Control PC real-time monitoring status and data. Collect data from sensors and other devices, analyze and process valuable information.

Product Advantages

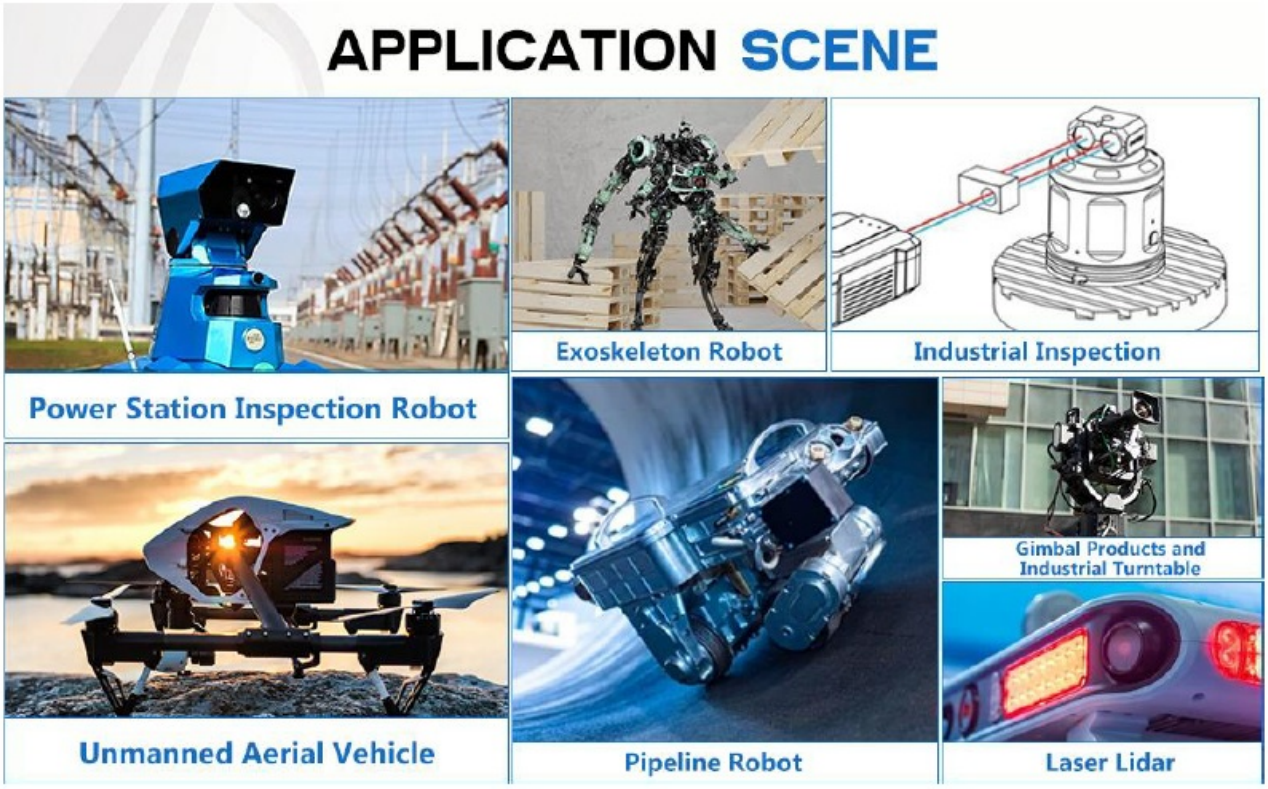
1. Multiple protection design: over temperature protection/ over current protection/over voltage protection/ over speed protection.
2. More stable operation: The new pad structure is more stable. The connection is more stable, and the interface is easy to be damaged after long-term use.
3. Means of communication: CAN BUS:500K/1M
4. Double bearing structure: better compression/shock resistance (performance increase by 20%)
5. Support remote update, update the latest firmware at any time.
6. Can be customized personality command.
7. Support temperature sensor, temperature can be read in real time.
8. Support to install second encoder, higher control accuracy. No fear of power after the Angle changes again. Suitable for robotic arm application scenarios.





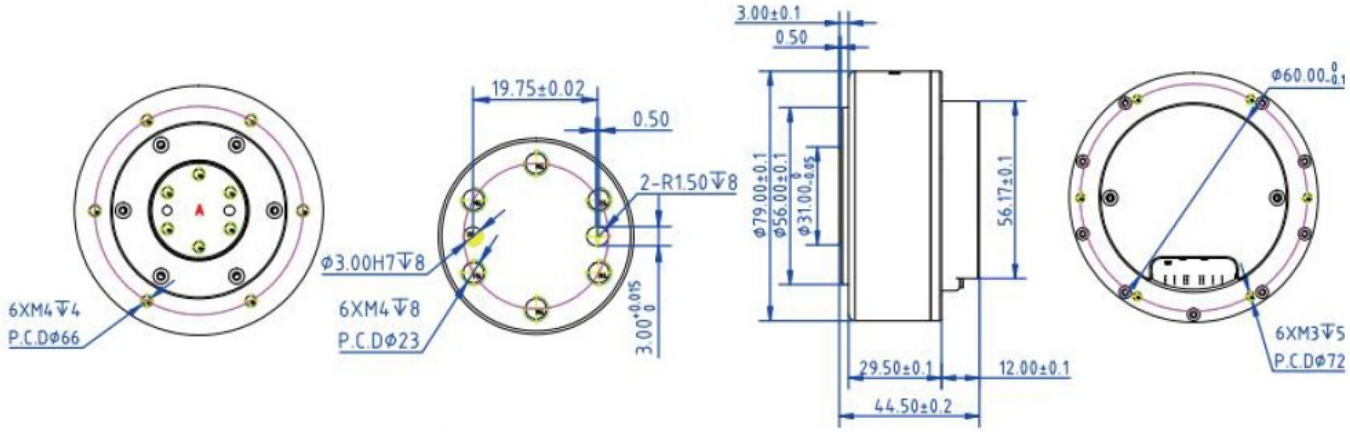
Various Applications

The superior hardness of our servo motor guarantees long-lasting durability under various working conditions. Additionally, the high-speed capabilities enable rapid response times for enhanced productivity. Its high torque capability allows for precise control over heavy loads while maintaining smooth motion.
Featuring a compact design and robust construction, this servo motor ensures reliable operation even in demanding environments, our servo motor is engineered to meet your specific needs.
With its advanced technology and superior performance, our electric motor is suitable for various applications such as industrial machinery, robotics, automotive systems, and more. Trust in its reliability to meet your specific needs. Whether you need precise control in robotics or automation systems or seek a reliable solution for industrial machinery, our servo motor offers the perfect combination of high performance and durability.


