



MYACTUATOR

# All in one customizable pancake brushless servomotor







HIGH INTEGRATION PLANETARY SERVOMOTORS

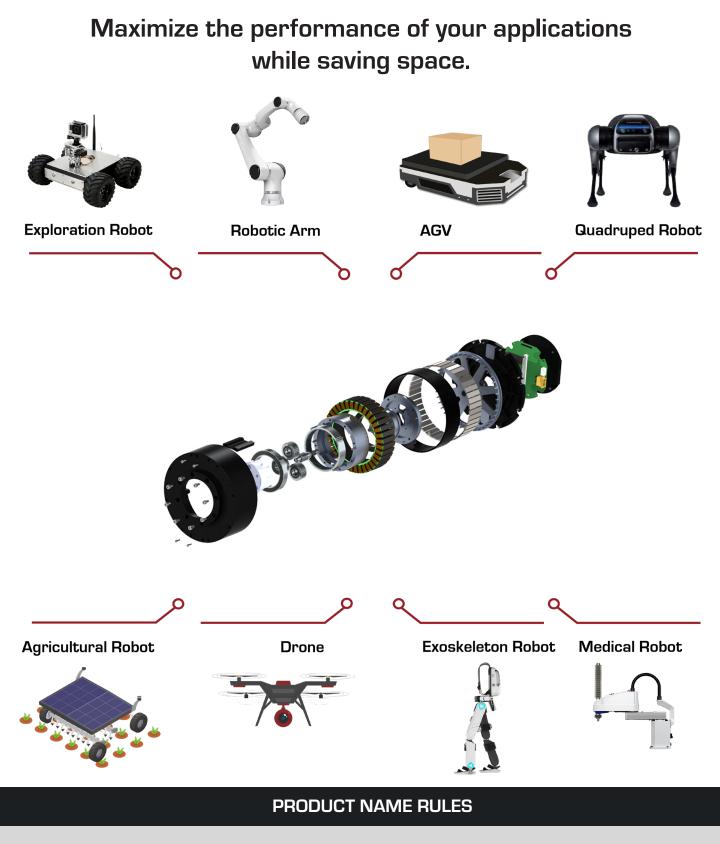
V1.2.2

MY ACTUATOR EUROPE - Tél : +33(0)1 61 08 62 19 - www.a2v.fr - a2v@a2v.fr

# RMD-X V3 series and RMD-X Bionic series Both support a second encoder

- The first encoder records the multiturn position, and the second encoder records the output shaft position.
- RMD-X planetary series, with high speed, high dynamic response and high torque density, is suitable for the needs of bionic robots with high sensitivity.
- Multiple protections such as over-current protection, over-temperature protection, and over-voltage protection make the product safer and more secure.







- (1) Brand Name R-Reducer M-Motor D-drive
- (2) X Stands For The Series Name, 4 represent motor model number e.g : X4 X6 X8 X10 etc
- ③ Planetary gear ration e.g : P6 P7 P8 etc
- (4) Peak torque 3N.m
- (5) Communication C : CAN bus R : RS485 E : EtherCAT
- 6 Customizable Brakes : N : No Brake B : Brake

Previous Name RMD-X4 1:6 V2

Motor simplified Name

X4-3

#### • Single Encoder

Actuator Full Name	Product Code	With Brake / Without Brake		
RMD-X4-P6-3-R-N	1102010060230100	N (without brake)		
RMD-X4-P6-3-C-N	1102010060130100	N (without brake)		

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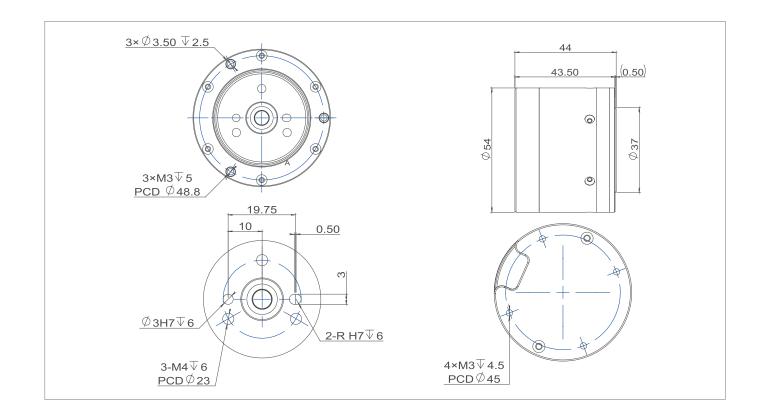
**X**4-3

30W 1.5N.m 200rpm 1:6

VCC VCC GND GND CANL CANN

\*This motor support brake customization

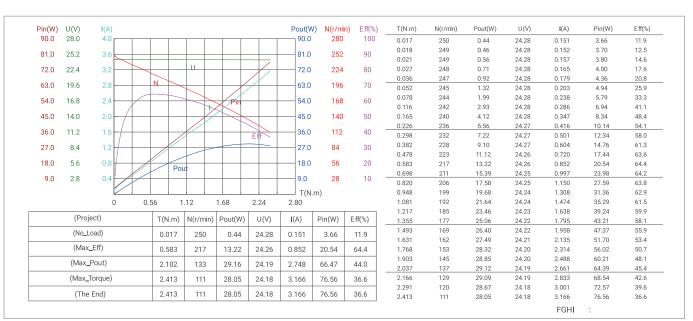
\*This motor support IP54 customization



Item Name		Units	X4-3
Reducer Type		-	Planetary Reducer
Gear Ratio		-	6:1
Input Voltage		V	24
Rated Power		W	30
Rated Torque		N.m	1,5
Rated Speed		RPM	200
Rated Current		А	2
Peak Torque		N.m	3
Peak Current	Peak Current		4
Efficiency		%	60
Input Encoder		-	16 bit
Output Encoder		-	/
Communication Met	hod & Baudrate	-	CAN : 1M RS485 : 115200 / 500K / 1M / 2.5M
Axial Payload		Ν	300
Radial Payload		Ν	550
Inertia		Kg.cm <sup>2</sup>	1,2
Pole Pair		-	14
Back Drive Torque		N.m	0,06
Backlash		arc min	10
Moight	N (without brake)	g	300
Weight	B (with brake)	-	/

\* Rated torque test method : When the ambient temperature is 24 degrees Celsius (no other dissipation methods), the test is performed at the rated speed. The motor torque reaches temperature balance under the condition of a temperature rise of 60 degrees Celsius, and the long-term working point is the rated torque value of the motor.

