

DINGS'

Precision Motion Specialist

JOINT SERVO ACTUATOR

Integrated Intelligent Direct Drive / Planetary / Harmonic / Outer Runner FLO

PRODUCT CATALOG





Since its establishment in 2008, Jiangsu DINGS' Intelligent Control Technology Co., Ltd. has adhered to the business philosophy of **"Quality comes from responsibility, and details determine success or failure."** The company is committed to becoming a Precision Motion Specialist and a world-class provider of motion control solutions. DINGS' offers a comprehensive range of products, including precision stepper motors, DC motors, voice coil motors, lead and ball screw linear actuators, PMSM motors for new energy vehicles, and motion controllers.

SCALE

200+ Processing Equipment



20+ Assembly Lines



100+ Testing Instruments



140+ Patents



CERTIFICATIONS



9001

Quality



14001

Environmental



45001

Health & Safety



13485

Medical Device Quality



IATF16949

Automotive Quality



Intellectual Property



Safety Standards



Environmental Standards - RoHS



Environmental Standards - REACH

GROWTH

2008 Company founded and DINGS' brand registered

2010 Established DINGS' MOTION USA

2016 Established DINGS' Korea

2019 Joined LEILI Group

2021 Established Changzhou Intelligent Manufacturing Factory
Listed on China's NEEQ ('New Third Board') Market

2022 Set up R&D Center in Korea

Listed on the Beijing Stock Exchange [Stock Code : 920593]
2023 Conversion to DINGS' Korea Corporation
Established of DINGS' Japan

2024 Completed Headquarters Smart Manufacturing Base
Established of DINGS' Motion Europe

2025 Establishment of Thailand Manufacturing Base

PRODUCT WARRANTY

DINGS' provides a 1-year warranty from the delivery date.

If caused by quality issues, free repair is provided.

Free maintenance does not apply in the following cases:

- Warranty period expired (including nameplate loss or intentional damage)
- Improper installation, use, or environment
- Unauthorized disassembly or modification
- Repaired by non-accredited personnel
- Damage from natural disasters or force majeure

DINGS' is dedicated to delivering quality, reliability, and responsibility in every product and service.

PRODUCT CATALOG

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RMD-X V4 Series Planetary Actuator

Special Series For Robot

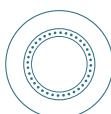


* The pictures of this series of products are subject to the actual products.

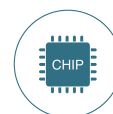
RMD-X V4 Series Product Features



CAN BUS & EtherCAT



Crossed Roller Bearings



Dual Encoder



High Torque Density

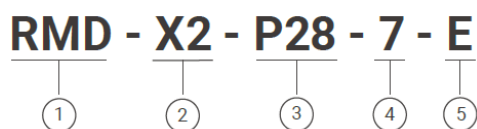


High Precision



Hollow Design

RMD-X V4 Series Part Number Construction



- 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: Communication E: CAN BUS & EtherCAT

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: Communication E: CAN BUS & EtherCAT

Series Name

RMD-X V4

Motor Simplified Name

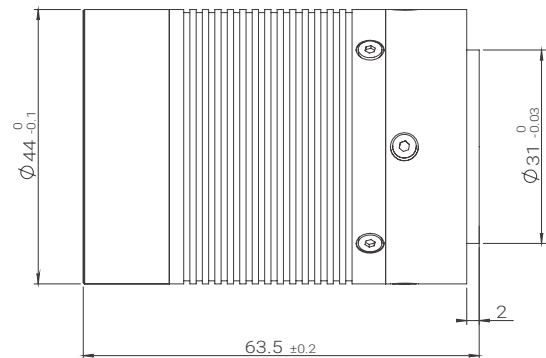
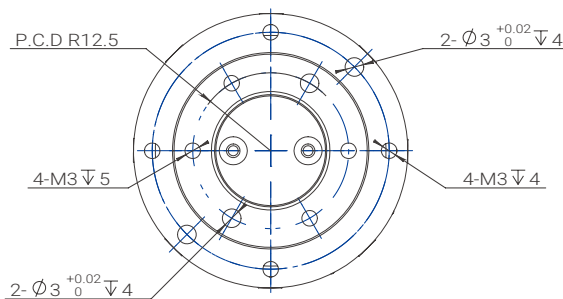
X2-7



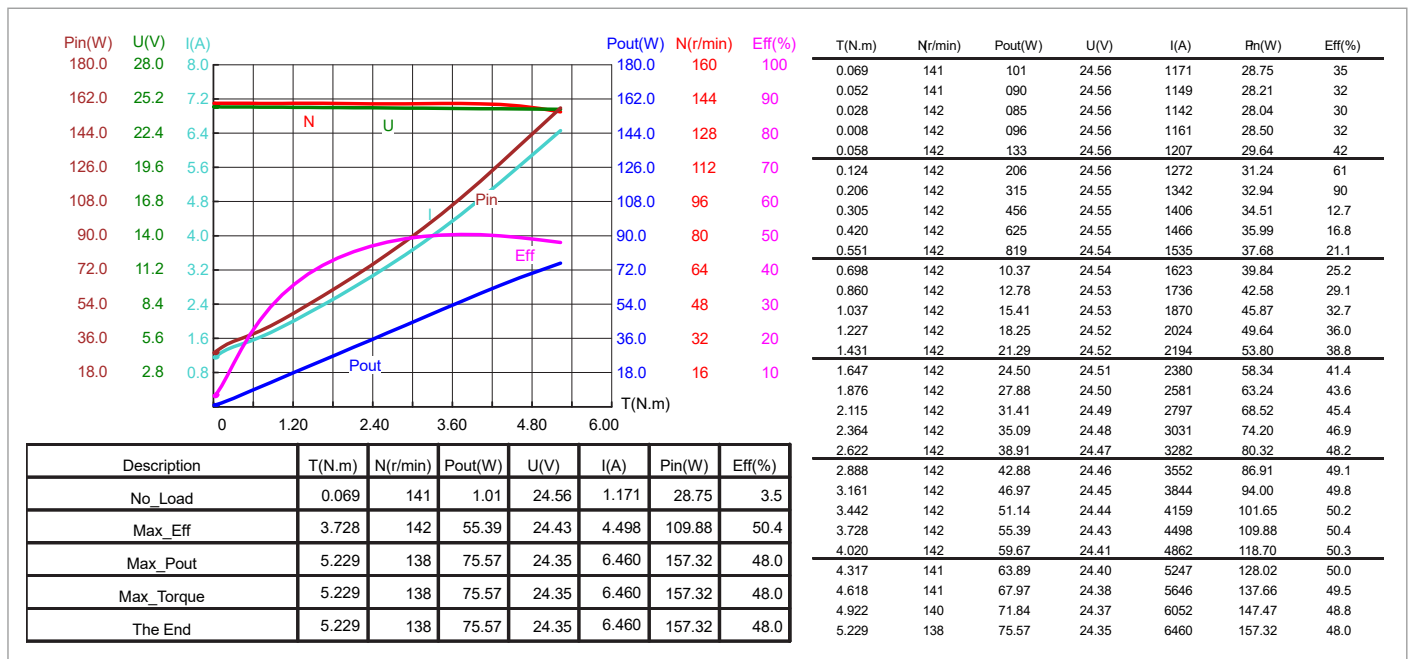
DUAL ENCODER

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

INSTALLATION DRAWING



TORQUE PERFORMANCE CURVE



PRODUCT PARAMETERS

Parameters		Unit	X2-7
Gear Ratio		-	28.17
Input Voltage		V	24
No Load Speed		RPM	178
No Load Input Current		A	1
Rated Speed		RPM	142
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		%	63
Motor Back-EMF Constant		Vdc/Krpm	4.3
Module Torque Constant		N.m/A	0.8
Motor Phase Resistance		Ω	0.61
Motor Phase Inductance		mH	0.13
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	0.25
	Stress	KN	0.25
Radial Load		KN	1
Inertia		Kg.cm ²	0.17
Encoder Type & Interface		-	Dual Encoder ABS-17BIT [Input] / 18BIT [Output]
Repeat Position Accuracy		Degree	< 0.01
Communication		-	CAN BUS & EtherCAT
Weight		kg	0.26
Insulation Grade		-	F

STALL TORQUE DATA

X2-7	Torque (N.m)	Temperature rise (°C)	Stall time (s)	Phase current (Arms)
	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 V4

Motor Simplified Name

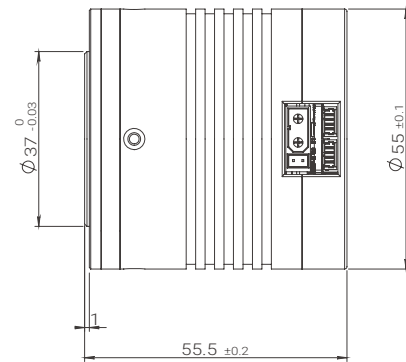
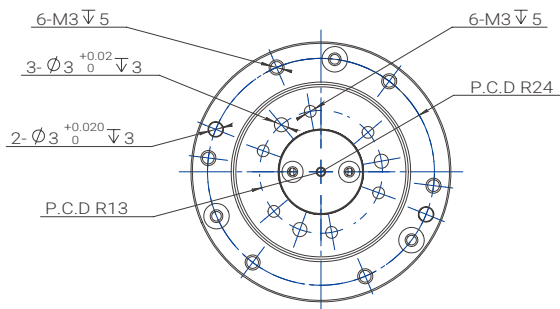
X4-10



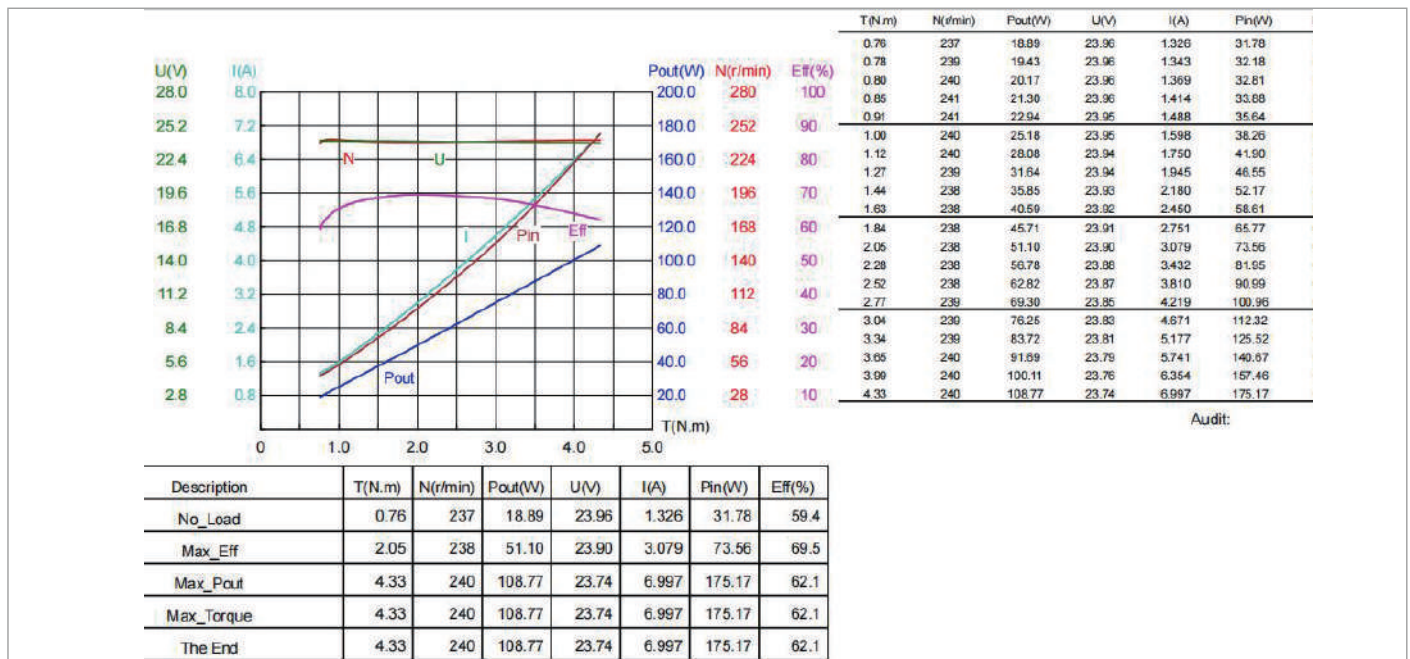
DUAL ENCODER

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

INSTALLATION DRAWING



TORQUE PERFORMANCE CURVE



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]
Repeat Position Accuracy		Degree	< 0.01
Communication		-	CAN BUS & EtherCAT
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 V4

Motor Simplified Name

X4-36



DUAL ENCODER

Actuator Full Name

RMD-X4-P36-36-E

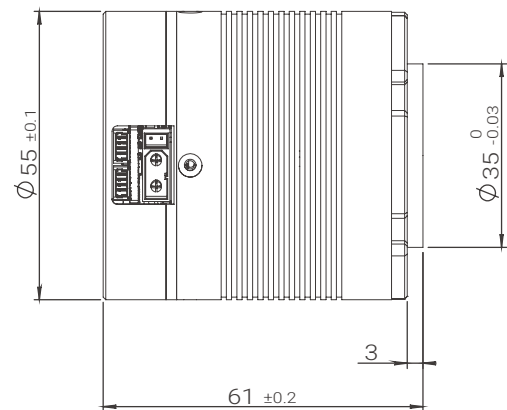
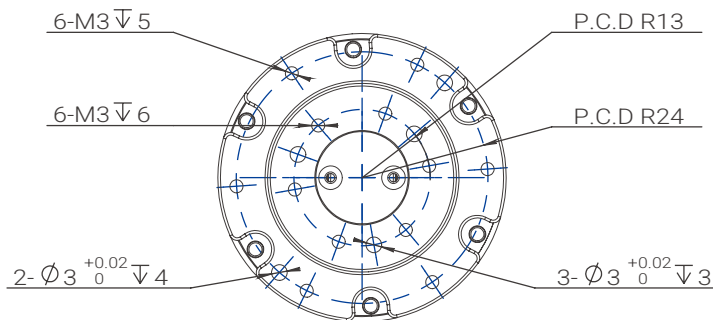
With Brake / Without Brake

N (without brake)

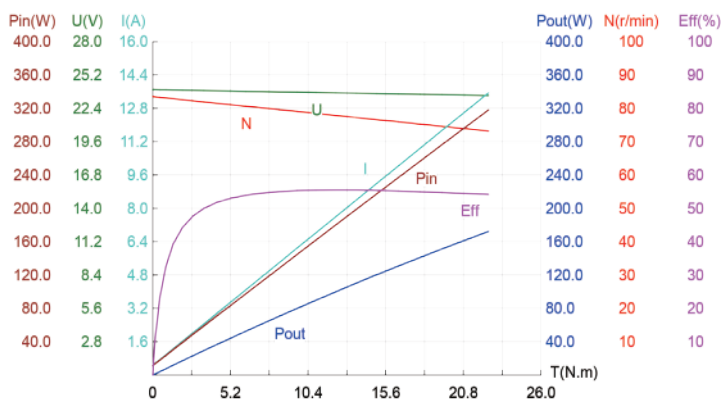
Communication

CAN BUS & EtherCAT

INSTALLATION DRAWING



TORQUE PERFORMANCE CURVE



Description	T(N.m)	N(r/min)	Pout(W)	U(V)	I(A)	Pin(W)	Eff(%)
No_Load	0.00	83	0.00	23.97	0.467	11.19	0.0
Max_Eff	12.27	78	100.08	23.70	7.609	180.34	55.5
Max_Pout	22.48	73	172.26	23.48	13.548	318.06	54.2
Max_Torque	22.48	73	172.26	23.48	13.548	318.06	54.2
The End	22.48	73	172.26	23.48	13.548	318.06	54.2

T(N.m)	N(r/min)	Pout(W)	U(V)	I(A)	Pin(W)	Eff(%)
0.00	83	0.00	23.97	0.467	11.19	0.0
0.02	83	0.18	23.97	0.479	11.47	1.5
0.03	83	0.26	23.97	0.484	11.61	2.3
0.18	83	1.58	23.97	0.572	13.71	11.5
0.48	83	4.20	23.96	0.747	17.91	23.5
0.87	83	7.60	23.95	0.975	23.36	32.6
1.37	83	11.85	23.94	1.262	30.20	39.2
1.99	83	17.20	23.93	1.624	38.86	44.3
2.70	82	23.27	23.91	2.039	48.75	47.7
3.43	82	29.38	23.89	2.480	58.78	50.0
4.31	82	36.78	23.88	2.974	71.01	51.8
5.22	81	44.36	23.86	3.506	83.64	53.0
6.22	81	52.51	23.83	4.085	97.35	53.9
7.32	80	61.45	23.81	4.728	112.56	54.8
8.46	80	70.51	23.78	5.388	128.15	55.0
9.69	79	80.23	23.76	6.107	145.09	55.3
10.93	78	89.81	23.73	6.826	161.98	55.4
12.27	78	100.08	23.70	7.609	180.34	55.5
13.65	77	110.40	23.67	8.410	199.07	55.5
15.02	77	120.46	23.64	9.205	217.61	55.4
16.45	76	130.84	23.61	10.041	237.05	55.2
17.91	75	141.17	23.58	10.888	256.71	55.0
19.37	75	151.37	23.55	11.742	276.46	54.8
20.92	74	161.90	23.51	12.642	297.22	54.5
22.48	73	172.26	23.48	13.548	318.06	54.2

Audit:

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	1.3
	Stress	KN	1.3
Radial Load		KN	1.5
Inertia		Kg.cm ²	0.3
Encoder Type & Interface		-	Dual Encoder ABS-17BIT [Input] / 18BIT [Output]
Repeat Position Accuracy		Degree	< 0.01
Communication		-	CAN BUS & EtherCAT
Weight		kg	0.36
Insulation Grade		-	F

STALL TORQUE DATA

X4-36	Torque (N.m)	Temperature rise (°C)	Stall time (s)	Phase current (Arms)
	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 V4

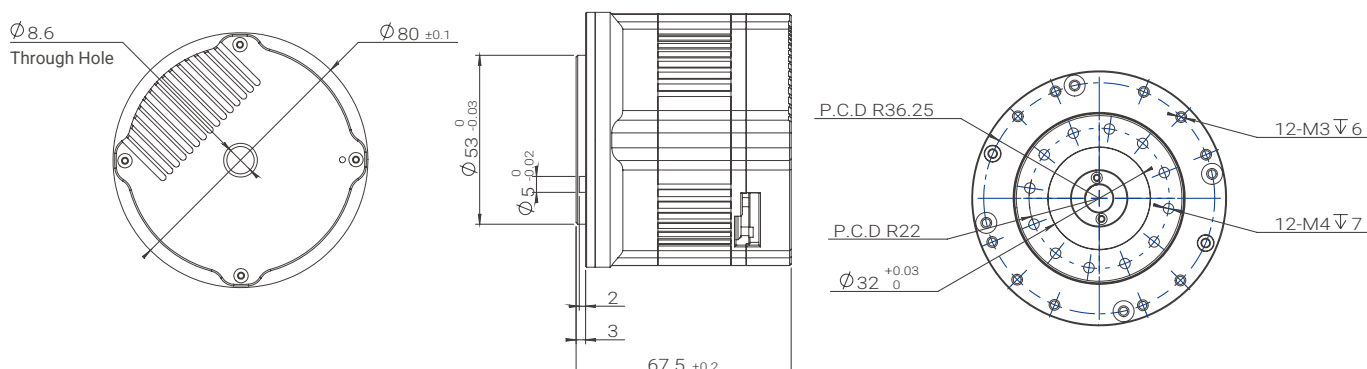
Motor Simplified Name
X6-60



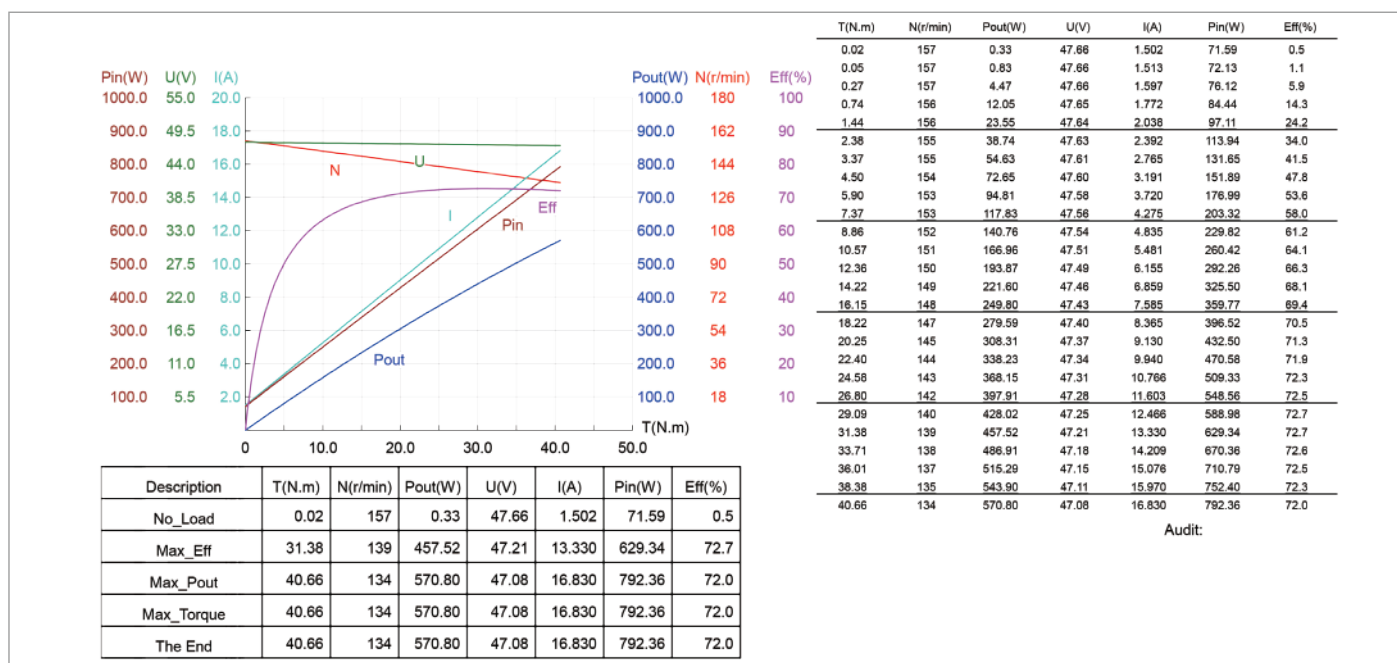
DUAL ENCODER

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

INSTALLATION DRAWING



TORQUE PERFORMANCE CURVE



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]
Repeat Position Accuracy		Degree	< 0.01
Communication		-	CAN BUS & EtherCAT
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 V4

Motor Simplified Name
X8-32



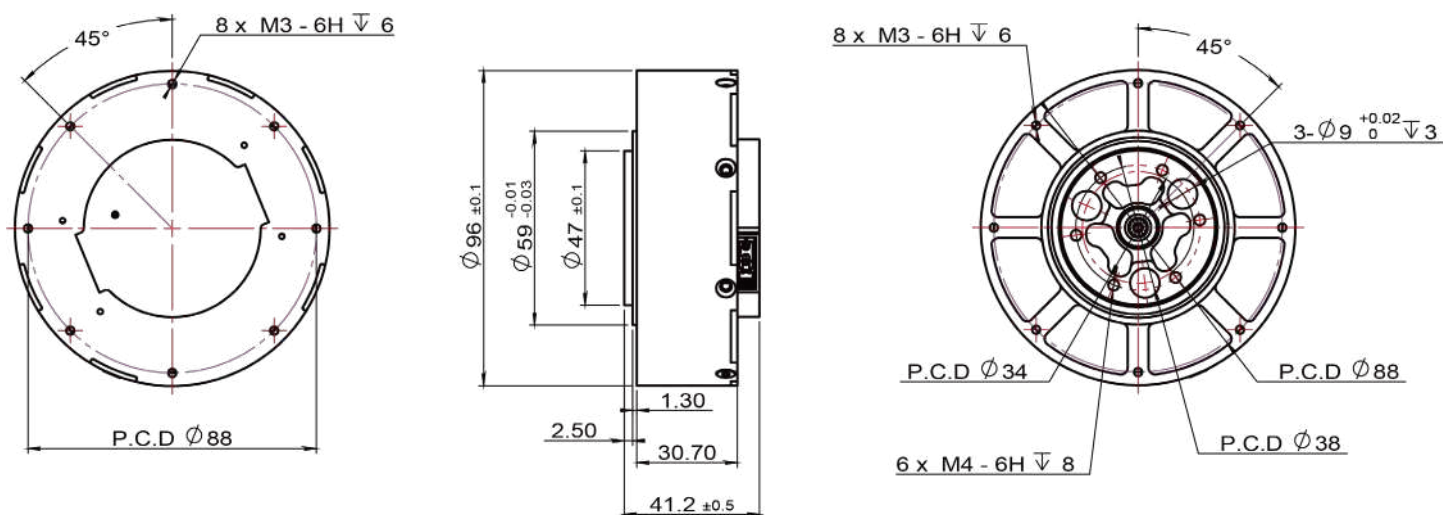
*Replacement product for discontinued model [V3 Series: X8-20]

■ SINGLE ENCODER

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

Note: The X8-32 model in the V4 series does not support EtherCAT communication.
This model is equipped with a single encoder.

