Product Series
MYACTUATOR

RMD-X V4 Series Planetary Actuator

Special Series For Robot



* The pictures of this series of products are subject to the actual products.

RMD-X V4 Series Product Features

- EtherCAT & CAN BUS
- Crossed Roller Bearings
- Dual Encoder
- High Torque Density
- High Precision
- Hollow Design

RMD-X V4 Series Naming Conventions

RMD - X2 - P28 - 7 - E

1 2 3 4 5

1. **RMD:** Brand Name R-Reducer M-Motor D-Drive
2. **X2:** X Stands For The Series Name: Integrated Planetary Actuator, 2 represent motor model number e.g:X2 X4 X6 X8 etc
3. **P28:** Planetary gear ratio e.g:P12 P28 P32 etc
4. **7:** Peak torque 7N.m
5. **E:** EtherCAT & CAN BUS

For example

Model RMD-X8-P20-120-E

Illustrate
- RMD: Brand Name
- X8: Motor model name
- P20: Planetary gear ratio 20:1
- 120: Peak torque
- E: EtherCAT & CAN BUS

Series Name
RMD-X

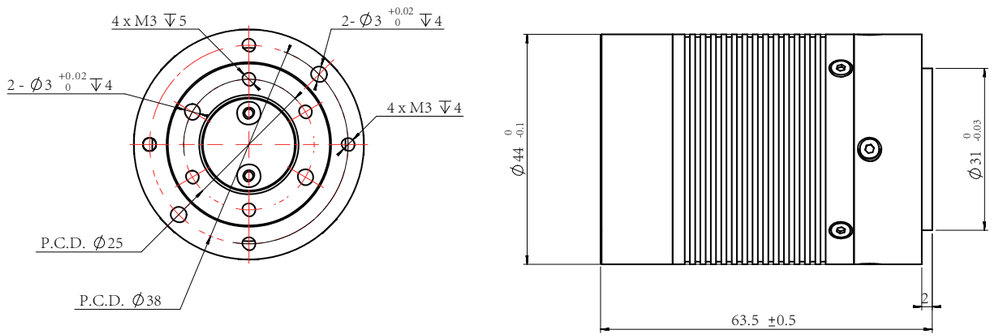
Motor Simplified Name
X2-7



Dual encoder

Actuator Full Name	With Brake/Without Brake	Communication
RMD-X2-P28-7-E	N (without Brake)	EtherCAT & CAN BUS

Installation Drawing



Product Parameters

Parameters		Unit	X2-7
Reduction Ratio		—	28.17
Input Voltage		V	24
Voltage Range		V	20-55
No-Load Speed		RPM	178
No-Load Current		A	1
Rated Speed		RPM	142
Rated Torque		N.m	2.5
Rated Power		W	37
Rated Current		A	3
Peak Torque		N.m	7
Peak Current		A	8.1
Efficiency		%	63
Back EMF Constant		Vdc/Krpm	4.3
Torque Constant		N.m/A	0.8
Line Resistance		Ω	0.61
Line Inductance		mH	0.13
Pole Pairs		—	13
Wiring Mode		—	Y
Backdrive Torque		N.m	0.4
Backlash		Arcmin	≤15
Output Bearing Type		—	Deep Groove Ball Bearings
Axial Load	Tensile load	KN	0.25
	Compressive load	KN	0.25
Radial Load		KN	1
Moment of Inertia		Kg.cm²	0.17
Encoder Type		—	Dual Encoder ABS-17BIT(Input) / 18BIT(Output)
Control Accuracy		Degree	<0.01
Communication Interface		—	EtherCAT & CAN BUS
Weight		Kg	0.26
Insulation Class		—	F

Note:
1.The maximum operating voltage of the motor is 55V. It is recommended that customers add an external capacitor to regulate voltage, so as to ensure stable battery power supply and protect the PCB from damage caused by voltage fluctuations.
2. If voltage exceeds the rated value, the operating speed must not exceed the motor's rated speed.