## 🔿 Motor Characteristic Curve



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Previous Name RMD-X6 1:6 V2

Motor simplified Name

X6-7

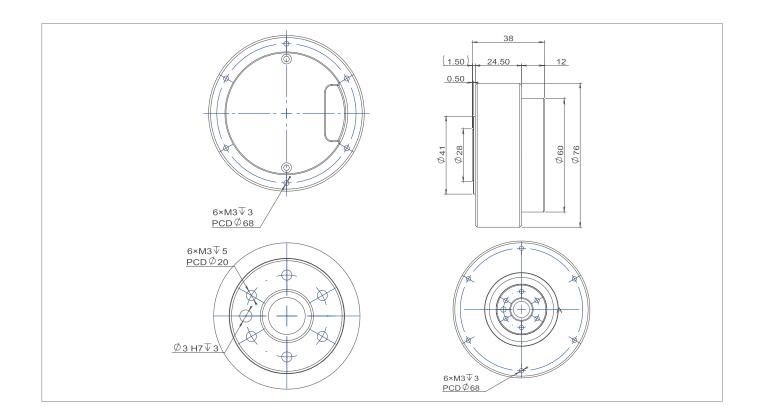
## ○ Single Encoder



Actuator Full Name	Product Code	With Brake / Without Brake		
RMD-X6-P6-7-R-N	1102150060230100	N (without brake)		
RMD-X6-P6-7-C-N	1102150060130100	N (without brake)		

\*This motor support brake customization

\*This motor support IP54 customization



Item Name		Units	X6-7
Reducer Type		-	Planetary Reducer
Gear Ratio		-	6:1
Input Voltage		V	48
Rated Power		W	150
Rated Torque		N.m	3,5
Rated Speed		RPM	400
Rated Current		А	4
Peak Torque		N.m	7
Peak Current		А	9
Efficiency	Efficiency		70
Input Encoder	Input Encoder		16 bit
Output Encoder		-	/
Communication Met	hod & Baudrate	-	CAN : 1M RS485 : 115200 / 500K / 1M / 2.5M
Axial Payload		Ν	775
Radial Payload		Ν	1250
Inertia		Kg.cm <sup>2</sup>	4,8
Pole Pair		-	14
Back Drive Torque		N.m	0,08
Backlash		arc min	10
	N (without brake)	g	350
Weight	B (with brake)	-	/

\* Rated torque test method : When the ambient temperature is 24 degrees Celsius (no other dissipation methods), the test is performed at the rated speed. The motor torque reaches temperature balance under the condition of a temperature rise of 60 degrees Celsius, and the long-term working point is the rated torque value of the motor.

## ○ Motor Characteristic Curve

Pin(W)	U(V)	I(A)								Pout(	W) N(r/mir	n) Eff(%)	T(N.m)	N(r/min)	Pout(W)	U(V)	I(A)	Pin(W)	Eff(%)
550.0	55.0	12.0								550	0 800	100	0.028	670	1.96	48.13	0.578	27.82	7.0
495.0	49.5	10.8								495	0 720	90	0.059	670	4.15	48.13	0.632	30.41	12.0
													0.102	670	7.13	48.13	0.704	33.90	18.0
440.0	44.0	9.6		~						440	0 640	80	0.165	669	11.53	48.12	0.810	38.96	25.2
385.0	38.5	8.4		$\rightarrow$		\$	$\geq$	$\downarrow$	4		0 560	70	0.254	668	17.70	48.12	0.955	45.95	33.5
330.0	33.0	7.2		$\langle  $				+21-	$ \downarrow  $	330	0 480	60	0.372	665	25.79	48.11	1.143	54.98	41.9
330.0	33.0	1.2						Pin	Eff	330	0 480	60	0.519	662	35.71	48.10	1.373	66.03	49.8
275.0	27.5	6.0	-/-			-	$ \rightarrow$			275	0 400	50	0.692	657	47.27	48.09	1.642	78.96	56.5
220.0	22.0	4.8								220	0 320	40	0.890	651	60.14	48.08	1.947	93.60	61.8
220.0	22.0	4.0				1	$\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{F}}}}}$	$1 \square$		220	0 320	40	1.109	643	73.99	48.07	2.281	109.66	65.8
165.0	16.5	3.6	+	-	$\mathcal{A}$	+	+			165	0 240	30	1.348	634	88.48	48.06	2.640	126.85	68.7
110.0	11.0	2.4				Pout				110	0 160	20	1.604	622	103.32	48.04	3.016	144.91	70.7
													1.876	609	118.29	48.03	3.409	163.71	71.9
55.0	5.5	1.2	$\nearrow$	$ \rightarrow$		+			+ +		80	10	2.164	595	133.27	48.01	3.816	183.21	72.6
		ľ	$\geq$								l.m)		2.468	580	148.16	48.00	4.241	203.54	72.8
		0		1.4	10	2.80	)	4.20	5.60	7.00	<i>,</i>		2.786	564	162.94	47.98	4.686	224.84	72.6
	(5.)					<b>.</b>						= (((a))	3.118	549	177.55	47.96	5.156	247.28	72.0
	(Proje	ct)			T(N.m)	N	(r/min)	Pout(W)	U(V)	I(A)	Pin(W)	Eff(%)	3.461	534	191.92	47.94	5.651	270.94	71.2
	(No_Lo	oad)			0.028		670	1.96	48.13	0.578	27.82	7.0	3.814	520	205.94	47.92	6.172	295.80	70.0
	(Max_	Eff)			2.468		580	148.16	48.00	4.241	203.54	72.8	4.174	506	219.50	47.90	6.719	321.87	68.6
		,			2.400	_	560	146.10	46.00	4.241	203.54	72.0	4.541	493	232.54	47.88	7.294	349.25	67.0
	(Max_F	Pout)			6.076		441	280.59	47.79	9.907	473.47	59.3	4.916	479	245.06	47.86	7.901	378.14	65.3
	(Max_T	orque)			6.076		441	280.59	47.79	9,907	473.47	59.3	5.297	466	257.15	47.84	8.543	408.66	63.4
		. ,				+							5.685	454	268.94	47.81	9.216	440.63	61.3
	(The	Ena)			6.076		441	280.59	47.79	9.907	473.47	59.3	6.076	441	280.59	47.79	9.907	473.47	59.3