■ 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
Motor Phase Resistance		Ω	0.13
Motor Phase Inductance		mH	0.081
Pole Pair		-	21
3 Phase Connection		-	Δ
Back Drive Torque		N.m	0.8
Backlash		Arcmin	8
Output Bearing Type		-	Deep Groove Ball Bearings
Axial Load	Suffer	KN	0.6
	Stress	KN	0.6
Radial Load		KN	2
Inertia		Kg.cm²	1.43
Encoder Type & Interface		-	Single Encoder ABS-18BIT
Repeat Position 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 V4

Motor Simplified Name

X8-120



DUAL ENCODER

Actuator Full Name

RMD-X8-P20-120-E

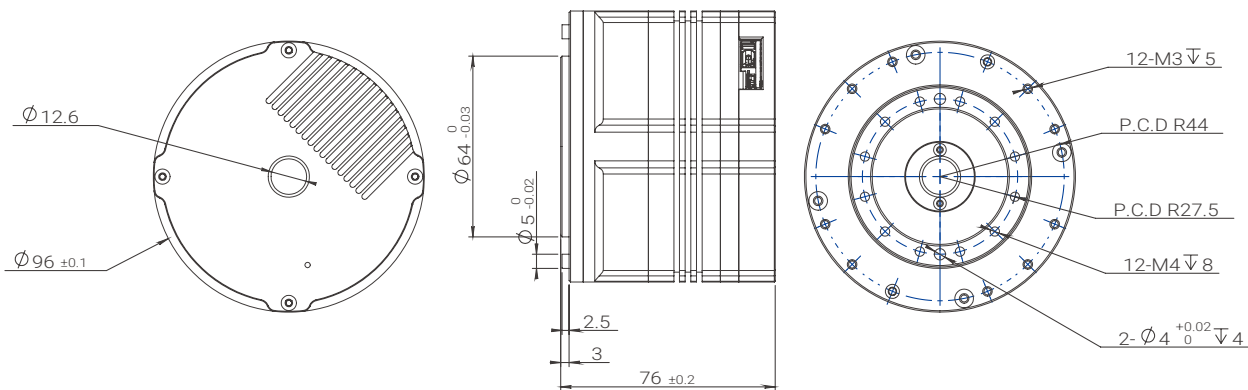
With Brake / Without Brake

N (without brake)

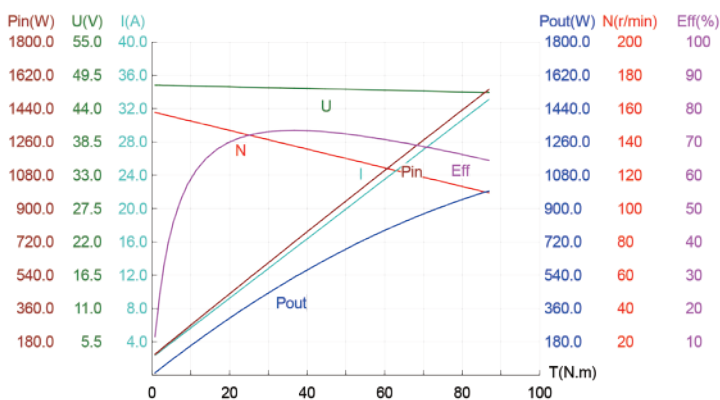
Communication

CAN BUS & EtherCAT

INSTALLATION DRAWING



TORQUE PERFORMANCE CURVE



Description	T(N.m)	N(r/min)	Pout(W)	U(V)	I(A)	Pin(W)	Eff(%)
No_Load	0.8	158	13.18	47.88	2.385	114.22	11.5
Max_Eff	36.7	138	528.92	47.37	15.200	720.04	73.5
Max_Pout	86.9	109	995.43	46.66	33.105	1544.58	64.4
Max_Torque	86.9	109	995.43	46.66	33.105	1544.58	64.4
The End	86.9	109	995.43	46.66	33.105	1544.58	64.4

T(N.m)	N(r/min)	Pout(W)	U(V)	I(A)	Pin(W)	Eff(%)
0.8	158	13.18	47.88	2.385	114.22	11.5
0.8	158	13.18	47.88	2.385	114.22	11.5
1.0	158	16.47	47.88	2.457	117.62	14.0
1.4	157	23.02	47.87	2.599	124.43	18.5
2.0	157	32.82	47.86	2.813	134.83	24.4
3.0	156	49.05	47.85	3.169	151.62	32.4
4.1	156	66.78	47.84	3.560	170.30	39.2
5.5	155	89.13	47.82	4.058	194.06	45.9
7.3	154	117.53	47.79	4.899	224.57	52.3
9.2	153	147.09	47.76	5.376	256.75	57.3
11.5	152	182.32	47.73	6.194	295.65	61.7
14.0	150	219.91	47.69	7.084	337.88	65.1
16.8	149	261.13	47.65	8.081	385.09	67.8
19.7	147	302.87	47.61	9.113	433.91	69.8
22.7	145	345.00	47.57	10.181	484.32	71.2
26.0	144	391.48	47.52	11.391	541.35	72.3
29.4	142	436.61	47.47	12.602	598.26	73.0
33.1	140	484.18	47.42	13.919	660.05	73.4
36.7	138	528.92	47.37	15.200	720.04	73.5
40.7	135	576.86	47.31	16.624	786.55	73.3
44.7	133	622.93	47.26	18.048	852.89	73.0
48.7	131	667.12	47.20	19.472	919.07	72.6
52.8	129	710.47	47.14	20.931	986.74	72.0
56.9	126	751.86	47.08	22.391	1054.24	71.3
61.2	124	793.15	47.02	23.921	1124.85	70.5
65.4	121	831.39	46.96	25.416	1193.64	69.7
69.8	119	869.23	46.90	26.982	1265.51	68.7
74.0	117	903.24	46.84	28.478	1333.93	67.7
78.3	114	936.66	46.78	30.044	1405.42	66.6
82.7	112	967.81	46.72	31.610	1476.71	65.5
86.9	109	995.43	46.66	33.105	1544.58	64.4

Audit:

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	4
	Stress	KN	1
Radial Load		KN	4.5
Inertia		Kg.cm ²	1.5
Encoder Type & Interface		-	Dual Encoder ABS-17BIT [Input] / 17BIT [Output]
Repeat Position Accuracy		Degree	< 0.01
Communication		-	CAN BUS & EtherCAT
Weight		kg	1.4
Insulation Grade		-	F

STALL TORQUE DATA

X8-120	Torque (N.m)	Temperature rise (°C)	Stall time (s)	Phase current (Arms)
	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 V4

Motor Simplified Name

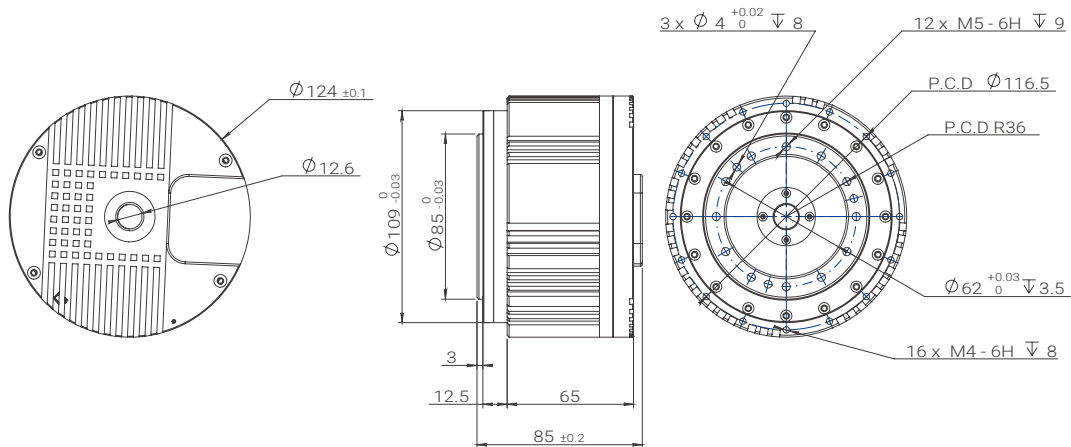
X12-320



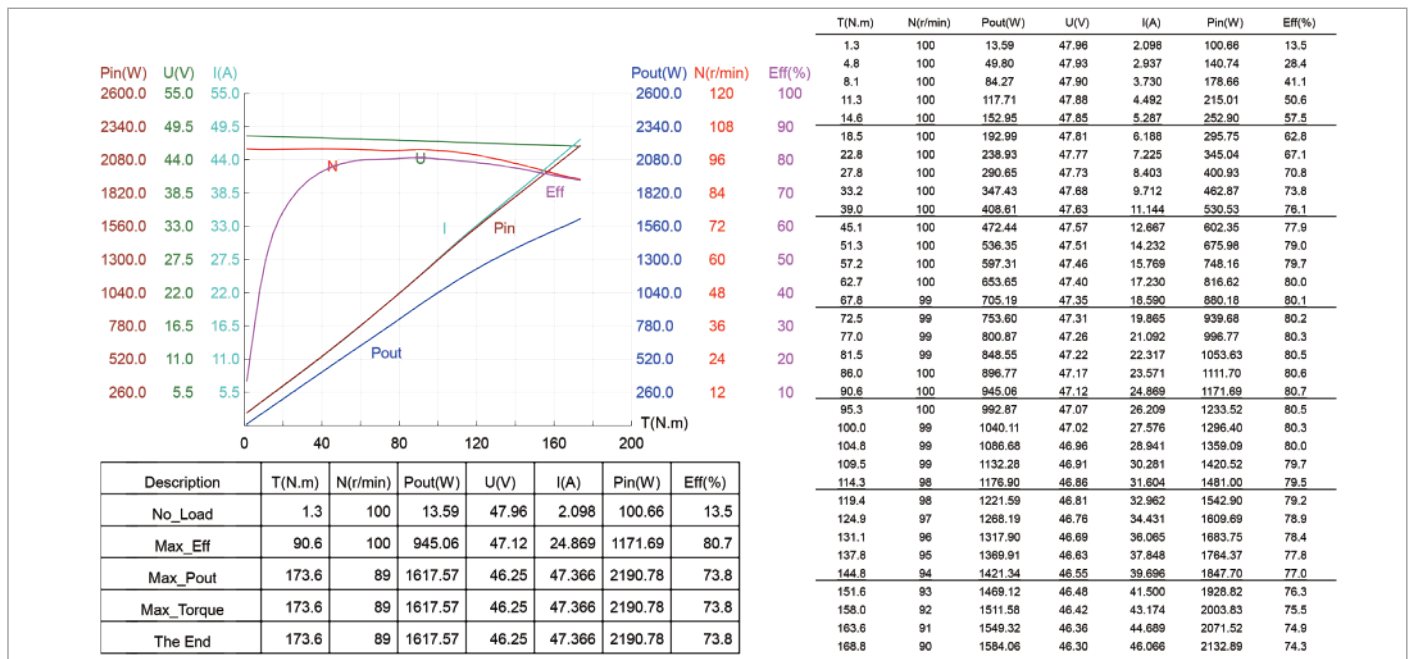
DUAL ENCODER

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

INSTALLATION DRAWING



TORQUE PERFORMANCE CURVE



PRODUCT PARAMETERS

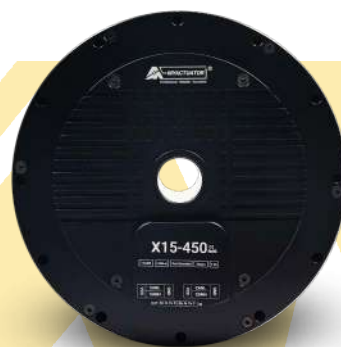
Parameters	Unit	X12-320
Gear Ratio	-	20
Input Voltage	V	48
No Load Speed	RPM	125
No Load Input Current	A	2.7
Rated Speed	RPM	100
Rated Torque	N.m	85
Rated Output Power	W	900
Rated Phase Current	A (rms)	30
Peak Torque	N.m	320
Peak Phase Current	A (rms)	100
Efficiency	%	75
Motor Back-EMF Constant	Vdc/Krpm	17.9
Module Torque Constant	N.m/A	3.3
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 ²	12.9
Encoder Type & Interface	-	Dual Encoder ABS-17BIT [Input] / 17BIT [Output]
Repeat Position Accuracy	Degree	< 0.01
Communication	-	CAN BUS & EtherCAT
Weight	kg	2.37
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 V4

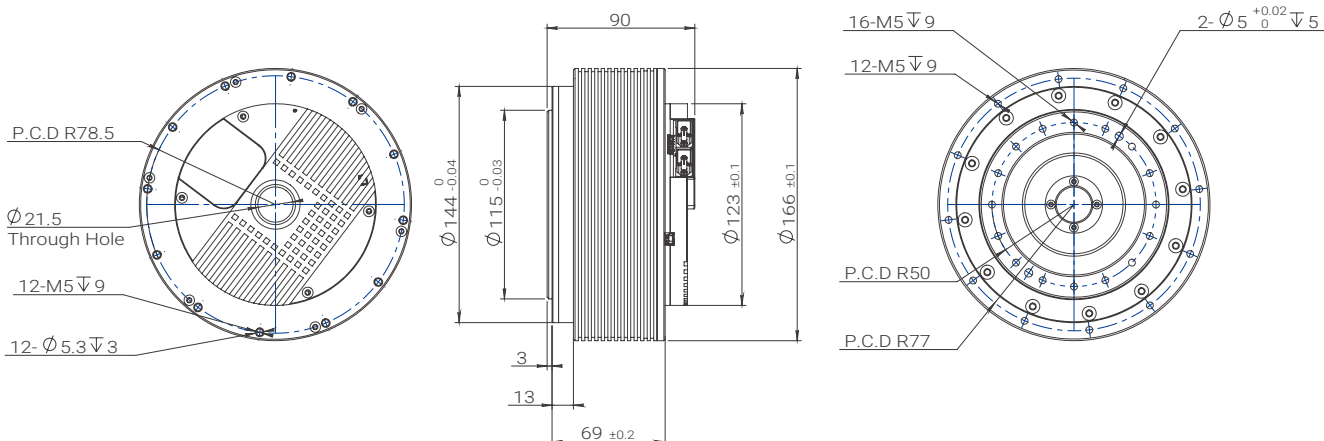
Motor Simplified Name
X15-450



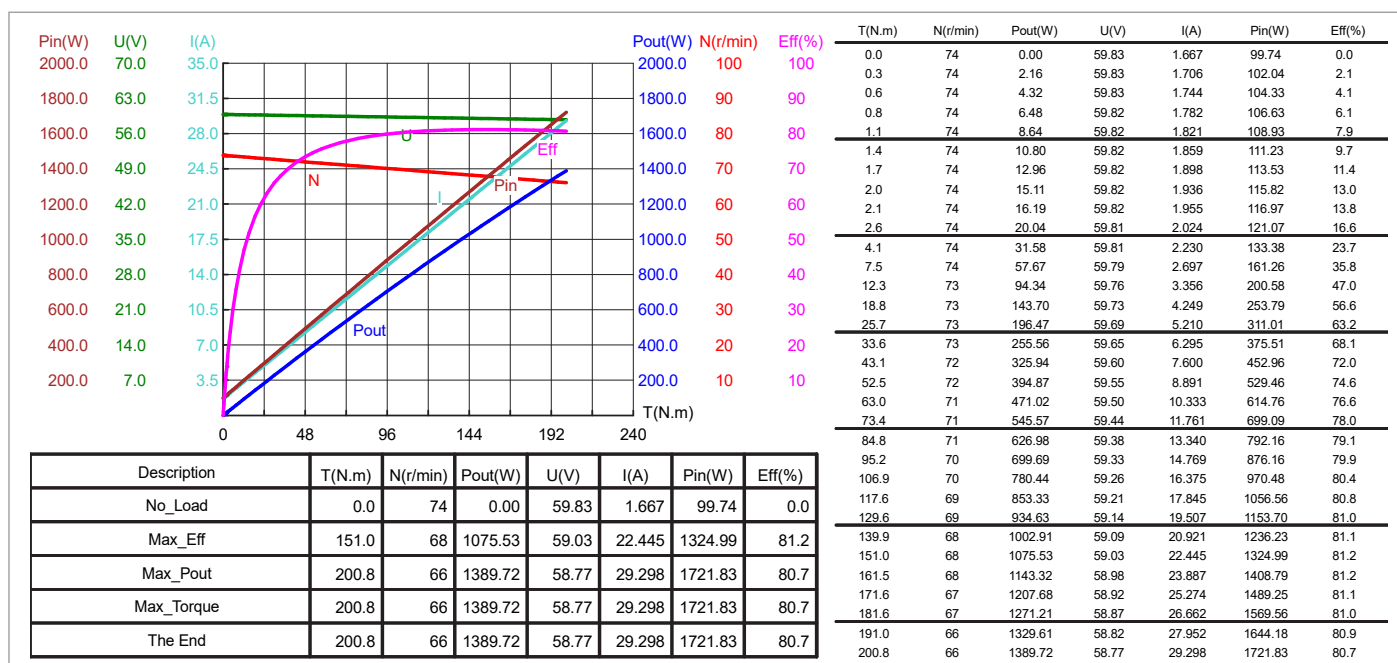
DUAL ENCODER

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

INSTALLATION DRAWING



TORQUE PERFORMANCE CURVE



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.cm ²	31.6
Encoder Type & Interface		-	Dual Encoder ABS-17BIT [Input] / 17BIT [Output]
Repeat Position Accuracy		Degree	< 0.01
Communication		-	CAN BUS & EtherCAT
Weight		kg	3.5
Insulation Grade		-	F

STALL TORQUE DATA

X15-450	Torque (N.m)	Temperature rise (°C)	Stall time (s)	Phase current (Arms)
	217.5	15	15	31.1
	290	15	10	41
	362.5	20	8	51.6
	435	25	5	67.2

RMD-X Series

INTEGRATION PLANETARY ACTUATORS

SMALL SIZE | LIGHT WEIGHT | HIGH INTEGRATION

RMD-X V2



RMD-X V3



RMD-X V4



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.



Products widely used

Widely Used In Humanoid Robot/Legged Robots/Robot Arm/SCARA/AGV/AMR etc.