Stall Torque Data

	Torque (N.m)	Temperature Rise (℃)	Stall Time (s)	Phase Current (Arms)
X2-7	3.75	20	15	4.3
	5	48	10	5.7
	6.25	31	8	7.4
	7.5	59	5	8.6

Series Name
RMD-X

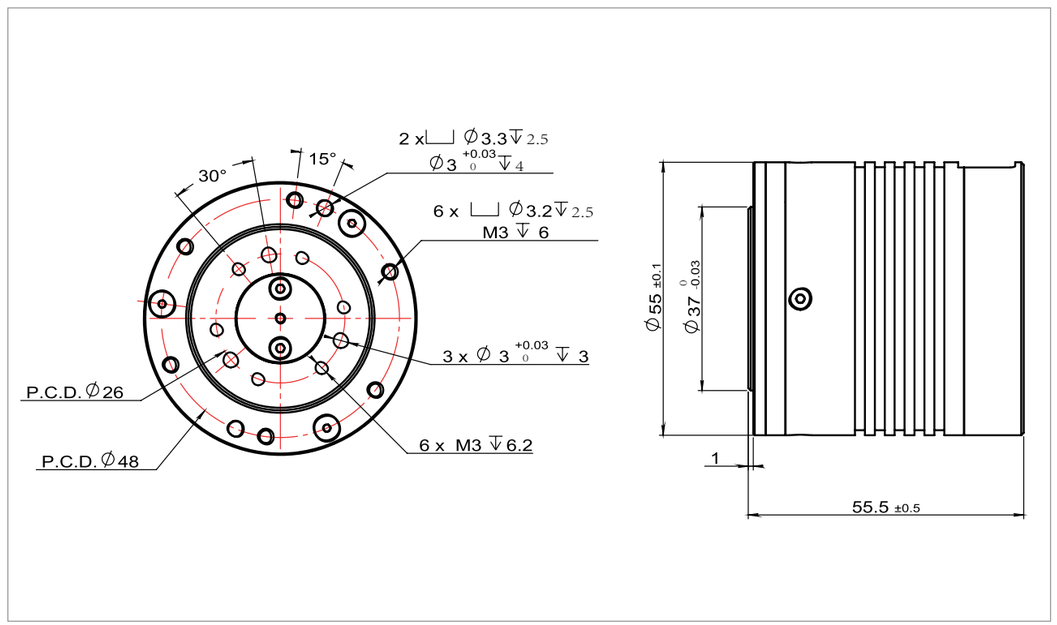
Motor Simplified Name
X4-10



Dual encoder

Actuator Full Name	With Brake/Without Brake	Communication
RMD-X4-P12-10-E	N (without Brake)	EtherCAT & CAN BUS

Installation Drawing



Product Parameters

Parameters		Unit	X4-10
Reduction Ratio		—	12.5
Input Voltage		V	24
Voltage Range		V	20-55
No-Load Speed		RPM	317
No-Load Current		A	1
Rated Speed		RPM	238
Rated Torque		N.m	4
Rated Output Power		W	100
Rated Phase Current		A(rms)	7.8
Peak Torque		N.m	10
Peak Phase Current		A(rms)	19.5
Efficiency		%	69.5
Back EMF Constant		Vdc/Krpm	6
Module Torque Constant		N.m/A	0.8
Line Resistance		Ω	0.32
Line Inductance		mH	0.14
Pole Pairs		—	13
Wiring Mode		—	Y
Backdrive Torque		N.m	0.8
Backlash		Arcmin	≤15
Output Bearing Type		—	Deep Groove Ball Bearings
Axial Load	Tensile load	KN	1.2
	Compressive load	KN	1.2
Radial Load		KN	1.2
Moment of Inertia		Kg.cm²	0.25
Encoder Type		—	Dual Encoder ABS-17BIT (Input) / 18BIT(Output)
Control Accuracy		Degree	<0.01
Communication Interface		—	EtherCAT & CAN BUS
Weight		Kg	0.33
Insulation Class		—	F

Note:
1.The maximum operating voltage of the motor is 55V. It is recommended that customers add an external capacitor to regulate voltage, so as to ensure stable battery power supply and protect the PCB from damage caused by voltage fluctuations.
2. If voltage exceeds the rated value, the operating speed must not exceed the motor's rated speed.

Stall Torque Data

	Torque (N.m)	Temperature Rise (℃)	Stall Time (s)	Phase Current (Arms)
X4-10	5.2	41	10	7.8
	6	16	8	9.1
	7.2	26	5	11
	8	30	3	12.1

