

## 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

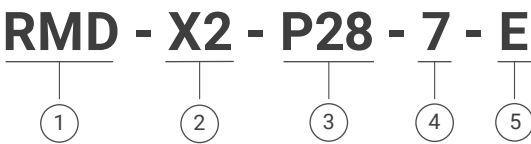
Dual Encoder

High Torque Density

High Precision

Hollow Design

### RMD-X V4 Series Naming Conventions



- 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

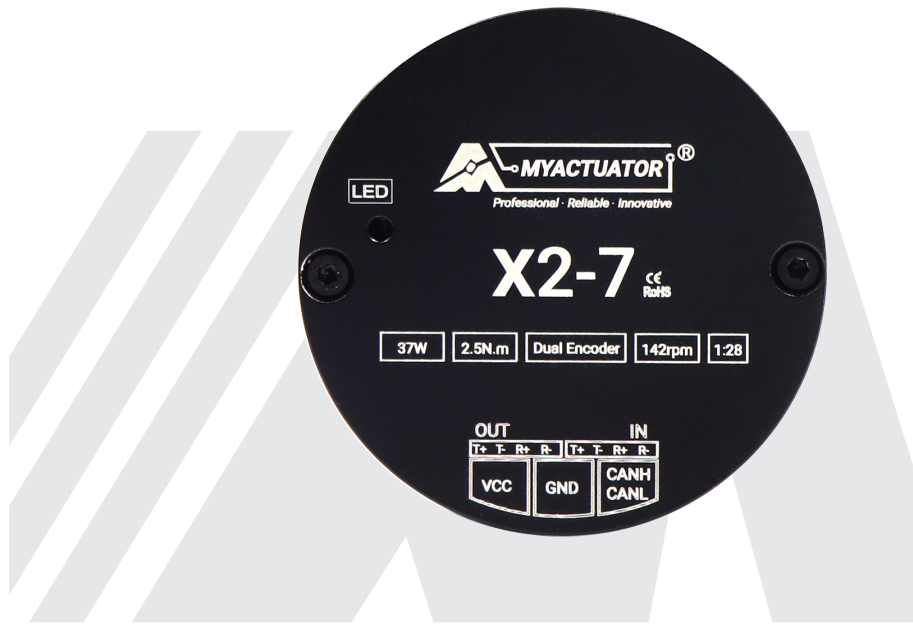
E:

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

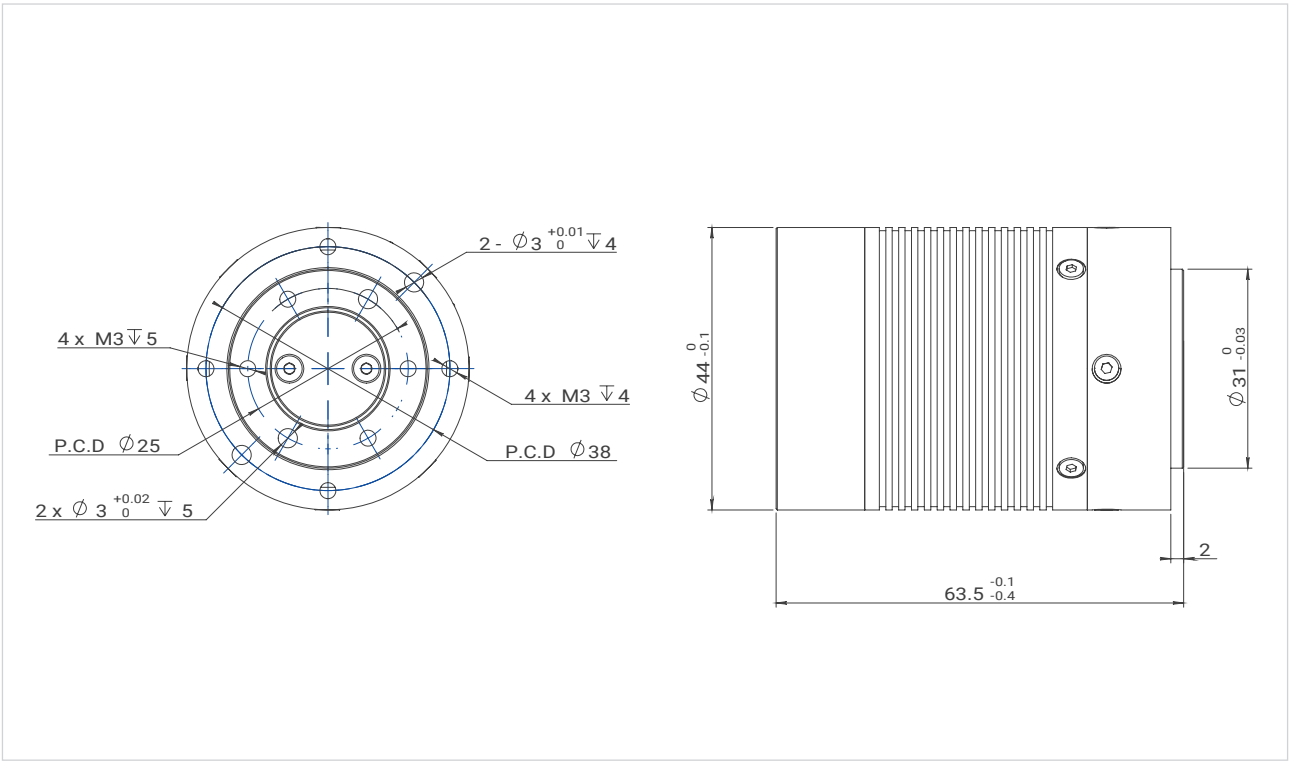
Series Name  
**RMD-X**  
Motor Simplified Name  
**X2-7**