Robotic Arm



Humanoid Robot



Exoskeleton Robot



Quadruped Robot



AGV Smart Car



ARU Robot

RMD-X Series Part Number Construction

RMD-X4-P6-3-C-N

① ② ③ ④ ⑤ ⑥

- 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 Ratio e.g:P6 P7 P8 etc
- ④ Peak Torque 3N.m
- ⑤ Communication C: CAN bus R: RS485
- ⑥ N: Without Brake

For example

Model	RMD-X6-P6-7-C-N
Illustrate	RMD : Brand Name X6 : Motor model name P6 : Planetary gear ratio 6:1 7 : Peak torque C : Communication C: CAN bus N : Without Brake

Series Name
RMD-X V3

Previous Name
RMD-X6 1:8 V3

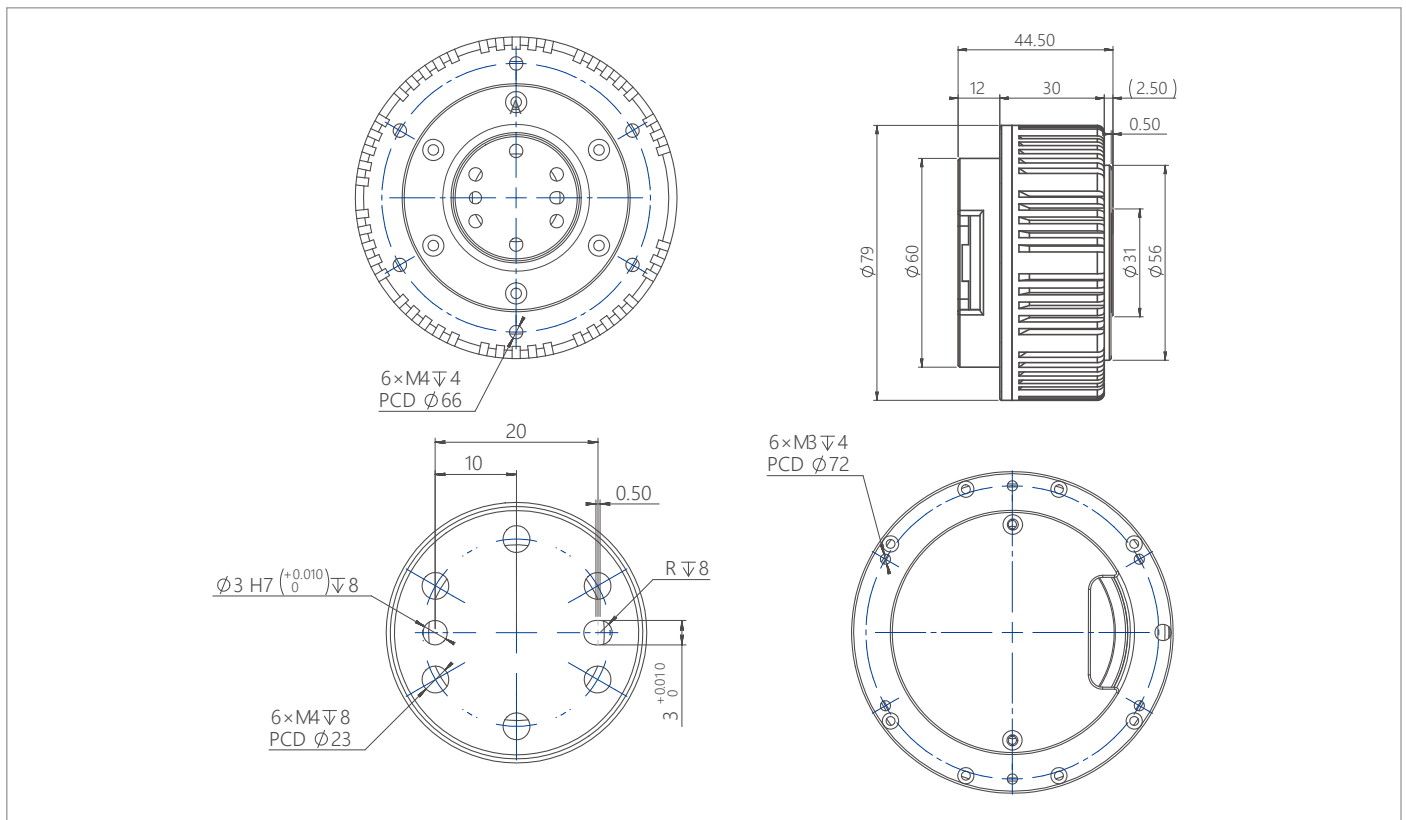
Motor Simplified Name
X6-8



DUAL ENCODER

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

INSTALLATION DRAWING



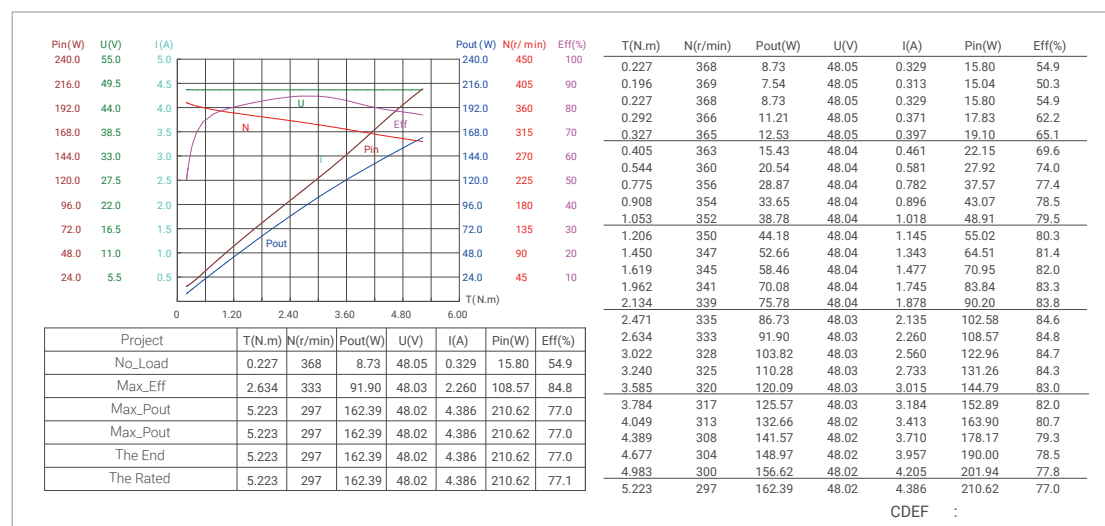
STALL TORQUE DATA

	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

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	0.85
	Stress	KN	0.775
Radial Load		KN	1.04
Inertia		Kg.cm²	0.61
Encoder Type & Interface		-	Dual Encoder ABS-17BIT [Input] / 18BIT [Output]
Repeat Position Accuracy		Degree	< 0.01
Communication		-	CAN BUS
Weight		kg	0.49
Insulation Grade		-	F

TORQUE PERFORMANCE CURVE



Series Name
RMD-X V3

Previous Name
RMD-X8 S2 1:36 V3

Motor Simplified Name
X8-60

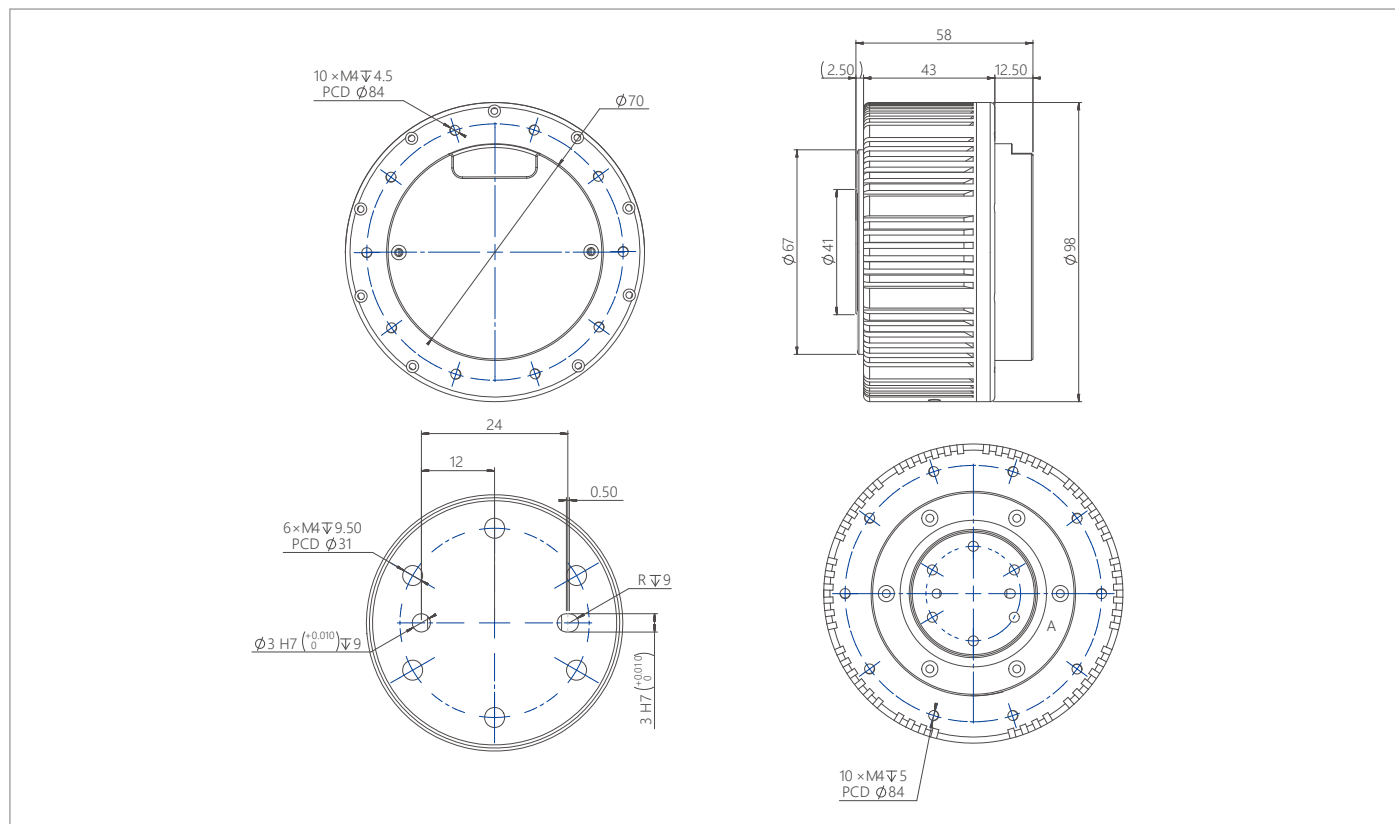


DUAL ENCODER

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)

- * 1. The standard motor doesn't support brake, support customization.
- * 2. The standard motor doesn't support IP54, support customization.
- * 3. The standard motor support CAN BUS and RS485.

INSTALLATION DRAWING

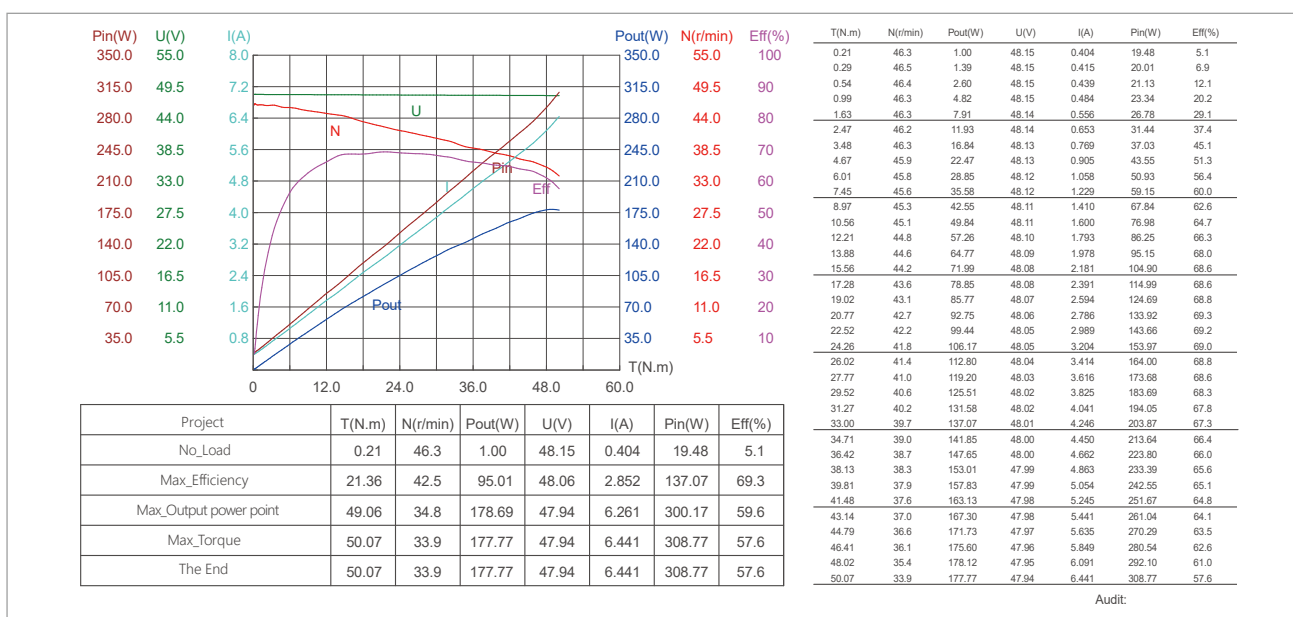


PRODUCT PARAMETERS

Item Name	Unit	X8-60
Gear Ratio	-	36
Input Voltage	V	48
Rated Speed	RPM	40
Rated Torque	N.m	30
Rated Power	W	130
Rated Current	A	4
Peak Torque	N.m	60
Peak Current	A	8
Efficiency	%	69
Pole Pair	-	20
Anti-Force Torque	N.m	1
Backlash	Arcmin	15
Axial Payload	N	985
Radial Payload	N	1250
Inertia	Kg.cm ²	96
Encoder Type	bit	14 / 14
Communication	-	CAN : 1M RS485 : 115200 / 500K / 1M / 2.5M
Weight	kg	0.9

*Rated torque test method When the ambient temperature is 24 degrees Celsius (no other heat 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:

Series Name

RMD-X V3

Previous Name

RMD-X10 1:7 V3

Motor Simplified Name

X10-40

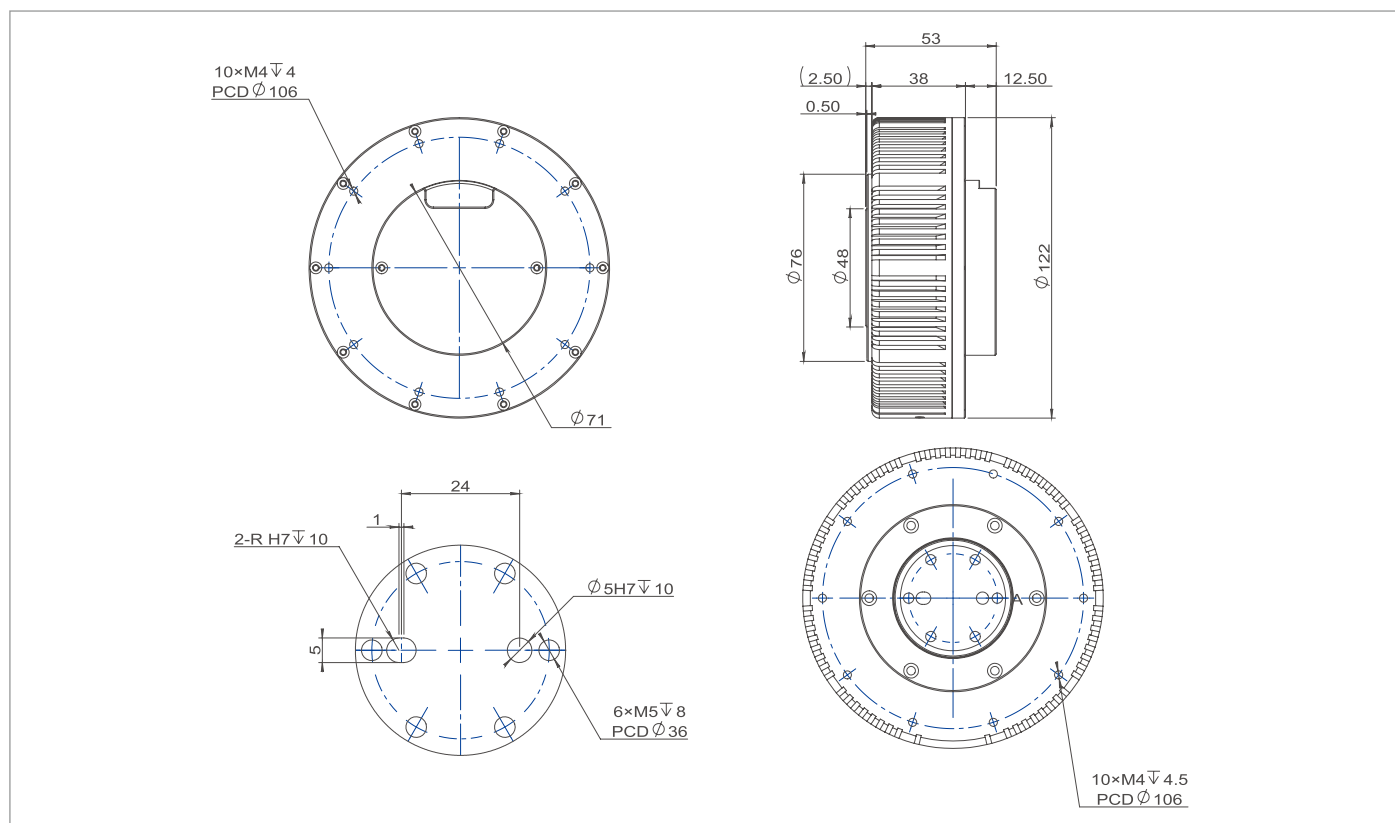


DUAL ENCODER

Actuator Full Name	Product Code	With Brake / Without Brake
RMD-X10-P7-40-R-N	1102040070230200	N (without brake)
RMD-X10-P7-40-C-N	1102040070130200	N (without brake)

- * 1. The standard motor doesn't support brake, support customization.
- * 2. The standard motor doesn't support IP54, support customization.
- * 3. The standard motor support CAN BUS and RS485.

INSTALLATION DRAWING

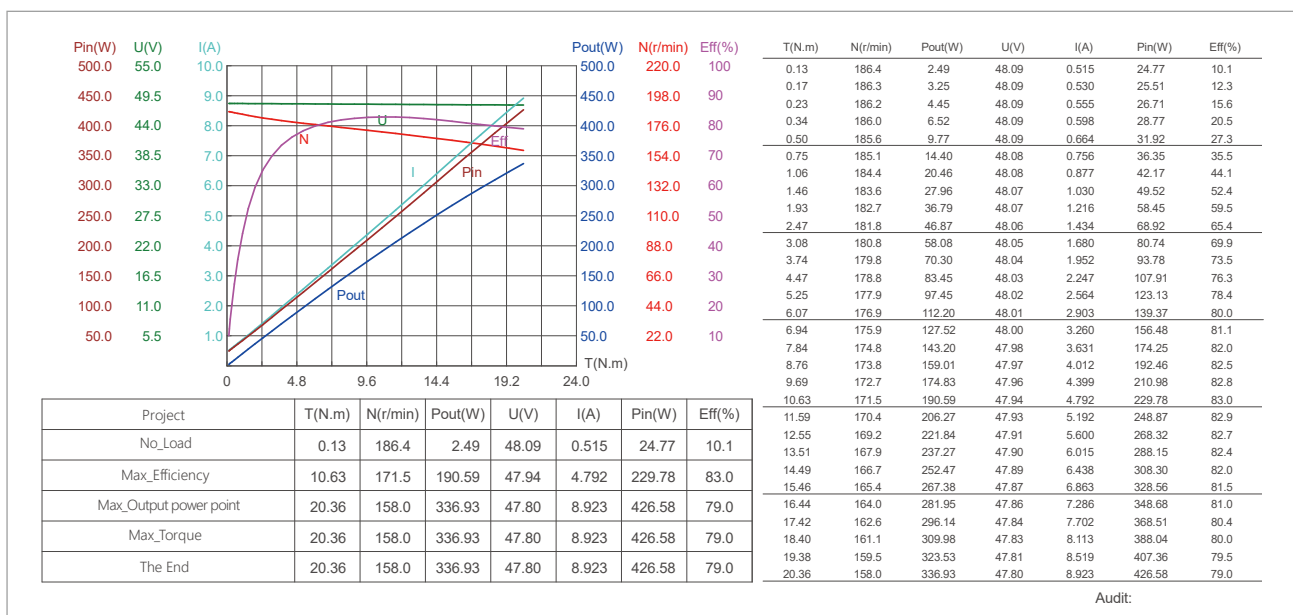


PRODUCT PARAMETERS

Item Name	Unit	X10-40
Gear Ratio	-	7
Input Voltage	V	48
Rated Speed	RPM	165
Rated Torque	N.m	15
Rated Power	W	265
Rated Current	A	6.5
Peak Torque	N.m	40
Peak Current	A	15
Efficiency	%	82
Pole Pair	-	21
Anti-Force Torque	N.m	0.62
Backlash	Arcmin	10
Axial Payload	N	1625
Radial Payload	N	2250
Inertia	Kg.cm ²	39.7
Encoder Type	bit	14 / 14
Communication	-	CAN : 1M RS485 : 115200 / 500K / 1M / 2.5M
Weight	kg	1.15

*Rated torque test method When the ambient temperature is 24 degrees Celsius (no other heat 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:

RMD-X V3

Previous Name

RMD-X10 S2 1:35 V3

Motor Simplified Name

X10-100

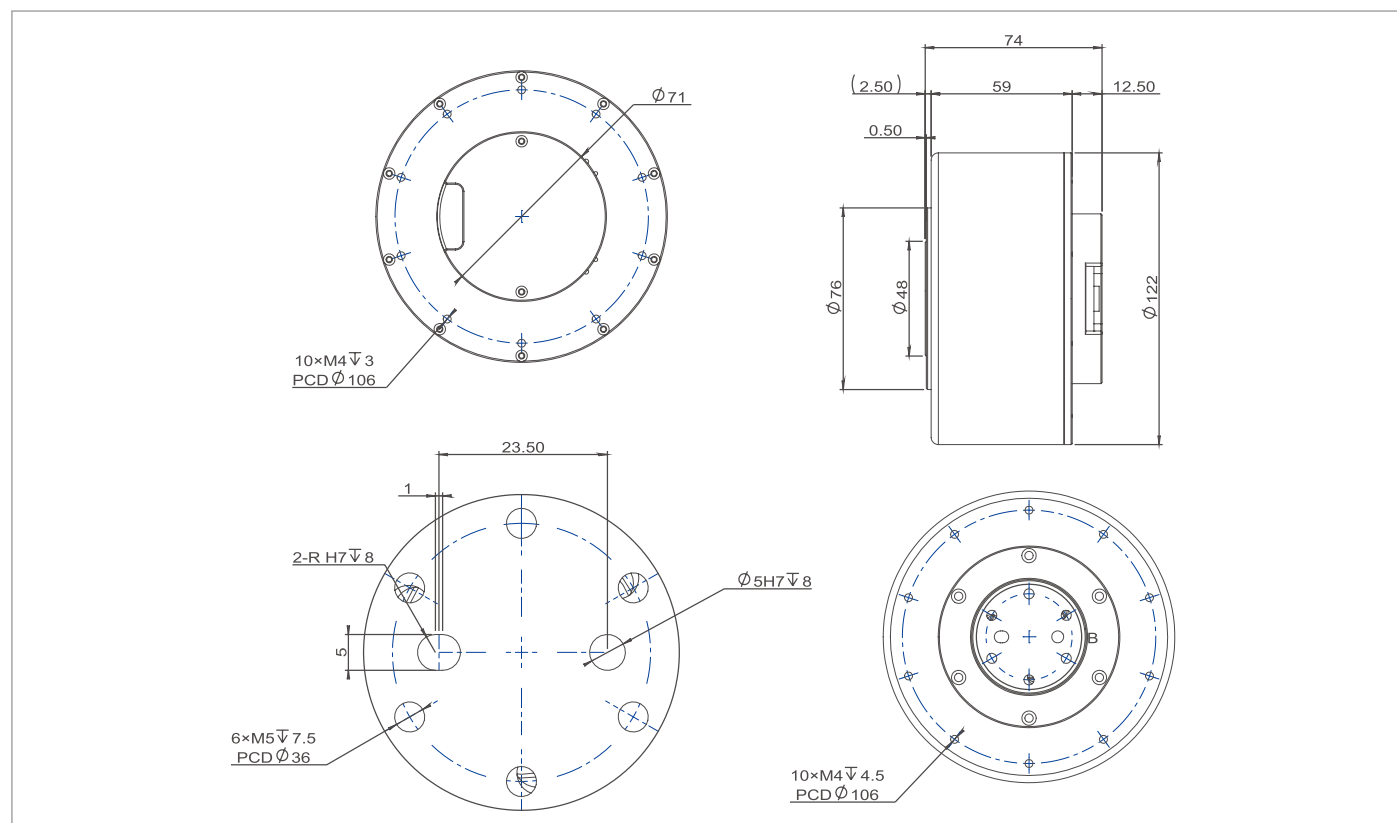


■ DUAL ENCODER

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)

- * 1. The standard motor doesn't support brake, support customization.
- * 2. The standard motor doesn't support IP54, support customization.
- * 3. The standard motor support CAN BUS and RS485.