Series Name
RMD-X

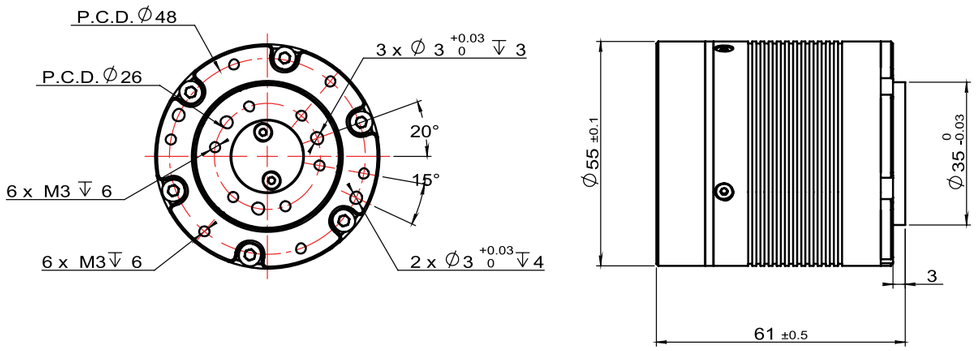
Motor Simplified Name
X4-36



Dual encoder

Actuator Full Name	With Brake/Without Brake	Communication
RMD-X4-P36-36-E	N (without Brake)	EtherCAT & CAN BUS

Installation Drawing



Product Parameters

Parameters		Unit	X4-36
Reduction Ratio		—	36
Input Voltage		V	24
Voltage Range		V	20-55
No-Load Speed		RPM	111
No-Load Input Current		A	0.9
Rated Speed		RPM	83
Rated Torque		N.m	10.5
Rated Output Power		W	100
Rated Phase Current		A(rms)	6.1
Peak Torque		N.m	34
Peak Phase Current		A(rms)	21.5
Efficiency		%	63.1
Back EMF Constant		Vdc/Krpm	6
Module Torque Constant		N.m/A	1.9
Line Resistance		Ω	0.39
Line Inductance		mH	0.07
Pole Pairs		—	11
Wiring Mode		—	Y
Backdrive Torque		N.m	1.14
Backlash		Arcmin	≤15
Output Bearing Type		—	Crossed Roller Bearings
Axial Load	Tensile load	KN	1.3
	Compressive load	KN	1.3
Radial Load		KN	1.5
Moment of Inertia		Kg.cm²	0.3
Encoder Type		—	Dual Encoder ABS-17BIT (Input) / 18BIT (Output)
Control Accuracy		Degree	<0.01
Communication Interface		—	EtherCAT & CAN BUS
Weight		Kg	0.36
Insulation Class		—	F

Note:
1.The maximum operating voltage of the motor is 55V. It is recommended that customers add an external capacitor to regulate voltage, so as to ensure stable battery power supply and protect the PCB from damage caused by voltage fluctuations.
2. If voltage exceeds the rated value, the operating speed must not exceed the motor's rated speed.

Stall Torque Data

	Torque (N.m)	Temperature Rise (℃)	Stall Time (s)	Phase Current (Arms)
X4-36	17.25	30	15	9.2
	23	58	10	12.7
	28.75	41	5	16.3
	34.5	50	3	21.2

Series Name
RMD-X

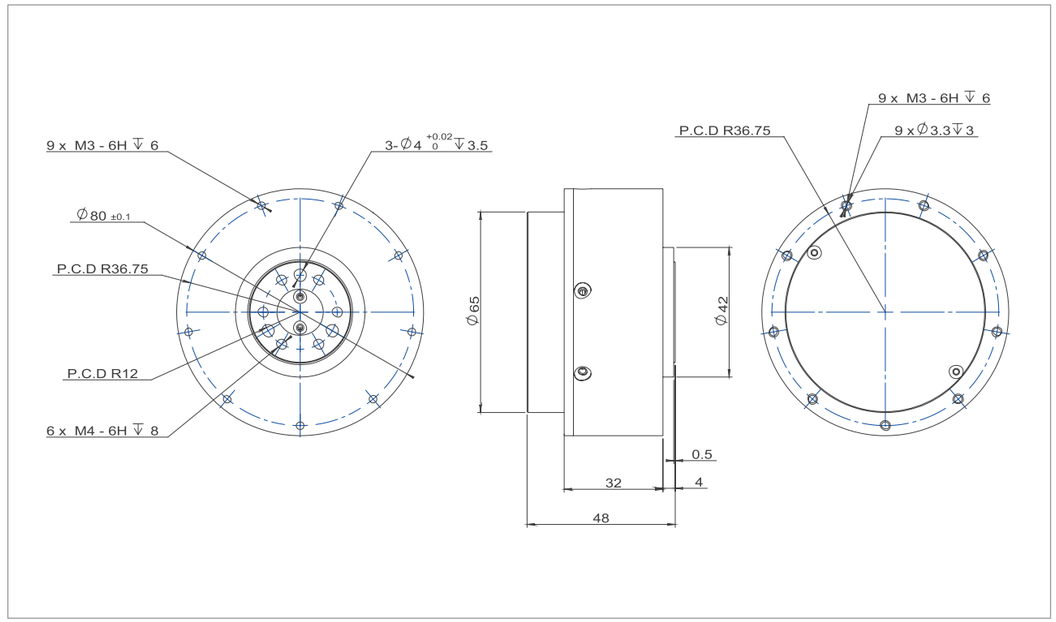
Motor Simplified Name
X6-8



Dual encoder

Actuator Full Name	With Brake/Without Brake	Communication
RMD-X6-P8-8-C	N (without Brake)	CAN BUS