APPLICATION SCENE
Power Station Inspection Robot
Exoskeleton Robot
Industrial Inspection
Unmanned Aerial Vehicle
Pipeline Robot
Gimbal Products and Industrial Turntable
Laser Lidar

RMD-X6 V3 1:8


RMD X6-V3 1:8
The Products Wide Application
MYACTUATOR
Servo Actuator System
RMD X6 1:8
V3
SN10323000202
Exoskeleton robot
Mechanical arm
ARU Robot

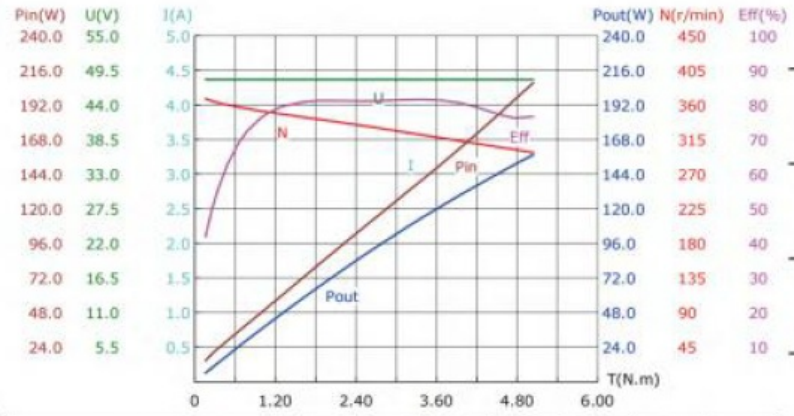


PRODUCT PARAMETERS

参数/型号(Actuator Name)		RMD-X6 V3
货品编码(Item No.)		1033220040
控制模式(Control mode)		Servo mode(Torque /Velocity/Position) Motion mode (feedforward torque/velocity/position)
通信方式及波特率(Communication Method &Baudrate)		CAN BUS :500Kbps/ 1Mbps RS485 BUS : 115200/500K/1M/1.5K /2.5K
额定电压(Input voltage)	V	48
最大出轴空载转速 (No -load output Speed)	rpm	360
额定出轴转速 (Nominal output Speed)	rpm	310
额定电流(Nominal current)	A	3.6
输出额定功率(Output Norminal power) / (热平衡点)	W	135
额定扭矩 (Nominal torque)	N.M	4.5
电机效率(Motor efficency)	%	78%
瞬时过载系数(Overload coefficient)		2.5
线电阻(Wire Resistance)	Ω	0.55
线电感(Wire inductance)	mH	0.18
电机转速常数(Motor Speed constant)	rpm/v	62
电机扭矩电流常数(Motor Torque constant)	N.M/A	0.17
轴向负载 (Axial direction payload)	N	775
径向负载(Radial direction payload)	N	1040
转子惯量(Rotor inertia)	gcm²	850
电机重量(Motor weight)	g	490
减速机速比(Reducer ratio)		8 : 1
减速箱背隙(Backlash)	Arc min	8

Thermal balance point: The above thermal balance point data are measured by our company under the ambient temperature of 24 degrees Celsius (no other heat dissipation method) and temperature rise of 60 degrees. Users need to set the rated working range reasonably according to the test environment temperature and heat dissipation conditions.

MOTOR CHARACTERISTIC CURVE

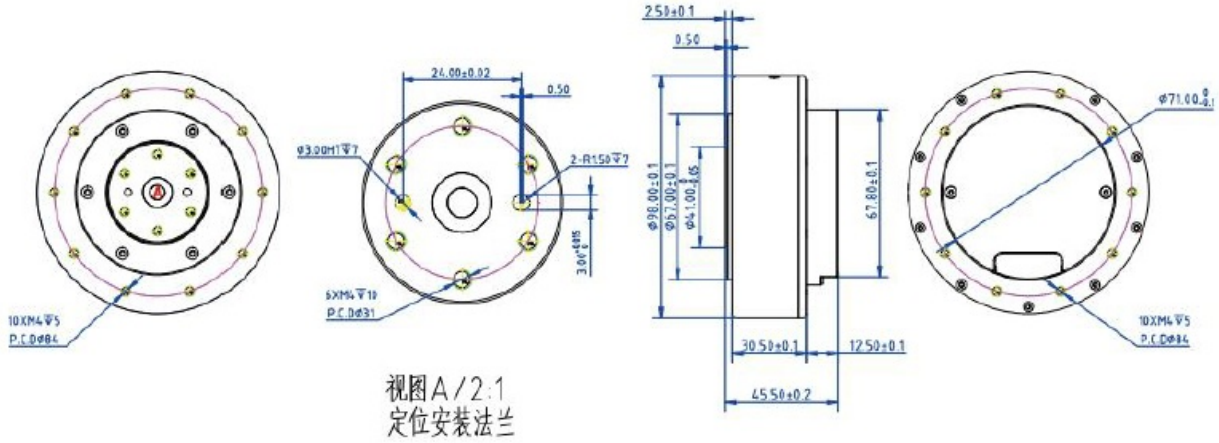


T(N.m)	N(r/min)	Pout(W)	U(V)	I(A)	Pin(W)	Eff(%)
0.158	368	6.11	48.05	0.307	14.77	42.0
0.158	368	6.11	48.05	0.307	14.77	42.0
0.221	366	8.44	48.04	0.371	17.84	47.2
0.221	366	8.44	48.04	0.371	17.84	47.2
0.257	365	9.28	48.04	0.404	19.43	49.9
0.338	363	12.82	48.04	0.474	22.81	55.3
0.484	360	18.24	48.04	0.594	28.56	62.8
0.657	357	24.59	48.04	0.734	35.26	69.2
0.787	355	29.27	48.04	0.837	40.24	72.6
0.997	352	36.80	48.04	1.007	48.40	76.5
1.072	351	39.41	48.04	1.067	51.28	77.4
1.302	348	47.47	48.04	1.254	60.25	79.6
1.622	344	58.43	48.04	1.514	72.72	80.9
1.865	341	66.59	48.04	1.710	82.17	81.2
2.027	339	71.93	48.03	1.841	88.42	81.2
2.345	335	82.24	48.03	2.095	100.65	81.1
2.577	332	89.59	48.03	2.279	109.49	81.1
2.729	330	94.29	48.03	2.399	115.23	81.2
3.169	324	107.55	48.02	2.745	131.86	81.5
3.384	321	113.78	48.02	2.915	140.01	81.6
3.669	317	121.83	48.02	3.144	150.98	81.4
3.957	313	129.70	48.02	3.380	162.30	80.5
4.175	310	135.54	48.02	3.564	171.12	79.4
4.544	305	145.11	48.02	3.881	186.35	77.2
4.763	302	150.63	48.02	4.072	195.56	76.2
5.041	298	157.34	48.01	4.315	207.23	76.6