■ INSTALLATION DRAWING

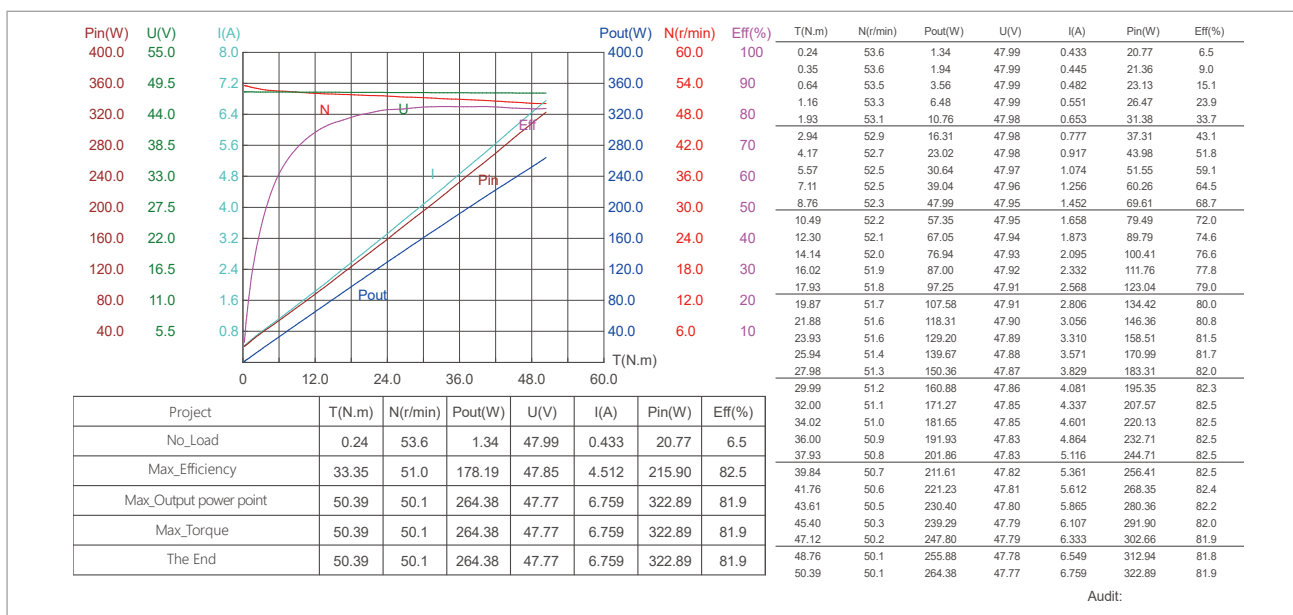


PRODUCT PARAMETERS

Item Name	Unit	X10-100
Gear Ratio	-	35
Input Voltage	V	48
Rated Speed	RPM	50
Rated Torque	N.m	50
Rated Power	W	265
Rated Current	A	6.7
Peak Torque	N.m	100
Peak Current	A	13.5
Efficiency	%	82
Pole Pair	-	21
Anti-Force Torque	N.m	2.88
Backlash	Arcmin	15
Axial Payload	N	1625
Radial Payload	N	2250
Inertia	Kg.cm ²	198.6
Encoder Type	bit	14 / 14
Communication	-	CAN : 1M RS485 : 115200 / 500K / 1M / 2.5M
Weight	kg	1.7

*Rated torque test method When the ambient temperature is 24 degrees Celsius (no other heat 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



Series Name

RMD-X V2

Previous Name

RMD-X4 1:6 V2

Motor Simplified Name

X4-3

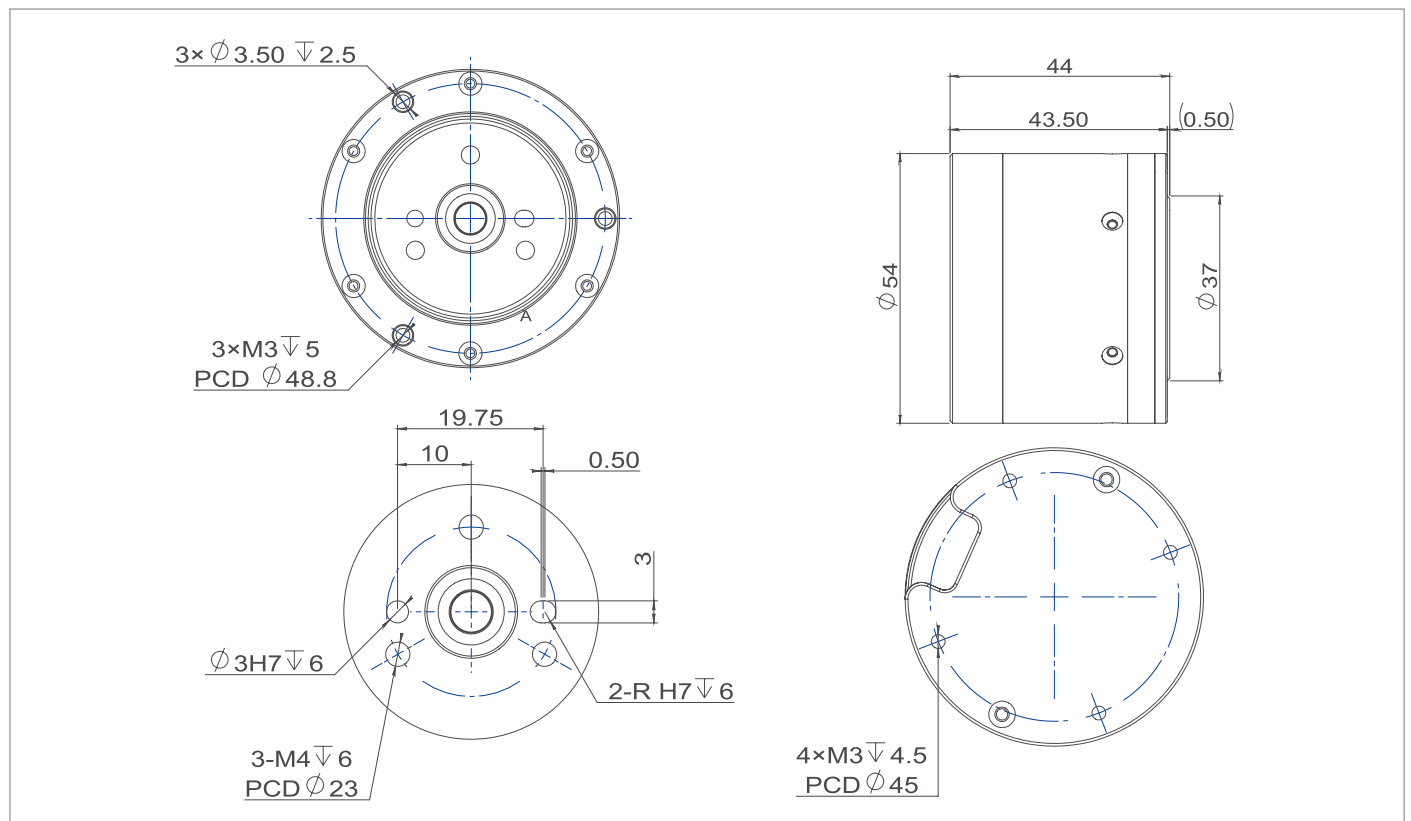


■ SINGLE ENCODER

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)

- * 1. The standard motor doesn't support brake, support customization.
- * 2. The standard motor doesn't support IP54, support customization.
- * 3. The standard motor support CAN BUS and RS485.

■ INSTALLATION DRAWING

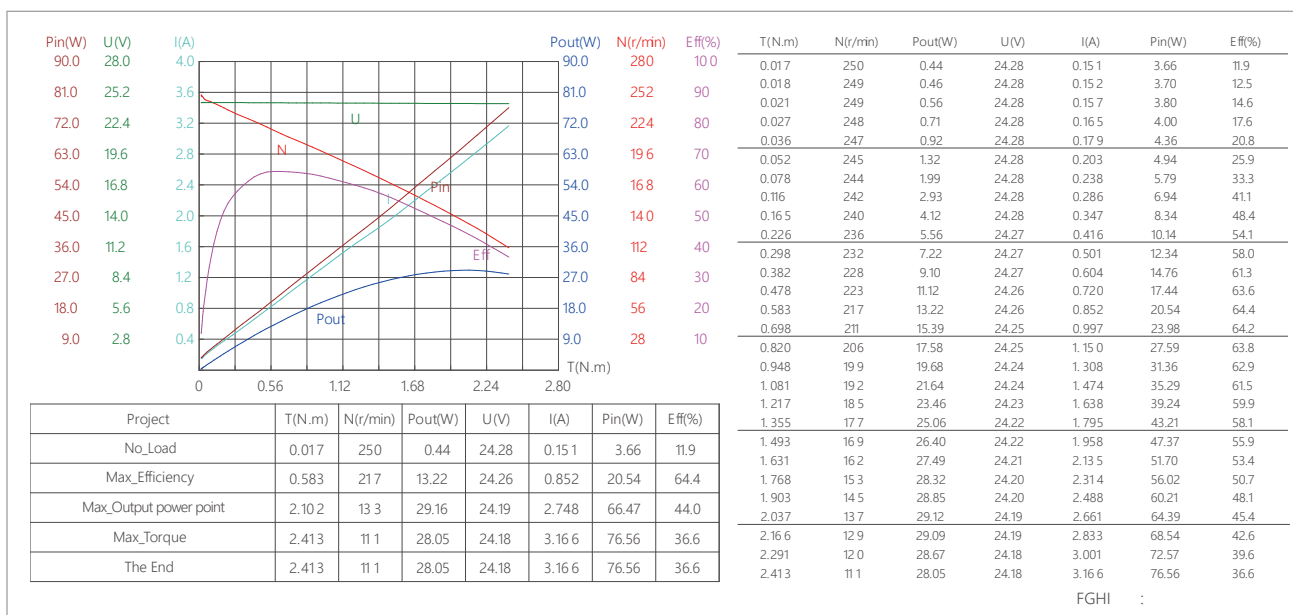


PRODUCT PARAMETERS

Item Name	Unit	X4-3
Gear Ratio	-	6
Input Voltage	V	24
Rated Speed	RPM	200
Rated Torque	N.m	1.5
Rated Power	W	30
Rated Current	A	2
Peak Torque	N.m	3
Peak Current	A	4
Efficiency	%	60
Pole Pair	-	14
Anti-Force Torque	N.m	0.06
Backlash	Arcmin	10
Axial Payload	N	300
Radial Payload	N	550
Inertia	Kg.cm ²	1.2
Encoder Type	bit	18
Communication	-	CAN : 1M RS485 : 115200 / 500K / 1M / 2.5M
Weight	kg	0.3

*Rated torque test method When the ambient temperature is 24 degrees Celsius (no other heat 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



Series Name

RMD-X V2

Previous Name

RMD-X6 1:6 V2

Motor Simplified Name

X6-7

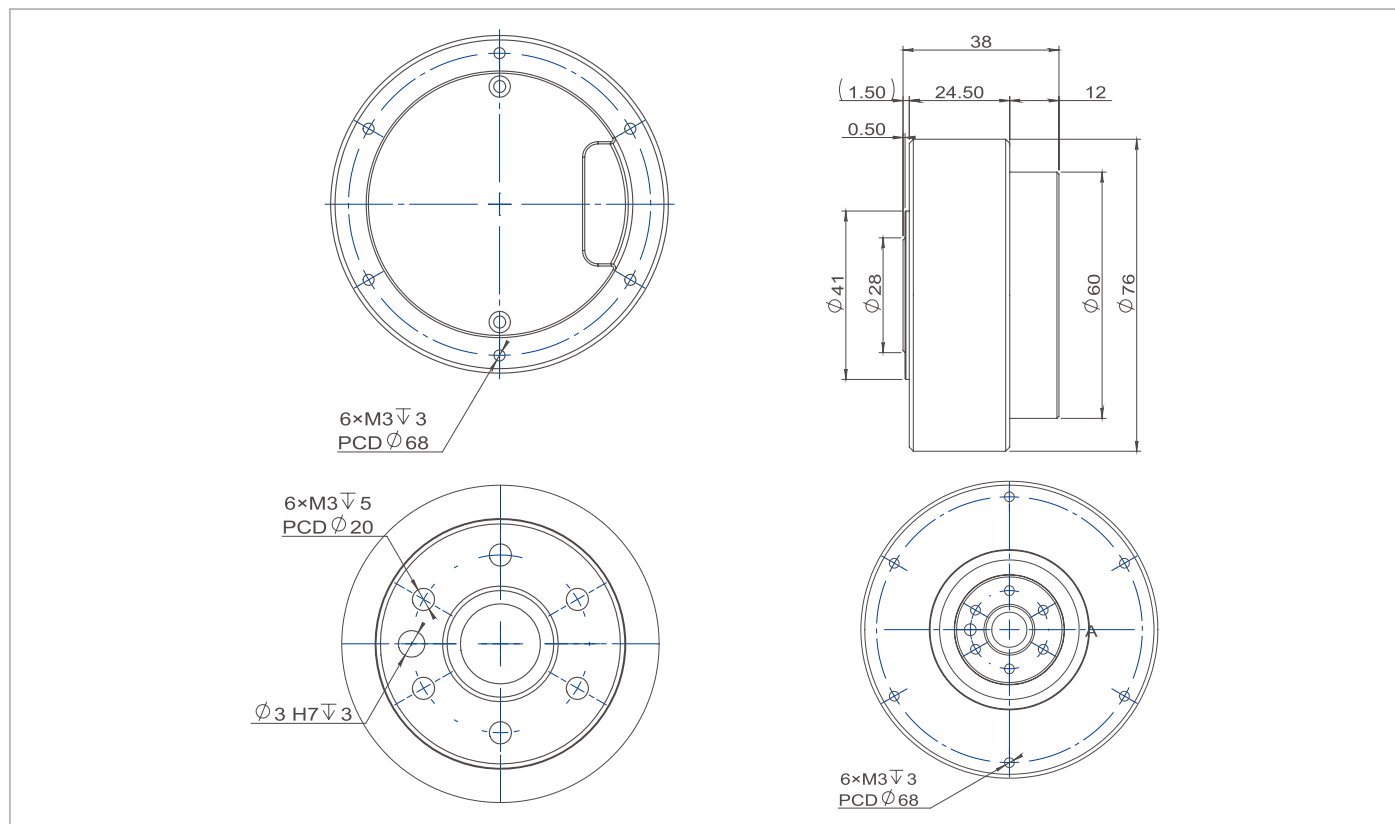


■ SINGLE ENCODER

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)

- * 1. The standard motor doesn't support brake, support customization.
- * 2. The standard motor doesn't support IP54, support customization.
- * 3. The standard motor support CAN BUS and RS485.

■ INSTALLATION DRAWING

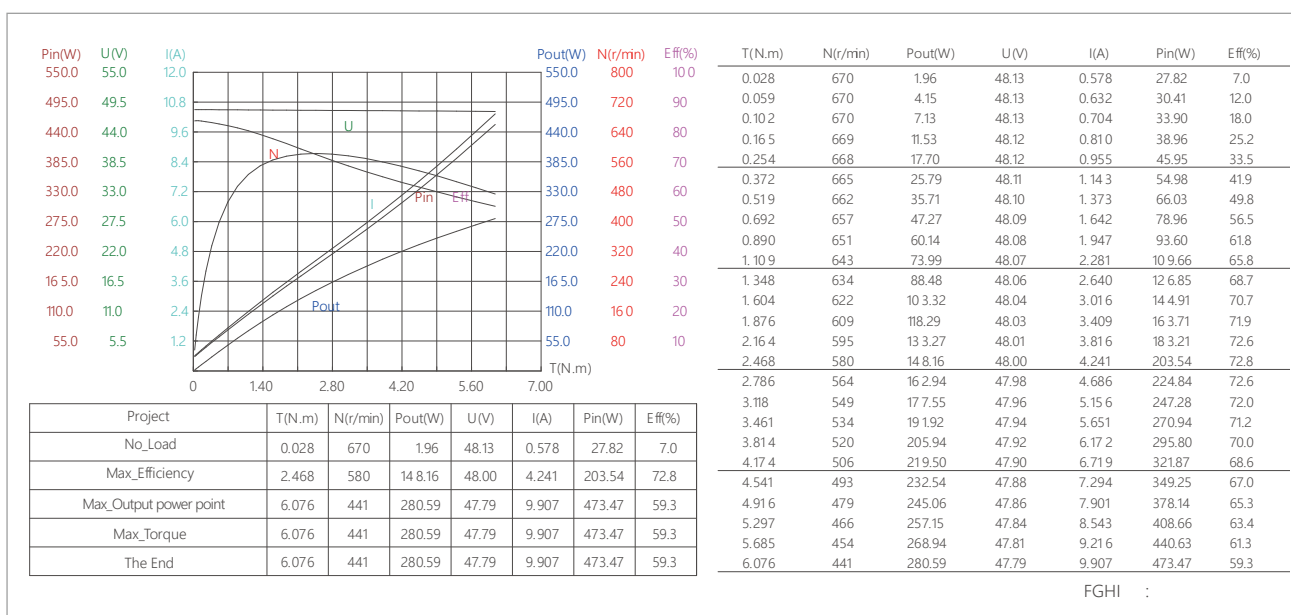


PRODUCT PARAMETERS

Item Name	Unit	X6-7
Gear Ratio	-	6
Input Voltage	V	48
Rated Speed	RPM	400
Rated Torque	N.m	3.5
Rated Power	W	150
Rated Current	A	4
Peak Torque	N.m	7
Peak Current	A	9
Efficiency	%	70
Pole Pair	-	14
Anti-Force Torque	N.m	0.08
Backlash	Arcmin	10
Axial Payload	N	775
Radial Payload	N	1250
Inertia	Kg.cm ²	4.8
Encoder Type	bit	18
Communication	-	CAN : 1M RS485 : 115200 / 500K / 1M / 2.5M
Weight	kg	0.35

*Rated torque test method When the ambient temperature is 24 degrees Celsius (no other heat 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



FGHI :

Series Name
RMD-X V2

Previous Name
RMD-X6 S2 1:36 V2

Motor Simplified Name
X6-40

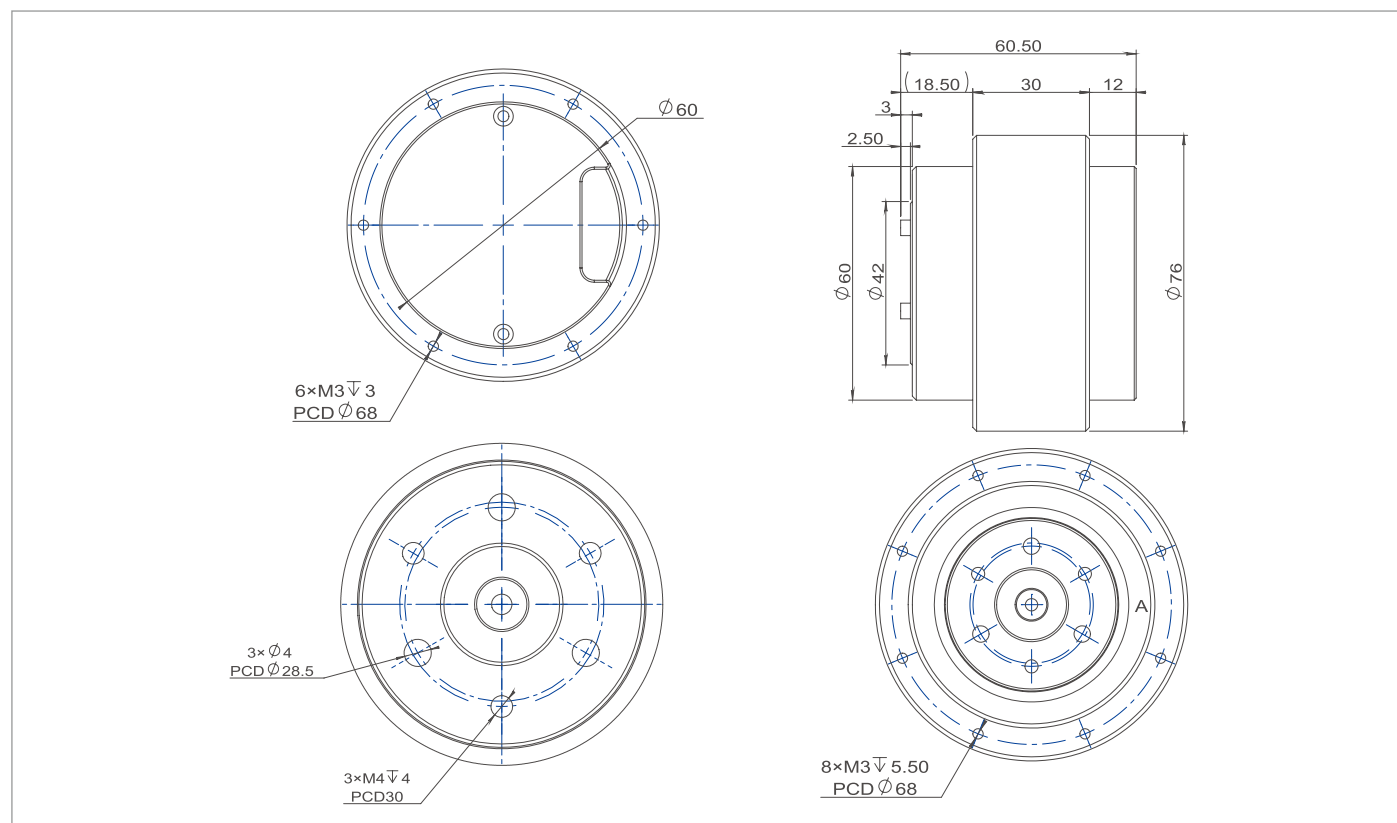


■ SINGLE ENCODER

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)

- * 1. The standard motor doesn't support brake, support customization.
- * 2. The standard motor doesn't support IP54, support customization.
- * 3. The standard motor support CAN BUS and RS485.