Installation Drawing



Product Parameters

Parameters		Unit	X6-8
Reduction Ratio		—	8
Input Voltage		V	48
No-Load Speed		RPM	387
No-Load Current		A	1.1
Rated Speed		RPM	310
Rated Torque		N.m	4.5
Rated Output Power		W	135
Rated Phase Current		A(rms)	3.6
Peak Torque		N.m	8
Peak Phase Current		A(rms)	7.2
Efficiency		%	78
Back EMF Constant		Vdc/Krpm	19.4
Module Torque Constant		N.m/A	1.3
Line Resistance		Ω	1.1
Line Inductance		mH	0.57
Pole Pairs		—	14
Wiring Mode		—	Y
Backdrive Torque		N.m	0.8
Backlash		Arcmin	10
Output Bearing Type		—	Deep Groove Ball Bearings
Axial Load	Tensile load	KN	0.85
	Compressive load	KN	0.775
Radial Load		KN	1.04
Moment of Inertia		Kg.cm²	0.61
Encoder Type & Interface		—	Dual Encoder ABS-17BIT(Input) / 18BIT(Output)
Control Accuracy		Degree	<0.01
Communication Interface		—	CAN BUS
Weight		Kg	0.49
Insulation Class		—	F

Stall Torque Data

	Torque (N.m)	Temperature Rise (℃)	Stall Time (s)	Phase Current (Arms)
X6-8	6.75	30	10	7
	9	49	8	9.5
	11.25	31	5	11.3
	13.5	19	3	12.7

Series Name
RMD-X

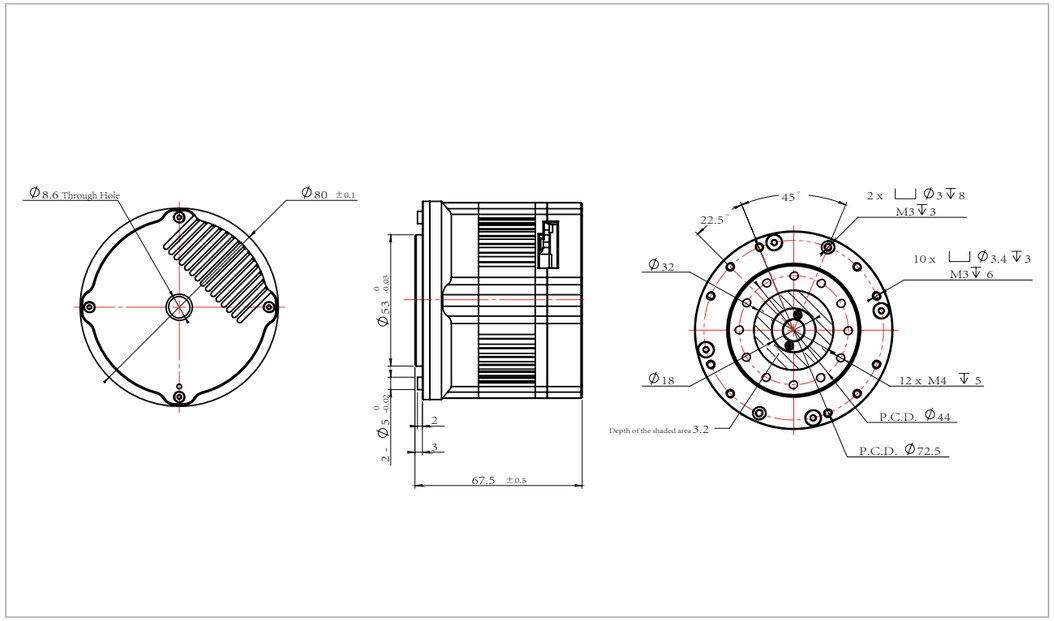
Motor Simplified Name
X6-60



Dual encoder

Actuator Full Name	With Brake/Without Brake	Communication
RMD-X6-P20-60-E	N (without Brake)	EtherCAT & CAN BUS