FGHI :

Previous Name RMD-X6 S2 1:36 V2

Motor simplified Name

X6-40

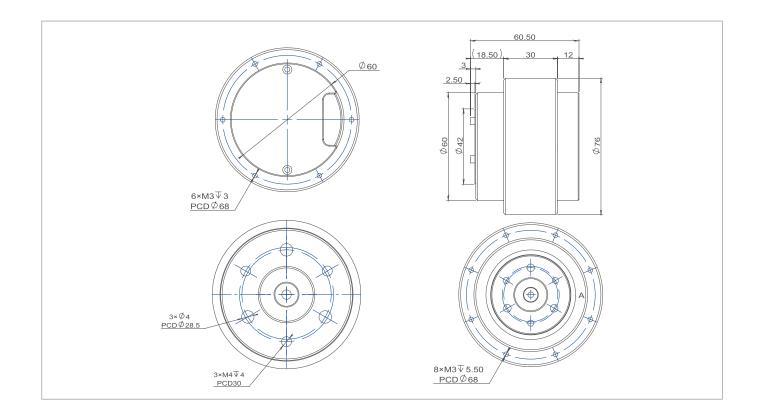
## ○ Single Encoder



Actuator Full Name	Product Code	With Brake / Without Brake		
RMD-X6-P36-40-R-N	1102050360230100	N (without brake)		
RMD-X6-P36-40-C-N	1102050360130100	N (without brake)		

\*This motor support brake customization

\*This motor support IP54 customization

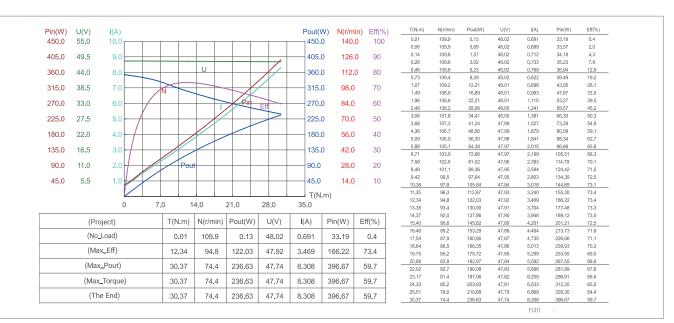


#### 

Item Name		Units	X6-40
Reducer Type		-	Planetary Reducer
Gear Ratio		-	36:1
Input Voltage		V	48
Rated Power		W	170
Rated Torque		N.m	18
Rated Speed		RPM	90
Rated Current		А	5,2
Peak Torque		N.m	40
Peak Current		А	10,5
Efficiency		%	70
Input Encoder		-	16 bit
Output Encoder		-	/
Communication Met	hod & Baudrate	-	CAN : 1M RS485 : 115200 / 500K / 1M / 2.5M
Axial Payload		Ν	775
Radial Payload		Ν	1250
Inertia		Kg.cm <sup>2</sup>	28,8
Pole Pair		-	14
Back Drive Torque		N.m	0,91
Backlash		arc min	15
	N (without brake)	g	590
Weight	B (with brake)	-	/

\* Rated torque test method : When the ambient temperature is 24 degrees Celsius (no other dissipation methods), the test is performed at the rated speed. The motor torque reaches temperature balance under the condition of a temperature rise of 60 degrees Celsius, and the long-term working point is the rated torque value of the motor.

## 🔿 Motor Characteristic Curve



Previous Name RMD-X8 PRO 1:9 V2

Motor simplified Name

X8-25

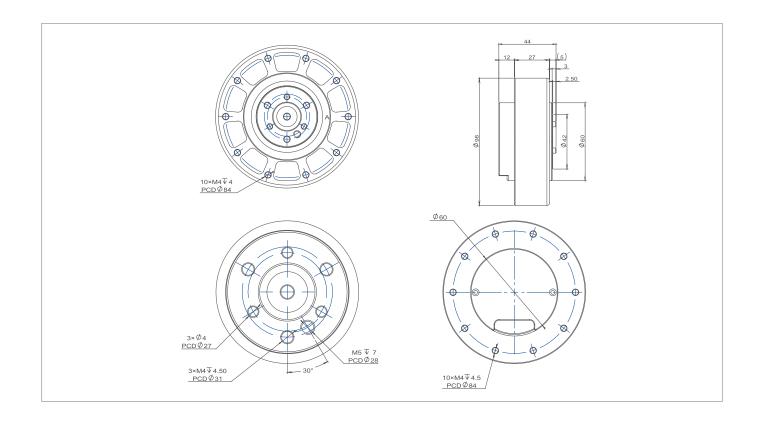
## ○ Single Encoder



Actuator Full Name	Product Code	With Brake / Without Brake		
RMD-X8-P9-25-R-N	1102030090230100	N (without brake)		
RMD-X8-P9-25-C-N	1102030090130100	N (without brake)		