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
Gear Ratio	—	28.17
Input Voltage	V	24
No Load Speed	RPM	178.6
No-Load Input Current	A	1
Rated Speed	RPM	142.8
Rated Torque	N.m	2.5
Rated Output Power	W	37
Rated Phase Current	A(rms)	3
Peak Torque	N.m	7
Peak Phase Current	A(rms)	8.1
Efficiency	%	58
Motor Back-EMF Constant	Vdc/Krpm	4.3
Module Torque Constant	N.m/A	0.047
Motor Phase Resistance	Ω	0.61
Motor Phase Inductance	mH	0.133
Pole Pair	—	13
3 Phase Connection	—	Y
Back Drive Torque	N.m	0.4
Backlash	Arcmin	12
Output Bearing Type	—	Deep Groove Ball Bearings
Axial Load	Suffer	KN
	Stress	KN
Radial Load	KN	1
Inertia	Kg.cm <sup>2</sup>	0.17
Encoder Type & Interface	—	Dual Encoder ABS-17BIT(Input) / 18BIT(Output)
Control Accuracy	Degree	<0.01
Communication	—	EtherCAT & CAN BUS
Weight	Kg	0.3
Insulation Grade	—	F

Stall Torque Data

	Torque (N.m)	Temperature Rise (°C)	Stall Time (s)	Phase Current (A <sub>rms</sub> )
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



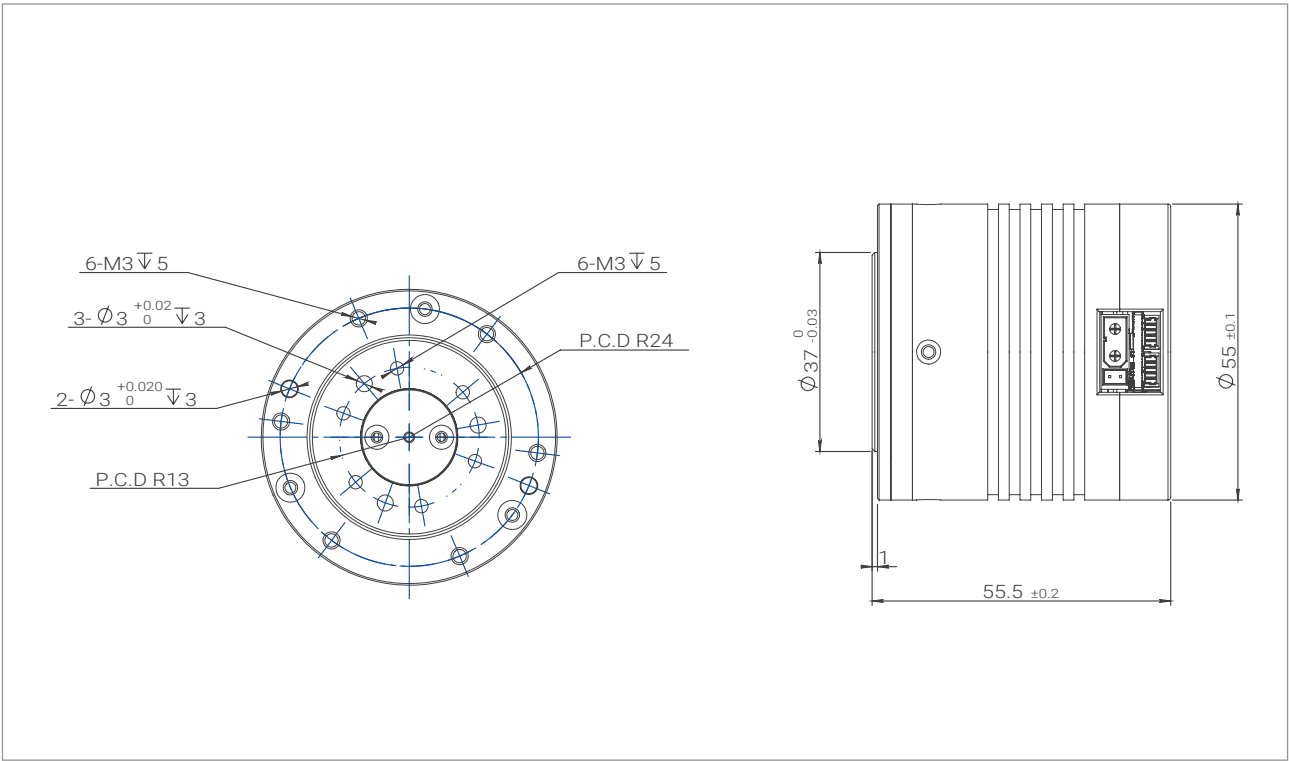
Series Name  
**RMD-X**  
Motor Simplified Name  
**X4-10**