Audit:

Description	T(N.m)	N(r/min)	Pout(W)	U(V)	I(A)	Pin(W)	Eff(%)
No_Load	0.158	368	6.11	48.05	0.307	14.77	42.0
Max_Eff	3.384	321	113.78	48.02	2.915	140.01	81.6
Max_Pout	5.041	298	157.34	48.01	4.315	207.23	76.6
Max_Torque	5.041	298	157.34	48.01	4.315	207.23	76.6
The_End	5.041	298	157.34	48.01	4.315	207.23	76.6
The_Rated	5.041	298	157.34	48.01	4.315	207.23	75.9

RMD-X8-H V3 1:6

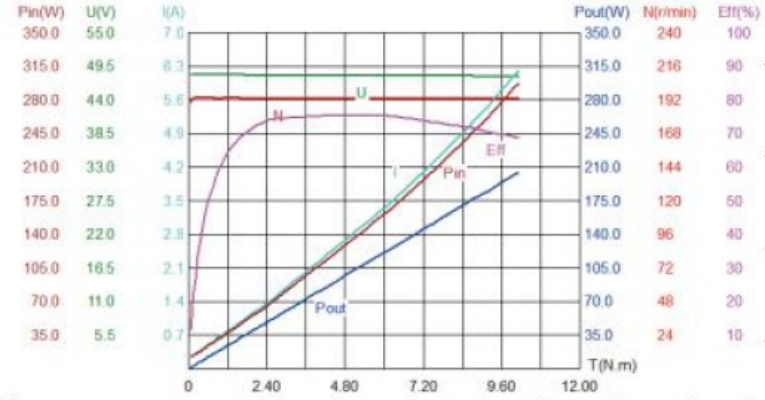


PRODUCT PARAMETERS

参数/型号(Actuator Name)		RMD-X8-H V3
货品编码 (Item No.)		1033718040
控制模式 (Control mode)		Servo mode(Torque /Velocity/Position) Motion mode (feedforward torque/velocity/position)
通信方式及波特率 (Communication Method &Baudrate)		CAN BUS:500Kbps/ 1Mbps RS485 BUS : 115200/500K/1M/1.5K /2.5K
额定电压 (Input voltage)	V	48
最大出轴空载转速 (No -load output Speed)	rpm	260
额定出轴转速 (Nominal output Speed)	rpm	190
额定电流 (Nominal current)	A	3.5
输出额定功率 (Output Norminal power) / (热平衡点)	W	120
额定扭矩 (Nominal torque)	N.M	6
电机效率 (Motor efficency)	%	75%
瞬时过载系数 (Overload coefficient)		3
线电阻 (Wire Resistance)	Ω	0.53
线电感 (Wire inductance)	mH	0.21
电机转速常数 (Motor Speed constant)	rpm/v	33
电机扭矩电流常数 (Motor Torque constant)	N.M/A	0.30
轴向负载 (Axial direction payload)	N	985
径向负载(Radial direction payload)	N	1250
转子惯量 (Rotor inertia)	gcm²	2670
电机重量(Motor weight)	g	660
减速机速比 (Reducer ratio)		6.2 : 1(中空斜齿)
减速箱背隙(Backlash)	Arc min	6

Thermal balance point: The above thermal balance point data are measured by our company under the ambient temperature of 24 degrees Celsius (no other heat dissipation method) and temperature rise of 60 degrees. Users need to set the rated working range reasonably according to the test environment temperature and heat dissipation conditions.

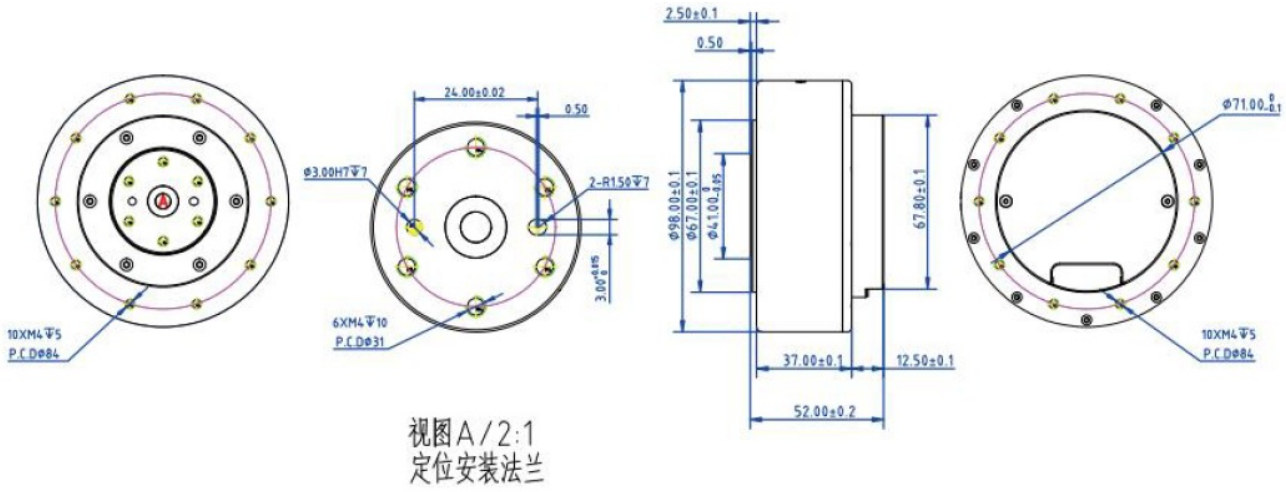
MOTOR CHARACTERISTIC CURVE



项目	T(N.m)	N(r/min)	Pout(W)	U(V)	I(A)	Pin(W)	Eff(%)
不加载点(No_Load)	0.072	190	1.44	48.11	0.259	12.45	11.5
最高效率点(Max_Eff)	5.776	193	116.91	48.00	3.226	154.87	75.5
最大输出功率点(Max_Pout)	10.116	193	204.46	47.89	6.204	297.14	68.8
最大转矩点(Max_Torque)	10.116	193	204.46	47.89	6.204	297.14	68.8
结束(The End)	10.116	193	204.46	47.89	6.204	297.14	68.8