\*This motor support brake customization

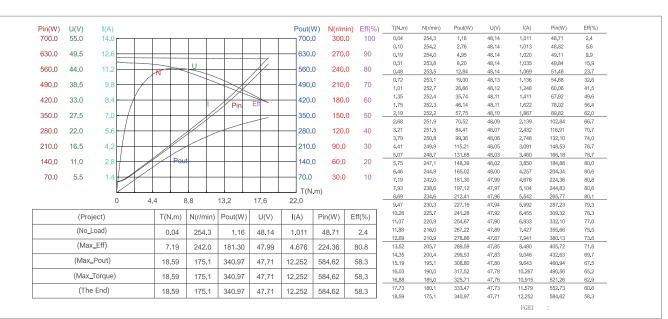
\*This motor support IP54 customization



Item Name		Units	X8-25
Reducer Type		-	Planetary Reducer
Gear Ratio		-	9:1
Input Voltage		V	48
Rated Power		W	125
Rated Torque		N.m	10
Rated Speed		RPM	110
Rated Current		А	3,2
Peak Torque		N.m	25
Peak Current	Peak Current		8
Efficiency		%	80
Input Encoder		-	16 bit
Output Encoder		-	/
Communication Met	hod & Baudrate	-	CAN : 1M RS485 : 115200 / 500K / 1M / 2.5M
Axial Payload		Ν	985
Radial Payload		Ν	1250
Inertia		Kg.cm <sup>2</sup>	30,6
Pole Pair		-	21
Back Drive Torque		N.m	0,61
Backlash		arc min	10
	N (without brake)	g	710
Weight	B (with brake)	-	/

\* Rated torque test method : When the ambient temperature is 24 degrees Celsius (no other dissipation methods), the test is performed at the rated speed. The motor torque reaches temperature balance under the condition of a temperature rise of 60 degrees Celsius, and the long-term working point is the rated torque value of the motor.

## 🔿 Motor Characteristic Curve



Previous Name RMD-X6 1:8 V3

Motor simplified Name

X6-8

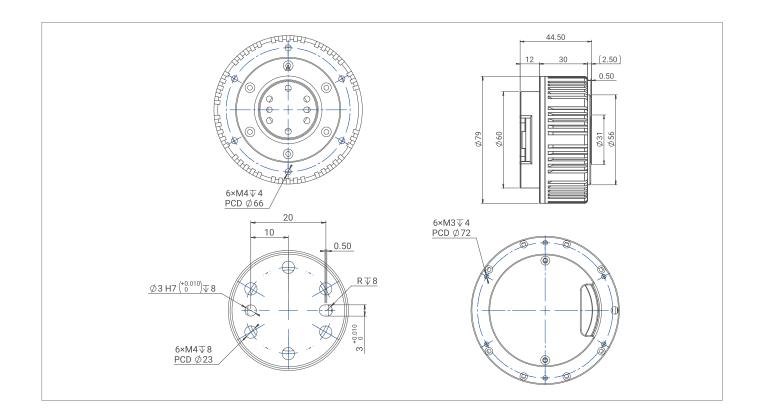
## ○ Single Encoder



Actuator Full Name	Product Code	With Brake / Without Brake		
RMD-X6-P8-8-R-N	1102020080230200	N (without brake)		
RMD-X6-P8-8-C-N	1102020080130200	N (without brake)		

\*This motor support brake customization

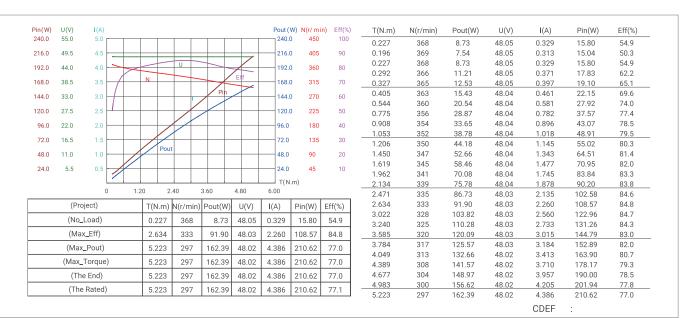
\*This motor support IP54 customization



Item Name		Units	X6-8
Reducer Type		-	Planetary Reducer
Gear Ratio		-	8:1
Input Voltage		V	48
Rated Power		W	135
Rated Torque		N.m	4,5
Rated Speed		RPM	310
Rated Current		А	3,6
Peak Torque		N.m	8
Peak Current		А	7,2
Efficiency	Efficiency		78
Input Encoder		-	16 bit
Output Encoder		-	14 bit
Communication Met	hod & Baudrate	-	CAN : 1M RS485 : 115200 / 500K / 1M / 2.5M
Axial Payload		Ν	775
Radial Payload		Ν	1040
Inertia		Kg.cm <sup>2</sup>	6,8
Pole Pair		-	14
Back Drive Torque		N.m	O,1
Backlash		arc min	10
	N (without brake)	g	490
Weight	B (with brake)	-	/

\* Rated torque test method : When the ambient temperature is 24 degrees Celsius (no other dissipation methods), the test is performed at the rated speed. The motor torque reaches temperature balance under the condition of a temperature rise of 60 degrees Celsius, and the long-term working point is the rated torque value of the motor.

## 🔿 Motor Characteristic Curve



Previous Name RMD-X8-Pro-H 1:6 V3

Motor simplified Name

X8-20

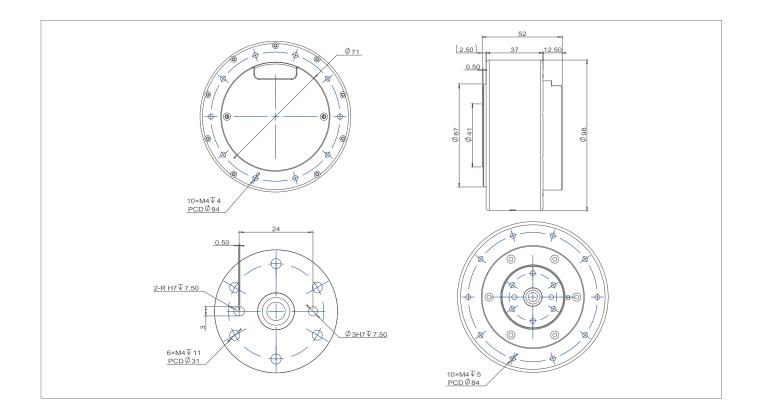
## ○ Single Encoder



Actuator Full Name	Product Code	With Brake / Without Brake		
RMD-X8-P6-20-R-N	1102140060230200	N (without brake)		
RMD-X8-P6-20-C-N	1102140060130200	N (without brake)		