■ INSTALLATION DRAWING

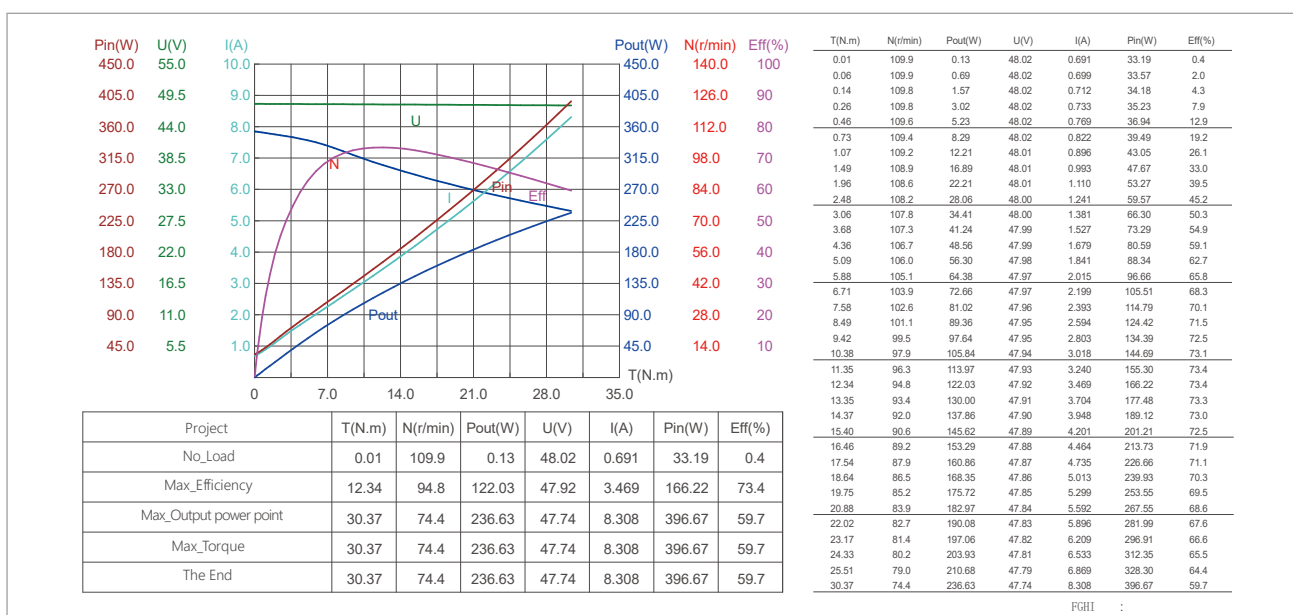


PRODUCT PARAMETERS

Item Name	Unit	X6-40
Gear Ratio	-	36
Input Voltage	V	48
Rated Speed	RPM	90
Rated Torque	N.m	18
Rated Power	W	170
Rated Current	A	5.2
Peak Torque	N.m	40
Peak Current	A	10.5
Efficiency	%	70
Pole Pair	-	14
Anti-Force Torque	N.m	0.91
Backlash	Arcmin	15
Axial Payload	N	775
Radial Payload	N	1250
Inertia	Kg.cm ²	28.8
Encoder Type	bit	18
Communication	-	CAN : 1M RS485 : 115200 / 500K / 1M / 2.5M
Weight	kg	0.59

*Rated torque test method When the ambient temperature is 24 degrees Celsius (no other heat 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



FGHI :

Series Name

RMD-X V2

Previous Name

RMD-X8 Pro 1:9 V2

Motor Simplified Name

X8-25

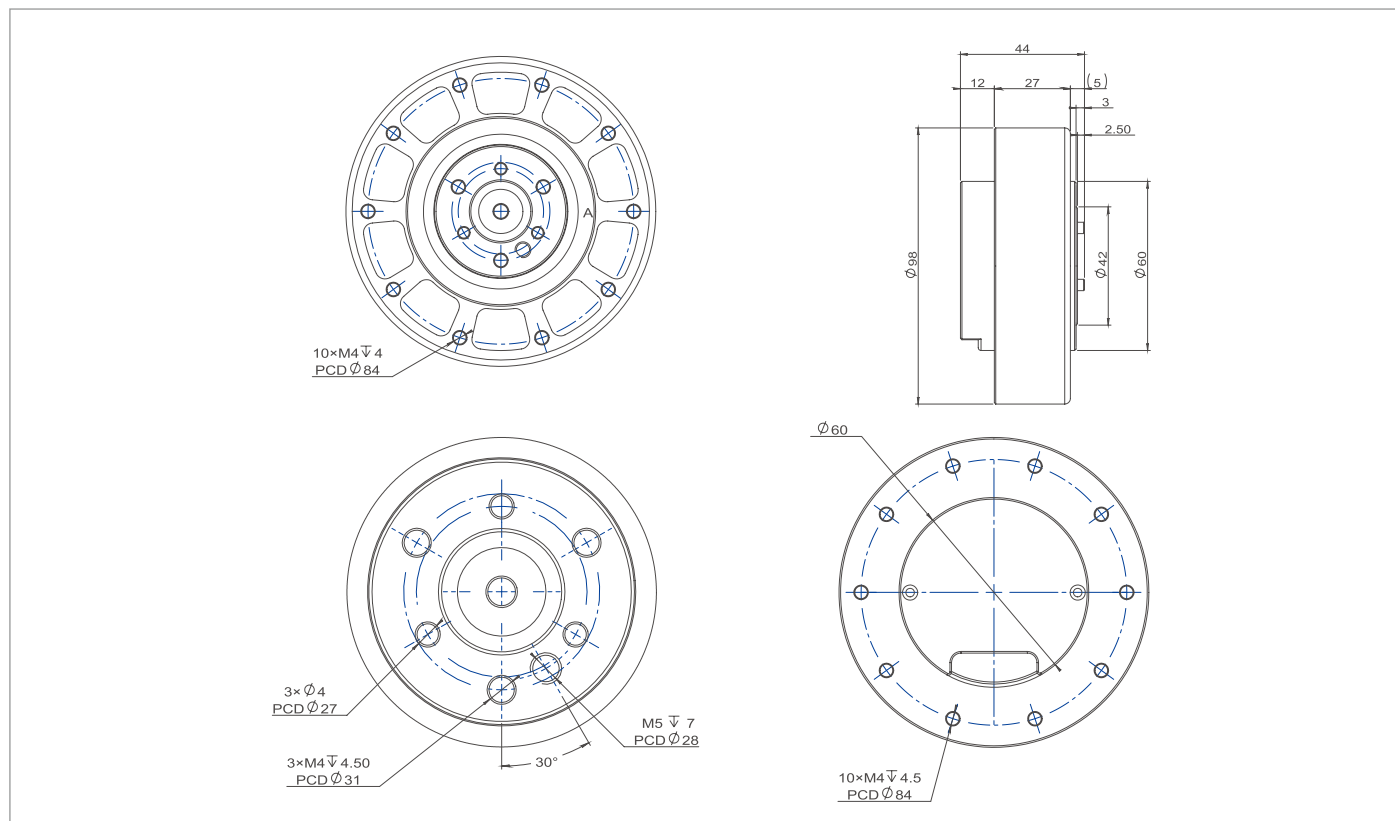


■ SINGLE ENCODER

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)

- * 1. The standard motor doesn't support brake, support customization.
- * 2. The standard motor doesn't support IP54, support customization.
- * 3. The standard motor support CAN BUS and RS485.

■ INSTALLATION DRAWING

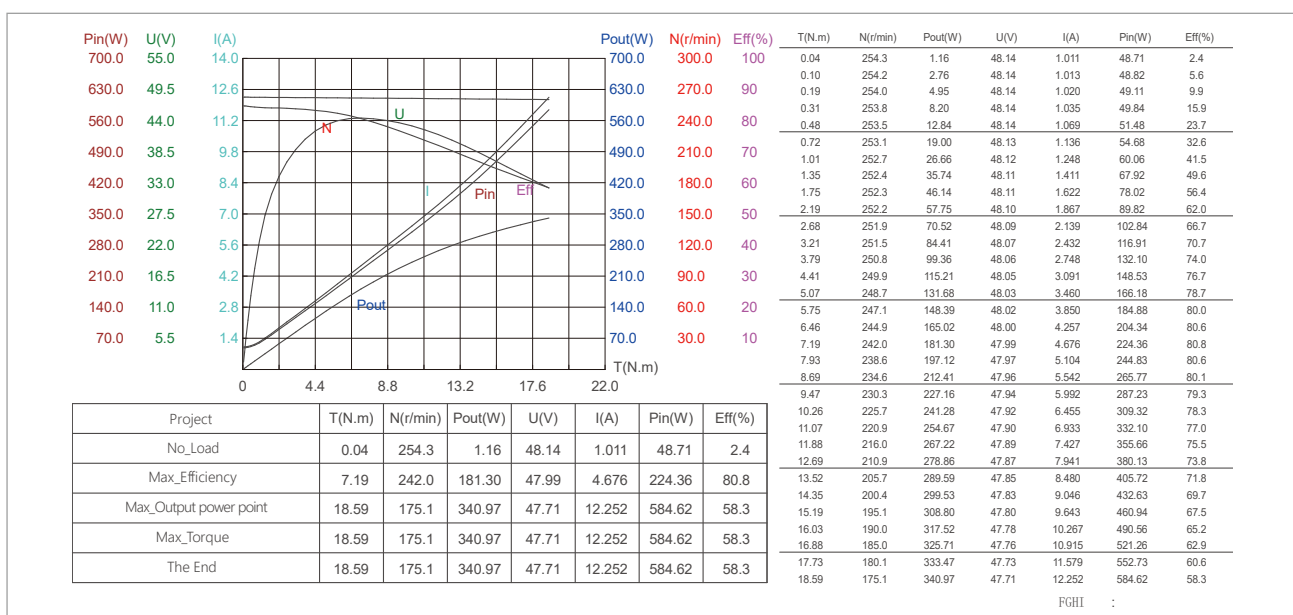


PRODUCT PARAMETERS

Item Name	Unit	X8-25
Gear Ratio	-	9
Input Voltage	V	48
Rated Speed	RPM	110
Rated Torque	N.m	10
Rated Power	W	125
Rated Current	A	3.2
Peak Torque	N.m	25
Peak Current	A	8
Efficiency	%	80
Pole Pair	-	21
Anti-Force Torque	N.m	0.61
Backlash	Arcmin	10
Axial Payload	N	985
Radial Payload	N	1250
Inertia	Kg.cm ²	30.6
Encoder Type	bit	18
Communication	-	CAN : 1M RS485 : 115200 / 500K / 1M / 2.5M
Weight	kg	0.71

*Rated torque test method When the ambient temperature is 24 degrees Celsius (no other heat 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



METICULOUSLY CRAFTED

14-bit singleturn absolute encoder

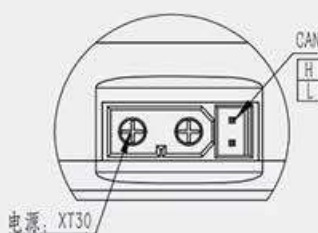
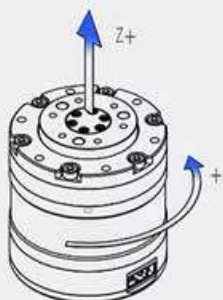
To provide you with a better experience



- **CAN bus communication**

- Configure double coding, and the zero point will not be lost after power failure

Product interface, coordinate system definition and accessory description



Facing the output shaft of the module, the counterclockwise rotation speed is positive, and the angle increases;
The clockwise rotation speed is negative and the angle decreases.



Both support a second encoder

1. The first encoder records the multiturn position, and the second encoder records the output shaft position.

2. 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.

3. Multiple protections such as over-current protection, over-temperature protection, and over voltage protection make the product safer and more secure.



Compatible with host computer software for parameter tuning /test/firmware upgrade

Support open source development platforms, such as PC/MCU/ PLC/industrial computer/Raspberry Pi

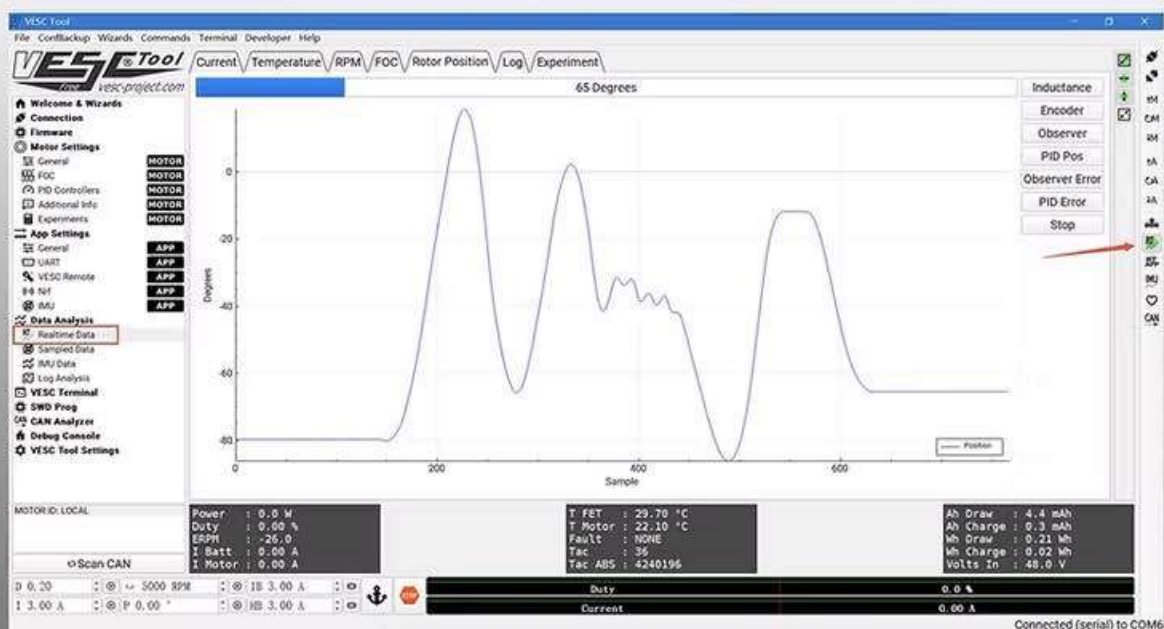
Speed control mode

Position control mode

Current control mode

Regenerative braking control

Energy consumption brake control

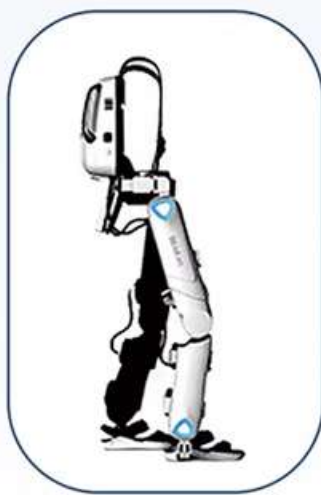


Fields of application

It is widely used in foot-type robots/robotic arms/SCARA robots, etc



Robotic arm



Exoskeleton Robot



Humanoid Robot



Quadruped Robot



AGV Smart Car



ARU Robot

Design for Bionic Robot

Series Name

RMD-X Series

Motor Simplified Name

X4-24

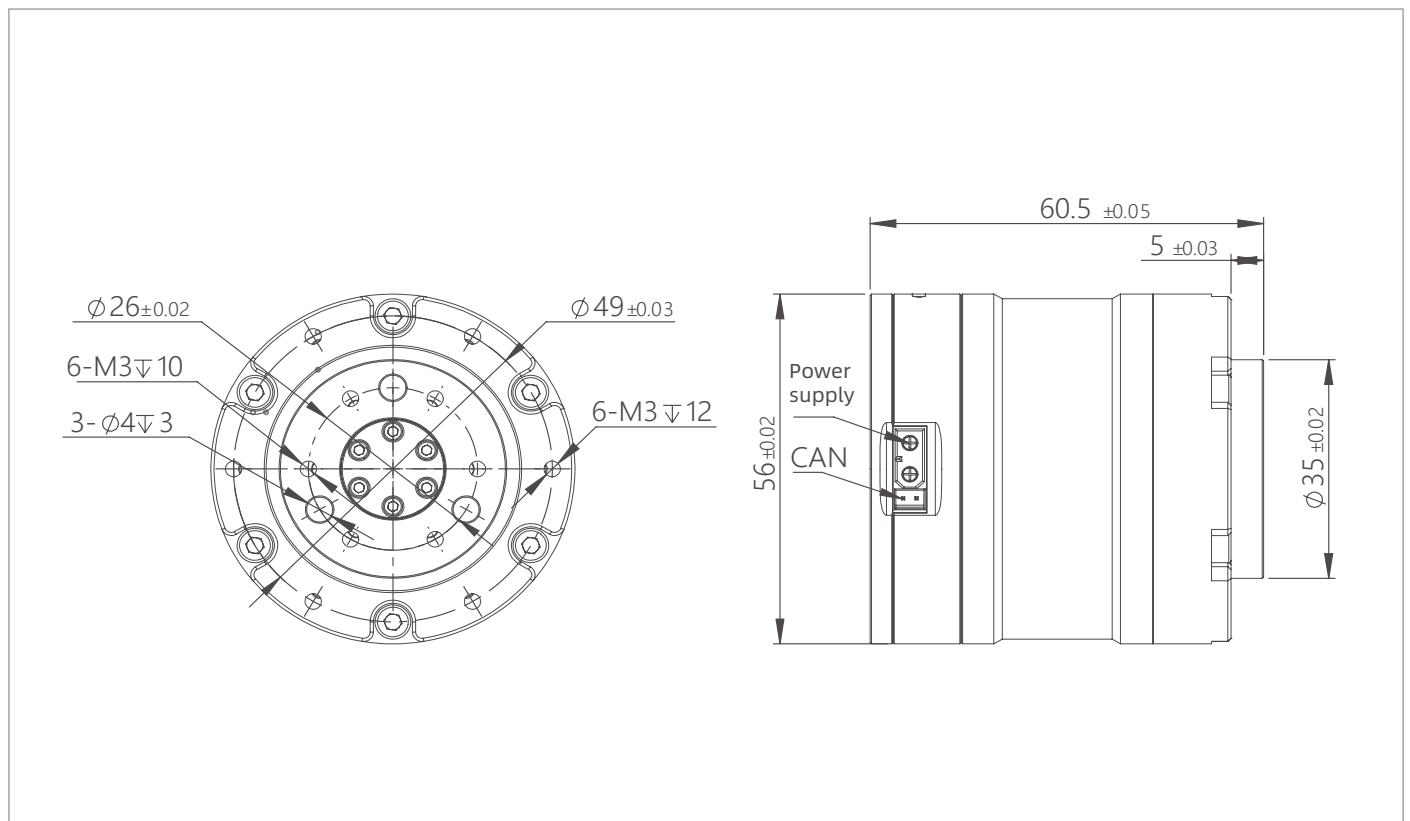


DUAL ENCODER

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

* 1. The standard motor only support CAN BUS communication.

INSTALLATION DRAWING

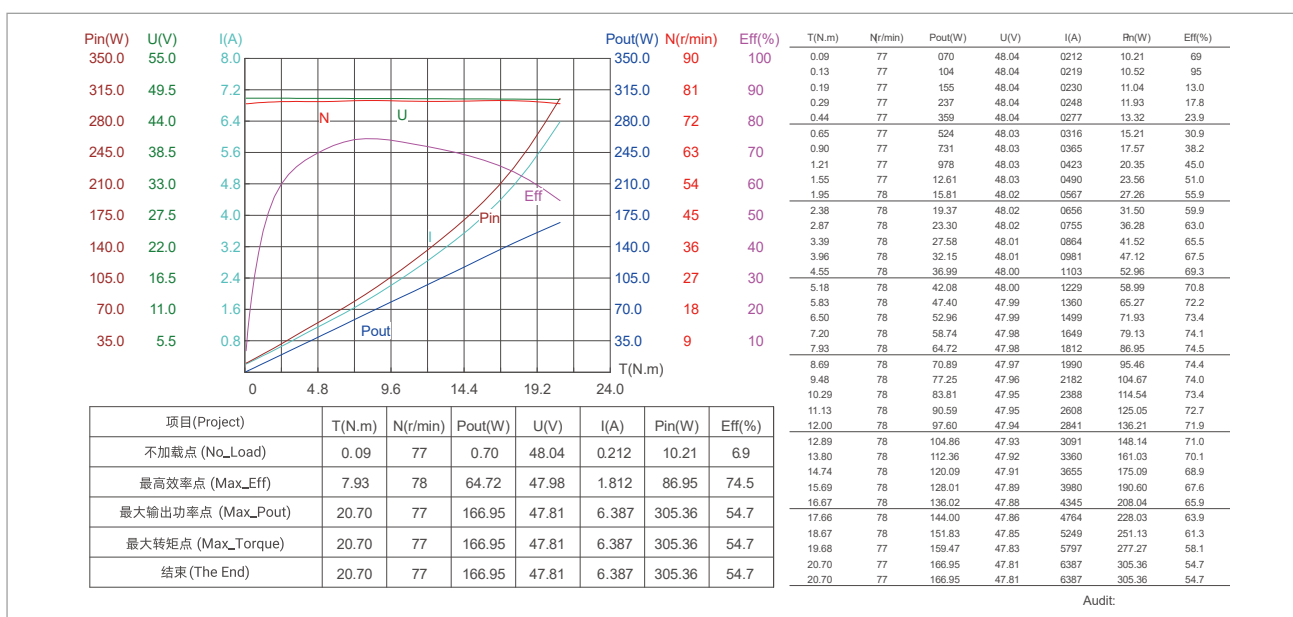


PRODUCT PARAMETERS

Item Name	Unit	X4-24
Gear Ratio	-	36
Input Voltage	V	48
Rated Speed	RPM	100
Rated Torque	N.m	9
Rated Power	W	150
Rated Current	A	3.5
Peak Torque	N.m	24
Peak Current	A	10
Efficiency	%	75
Pole Pair	-	14
Anti-Force Torque	N.m	0.87
Backlash	Arcmin	15
Axial Payload	N	1900
Radial Payload	N	1900
Inertia	Kg.cm ²	6.8
Encoder Type	bit	14 / 14
Communication	-	CAN : 1M
Weight	kg	0.38

*Rated torque test method When the ambient temperature is 24 degrees Celsius (no other heat 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 Series

Motor Simplified Name

X8-90

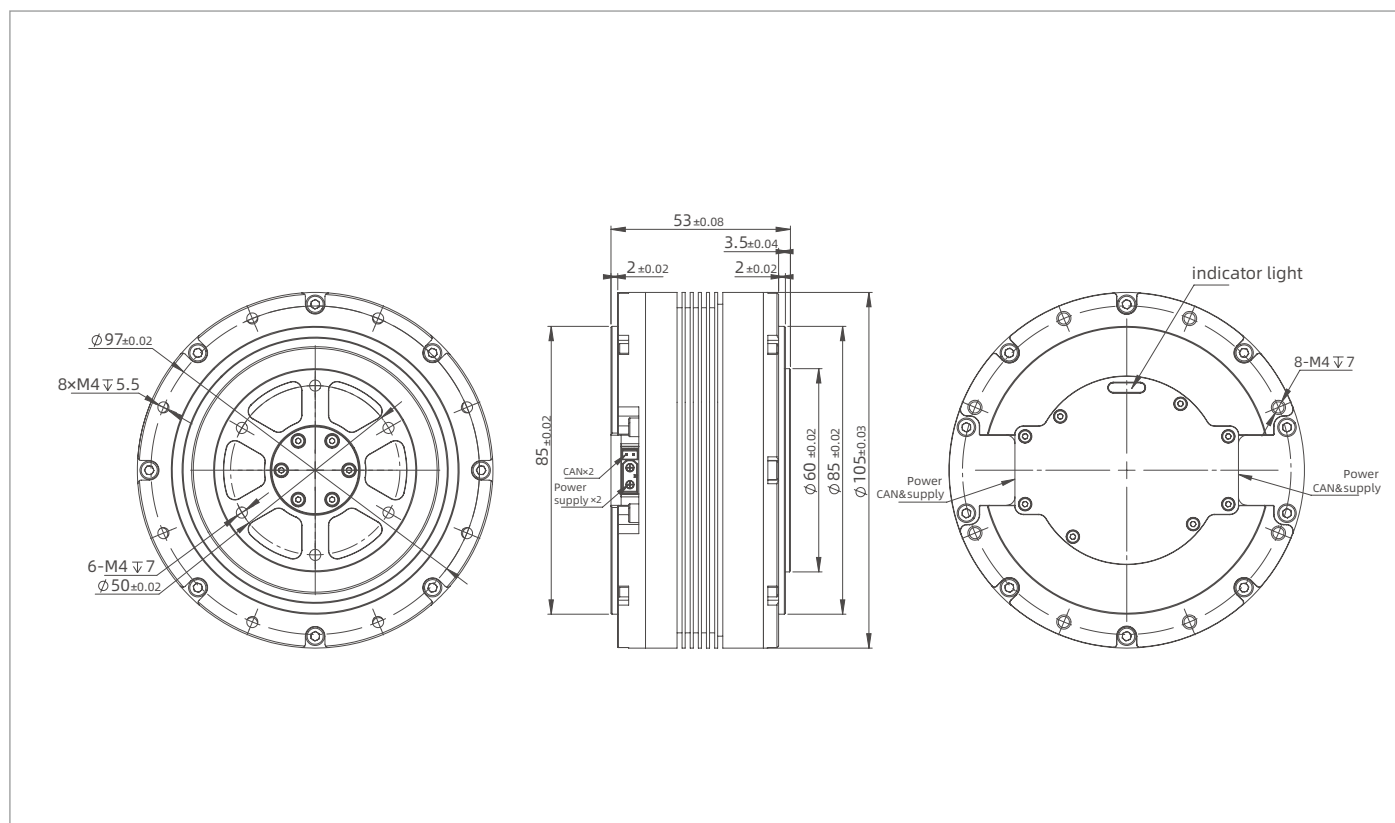


DUAL ENCODER

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

* 1. The standard motor only support CAN BUS communication.