T(N.m)	N(r/min)	Pout(W)	U(V)	I(A)	Pin(W)	Eff(%)
0.072	190	1.44	48.11	0.259	12.45	11.5
0.085	192	1.70	48.11	0.262	12.60	13.5
0.112	193	2.27	48.11	0.272	13.08	17.1
0.163	193	3.31	48.11	0.293	14.10	22.9
0.237	194	4.81	48.11	0.325	15.68	29.9
0.332	194	6.73	48.11	0.370	17.79	37.1
0.448	194	9.11	48.10	0.426	20.49	43.7
0.588	194	11.93	48.10	0.494	23.77	49.5
0.750	193	15.19	48.10	0.572	27.54	54.6
0.933	193	18.90	48.09	0.658	31.64	59.2
1.133	194	22.99	48.09	0.751	36.11	63.3
1.347	194	27.35	48.09	0.852	41.00	66.4
1.575	193	31.89	48.08	0.961	46.25	68.8
1.815	193	36.67	48.08	1.078	51.83	70.6
2.064	193	41.72	48.07	1.199	57.63	72.3
2.324	193	47.00	48.07	1.325	63.69	73.7
2.596	193	52.50	48.06	1.467	70.50	74.4
2.878	193	58.19	48.05	1.624	78.05	74.6
3.167	193	64.03	48.05	1.785	85.77	74.6
3.460	193	69.93	48.04	1.943	93.37	74.9
3.755	193	75.83	48.04	2.101	100.96	75.1
4.053	193	81.80	48.03	2.262	108.68	75.3
4.356	193	87.95	48.03	2.428	116.64	75.4
4.663	193	94.23	48.02	2.601	124.92	75.4
4.976	193	100.64	48.01	2.782	133.60	75.3
5.295	193	107.17	48.01	2.963	142.27	75.3
5.616	193	113.69	48.00	3.138	150.65	75.5
5.935	193	120.08	47.99	3.317	159.21	75.4
6.251	193	126.34	47.99	3.505	168.19	75.1
6.568	193	132.62	47.98	3.698	177.47	74.7
6.885	193	139.02	47.97	3.897	186.95	74.4
7.199	193	145.44	47.96	4.102	196.74	73.9
7.512	193	151.73	47.95	4.312	206.81	73.4
7.823	193	157.95	47.95	4.522	216.84	72.9
10.116	193	204.46	47.89	6.204	297.14	68.8

RMD-X8-Pro-H V3 1:6

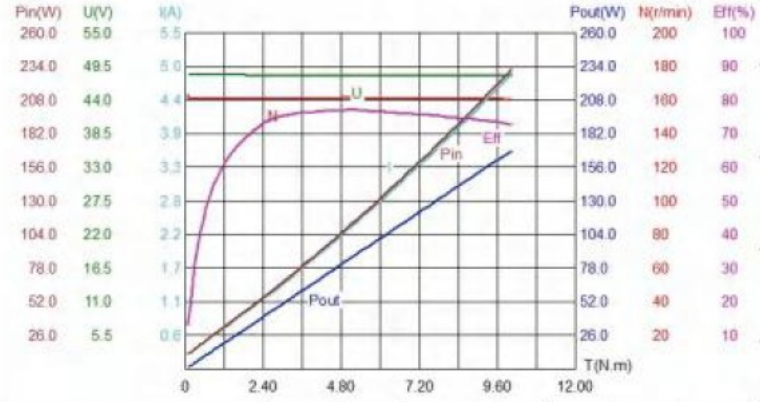


PRODUCT PARAMETERS

参数/型号(Actuator Name)		RMD-X8-Pro-H V3
货品编码 (Item No.)		1033813040
控制模式 (Control mode)		Servo mode(Torque /Velocity/Position) Motion mode (feedforward torque/velocity/position)
通信方式及波特率 (Communication Method &Baudrate)		CAN BUS:500Kbps/ 1Mbps RS485 BUS : 115200/500K/1M/1.5K /2.5K
额定电压 (Input voltage)	V	48
最大出轴空载转速 (No -load output Speed)	rpm	220
额定出轴转速 (Nominal output Speed)	rpm	160
额定电流 (Nominal current)	A	3.75
输出额定功率 (Output Norminal power) / (热平衡点)	W	135
额定扭矩 (Nominal torque)	N.M	8
电机效率 (Motor efficency)	%	75%
瞬时过载系数 (Overload coefficient)		3
线电阻 (Wire Resistance)	Ω	0.55
线电感 (Wire inductance)	mH	0.27
电机转速常数 (Motor Speed constant)	rpm/v	30
电机扭矩电流常数 (Motor Torque constant)	N.M/A	0.29
轴向负载 (Axial direction payload)	N	985
径向负载(Radial direction payload)	N	1250
转子惯量 (Rotor inertia)	gcm²	3400
电机重量(Motor weight)	g	780
减速机速比 (Reducer ratio)		6.2 : 1(中空斜齿)
减速箱背隙(Backlash)	Arc min	6

Thermal balance point: The above thermal balance point data are measured by our company under the ambient temperature of 24 degrees Celsius (no other heatdissipation method) and temperature rise of 60 degrees. Users need to set the rated working range reasonably according to the test environment temperature and heat dissipation conditions.