\*This motor support brake customization

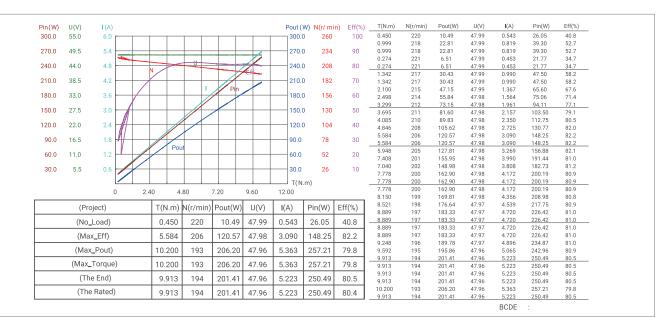
\*This motor support IP54 customization



ltem	Name	Units	X8-20
Reducer Type		-	Planetary Reducer
Gear Ratio		-	6:1
Input Voltage		V	48
Rated Power		W	200
Rated Torque		N.m	10
Rated Speed		RPM	190
Rated Current		А	5,2
Peak Torque		N.m	20
Peak Current		А	10,5
Efficiency		%	80
Input Encoder		-	16 bit
Output Encoder		-	14 bit
Communication Met	hod & Baudrate	-	CAN : 1M RS485 : 115200 / 500K / 1M / 2.5M
Axial Payload		Ν	985
Radial Payload		Ν	1250
Inertia		Kg.cm <sup>2</sup>	20
Pole Pair		-	20
Back Drive Torque		N.m	0,4
Backlash		arc min	10
	N (without brake)	g	780
Weight	B (with brake)	-	/

\* Rated torque test method : When the ambient temperature is 24 degrees Celsius (no other dissipation methods), the test is performed at the rated speed. The motor torque reaches temperature balance under the condition of a temperature rise of 60 degrees Celsius, and the long-term working point is the rated torque value of the motor.

## 🔿 Motor Characteristic Curve



Previous Name RMD-X8 S2 1:36 V3

Motor simplified Name

X8-60

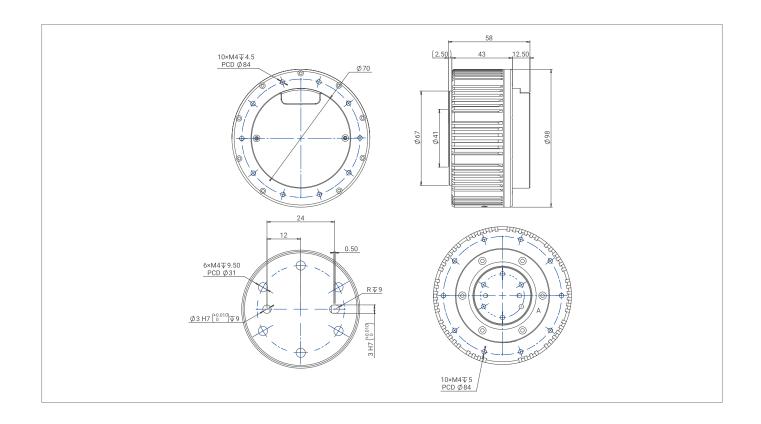
## ○ Single Encoder



Actuator Full Name	Product Code	With Brake / Without Brake
RMD-X8-P36-60-R-N	1102060360230200	N (without brake)
RMD-X8-P36-60-C-N	1102060360130200	N (without brake)

\*This motor support brake customization

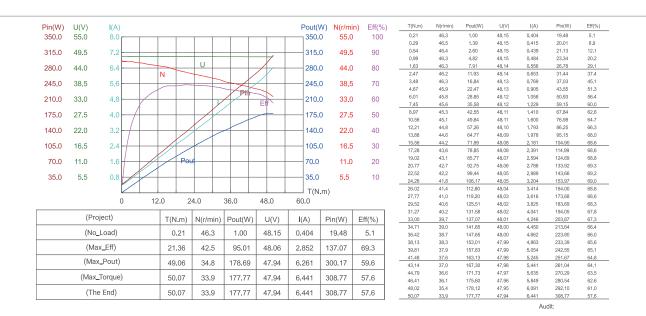
\*This motor support IP54 customization



ltem	Name	Units	X8-60
Reducer Type		-	Planetary Reducer
Gear Ratio		-	36:1
Input Voltage		V	48
Rated Power		W	130
Rated Torque		N.m	30
Rated Speed		RPM	40
Rated Current		А	4
Peak Torque		N.m	60
Peak Current		А	8
Efficiency		%	69
Input Encoder	Input Encoder		16 bit
Output Encoder		-	14 bit
Communication Met	hod & Baudrate	-	CAN : 1M RS485 : 115200 / 500K / 1M / 2.5M
Axial Payload		Ν	985
Radial Payload		Ν	1250
Inertia		Kg.cm <sup>2</sup>	96
Pole Pair		-	20
Back Drive Torque		N.m	1
Backlash	Backlash		15
	N (without brake)	g	900
Weight	B (with brake)	-	/

\* Rated torque test method : When the ambient temperature is 24 degrees Celsius (no other dissipation methods), the test is performed at the rated speed. The motor torque reaches temperature balance under the condition of a temperature rise of 60 degrees Celsius, and the long-term working point is the rated torque value of the motor.