INSTALLATION DRAWING

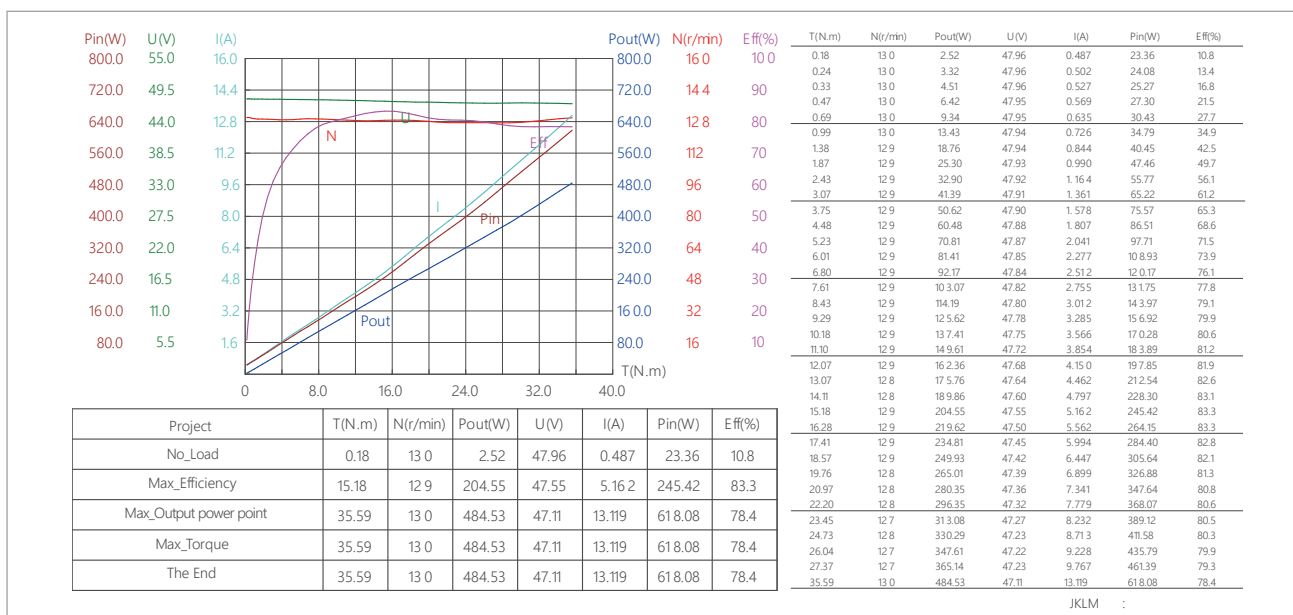


PRODUCT PARAMETERS

Item Name	Unit	X8-90
Gear Ratio	-	18
Input Voltage	V	48
Rated Speed	RPM	130
Rated Torque	N.m	25
Rated Power	W	500
Rated Current	A	10
Peak Torque	N.m	90
Peak Current	A	30
Efficiency	%	80
Pole Pair	-	21
Anti-Force Torque	N.m	0.65
Backlash	Arcmin	10
Axial Payload	N	2800
Radial Payload	N	2800
Inertia	Kg.cm ²	26
Encoder Type	bit	14 / 14
Communication	-	CAN : 1M
Weight	kg	0.85

*Rated torque test method When the ambient temperature is 24 degrees Celsius (no other heat 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 Series

Motor Simplified Name

X12-150

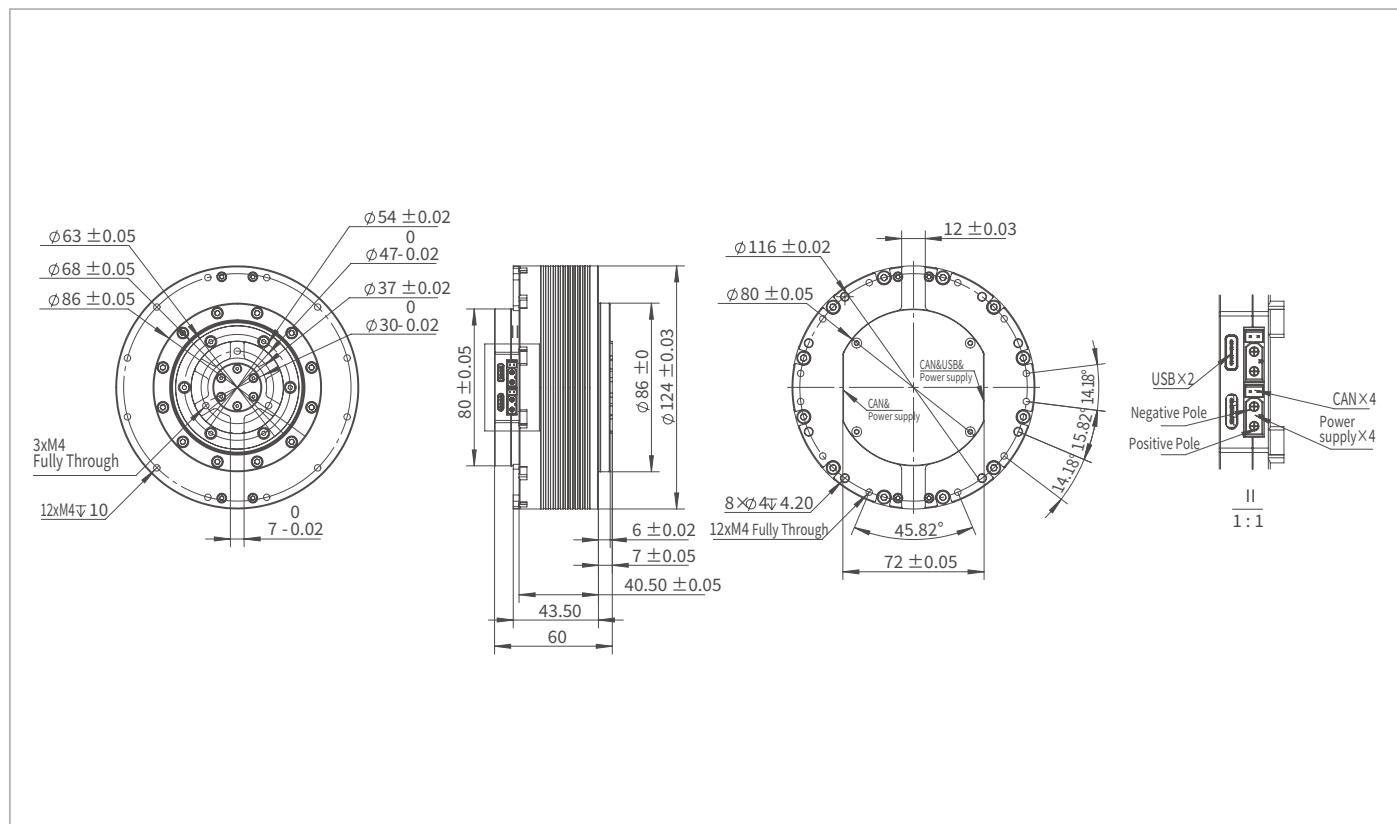


DUAL ENCODER

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

* 1. The standard motor only support CAN BUS communication.

INSTALLATION DRAWING

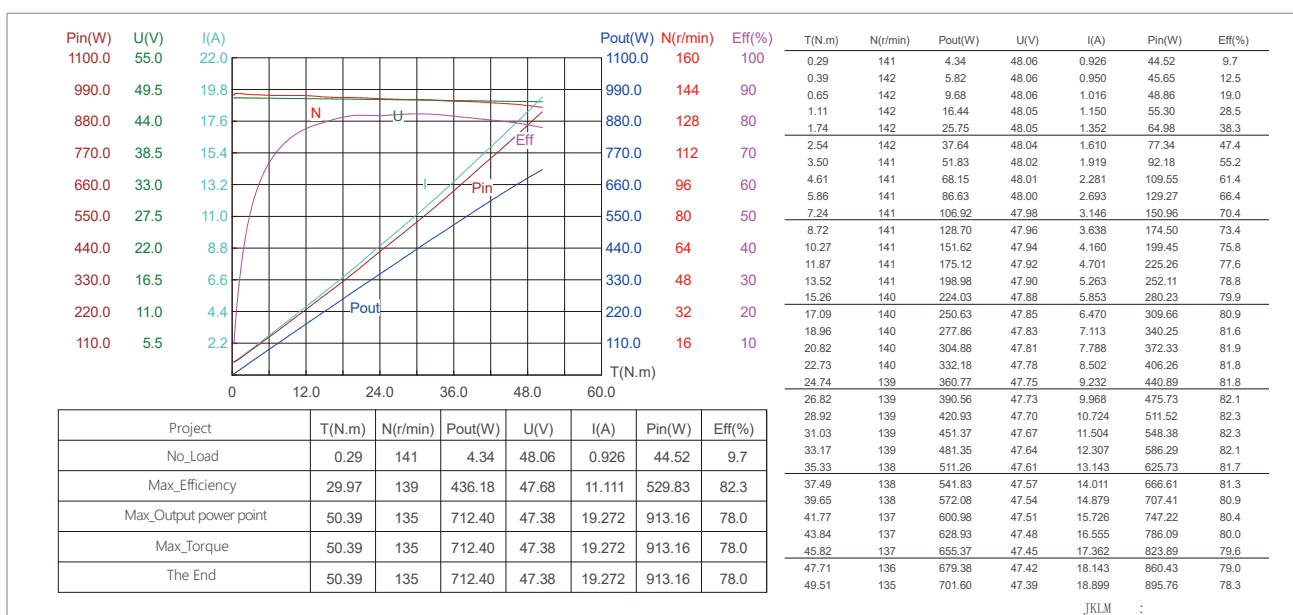


PRODUCT PARAMETERS

Item Name	Unit	X12-150
Gear Ratio	-	12
Input Voltage	V	48
Rated Speed	RPM	100
Rated Torque	N.m	50
Rated Power	W	780
Rated Current	A	15
Peak Torque	N.m	150
Peak Current	A	45
Efficiency	%	78
Pole Pair	-	21
Anti-Force Torque	N.m	1.26
Backlash	Arcmin	10
Axial Payload	N	2600
Radial Payload	N	2600
Inertia	Kg.cm ²	59
Encoder Type	bit	14 / 14
Communication	-	CAN : 1M
Weight	kg	1.3

*Rated torque test method When the ambient temperature is 24 degrees Celsius (no other heat 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

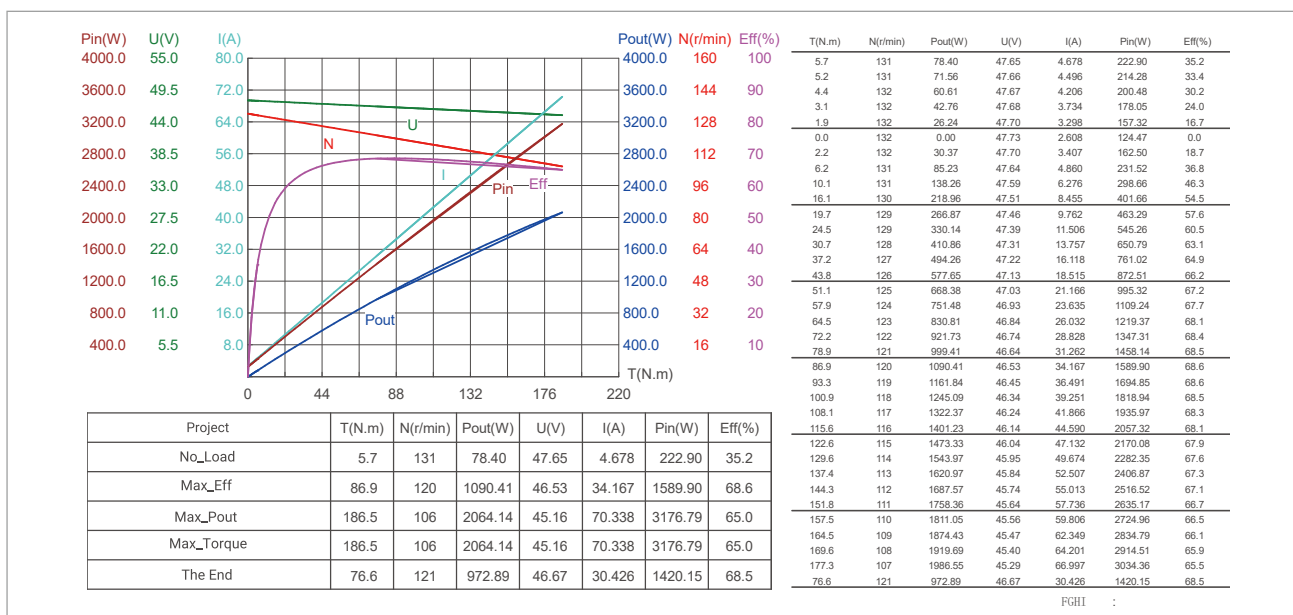


PRODUCT PARAMETERS

Item Name	Unit	X15-400
Gear Ratio	-	11.4
Input Voltage	V	60
Rated Speed	RPM	80
Rated Torque	N.m	130
Rated Power	W	1500
Rated Current	A	23
Peak Torque	N.m	380
Peak Current	A	65
Efficiency	%	83
Pole Pair	-	21
Anti-Force Torque	N.m	2.15
Backlash	Arcmin	10
Axial Payload	N	6700
Radial Payload	N	6700
Inertia	Kg.cm ²	175
Encoder Type	bit	14 / 14
Communication	-	CAN : 1M
Weight	kg	3.1

*Rated torque test method When the ambient temperature is 24 degrees Celsius (no other heat 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



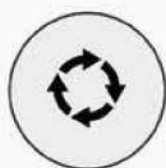
Integrated hollow direct drive module

RMD-H-Hollow Series

Drive integration / High precision / Large hollow / High speed



Understand what you need in heart and
know how to make effort diligently



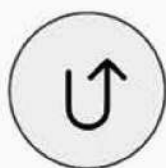
STABLE AT LOW SPEED



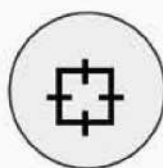
LOW NOISE



HIGH PRECISION



STRONG CARRYING CAPACITY



PRECISE CONTROL



EASY TO OPERATE

H SERIES DIVERSIFIED APPLICABLE SCENARIOS



Humanoid robots



Robotic arm



Exoskeleton robots



Quadruped robots



AGV smart truck



ARU robotics

RMD-H Series Part Number Construction

RMD-H-70-15-200-C

- ① RMD: Brand Name R-Reducer M-Motor D-Drive
- ② H: H Stands For The Series Name: Integrated Hollow Direct Drive Actuator
- ③ 70: 70 Represent Motor Model Number e.g: 30/40/50/70/90 etc
- ④ 15: Stator stack height 15mm
- ⑤ 200: Motor power 200W
- ⑥ C: Communication C: CAN BUS

For example

Model	RMD-H-90-15-400-C
Illustrate	RMD: Brand Name H: Hollow Direct Drive Series 90: Motor Model Number 15: Stator Stack Height 400: Motor Power C: Communication C: CAN BUS

Series Name

RMD-H

Motor Simplified Name

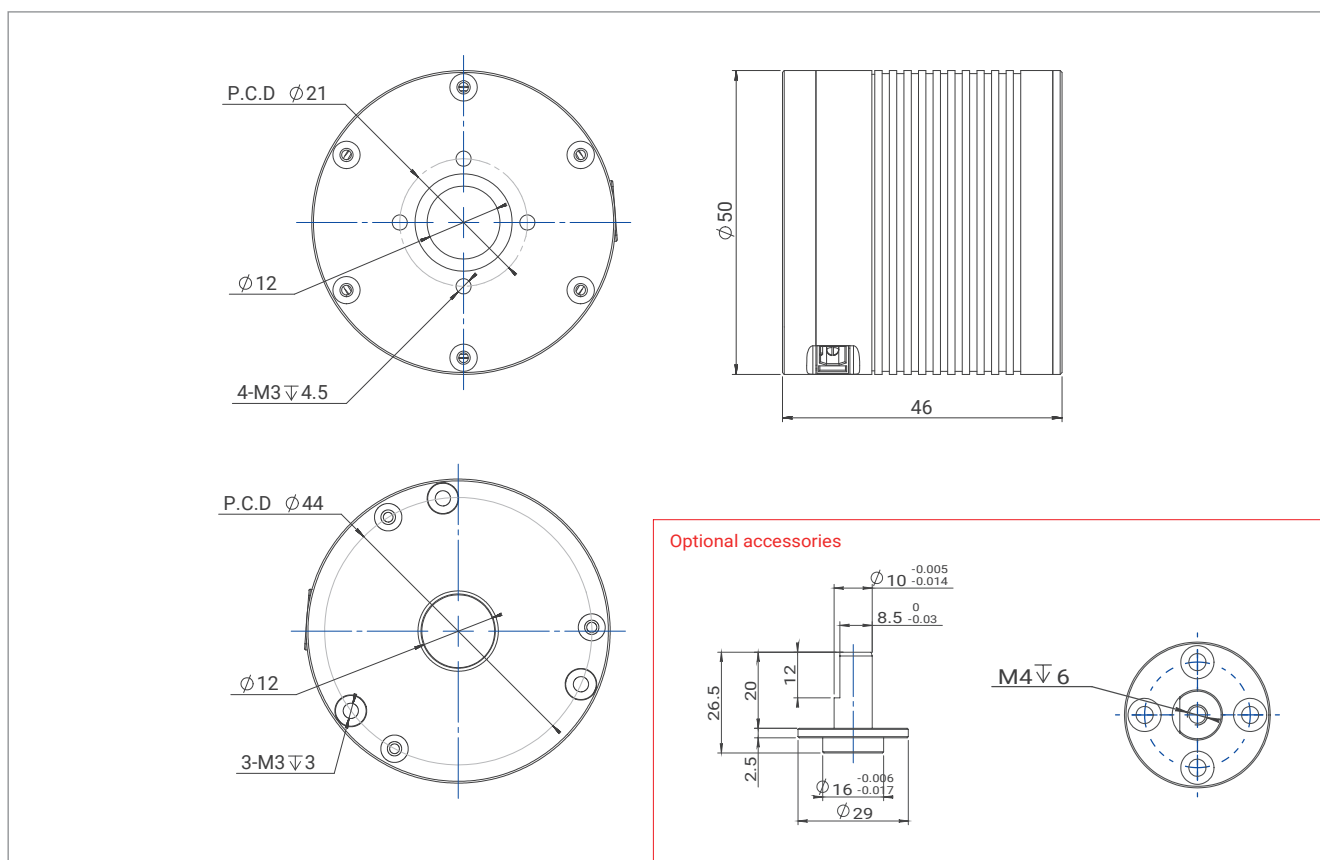
H-50-15



■ SINGLE ENCODER

Actuator Full Name	With Brake / Without Brake	Communication
RMD-H-50-15-100-C	N (without brake)	CAN BUS

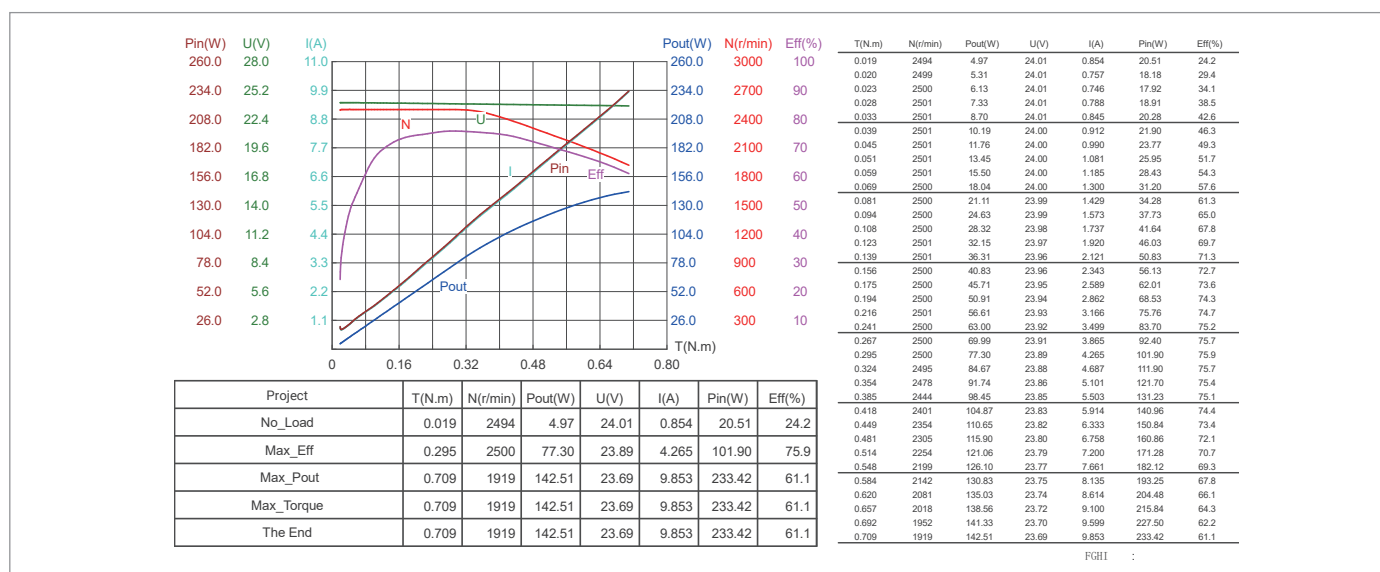
■ INSTALLATION DRAWING



PRODUCT PARAMETERS

Item Name	Unit	H-50-15
Input Voltage	V	24
No Load Speed	RPM	3200
No Load Input Current	A	0.4
Rated Speed	RPM	2500
Rated Torque	N.m	0.35
Rated Output Power	W	91.6
Rated Phase Current	A	4.9
Peak Torque	N.m	0.9
Peak Phase Current	A	12.4
Efficiency	%	>83
Motor Back-EMF Constant	Vdc/Krpm	7.93
Module Torque Constant	N.m/A	0.07
Motor Phase Resistance	Ω	0.4
Motor Phase Inductance	mH	0.19
Pole Pair	-	13
Cogging Torque	mN.m	12
3 Phase Connection	-	Y
Max Axial Load	KN	0.489
Max Radial Load	KN	0.1
Inertia	Kg.cm ²	0.57
Encoder Type	-	ABS-17bit
Repeat Position Accuracy	Degree	< 0.01
Communication	-	CAN BUS
Weight	Kg	0.24
Insulation Grade	-	F