Installation Drawing



Product Parameters

Parameters		Unit	X6-60
Reduction Ratio		—	19.612
Input Voltage		V	48
Voltage Range		V	20-55
No-Load Speed		RPM	176
No-Load Input Current		A	0.9
Rated Speed		RPM	153
Rated Torque		N.m	20
Rated Output Power		W	320
Rated Phase Current		A(rms)	9.5
Peak Torque		N.m	60
Peak Phase Current		A(rms)	29.1
Efficiency		%	72.7
Motor Back EMF Constant		Vdc/Krpm	16
Module Torque Constant		N.m/A	2.1
Line Resistance		Ω	0.41
Line Inductance		mH	0.51
Pole Pairs		—	10
Wiring Mode		—	Y
Backdrive Torque		N.m	1.6
Backlash		Arcmin	≤15
Output Bearing Type		—	Crossed Roller Bearings
Axial Load	Tensile load	KN	1.8
	Compressive load	KN	0.8
Radial Load		KN	2
Moment of Inertia		Kg.cm²	0.66
Encoder Type		—	Dual Encoder ABS-17BIT(Input) / 17BIT(Output)
Control Accuracy		Degree	<0.01
Communication Interface		—	EtherCAT & CAN BUS
Weight		Kg	0.82
Insulation Class		—	F

Note:
1.The maximum operating voltage of the motor is 55V. It is recommended that customers add an external capacitor to regulate voltage, so as to ensure stable battery power supply and protect the PCB from damage caused by voltage fluctuations.
2. If voltage exceeds the rated value, the operating speed must not exceed the motor's rated speed.

Stall Torque Data

	Torque (N.m)	Temperature Rise (℃)	Stall Time (s)	Phase Current (Arms)
X6-60	30	17	15	12.7
	40	29	10	17.7
	50	37	8	22.6
	60	24	5	28.3

Series Name
RMD-X

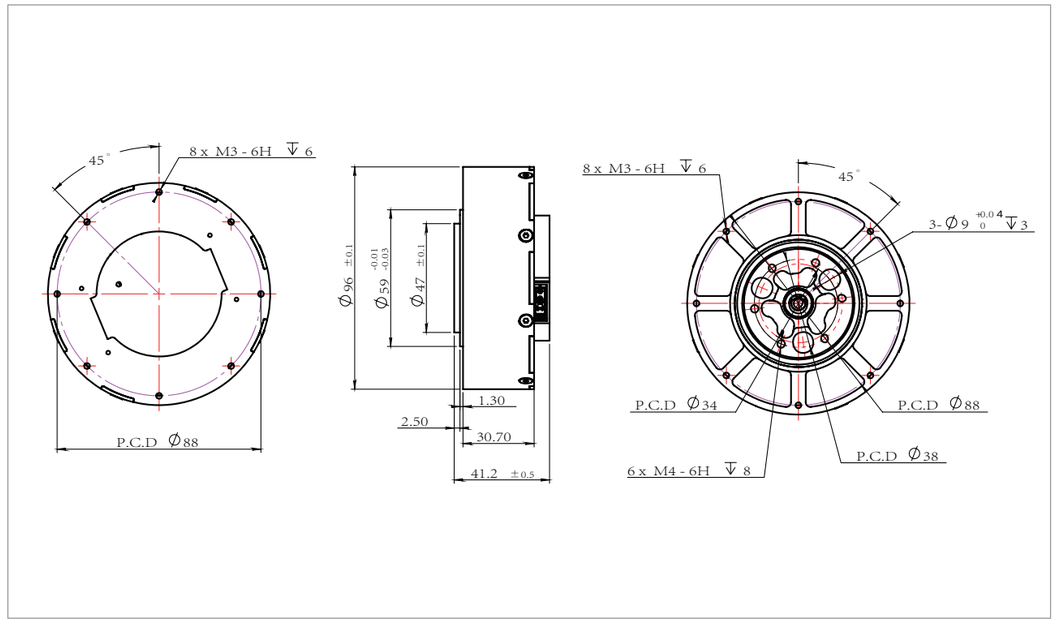
Motor Simplified Name
X8-32



Single Encoder

Actuator Full Name	With Brake/Without Brake	Communication
RMD-X8-P9-32-R	N (without Brake)	RS485