## 🔿 Motor Characteristic Curve



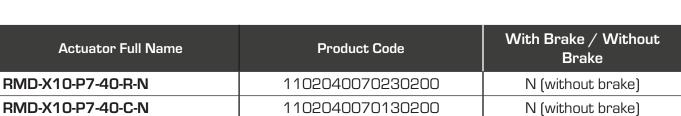
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Previous Name RMD-X10 1:7 V3

Motor simplified Name

X10-40

#### ○ Single Encoder

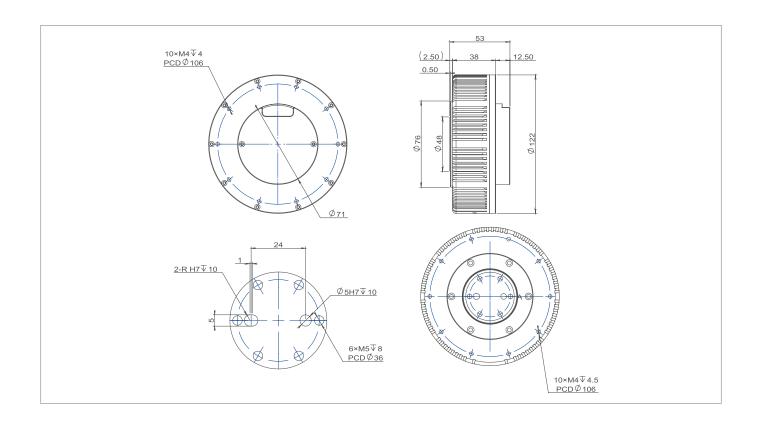


X10-40

128800381

\*This motor support brake customization

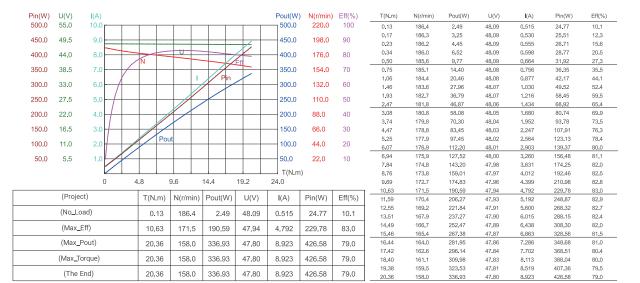
\*This motor support IP54 customization



Item Name		Units	X10-40
Reducer Type		-	Planetary Reducer
Gear Ratio		-	7:1
Input Voltage		V	48
Rated Power		W	265
Rated Torque		N.m	15
Rated Speed		RPM	165
Rated Current		А	6,5
Peak Torque		N.m	40
Peak Current		А	15
Efficiency		%	82
Input Encoder		-	16 bit
Output Encoder		-	14 bit
Communication Met	hod & Baudrate	-	CAN : 1M RS485 : 115200 / 500K / 1M / 2.5M
Axial Payload		Ν	1625
Radial Payload		Ν	2250
Inertia		Kg.cm <sup>2</sup>	39,7
Pole Pair		-	21
Back Drive Torque		N.m	0,62
Backlash		arc min	10
Moight	N (without brake)	g	1150
Weight	B (with brake)	-	/

\* Rated torque test method : When the ambient temperature is 24 degrees Celsius (no other dissipation methods), the test is performed at the rated speed. The motor torque reaches temperature balance under the condition of a temperature rise of 60 degrees Celsius, and the long-term working point is the rated torque value of the motor.

## 🔿 Motor Characteristic Curve



Audit:

Previous Name RMD-X10 S2 1:35 V3

Motor simplified Name

## X10-100

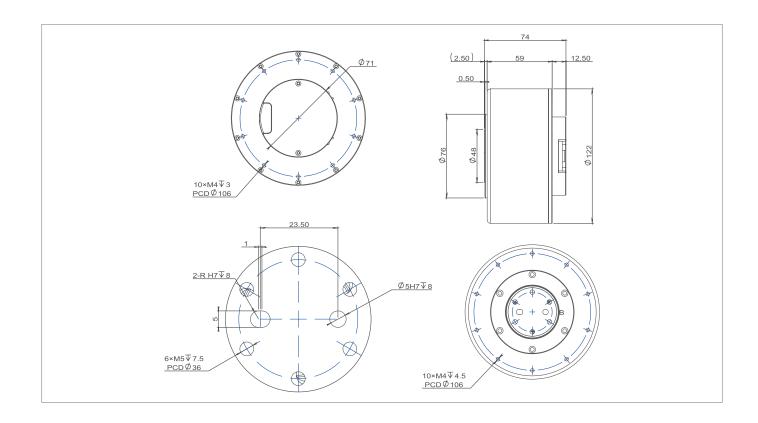
## ○ Single Encoder



Actuator Full Name	Product Code	With Brake / Without Brake
RMD-X10-P35-100-R-N	1102070350230200	N (without brake)
RMD-X10-P35-100-C-N	1102070350130200	N (without brake)

\*This motor support brake customization

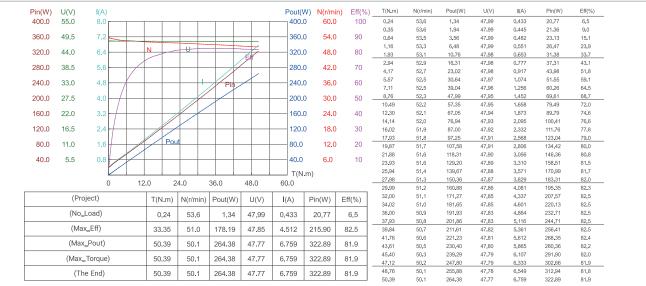
\*This motor support IP54 customization



Item Name		Units	X10-100
Reducer Type		-	Planetary Reducer
Gear Ratio		-	35:1
Input Voltage		V	48
Rated Power		W	265
Rated Torque		N.m	50
Rated Speed		RPM	50
Rated Current		А	6,7
Peak Torque		N.m	100
Peak Current		А	13,5
Efficiency		%	82
Input Encoder		-	16 bit
Output Encoder		-	14 bit
Communication Met	hod & Baudrate	-	CAN : 1M RS485 : 115200 / 500K / 1M / 2.5M
Axial Payload		Ν	1625
Radial Payload		Ν	2250
Inertia		Kg.cm <sup>2</sup>	198,6
Pole Pair		-	21
Back Drive Torque		N.m	2,88
Backlash	Backlash		15
	N (without brake)	g	1700
Weight	B (with brake)	-	/

\* Rated torque test method : When the ambient temperature is 24 degrees Celsius (no other dissipation methods), the test is performed at the rated speed. The motor torque reaches temperature balance under the condition of a temperature rise of 60 degrees Celsius, and the long-term working point is the rated torque value of the motor.