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
Gear Ratio		—	12.6
Input Voltage		V	24
No Load Speed		RPM	317
No-Load Input 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
Motor Back-EMF Constant		Vdc/Krpm	6
Module Torque Constant		N.m/A	0.8
Motor Phase Resistance		Ω	0.32
Motor Phase Inductance		mH	0.14
Pole Pair		—	13
3 Phase Connection		—	Y
Back Drive Torque		N.m	0.8
Backlash		Arcmin	10
Output Bearing Type		—	Deep Groove Ball Bearings
Axial Load	Suffer	KN	1.2
	Stress	KN	1.2
Radial Load		KN	1.2
Inertia		Kg.cm²	0.25
Encoder Type & Interface		—	Dual Encoder ABS-17BIT (Input) / 18BIT(Output)
Control Accuracy		Degree	<0.01
Communication		—	EtherCAT & CAN BUS
Weight		Kg	0.33
Insulation Grade		—	F

### Stall Torque Data

	Torque (N.m)	Temperature Rise (°C)	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

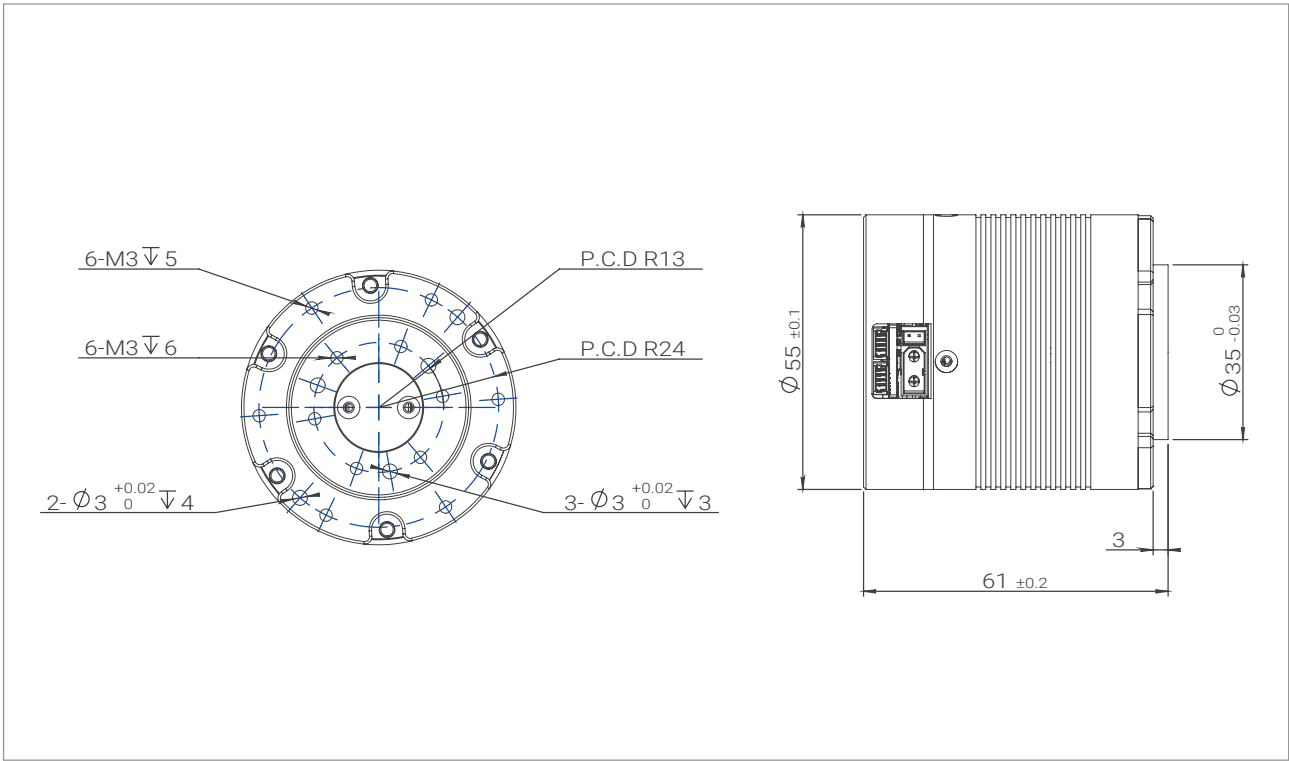
Series Name  
**RMD-X**  
Motor Simplified Name  
**X4-36**



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
Gear Ratio	—	36
Input Voltage	V	24
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
Motor Back-EMF Constant	Vdc/Krpm	6
Module Torque Constant	N.m/A	1.9
Motor Phase Resistance	Ω	0.35
Motor Phase Inductance	mH	0.17
Pole Pair	—	13
3 Phase Connection	—	Y
Back Drive Torque	N.m	1.14
Backlash	Arcmin	10
Output Bearing Type	—	Crossed Roller Bearings
Axial Load	Suffer	KN
	Stress	KN
Radial Load	KN	1.5
Inertia	Kg.cm <sup>2</sup>	0.3
Encoder Type & Interface	—	Dual Encoder ABS-17BIT (Input) / 18BIT (Output)
Control Accuracy	Degree	<0.01
Communication	—	EtherCAT & CAN BUS
Weight	Kg	0.36
Insulation Grade	—	F