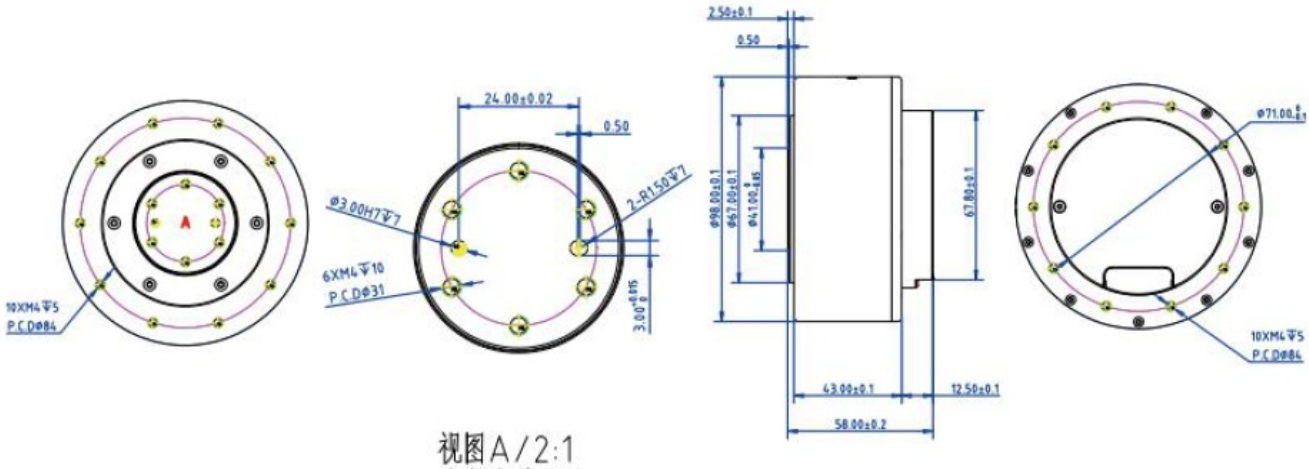
MOTOR CHARACTERISTIC CURVE



项目	T(N.m)	N(r/min)	Pout(W)	U(V)	I(A)	Pin(W)	Eff(%)
不加载点(No_Load)	0.090	163	1.54	48.10	0.245	11.78	13.1
最高效率点(Max_Eff)	5.104	161	86.24	48.03	2.330	111.92	77.1
最大输出功率点(Max_Pout)	10.050	160	168.39	47.94	4.842	232.15	72.5
最大转矩点(Max_Torque)	10.050	160	168.39	47.94	4.842	232.15	72.5
结束(The End)	10.050	160	168.39	47.94	4.842	232.15	72.5

T(N.m)	N(r/min)	Pout(W)	U(V)	I(A)	Pin(W)	Eff(%)
0.090	163	1.54	48.10	0.245	11.78	13.1
0.107	161	1.80	48.10	0.249	11.97	15.0
0.143	161	2.40	48.10	0.261	12.54	18.8
0.204	161	3.44	48.10	0.285	13.70	24.6
0.291	161	4.90	48.10	0.321	15.48	31.0
0.403	161	6.79	48.10	0.368	17.72	37.6
0.543	161	9.14	48.10	0.423	20.36	44.2
0.710	161	11.94	48.10	0.488	23.54	50.1
0.902	161	15.19	48.09	0.560	27.23	55.2
1.114	161	18.78	48.09	0.636	31.22	59.7
1.342	161	22.64	48.09	0.728	35.55	63.4
1.587	161	26.75	48.08	0.835	40.23	66.3
1.845	161	31.07	48.08	0.939	45.07	68.7
2.117	161	35.66	48.07	1.040	49.99	71.2
2.402	161	40.49	48.07	1.150	55.29	73.1
2.697	161	45.47	48.07	1.269	61.03	74.4
3.000	161	50.59	48.06	1.394	67.05	75.4
3.311	161	55.82	48.06	1.528	73.44	76.0
3.628	161	61.12	48.05	1.668	80.18	76.2
3.950	161	66.49	48.05	1.810	86.98	76.4
4.275	161	72.00	48.04	1.953	93.86	76.7
4.603	161	77.66	48.04	2.102	100.98	76.9
4.936	161	83.38	48.03	2.253	108.25	77.0
5.273	161	89.08	48.03	2.408	115.66	77.0
5.615	161	94.66	48.02	2.569	123.36	76.8
5.960	161	100.32	48.01	2.732	131.19	76.5
6.305	161	106.19	48.01	2.897	139.11	76.3
6.649	161	112.03	48.00	3.068	147.29	76.1
6.992	161	117.84	48.00	3.239	155.50	75.8
7.333	161	123.63	47.99	3.406	163.50	75.6
7.672	161	129.36	47.98	3.576	171.61	75.4
8.009	161	134.99	47.98	3.751	180.01	75.0
8.341	161	140.59	47.97	3.925	188.32	74.7
8.670	161	146.20	47.96	4.096	196.47	74.4
10.050	160	168.39	47.94	4.842	232.15	72.5

RMD-X8-S2 V3 1:36

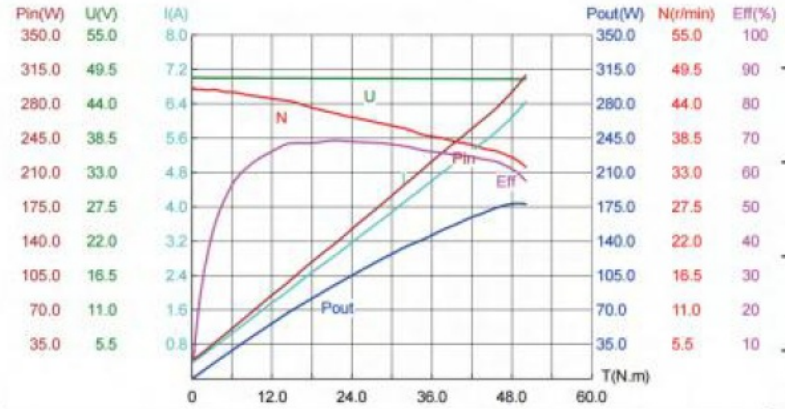


PRODUCT PARAMETERS

参数/型号(Actuator Name)		RMD-X8-S2 V3
货品编码 (Item No.)		1033918040
控制模式 (Control mode)		Servo mode(Torque /Velocity/Position) Motion mode (feedforward torque/velocity/position)
通信方式及波特率 (Communication Method &Baudrate)		CAN BUS:500Kbps/ 1Mbps RS485 BUS : 115200/500K/1M/1.5K/2.5K
额定电压 (Input voltage)	V	48
最大出轴空载转速 (No -load output Speed)	rpm	46
额定出轴转速 (Nominal output Speed)	rpm	40
额定电流 (Nominal current)	A	3.2
输出额定功率 (Output Norminal power) / (热平衡点)	W	110
额定扭矩 (Nominal torque)	N.M	25
电机效率 (Motor efficency)	%	70%
瞬时过载系数 (Overload coefficient)		2
线电阻 (Wire Resistance)	Ω	0.27
线电感 (Wire inductance)	mH	0.1
电机转速常数 (Motor Speed constant)	rpm/v	33
电机扭矩电流常数 (Motor Torque constant)	N.M/A	0.30
轴向负载 (Axial direction payload)	N	985
径向负载 (Radial direction payload)	N	1250
转子惯量 (Rotor inertia)	gcm^2	2670
电机重量 (Motor weight)	g	900
减速机速比 (Reducer ratio)		36: 1
减速箱背隙(Backlash)	Arc min	15

Thermal balance point: The above thermal balance point data are measured by our company under the ambient temperature of 24 degrees Celsius (no other heat dissipation method) and temperature rise of 60 degrees. Users need to set the rated working range reasonably according to the test environment temperature and heat dissipation conditions.