Installation Drawing



Product Parameters

Parameters		Unit	X8-32
Reduction Ratio		—	9
Input Voltage		V	24
No-Load Speed		RPM	277
No-Load Input Current		A	0.9
Rated Speed		RPM	244
Rated Torque		N.m	8
Rated Output Power		W	204
Rated Phase Current		A(rms)	6.2
Peak Torque		N.m	32
Peak Phase Current		A(rms)	30
Efficiency		%	82
Motor Back EMF Constant		Vdc/Krpm	10.9
Module Torque Constant		N.m/A	1.3
Phase Resistance		Ω	0.13
Phase Inductance		mH	0.08
Pole Pairs		—	21
Wiring Mode		—	△
Backdrive Torque		N.m	0.8
Backlash		Arcmin	≤10
Output Bearing Type		—	Deep Groove Ball Bearings
Axial Load	Tensile load	KN	0.6
	Compressive load	KN	0.6
Radial Load		KN	2
Moment of Inertia		Kg.cm²	1.43
Encoder Type		—	Single Encoder ABS-18BIT
Control Accuracy		Degree	<0.01
Communication Interface		—	RS485
Weight		Kg	0.55
Insulation Class		—	F

Stall Torque Data

	Torque (N.m)	Temperature Rise (℃)	Stall Time (s)	Phase Current (Arms)
X8-32	15.6	6	10	18.4
	18	11	8	21.2
	24	36	5	29
	30	54	3	38.2

Series Name
RMD-X

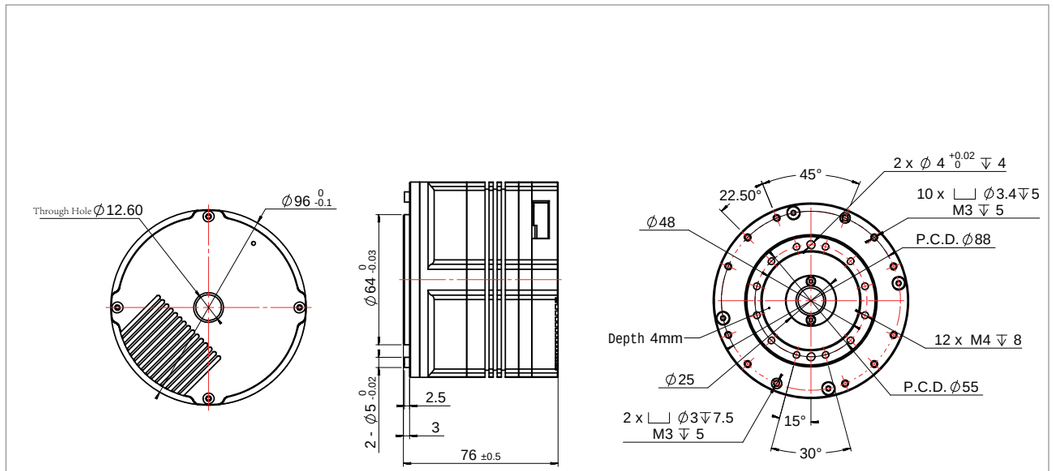
Motor Simplified Name
X8-120



Dual encoder

Actuator Full Name	With Brake/Without Brake	Communication
RMD-X8-P20-120-E	N (without Brake)	EtherCAT & CAN BUS

Installation Drawing



Product Parameters

Parameters		Unit	X8-120
Reduction Ratio		—	19.612
Input Voltage		V	48
Voltage Range		V	20-55
No-Load Speed		RPM	158
No-Load Input Current		A	1.6
Rated Speed		RPM	127
Rated Torque		N.m	43
Rated Output Power		W	574
Rated Phase Current		A(rms)	17.6
Peak Torque		N.m	120
Peak Phase Current		A(rms)	43.8
Efficiency		%	79
Motor Back EMF Constant		Vdc/Krpm	19.2
Module Torque Constant		N.m/A	2.4
Line Resistance		Ω	0.18
Line Inductance		mH	0.31
Pole Pairs		—	10
Wiring Mode		—	Y
Backdrive Torque		N.m	1.5
Backlash		Arcmin	≤15
Output Bearing Type		—	Crossed Roller Bearings
Axial Load	Tensile load	KN	4
	Compressive load	KN	1
Radial Load		KN	4.5
Moment of Inertia		Kg.cm²	1.5
Encoder Type		—	Dual Encoder ABS-17BIT (Input) / 17BIT (Output)
Control Accuracy		Degree	<0.01
Communication Interface		—	EtherCAT & CAN BUS
Weight		Kg	1.40
Insulation Class		—	F

Note:
1.The maximum operating voltage of the motor is 55V. It is recommended that customers add an external capacitor to regulate voltage, so as to ensure stable battery power supply and protect the PCB from damage caused by voltage fluctuations.
2. If voltage exceeds the rated value, the operating speed must not exceed the motor's rated speed.