### Stall Torque Data

	Torque (N.m)	Temperature Rise (°C)	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

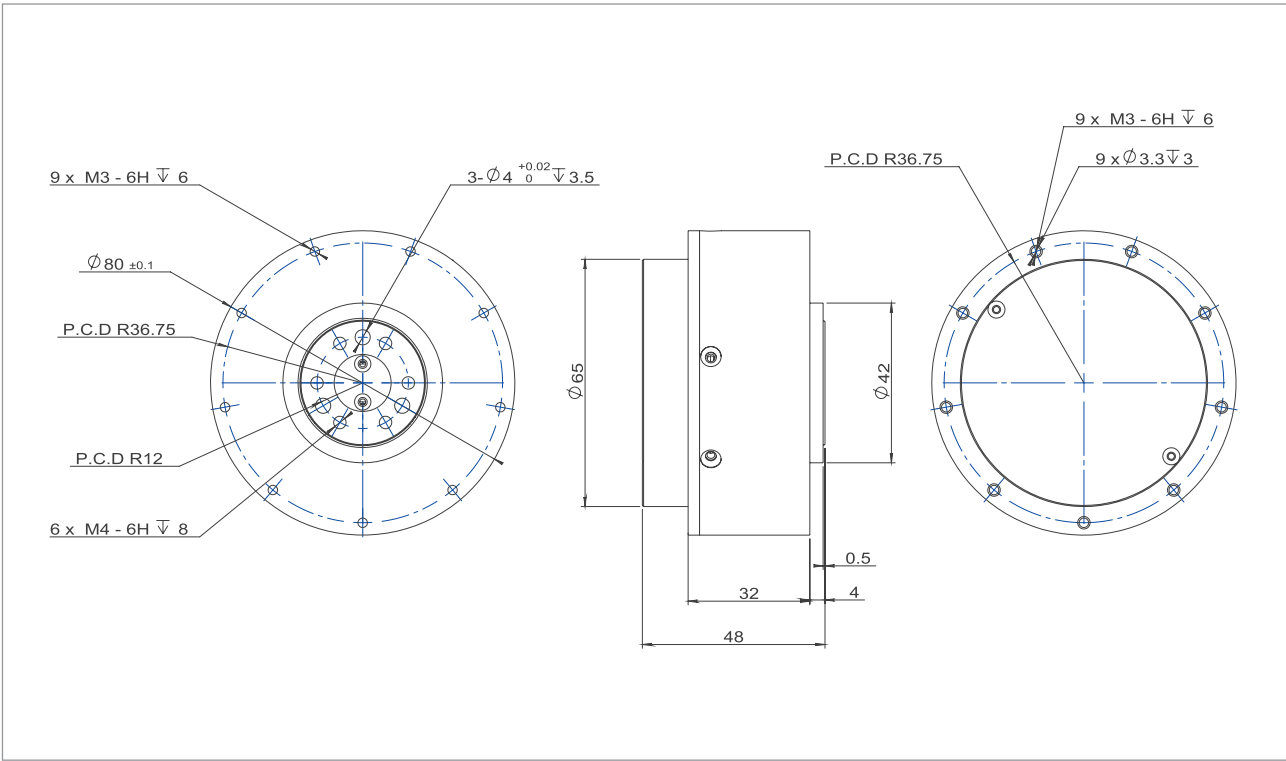
Series Name  
**RMD-X**  
Motor Simplified Name  
**X6-8**



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
Gear Ratio	—	8
Input Voltage	V	48
No Load Speed	RPM	387
No-Load Input 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
Motor Back-EMF Constant	Vdc/Krpm	19.4
Module Torque Constant	N.m/A	1.3
Motor Phase Resistance	Ω	1.1
Motor Phase Inductance	mH	0.57
Pole Pair	—	14
3 Phase Connection	—	Y
Back Drive Torque	N.m	0.8
Backlash	Arcmin	10
Output Bearing Type	—	Deep Groove Ball Bearings
Axial Load	Suffer	KN
	Stress	KN
Radial Load	KN	1.04
Inertia	Kg.cm <sup>2</sup>	0.61
Encoder Type & Interface	—	Dual Encoder ABS-17BIT(Input) / 18BIT(Output)
Control Accuracy	Degree	<0.01
Communication	—	CAN BUS
Weight	Kg	0.49
Insulation Grade	—	F

### Stall Torque Data

	Torque (N.m)	Temperature Rise (°C)	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