MOTOR CHARACTERISTIC CURVE

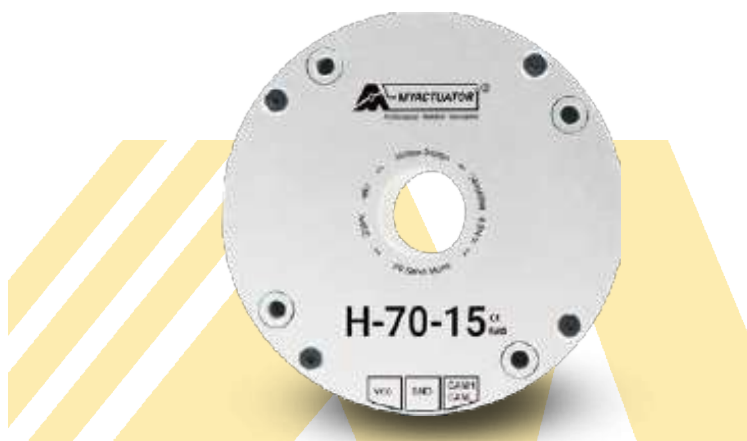


Series Name

RMD-H

Motor Simplified Name

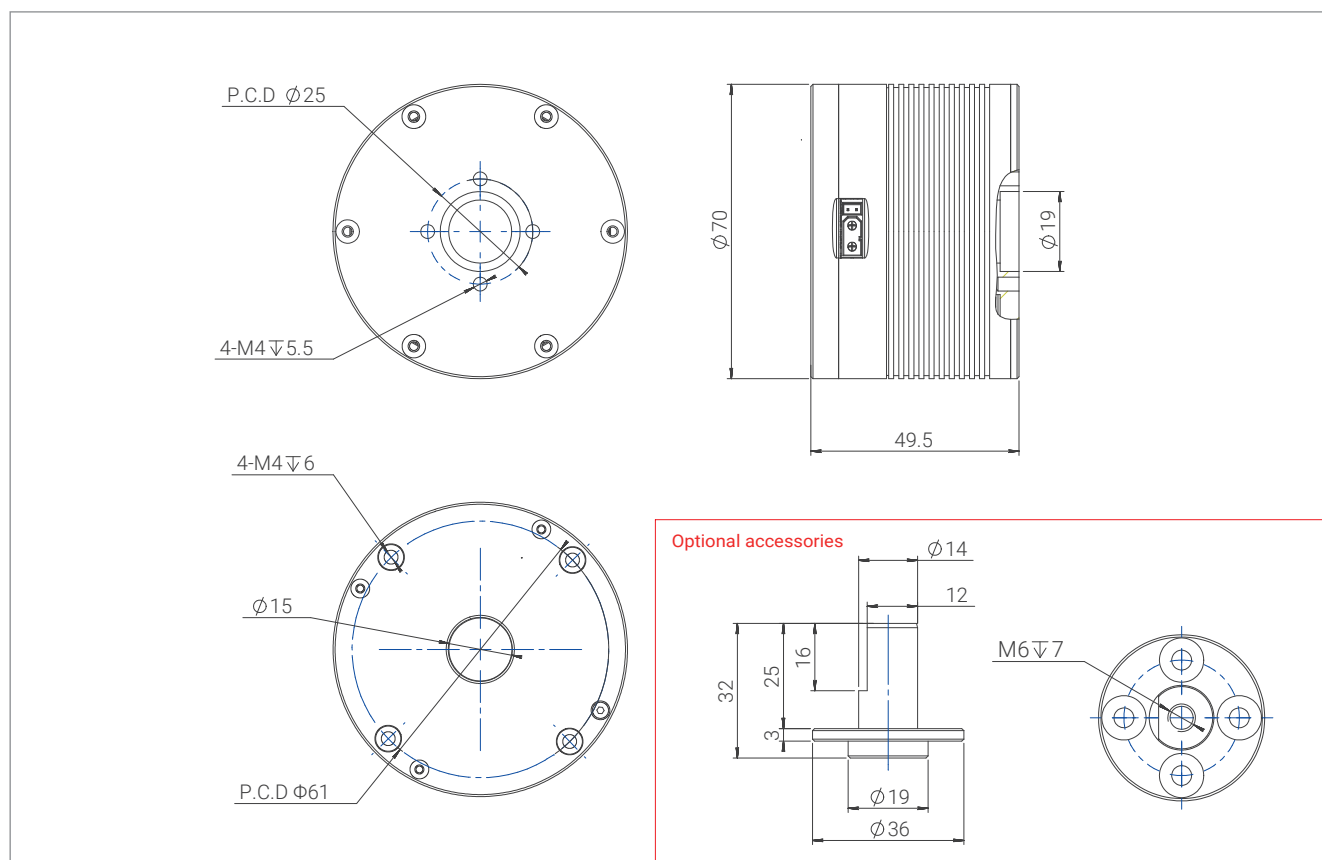
H-70-15



■ SINGLE ENCODER

Actuator Full Name	With Brake / Without Brake	Communication
RMD-H-70-15-200-C	N (without brake)	CAN BUS

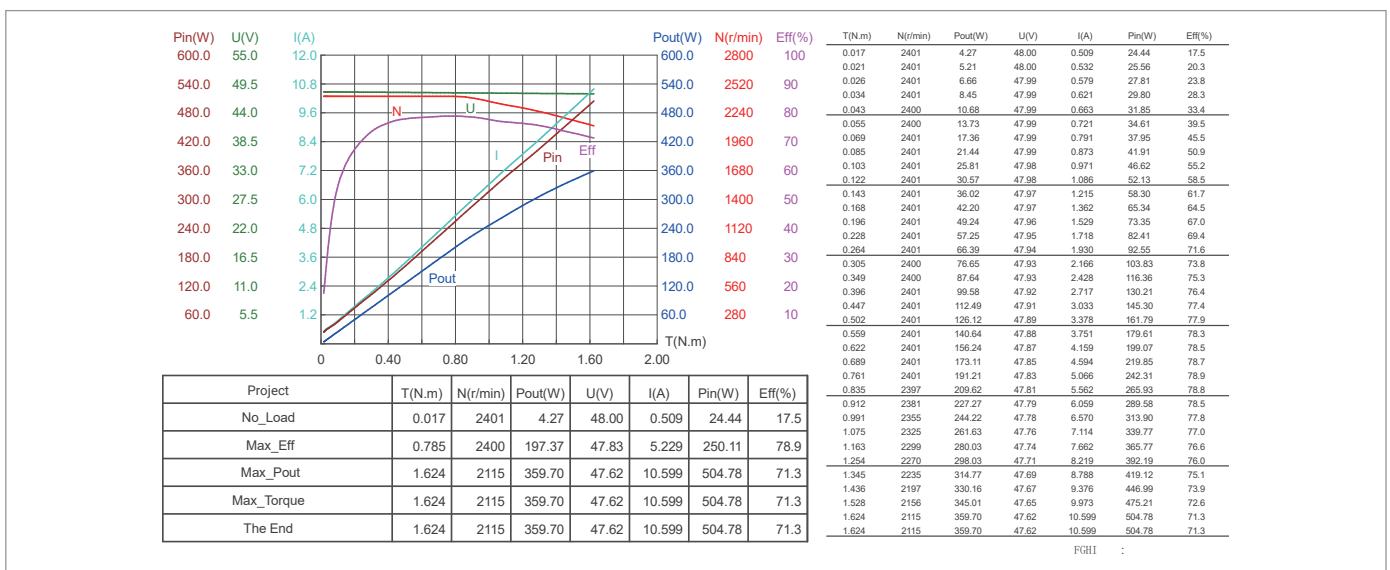
■ INSTALLATION DRAWING



PRODUCT PARAMETERS

Item Name	Unit	H-70-15
Input Voltage	V	48
No Load Speed	RPM	2800
No Load Input Current	A	0.18
Rated Speed	RPM	2400
Rated Torque	N.m	0.8
Rated Output Power	W	200
Rated Phase Current	A	4.4
Peak Torque	N.m	2
Peak Phase Current	A	13.2
Efficiency	%	>84
Motor Back-EMF Constant	Vdc/Krpm	17
Module Torque Constant	N.m/A	0.18
Motor Phase Resistance	Ω	0.5
Motor Phase Inductance	mH	0.55
Pole Pair	-	13
Cogging Torque	mN.m	31
3 Phase Connection	-	Y
Max Axial Load	KN	1.87
Max Radial Load	KN	0.44
Inertia	Kg.cm ²	1.8
Encoder Type	-	ABS-17bit
Repeat Position Accuracy	Degree	< 0.01
Communication	-	CAN BUS
Weight	Kg	0.47
Insulation Grade	-	F

MOTOR CHARACTERISTIC CURVE



Series Name

RMD-H

Motor Simplified Name

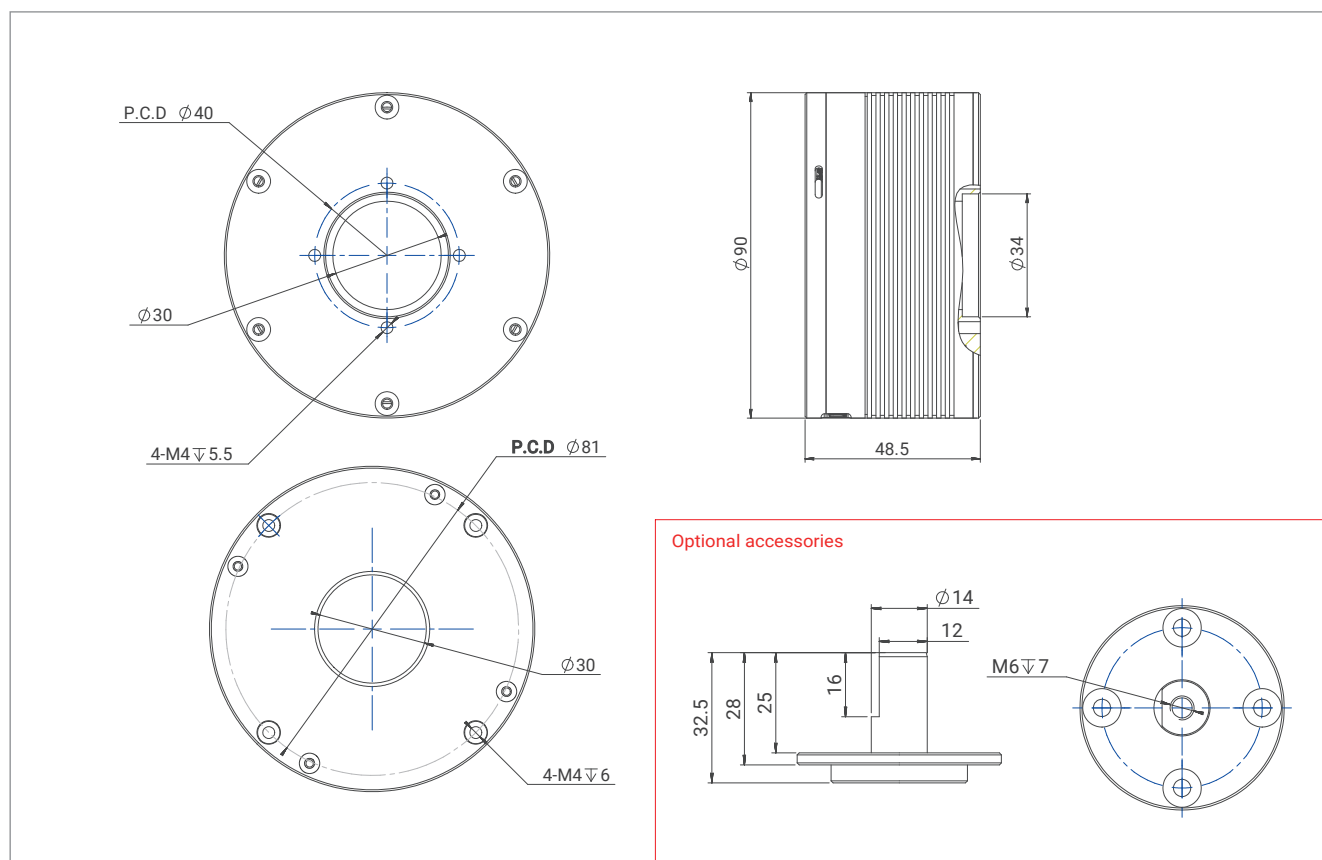
H-90-15



■ SINGLE ENCODER

Actuator Full Name	With Brake / Without Brake	Communication
RMD-H-90-15-400-C	N (without brake)	CAN BUS

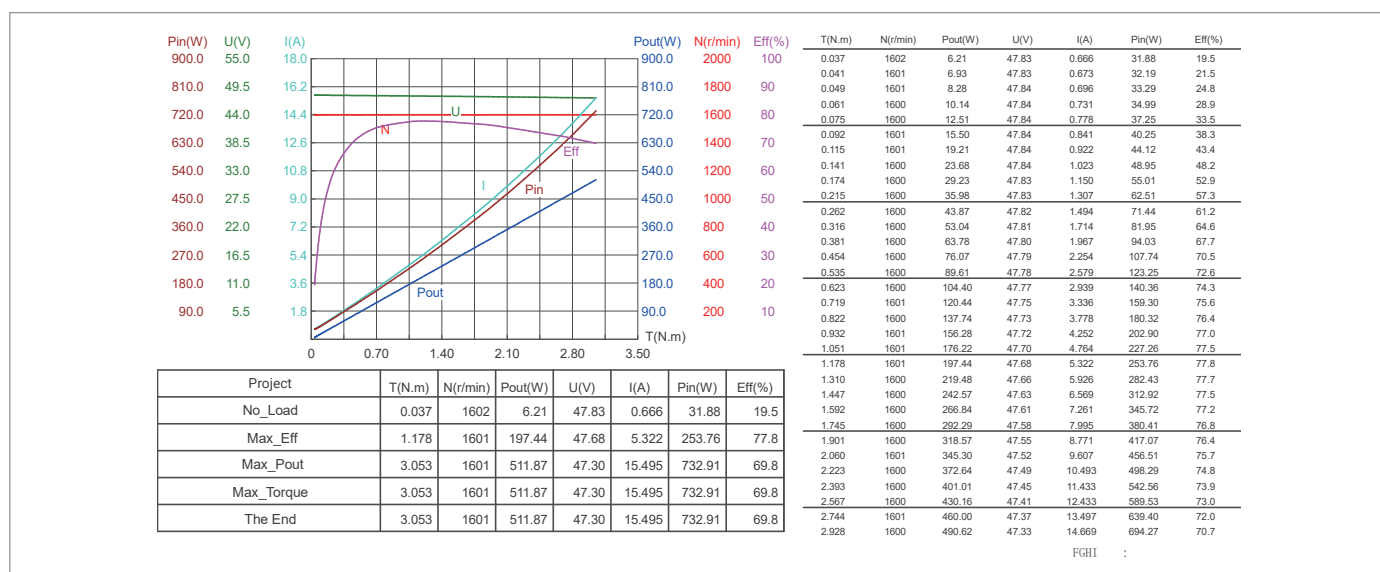
■ INSTALLATION DRAWING



PRODUCT PARAMETERS

Item Name	Unit	H-90-15
Input Voltage	V	48
No Load Speed	RPM	2000
No Load Input Current	A	0.35
Rated Speed	RPM	1600
Rated Torque	N.m	1.5
Rated Output Power	W	252
Rated Phase Current	A	6.6
Peak Torque	N.m	3.75
Peak Phase Current	A	19.8
Efficiency	%	>83
Motor Back-EMF Constant	Vdc/Krpm	21.1
Module Torque Constant	N.m/A	0.23
Motor Phase Resistance	Ω	0.35
Motor Phase Inductance	mH	0.28
Pole Pair	-	16
Cogging Torque	mN.m	64
3 Phase Connection	-	Y
Max Axial Load	KN	2.35
Max Radial Load	KN	0.77
Inertia	Kg.cm ²	4.2
Encoder Type	-	ABS-17bit
Repeat Position Accuracy	Degree	< 0.01
Communication	-	CAN BUS
Weight	Kg	0.71
Insulation Grade	-	F

MOTOR CHARACTERISTIC CURVE

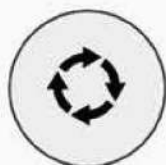


RMD-L SERIES

Integrated Drive with High Torque and High Speed



Six core advantages



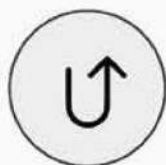
HIGH SMOOTHNESS



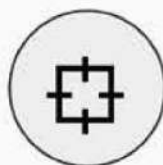
LOW NOISE



HIGH EFFICIENCY



STRONG CARRYING CAPACITY



PRECISE CONTROL



EASY TO OPERATE

DIVERSIFIED APPLICABLE SCENARIOS



Robotic Arm



Pipe Robot



Exoskeleton robots



Lidar



AGV smart truck



Gimbal

RMD-L Series Part Number Construction

RMD-L-4005-100-C

- ① Brand Name : R-Reducer M-Motor D-Drive
- ② L Stands For The Series Name
- ③ 4015 represent motor model number e.g : 4005 5005 7015 etc
- ④ Rated Power 100w
- ⑤ Communication C: CAN BUS R: RS485 E: EtherCAT

For example

Model	RMD-L-5005-100-C
Illustrate	RMD : Brand Name L : Direct Drive Series 5005 : Motor Model Number 100 : Rated Power C : Communication C: CAN BUS

Series Name

RMD-L

Motor Simplified Name

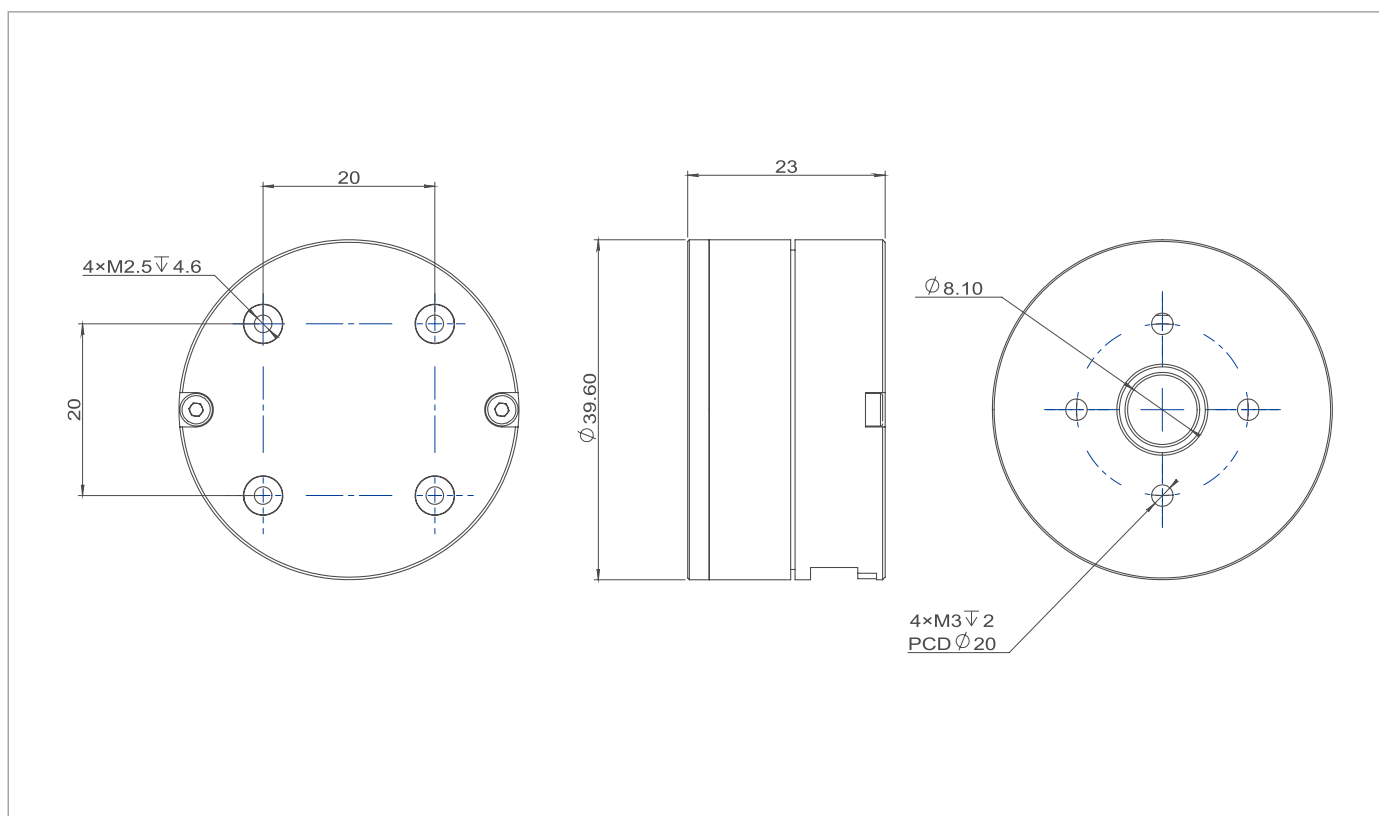
L-4005



■ SINGLE ENCODER

Actuator Full Name	Communication	Product Code
RMD-L-4005-100-C	CAN	110102062506
RMD-L-4005-100-R	RS485	110102062505

■ INSTALLATION DRAWING



PRODUCT PARAMETERS

Item Name	Unit	L-4005
Nominal Voltage	V	24
Nominal Current	A	1.44
Nominal Torque	N.M	0.07
Nominal Speed	RPM	1600
Max Speed	RPM	2390
Max Instant Torque	N.M	0.25
Max Instant Current	A	5.8
Line Resistance	Ω	1.9
Wire Connect	-	Y
Phase to Phase Indctance	mH	0.5
Speed Constant	RPM/V	199
Torque Constant	N.M/A	0.05
Rotor Inertia	g.cm ²	56
Number of Pole Pairs	-	13
Motor Weight	g	65
Working Temperature	°C	(-20 ~ 55°C)
Max Demagnetize Temperature	°C	120
Control Precision	°	0.001

Matched Driver

Drive	-	MC100
Input Voltage	V	12~24
Current	A	Normal : 5A Instant : 8A
Nominal Power	W	100
Encoder	-	18-bit Magnetic Encoder
Communication Method and Baud Rate	-	CAN BUS : 1M / RS485 : 115200 / 500k / 1M / 2.5M
Control Mode	-	Torque Loop (current loop) / Speed Loop / Position Loop
S-Curve	-	YES

MOTOR CHARACTERISTIC CURVE



Series Name

RMD-L

Motor Simplified Name

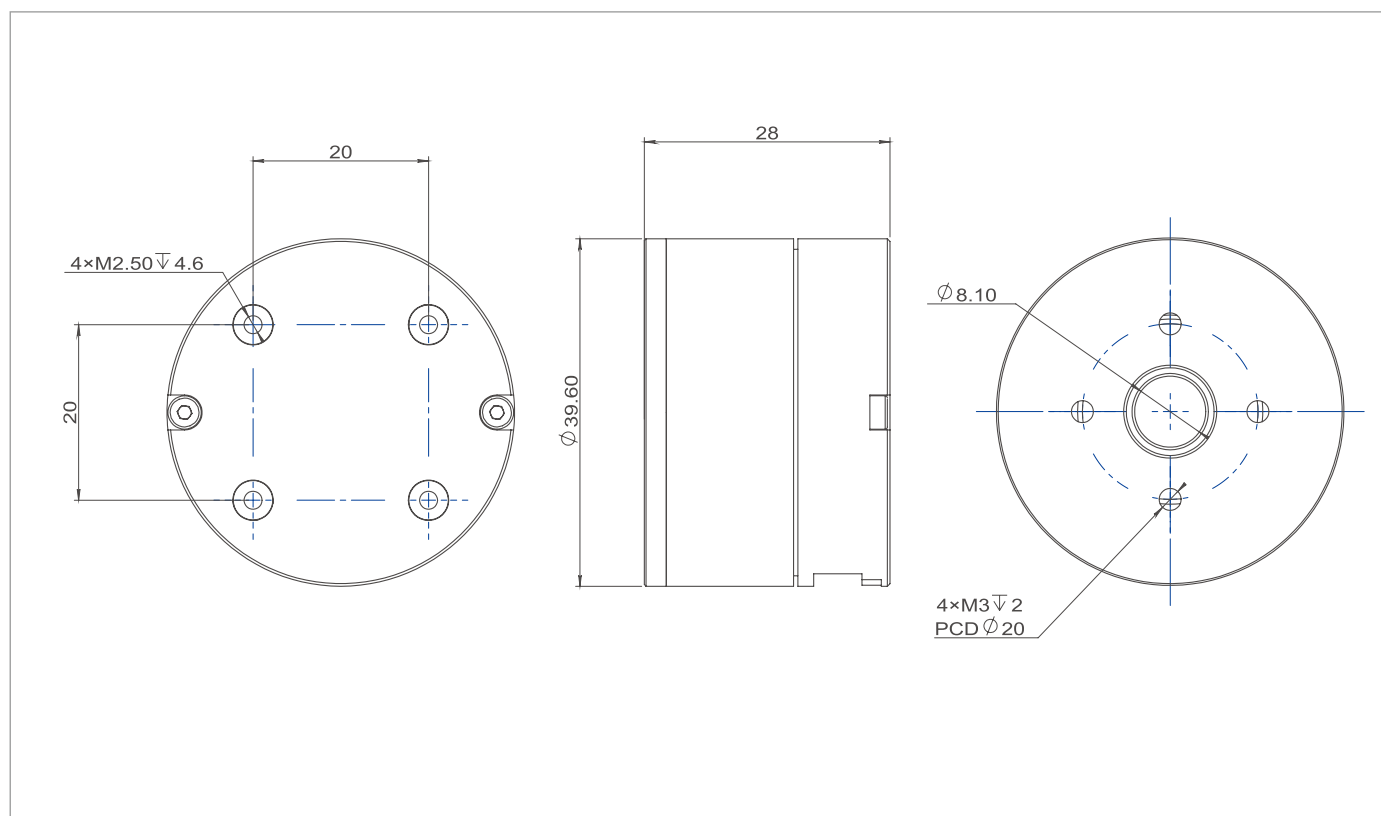
L-4010



■ SINGLE ENCODER

Actuator Full Name	Communication	Product Code
RMD-L-4010-100-C	CAN	110102072706
RMD-L-4010-100-R	RS485	110102072705