## 🔿 Motor Characteristic Curve



Audit:

#### **Design for Bionic Robot**

Series Name RMD-X V3

Motor simplified Name

X4-24

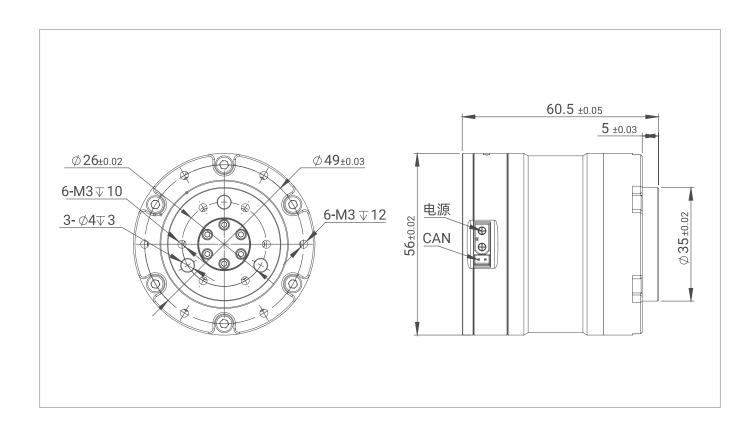


## ○ Single Encoder

Actuator Full Name	Product Code	With Brake / Without Brake
RMD-X4-P36-24-C-N	1102120360140200	N (without brake)

\*This motor support brake customization

\*This motor support IP54 customization



ltem	Name	Units	X4-24
Reducer Type		-	Planetary Reducer
Gear Ratio		-	36:1
Input Voltage		V	48
Rated Power		W	150
Rated Torque		N.m	9
Rated Speed		RPM	100
Rated Current		А	3,5
Peak Torque		N.m	24
Peak Current		А	10
Efficiency		%	75
Input Encoder	Input Encoder		14 bit
Output Encoder		-	14 bit
Communication Met	hod & Baudrate	-	CAN : 1M
Axial Payload		Ν	1900
Radial Payload		Ν	1900
Inertia		Kg.cm <sup>2</sup>	6,8
Pole Pair		-	14
Back Drive Torque		N.m	0,87
Backlash		arc min	15
	N (without brake)	g	380
Weight	B (with brake)	-	/

\* Rated torque test method : When the ambient temperature is 24 degrees Celsius (no other dissipation methods), the test is performed at the rated speed. The motor torque reaches temperature balance under the condition of a temperature rise of 60 degrees Celsius, and the long-term working point is the rated torque value of the motor.

#### Design for Bionic Robot

Series Name RMD-X V3

Motor simplified Name

X8-90

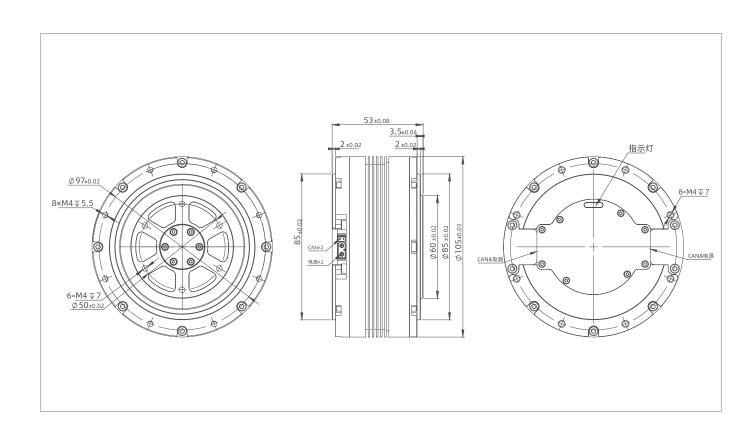


## ○ Single Encoder

Actuator Full Name	Product Code	With Brake / Without Brake
RMD-X8-P18-90-C-N	1102130180140200	N (without brake)

\*This motor support brake customization

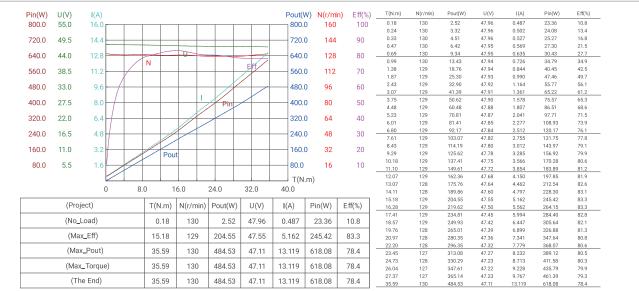
\*This motor support IP54 customization



ltem	Name	Units	X8-90
Reducer Type		-	Planetary Reducer
Gear Ratio		-	18:1
Input Voltage		V	48
Rated Power		W	500
Rated Torque		N.m	25
Rated Speed		RPM	130
Rated Current		А	10
Peak Torque		N.m	90
Peak Current		А	30
Efficiency		%	80
Input Encoder		-	14 bit
Output Encoder		-	14 bit
Communication Met	hod & Baudrate	-	CAN : 1M
Axial Payload		Ν	2800
Radial Payload		Ν	2800
Inertia		Kg.cm <sup>2</sup>	26
Pole Pair		-	21
Back Drive Torque		N.m	0,65
Backlash		arc min	10
	N (without brake)	g	850
Weight	B (with brake)	-	/

\* Rated torque test method : When the ambient temperature is 24 degrees Celsius (no other dissipation methods), the test is performed at the rated speed. The motor torque reaches temperature balance under the condition of a temperature rise of 60 degrees Celsius, and the long-term working point is the rated torque value of the motor.