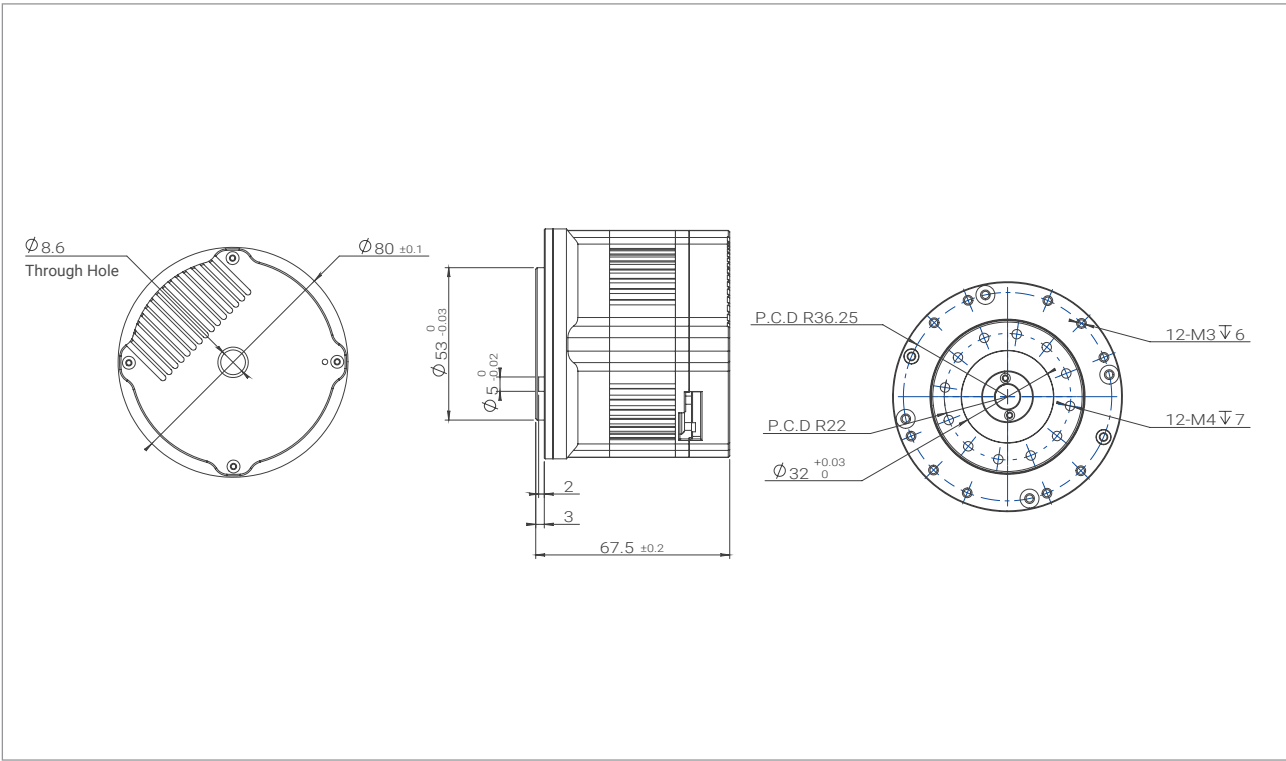
Series Name  
**RMD-X**  
Motor Simplified Name  
**X6-60**



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
Gear Ratio		—	19.612
Input Voltage		V	48
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
Motor Phase Resistance		Ω	0.41
Motor Phase Inductance		mH	0.51
Pole Pair		—	10
3 Phase Connection		—	Y
Back Drive Torque		N.m	1.6
Backlash		Arcmin	10
Output Bearing Type		—	Crossed Roller Bearings
Axial Load	Suffer	KN	1.8
	Stress	KN	0.8
Radial Load		KN	2
Inertia		Kg.cm²	0.66
Encoder Type & Interface		—	Dual Encoder ABS-17BIT(Input) / 17BIT(Output)
Control Accuracy		Degree	<0.01
Communication		—	EtherCAT & CAN BUS
Weight		Kg	0.82
Insulation Grade		—	F

### Stall Torque Data

	Torque (N.m)	Temperature Rise (°C)	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