Stall Torque Data

	Torque (N.m)	Temperature Rise (℃)	Stall Time (s)	Phase Current (Arms)
X8-120	64.5	7	15	23.3
	86	10	10	31.1
	107.5	26	8	38.9
	129	30	5	43.8

Series Name
RMD-X

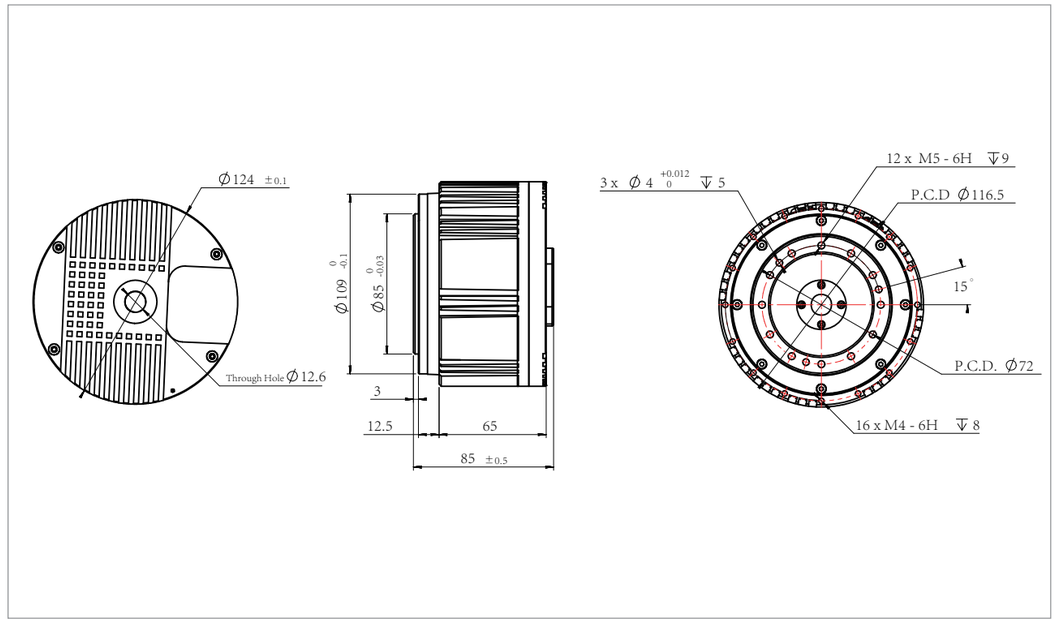
Motor Simplified Name
X12-320



Dual encoder

Actuator Full Name	With Brake/Without Brake	Communication
RMD-X12-P20-320-E	N (without Brake)	EtherCAT / CAN BUS

Installation Drawing



Product Parameters

Parameters		Unit	X12-320
Reduction Ratio		—	20
Input Voltage		V	48
Voltage Range		V	20-70
No-Load Speed		RPM	125
No-Load Input Current		A	2.7
Rated Speed		RPM	100
Rated Torque		N.m	85
Rated Output Power		W	900
Rated Phase Current		A(rms)	30
Peak Torque		N.m	320
Peak Phase Current		A(rms)	100
Efficiency		%	75
Motor Back EMF Constant		Vdc/Krpm	17.9
Module Torque Constant		N.m/A	3.3
Line Resistance		Ω	0.12
Line Inductance		mH	0.05
Pole Pairs		—	20
Wiring Mode		—	Y
Backdrive Torque		N.m	3.8
Backlash		Arcmin	≤15
Output Bearing Type		—	Crossed Roller Bearings
Axial Load	Tensile load	KN	4.5
	Compressive load	KN	4.5
Radial Load		KN	5
Moment of Inertia		Kg.cm²	12.9
Encoder Type		—	Dual Encoder ABS-17BIT (Input) /17BIT (Output)
Control Accuracy		Degree	<0.01
Communication Interface		—	EtherCAT & CAN BUS
Weight		Kg	2.37
Insulation Class		—	F

Note:
1.The maximum operating voltage of the motor is 55V. It is recommended that customers add an external capacitor to regulate voltage, so as to ensure stable battery power supply and protect the PCB from damage caused by voltage fluctuations.
2. If voltage exceeds the rated value, the operating speed must not exceed the motor's rated speed.