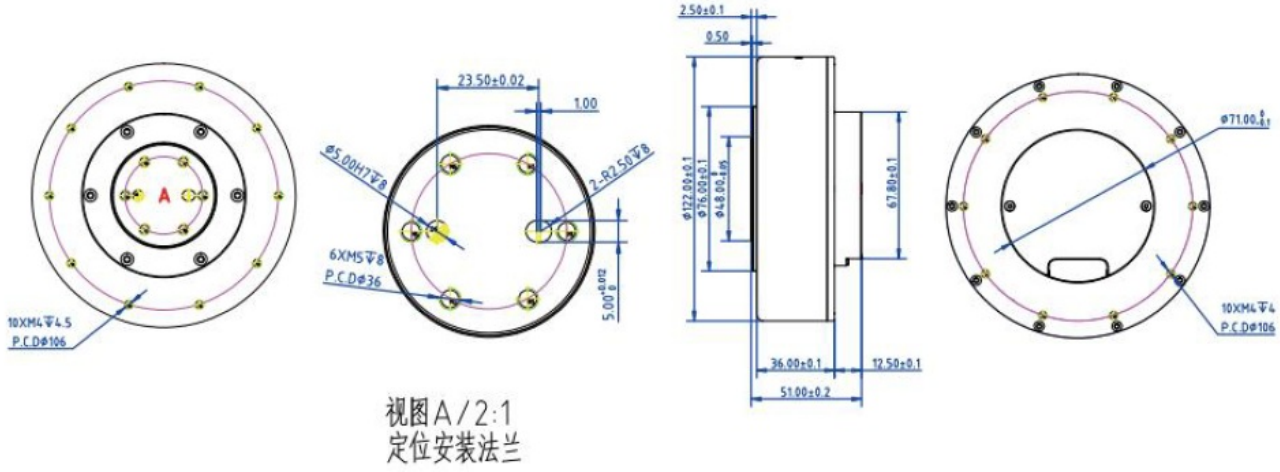
MOTOR CHARACTERISTIC CURVE



Description	T(N.m)	N(r/min)	Pout(W)	U(V)	I(A)	Pin(W)	Eff(%)
No_Load	0.21	46.3	1.00	48.15	0.404	19.48	5.1
Max_Eff	21.36	42.5	95.01	48.06	2.852	137.07	69.3
Max_Pout	49.06	34.8	178.69	47.94	6.261	300.17	59.6
Max_Torque	50.07	33.9	177.77	47.94	6.441	308.77	57.6
The End	50.07	33.9	177.77	47.94	6.441	308.77	57.6

T(N.m)	N(r/min)	Pout(W)	U(V)	I(A)	Pin(W)	Eff(%)
0.21	46.3	1.00	48.15	0.404	19.48	5.1
0.29	46.5	1.39	48.15	0.415	20.01	6.9
0.54	46.4	2.60	48.15	0.439	21.13	12.1
0.99	46.3	4.82	48.15	0.484	23.34	20.2
1.63	46.3	7.91	48.14	0.556	26.78	29.1
2.47	46.2	11.93	48.14	0.653	31.44	37.4
3.48	46.3	16.84	48.13	0.769	37.03	45.1
4.67	45.9	22.47	48.13	0.905	43.55	51.3
6.01	45.8	28.85	48.12	1.058	50.93	56.4
7.45	45.6	35.58	48.12	1.229	59.15	60.0
8.97	45.3	42.55	48.11	1.410	67.84	62.6
10.56	45.1	49.84	48.11	1.600	76.98	64.7
12.21	44.8	57.26	48.10	1.793	86.25	66.3
13.88	44.6	64.77	48.09	1.978	95.15	68.0
15.56	44.2	71.99	48.08	2.181	104.90	68.6
17.28	43.6	78.85	48.08	2.391	114.99	68.6
19.02	43.1	85.77	48.07	2.594	124.69	68.8
20.77	42.7	92.75	48.06	2.786	133.92	69.3
22.52	42.2	99.44	48.05	2.989	143.66	69.2
24.26	41.8	106.17	48.05	3.204	153.97	69.0
26.02	41.4	112.80	48.04	3.414	164.00	68.8
27.77	41.0	119.20	48.03	3.616	173.68	68.6
29.52	40.6	125.51	48.02	3.825	183.69	68.3
31.27	40.2	131.58	48.02	4.041	194.05	67.8
33.00	39.7	137.07	48.01	4.246	203.87	67.3
34.71	39.0	141.85	48.00	4.450	213.64	66.4
36.42	38.7	147.65	48.00	4.662	223.80	66.0
38.13	38.3	153.01	47.99	4.863	233.39	65.6
39.81	37.9	157.83	47.99	5.054	242.55	65.1
41.48	37.6	163.13	47.98	5.245	251.67	64.8
43.14	37.0	167.30	47.98	5.441	261.04	64.1
44.79	36.6	171.73	47.97	5.635	270.29	63.5
46.41	36.1	175.60	47.96	5.849	280.54	62.6
48.02	35.4	178.12	47.95	6.091	292.10	61.0
50.07	33.9	177.77	47.94	6.441	308.77	57.6