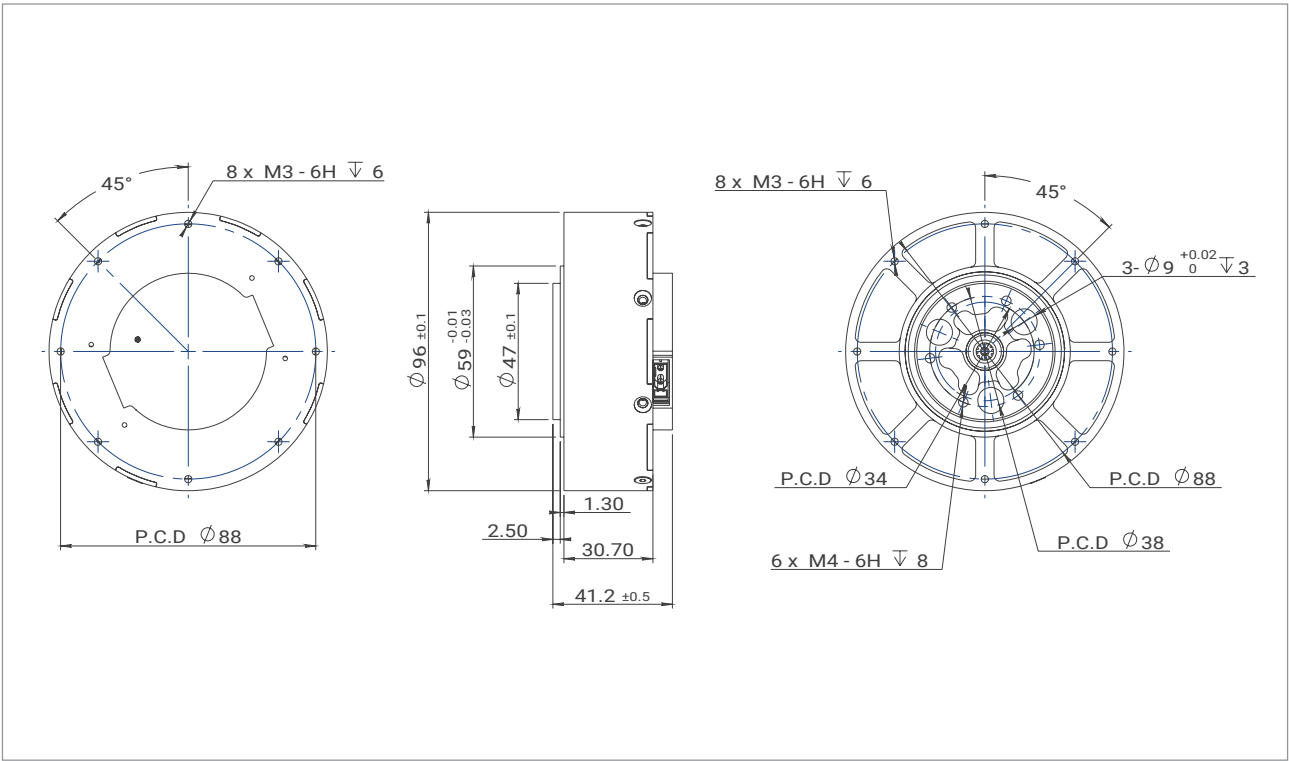
Series Name  
**RMD-X**  
Motor Simplified Name  
**X8-32**



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
Gear 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	0.081
Pole Pair	—	21
3 Phase Connection	—	△
Back Drive Torque	N.m	0.8
Backlash	Arcmin	8
Output Bearing Type	—	Deep Groove Ball Bearings
Axial Load	Suffer	KN
	Stress	KN
Radial Load	KN	2
Inertia	Kg.cm <sup>2</sup>	1.43
Encoder Type & Interface	—	Single Encoder ABS-18BIT
Control Accuracy	Degree	<0.01
Communication	—	RS485
Weight	Kg	0.55
Insulation Grade	—	F

Stall Torque Data

	Torque (N.m)	Temperature Rise (°C)	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



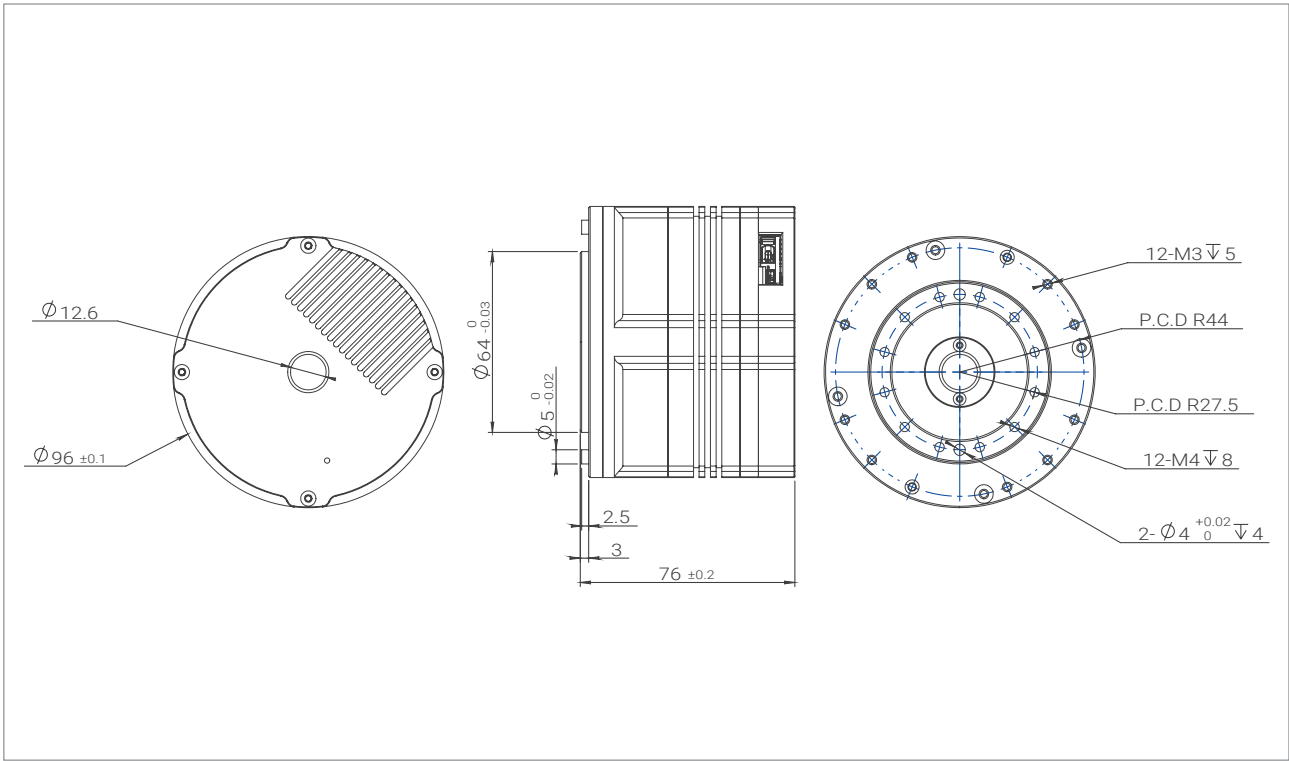
Series Name  
**RMD-X**  
Motor Simplified Name  
**X8-120**