Stall Torque Data

	Torque (N.m)	Temperature Rise (℃)	Stall Time (s)	Phase Current (Arms)
X12-320	150	13	10	37.5
	200	5	8	49.5
	250	7	7	61.5
	300	43	3	75.3

Series Name
RMD-X

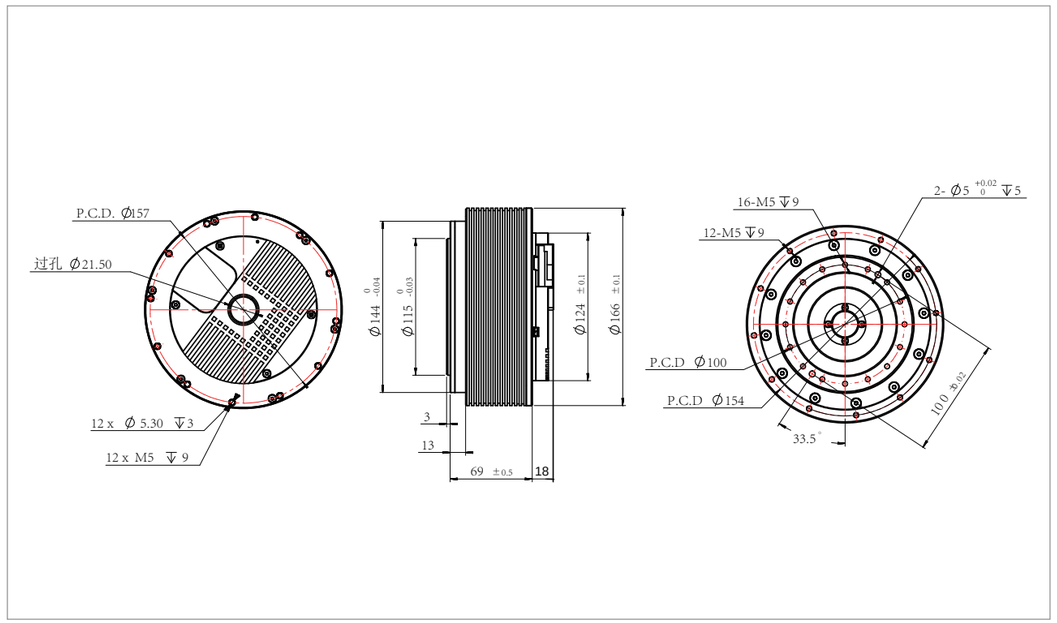
Motor Simplified Name
X15-450



Dual encoder

Actuator Full Name	With Brake/Without Brake	Communication
RMD-X15-P20-450-E	N (without Brake)	EtherCAT & CAN BUS

Installation Drawing



Product Parameters

Parameters		Unit	X15-450
Reduction Ratio		—	20.25
Input Voltage		V	72
Voltage Range		V	20-80
No-Load Speed		RPM	108
No-Load Input Current		A	3.5
Rated Speed		RPM	98
Rated Torque		N.m	145
Rated Output Power		W	1480
Rated Phase Current		A(rms)	25
Peak Torque		N.m	450
Peak Phase Current		A(rms)	69.2
Efficiency		%	82.4
Motor Back EMF Constant		Vdc/Krpm	29.9
Module Torque Constant		N.m/A	5.8
Line Resistance		Ω	0.08
Line Inductance		mH	0.14
Pole Pairs		—	20
Wiring Mode		—	Y
Backdrive Torque		N.m	4
Backlash		Arcmin	≤15
Output Bearing Type		—	Crossed Roller Bearings
Axial Load	Tensile load	KN	5.4
	Compressive load	KN	5.4
Radial Load		KN	6
Moment of Inertia		Kg.cm²	31.6
Encoder Type		—	Dual Encoder ABS-17BIT (Input) / 17BIT (Output)
Control Accuracy		Degree	<0.01
Communication Interface		—	EtherCAT & CAN BUS
Weight		Kg	3.50
Insulation Class		—	F

Note:
1. When the operating voltage exceeds the rated voltage, the operating speed must not exceed the motor's rated speed.
2. When the operating voltage is lower than the rated voltage, the operating speed must be reduced proportionally. In this case, the rated torque remains constant, but the rated current will be slightly higher at the same torque level. Please refer to the characteristic curve for different voltages.

Stall Torque Data

	Torque (N.m)	Temperature Rise (℃)	Stall Time (s)	Phase Current (Arms)
X15-450	217.5	15	15	31.1
	290	15	10	41
	362.5	20	8	51.6
	435	25	5	67.2