RMD-X10 V3 1:7



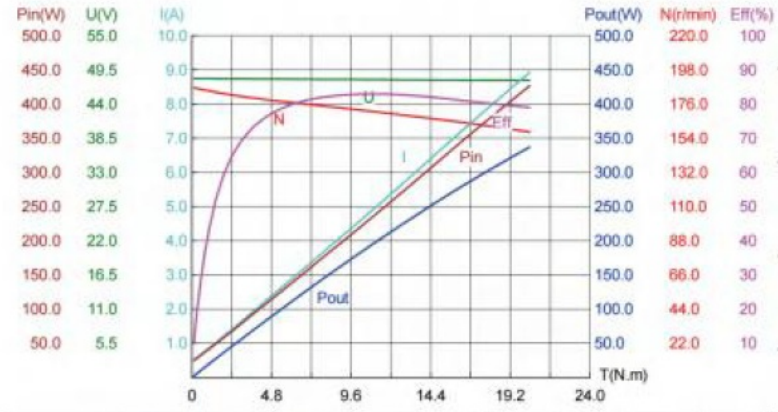
视图A/2:1
定位安装法兰

PRODUCT PARAMETERS

参数/型号(Actuator Name)		RMD-X10 V3
货品编码 (Item No.)		1034011040
控制模式 (Control mode)		Servo mode(Torque /Velocity/Position) Motion mode (feedforward torque/velocity/position)
通信方式及波特率 (Communication Method &Baudrate)		CAN BUS:500Kbps/ 1Mbps RS485 BUS : 115200/500K/1M/1.5K /2.5K
额定电压 (Input voltage)	V	48
最大出轴空载转速 (No -load output Speed)	rpm	190
额定出轴转速 (Nominal output Speed)	rpm	170
额定电流 (Nominal current)	A	5.3
输出额定功率 (Output Norminal power) / (热平衡点)	W	215
额定扭矩 (Nominal torque)	N.M	12
电机效率 (Motor efficency)	%	82.50%
瞬时过载系数 (Overload coefficient)		3
线电阻 (Wire Resistance)	Ω	0.3
线电感 (Wire inductance)	mH	0.13
电机转速常数 (Motor Speed constant)	rpm/v	30
电机扭矩电流常数 (Motor Torque constant)	N.M/A	0.32
轴向负载 (Axial direction payload)	N	1625
径向负载(Radial direction payload)	N	2250
转子惯量 (Rotor inertia)	gcm²	5675
电机重量 (Motor weight)	g	1150
减速机速比 (Reducer ratio)		7 : 1
减速箱背隙(Backlash)	Arc min	8

Thermal balance point: The above thermal balance point data are measured by our company under the ambient temperature of 24 degrees Celsius (no other heat dissipation method) and temperature rise of 60 degrees. Users need to set the rated working range reasonably according to the test environment temperature and heat dissipation conditions.

MOTOR CHARACTERISTIC CURVE

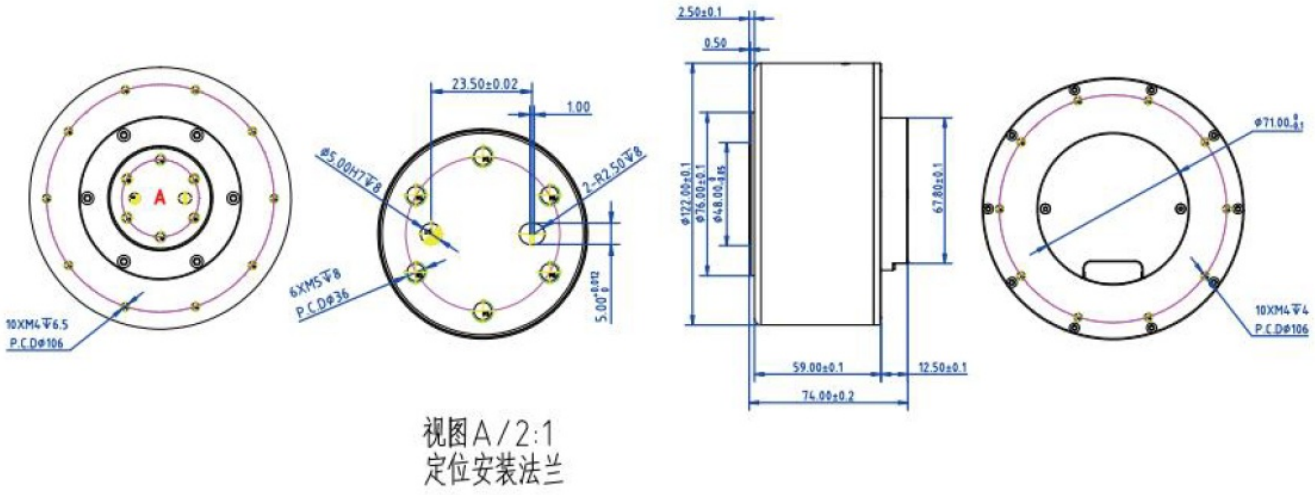


Description	T(N.m)	N(r/min)	Pout(W)	U(V)	I(A)	Pin(W)	Eff(%)
No_Load	0.13	186.4	2.49	48.09	0.515	24.77	10.1
Max_Eff	10.63	171.5	190.59	47.94	4.792	229.78	83.0
Max_Pout	20.36	158.0	336.93	47.80	8.923	426.58	79.0
Max_Torque	20.36	158.0	336.93	47.80	8.923	426.58	79.0
The End	20.36	158.0	336.93	47.80	8.923	426.58	79.0

T(N.m)	N(r/min)	Pout(W)	U(V)	I(A)	Pin(W)	Eff(%)
0.13	186.4	2.49	48.09	0.515	24.77	10.1
0.17	186.3	3.25	48.09	0.530	25.51	12.3
0.23	186.2	4.45	48.09	0.555	26.71	16.6
0.34	186.0	6.52	48.09	0.598	28.77	20.5
0.50	185.6	9.77	48.09	0.664	31.92	27.3
0.75	185.1	14.40	48.08	0.756	36.35	35.5
1.06	184.4	20.46	48.08	0.877	42.17	44.1
1.48	183.6	27.96	48.07	1.030	49.52	52.4
1.93	182.7	36.79	48.07	1.216	58.45	59.5
2.47	181.8	46.87	48.06	1.434	68.92	65.4
3.08	180.8	58.08	48.05	1.680	80.74	69.9
3.74	179.8	70.30	48.04	1.952	93.78	73.5
4.47	178.8	83.45	48.03	2.247	107.91	76.3
5.25	177.9	97.45	48.02	2.564	123.13	78.4
6.07	176.9	112.20	48.01	2.903	139.37	80.0
6.94	175.9	127.52	48.00	3.260	156.48	81.1
7.84	174.8	143.20	47.98	3.631	174.25	82.0
8.76	173.8	159.01	47.97	4.012	192.46	82.5
9.69	172.7	174.83	47.96	4.399	210.98	82.8
10.63	171.5	190.59	47.94	4.792	229.78	83.0
11.59	170.4	206.27	47.93	5.192	248.87	82.9
12.55	169.2	221.84	47.91	5.600	268.32	82.7
13.51	167.9	237.27	47.90	6.015	288.15	82.4
14.49	166.7	252.47	47.89	6.438	308.30	82.0
15.46	165.4	267.38	47.87	6.863	328.56	81.5
16.44	164.0	281.95	47.86	7.286	348.68	81.0
17.42	162.6	296.14	47.84	7.702	368.51	80.4
18.40	161.1	309.98	47.83	8.113	388.04	80.0
19.38	159.5	323.53	47.81	8.519	407.36	79.5
20.36	158.0	336.93	47.80	8.923	426.58	79.0