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
Gear Ratio	—	19.612
Input Voltage	V	48
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
Motor Phase Resistance	Ω	0.18
Motor Phase Inductance	mH	0.31
Pole Pair	—	10
3 Phase Connection	—	Y
Back Drive Torque	N.m	3.21
Backlash	Arcmin	10
Output Bearing Type	—	Crossed Roller Bearings
Axial Load	Suffer	KN
	Stress	KN
Radial Load	KN	4.5
Inertia	Kg.cm <sup>2</sup>	1.5
Encoder Type & Interface	—	Dual Encoder ABS-17BIT (Input) / 17BIT (Output)
Control Accuracy	Degree	<0.01
Communication	—	EtherCAT & CAN BUS
Weight	Kg	1.40
Insulation Grade	—	F

### Stall Torque Data

	Torque (N.m)	Temperature Rise (°C)	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

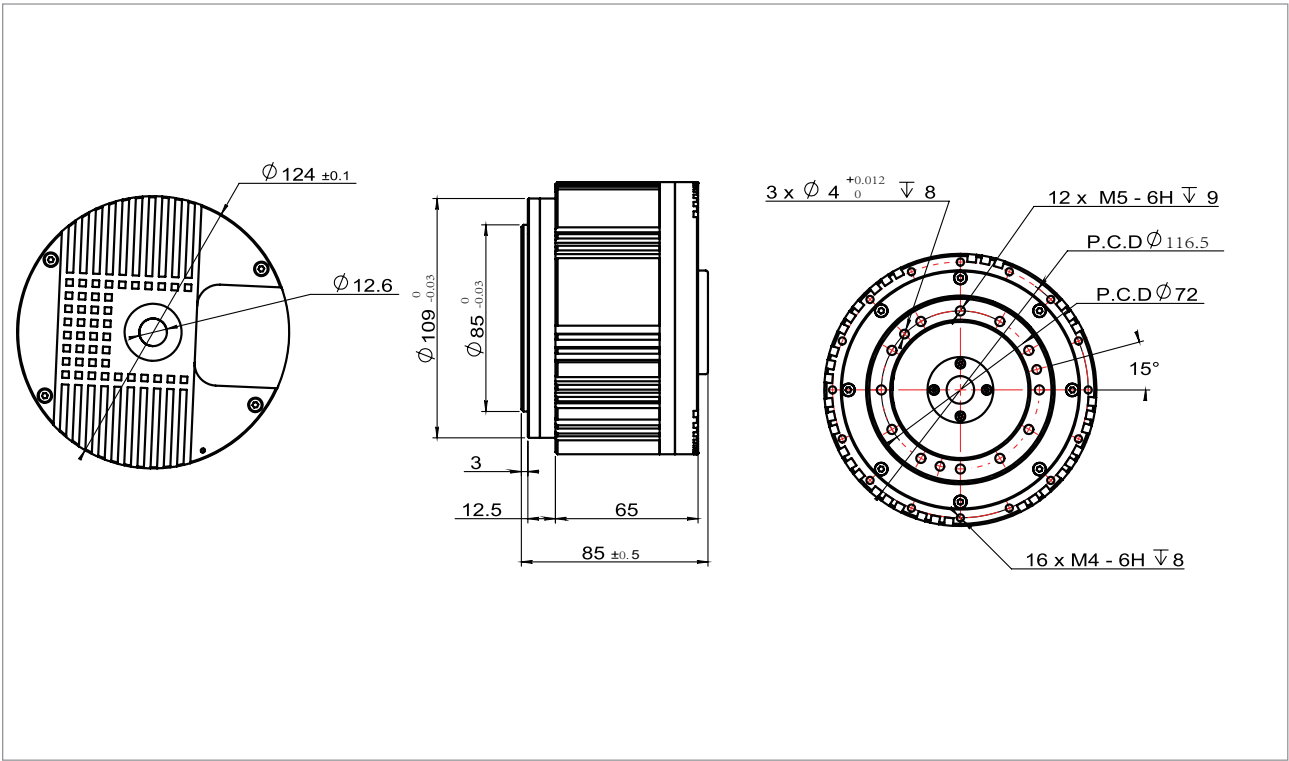
Series Name  
**RMD-X**  
Motor Simplified Name  
**X12-320**



Dual encoder

Actuator Full Name	With Brake/Without Brake	Communication
RMD-X12-P20-320-E	N (without Brake)	485 / EtherCAT / CAN BUS