## 🔿 Motor Characteristic Curve



JKLM :

#### Design for Bionic Robot

Series Name RMD-X V3

Motor simplified Name

X12-150

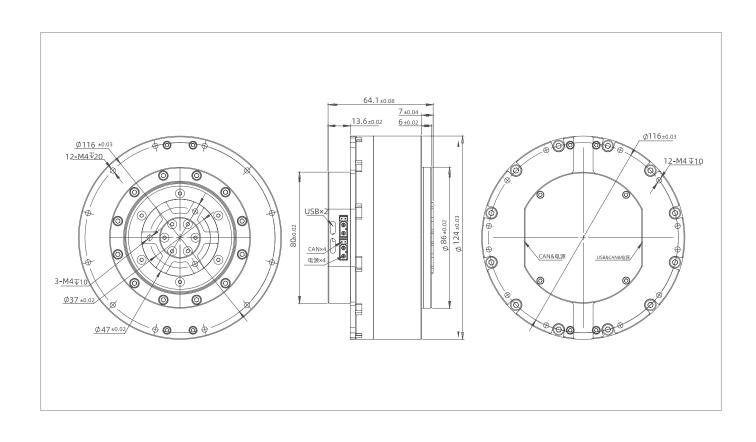


## ○ Single Encoder

Actuator Full Name	Product Code	With Brake / Without Brake
RMD-X12-P12-150-C-N	1102080120130200	N (without brake)

\*This motor support brake customization

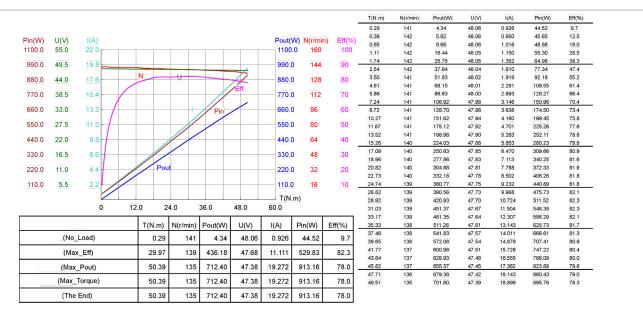
\*This motor support IP54 customization



ltem	Name	Units	X12-150
Reducer Type		-	Planetary Reducer
Gear Ratio		-	12:1
Input Voltage		V	48
Rated Power		W	780
Rated Torque		N.m	50
Rated Speed		RPM	100
Rated Current		А	15
Peak Torque		N.m	150
Peak Current		А	45
Efficiency		%	78
Input Encoder	Input Encoder		14 bit
Output Encoder		-	14 bit
Communication Met	hod & Baudrate	-	CAN : 1M
Axial Payload		Ν	2600
Radial Payload		Ν	2600
Inertia		Kg.cm <sup>2</sup>	59
Pole Pair		-	21
Back Drive Torque		N.m	1,26
Backlash		arc min	10
	N (without brake)	g	1300
Weight	B (with brake)	-	/

\* Rated torque test method : When the ambient temperature is 24 degrees Celsius (no other dissipation methods), the test is performed at the rated speed. The motor torque reaches temperature balance under the condition of a temperature rise of 60 degrees Celsius, and the long-term working point is the rated torque value of the motor.

## 🔿 Motor Characteristic Curve



#### Design for Bionic Robot

Series Name RMD-X V3

Motor simplified Name

X15-400

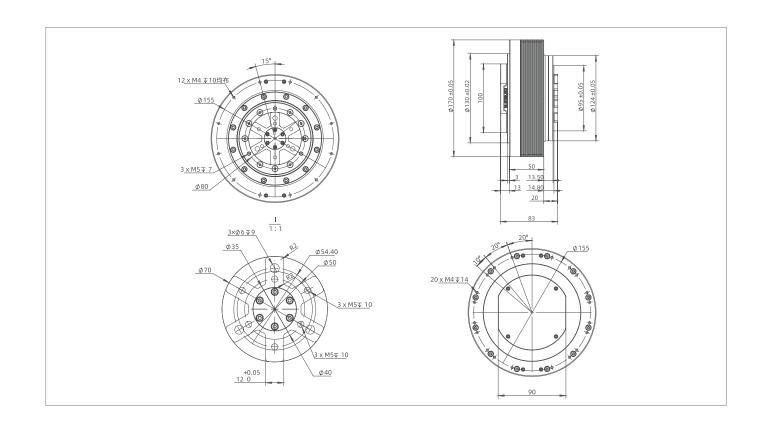


## ○ Single Encoder

Actuator Full Name	Product Code	With Brake / Without Brake
RMD-X15-P12-400-C-N	1102110120130200	N (without brake)

\*This motor support brake customization

\*This motor support IP54 customization



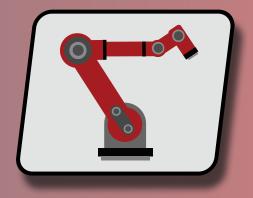
Item Name		Units	X15-400	
Reducer Type		-	Planetary Reducer	
Gear Ratio		-	11,4:1	
Input Voltage		V	60	
Rated Power		W	1500	
Rated Torque		N.m	130	
Rated Speed		RPM	80	
Rated Current		А	23	
Peak Torque		N.m	380	
Peak Current		А	65	
Efficiency		%	83	
Input Encoder		-	14 bit	
Output Encoder		-	14 bit	
Communication Method & Baudrate		-	CAN : 1M	
Axial Payload		Ν	6700	
Radial Payload		Ν	6700	
Inertia		Kg.cm <sup>2</sup>	175	
Pole Pair		-	21	
Back Drive Torque		N.m	2,15	
Backlash		arc min	10	
Weight	N (without brake)	g	3100	
	B (with brake)	-	/	

\* Rated torque test method : When the ambient temperature is 24 degrees Celsius (no other dissipation methods), the test is performed at the rated speed. The motor torque reaches temperature balance under the condition of a temperature rise of 60 degrees Celsius, and the long-term working point is the rated torque value of the motor.





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