Audit:

RMD-X10 -S2 V3 1:35

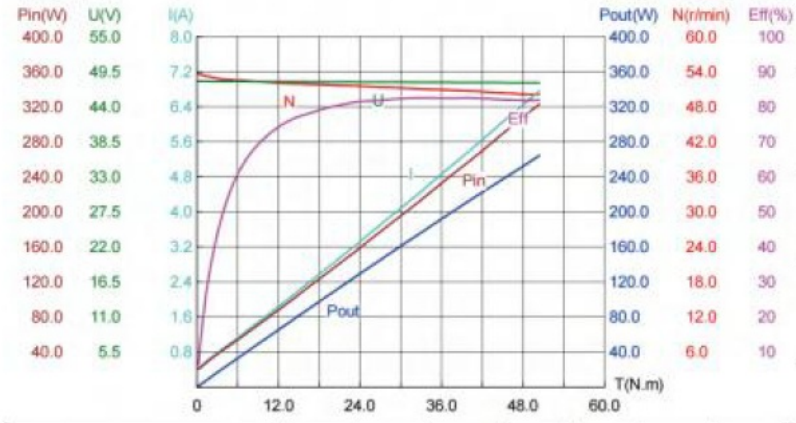


PRODUCT PARAMETERS

参数/型号(Actuator Name)		RMD-X10-S2 V3
货品编码 (Item No.)		1034111040
控制模式 (Control mode)		Servo mode(Torque /Velocity/Position) Motion mode (feedforward torque/velocity/position)
通信方式及波特率(Communication Method &Baudrate)		CAN BUS:500Kbps/ 1Mbps RS485 BUS : 115200/500K/1M/1.5K/2.5K
额定电压 (Input voltage)	V	48
最大出轴空载转速 (No -load output Speed)	rpm	55
额定出轴转速 (Nominal output Speed)	rpm	50
额定电流 (Nominal current)	A	6.7
输出额定功率(Output Norminal power) / (热平衡点)	W	265
额定扭矩 (Nominal torque)	N.M	50
电机效率 (Motor efficency)	%	82%
瞬时过载系数(Overload coefficient)		2
线电阻(Wire Resistance)	Ω	0.3
线电感(Wire inductance)	mH	0.13
电机转速常数(Motor Speed constant)	rpm/v	30
电机扭矩电流常数(Motor Torque constant)	N.M/A	0.32
轴向负载 (Axial direction payload)	N	1625
径向负载(Radial direction payload)	N	2250
转子惯量 (Rotor inertia)	gcm²	5675
电机重量(Motor weight)	g	1700
减速机速比(Reducer ratio)		35: 1
减速箱背隙(Backlash)	Arc min	15

Thermal balance point: The above thermal balance point data are measured by our company under the ambient temperature of 24 degrees Celsius (no other heat dissipation method) and temperature rise of 60 degrees. Users need to set the rated working range reasonably according to the test environment temperature and heat dissipation conditions.

MOTOR CHARACTERISTIC CURVE



Description	T(N.m)	N(r/min)	Pout(W)	U(V)	I(A)	Pin(W)	Eff(%)
No_Load	0.24	53.6	1.34	47.99	0.433	20.77	6.5
Max_Eff	33.35	51.0	178.19	47.85	4.512	215.90	82.5
Max_Pout	50.39	50.1	264.38	47.77	6.759	322.89	81.9
Max_Torque	50.39	50.1	264.38	47.77	6.759	322.89	81.9
The End	50.39	50.1	264.38	47.77	6.759	322.89	81.9

T(N.m)	N(r/min)	Pout(W)	U(V)	I(A)	Pin(W)	Eff(%)
0.24	53.6	1.34	47.99	0.433	20.77	6.5
0.35	53.6	1.94	47.99	0.445	21.36	9.0
0.64	53.5	3.56	47.99	0.482	23.13	15.1
1.16	53.3	6.48	47.99	0.551	26.47	23.9
1.93	53.1	10.76	47.98	0.653	31.38	33.7
2.94	52.9	16.31	47.98	0.777	37.31	43.1
4.17	52.7	23.02	47.98	0.917	43.98	51.8
5.57	52.5	30.64	47.97	1.074	51.55	59.1
7.11	52.5	39.04	47.96	1.256	60.26	64.5
8.76	52.3	47.99	47.95	1.452	69.61	68.7
10.49	52.2	57.35	47.95	1.658	79.49	72.0
12.30	52.1	67.05	47.94	1.873	89.79	74.6
14.14	52.0	76.94	47.93	2.095	100.41	76.6
16.02	51.9	87.00	47.92	2.332	111.76	77.8
17.93	51.8	97.25	47.91	2.566	123.04	79.0
19.87	51.7	107.58	47.91	2.806	134.42	80.0
21.88	51.6	118.31	47.90	3.056	146.36	80.8
23.93	51.6	129.20	47.89	3.310	158.51	81.5
25.94	51.4	139.67	47.88	3.571	170.99	81.7
27.98	51.3	150.36	47.87	3.829	183.31	82.0
29.99	51.2	160.88	47.86	4.081	195.35	82.3
32.00	51.1	171.27	47.85	4.337	207.57	82.5
34.02	51.0	181.65	47.85	4.601	220.13	82.5
36.00	50.9	191.93	47.83	4.864	232.71	82.5
37.93	50.8	201.86	47.83	5.116	244.71	82.5
39.84	50.7	211.61	47.82	5.361	256.41	82.5
41.76	50.6	221.23	47.81	5.612	268.35	82.4
43.61	50.5	230.40	47.80	5.865	280.36	82.2
45.40	50.3	239.29	47.79	6.107	291.90	82.0
47.12	50.2	247.80	47.79	6.333	302.66	81.9
48.76	50.1	255.88	47.78	6.549	312.94	81.8
50.39	50.1	264.38	47.77	6.759	322.89	81.9

Documents / Resources

	MYACTUATOR RMD-X V3 Series Brushless DC Servo Motor Dual Encoder [pdf] Instruction Manual RMD-X V3 Series, RMD-X V3 Series Brushless DC Servo Motor Dual Encoder, Brushless DC Servo Motor Dual Encoder, DC Servo Motor Dual Encoder, Servo Motor Dual Encoder, Motor Dual Encoder, Dual Encoder, Encoder

References

- User Manual