Installation Drawing



Product Parameters

Parameters	Unit	X12-320
Gear Ratio	—	20
Input Voltage	V	48
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	1000
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
Motor Phase Resistance	Ω	0.12
Motor Phase Inductance	mH	0.05
Pole Pair	—	20
3 Phase Connection	—	Y
Back Drive Torque	N.m	3.8
Backlash	Arcmin	10
Output Bearing Type	—	Crossed Roller Bearings
Axial Load	Suffer	KN
	Stress	KN
Radial Load	KN	5
Inertia	Kg.cm <sup>2</sup>	12.9
Encoder Type & Interface	—	Dual Encoder ABS-17BIT (Input) /17BIT (Output)
Control Accuracy	Degree	<0.01
Communication	—	485 / EtherCAT / CAN BUS
Weight	Kg	2.4
Insulation Grade	—	F

Stall Torque Data

	Torque (N.m)	Temperature Rise (°C)	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

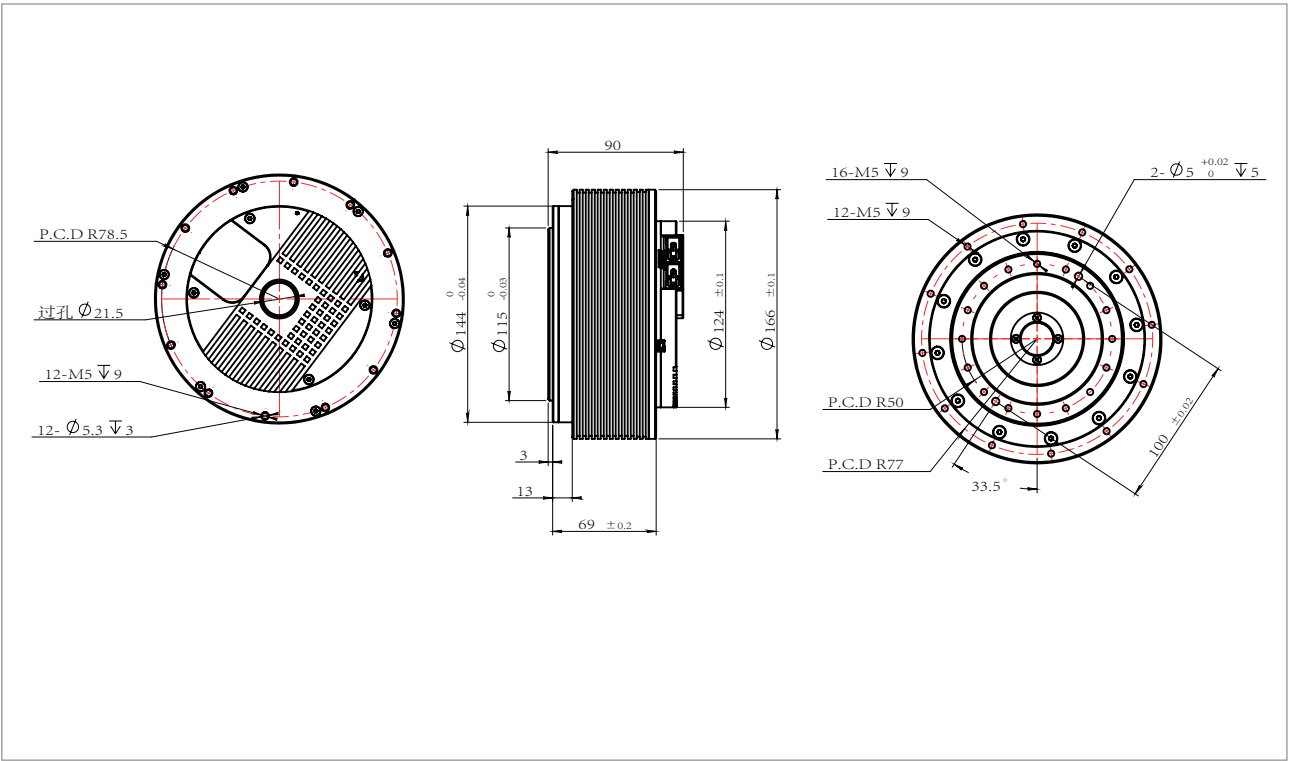
Series Name  
**RMD-X**  
Motor Simplified Name  
**X15-450**



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
Gear Ratio			—	20.25
Input Voltage			V	72
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
Motor Phase Resistance			Ω	0.08
Motor Phase Inductance			mH	0.14
Pole Pair			—	20
3 Phase Connection			—	Y
Back Drive Torque			N.m	4
Backlash			Arcmin	10
Output Bearing Type			—	Crossed Roller Bearings
Axial Load	Suffer		KN	5.4
	Stress		KN	5.4
Radial Load			KN	6
Inertia			Kg.cm²	31.6
Encoder Type & Interface			—	Dual Encoder ABS-17BIT (Input) / 17BIT (Output)
Control Accuracy			Degree	<0.01
Communication			—	485 / EtherCAT / CAN BUS
Weight			Kg	3.50
Insulation Grade			—	F

## Stall Torque Data

	Torque (N.m)	Temperature Rise (°C)	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