■ INSTALLATION DRAWING



PRODUCT PARAMETERS

Item Name	Unit	L-4010
Nominal Voltage	V	24
Nominal Current	A	1.43
Nominal Torque	N.M	0.15
Nominal Speed	RPM	560
Max Speed	RPM	1120
Max Instant Torque	N.M	0.33
Max Instant Current	A	3.2
Line Resistance	Ω	3
Wire Connect	-	Y
Phase to Phase Indctance	mH	1
Speed Constant	RPM/V	93
Torque Constant	N.M/A	0.1
Rotor Inertia	g.cm ²	81
Number of Pole Pairs	-	13
Motor Weight	g	92
Working Temperature	°C	(-20 ~ 55°C)
Max Demagnetize Temperature	°C	120
Control Precision	°	0.001

Matched Driver

Drive	-	MC100
Input Voltage	V	12~24
Current	A	Normal : 5A Instant : 8A
Nominal Power	W	100
Encoder	-	14-bit Magnetic Encoder
Communication Method and Baud Rate	-	CAN BUS : 1M / RS485 : 115200 / 500k / 1M / 2.5M
Control Mode	-	Torque Loop (current loop) / Speed Loop / Position Loop
S-Curve	-	YES

MOTOR CHARACTERISTIC CURVE



Series Name

RMD-L

Motor Simplified Name

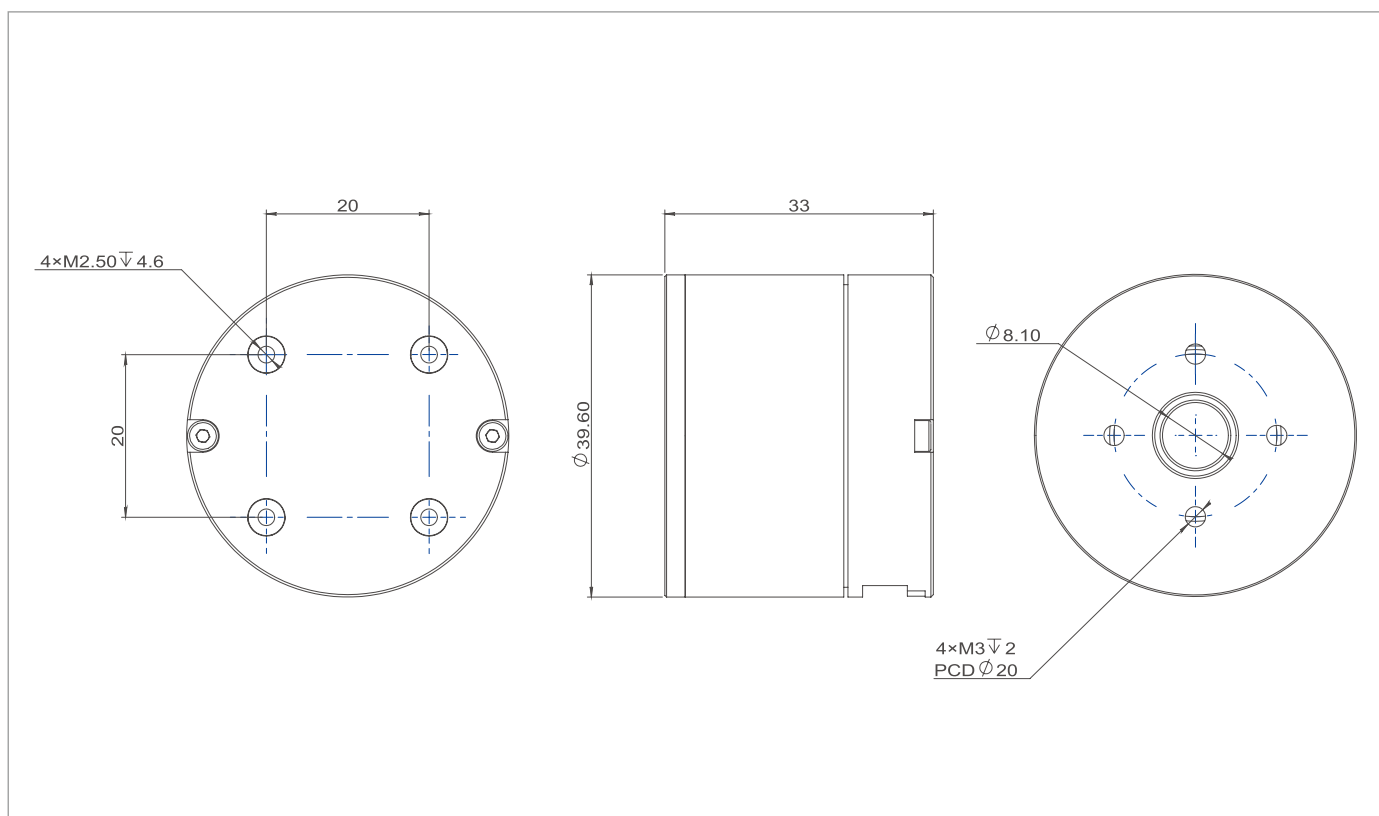
L-4015



■ SINGLE ENCODER

Actuator Full Name	Communication	Product Code
RMD-L-4015-100-C	CAN	110102082006
RMD-L-4015-100-R	RS485	110102082005

■ INSTALLATION DRAWING



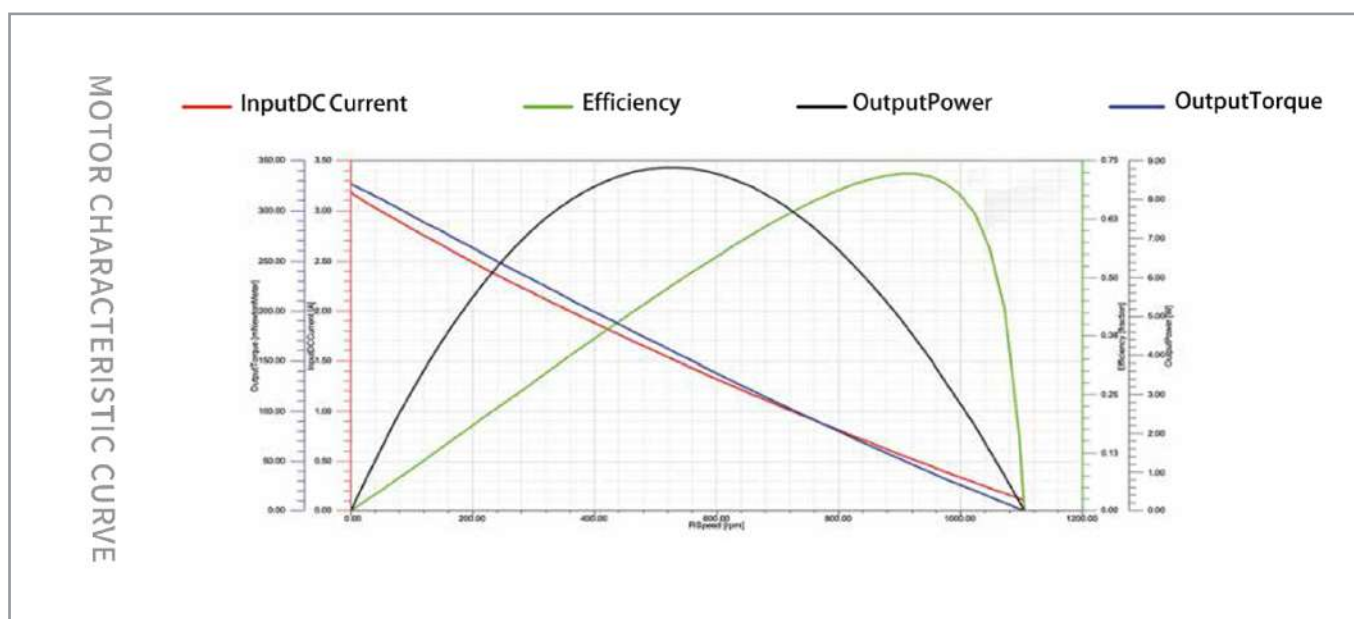
PRODUCT PARAMETERS

Item Name	Unit	L-4015
Nominal Voltage	V	24
Nominal Current	A	1.88
Nominal Torque	N.M	0.22
Nominal Speed	RPM	520
Max Speed	RPM	1010
Max Instant Torque	N.M	0.49
Max Instant Current	A	4.3
Line Resistance	Ω	3.3
Wire Connect	-	Y
Phase to Phase Indctance	mH	0.78
Speed Constant	RPM/V	63
Torque Constant	N.M/A	0.12
Rotor Inertia	g.cm ²	105
Number of Pole Pairs	-	13
Motor Weight	g	120
Working Temperature	°C	(-20 ~ 55°C)
Max Demagnetize Temperature	°C	120
Control Precision	°	0.001

Matched Driver

Drive	-	MC100
Input Voltage	V	12~24
Current	A	Normal : 5A Instant : 8A
Nominal Power	W	100
Encoder	-	18-bit Magnetic Encoder
Communication Method and Baud Rate	-	CAN BUS : 1M / RS485 : 115200 / 500k / 1M / 2.5M
Control Mode	-	Torque Loop (current loop) / Speed Loop / Position Loop
S-Curve	-	YES

MOTOR CHARACTERISTIC CURVE



Series Name

RMD-L

Motor Simplified Name

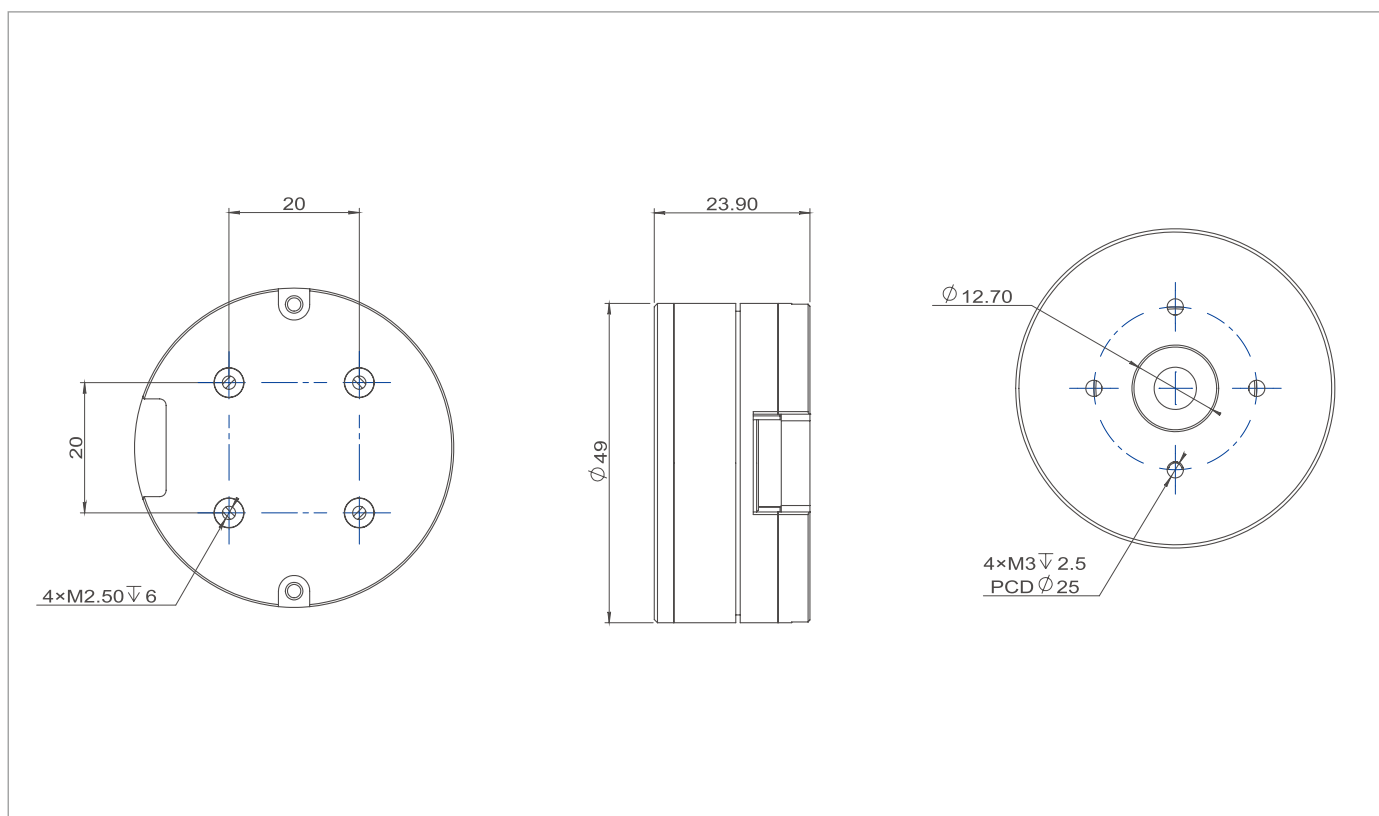
L-5005



■ SINGLE ENCODER

Actuator Full Name	Communication	Product Code
RMD-L-5005-100-C	CAN	110103013506
RMD-L-5005-100-R	RS485	110103013505

■ INSTALLATION DRAWING



PRODUCT PARAMETERS

Item Name	Unit	L-5005
Nominal Voltage	V	24
Nominal Current	A	1.67
Nominal Torque	N.M	0.13
Nominal Speed	RPM	1360
Max Speed	RPM	1970
Max Instant Torque	N.M	0.42
Max Instant Current	A	5
Line Resistance	Ω	2
Wire Connect	-	Y
Phase to Phase Indctance	mH	0.65
Speed Constant	RPM/V	123
Torque Constant	N.M/A	0.08
Rotor Inertia	g.cm ²	136
Number of Pole Pairs	-	14
Motor Weight	g	92
Working Temperature	°C	(-20 ~ 55°C)
Max Demagnetize Temperature	°C	120
Control Precision	°	0.001

Matched Driver

Drive	-	MC100
Input Voltage	V	12~24
Current	A	Normal : 5A Instant : 8A
Nominal Power	W	100
Encoder	-	14-bit Magnetic Encoder
Communication Method and Baud Rate	-	CAN BUS : 1M / RS485 : 115200 / 500k / 1M / 2.5M
Control Mode	-	Torque Loop (current loop) / Speed Loop / Position Loop
S-Curve	-	YES

MOTOR CHARACTERISTIC CURVE



Series Name

RMD-L

Motor Simplified Name

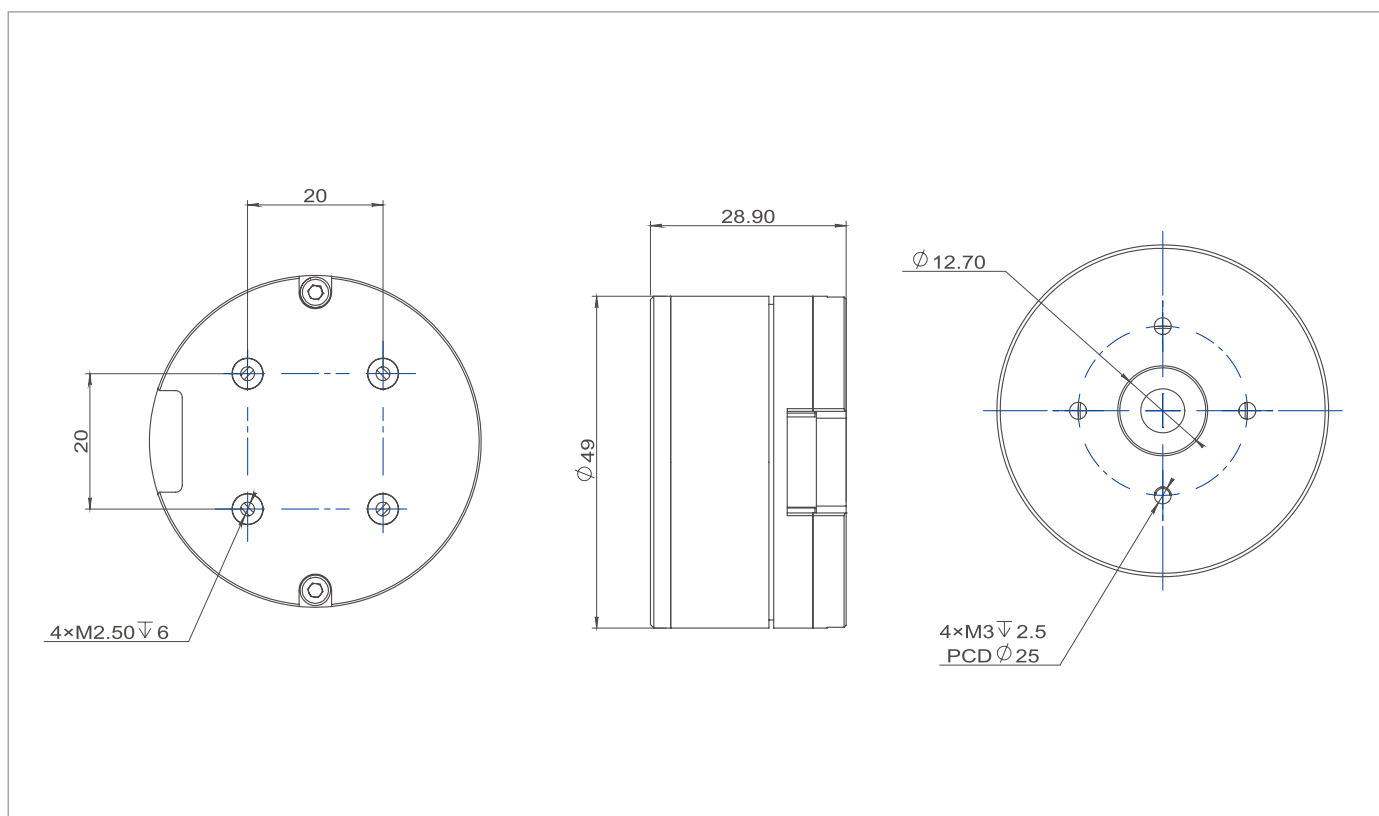
L-5010



■ SINGLE ENCODER

Actuator Full Name	Communication	Product Code
RMD-L-5010-100-C	CAN	110103023506
RMD-L-5010-100-R	RS485	110103023505

■ INSTALLATION DRAWING



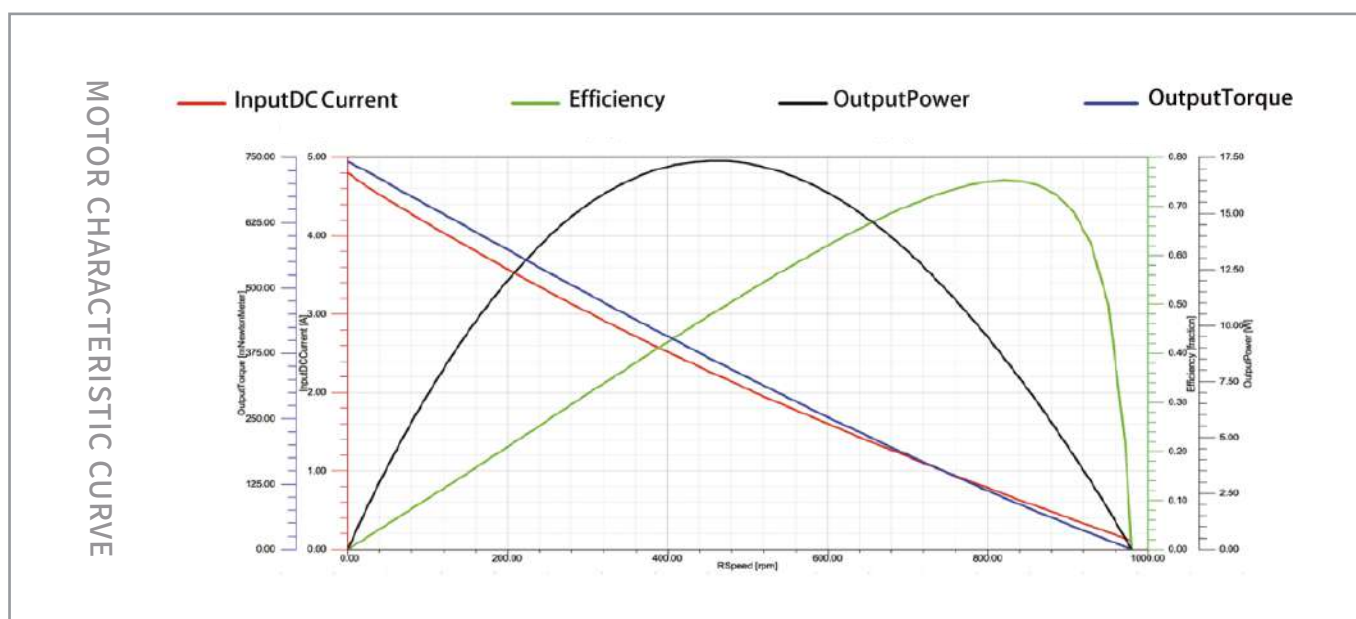
PRODUCT PARAMETERS

Item Name	Unit	L-5010
Nominal Voltage	V	24
Nominal Current	A	1.65
Nominal Torque	N.M	0.26
Nominal Speed	RPM	600
Max Speed	RPM	1015
Max Instant Torque	N.M	0.65
Max Instant Current	A	4.8
Line Resistance	Ω	3.2
Wire Connect	-	Y
Phase to Phase Indctance	mH	1.2
Speed Constant	RPM/V	63
Torque Constant	N.M/A	0.16
Rotor Inertia	g.cm ²	202
Number of Pole Pairs	-	14
Motor Weight	g	135
Working Temperature	°C	(-20 ~ 55°C)
Max Demagnetize Temperature	°C	120
Control Precision	°	0.001

Matched Driver

Drive	-	MC100
Input Voltage	V	12~24
Current	A	Normal : 5A Instant : 8A
Nominal Power	W	100
Encoder	-	18-bit Magnetic Encoder
Communication Method and Baud Rate	-	CAN BUS : 1M / RS485 : 115200 / 500k / 1M / 2.5M
Control Mode	-	Torque Loop (current loop) / Speed Loop / Position Loop
S-Curve	-	YES

MOTOR CHARACTERISTIC CURVE



Series Name

RMD-L

Motor Simplified Name

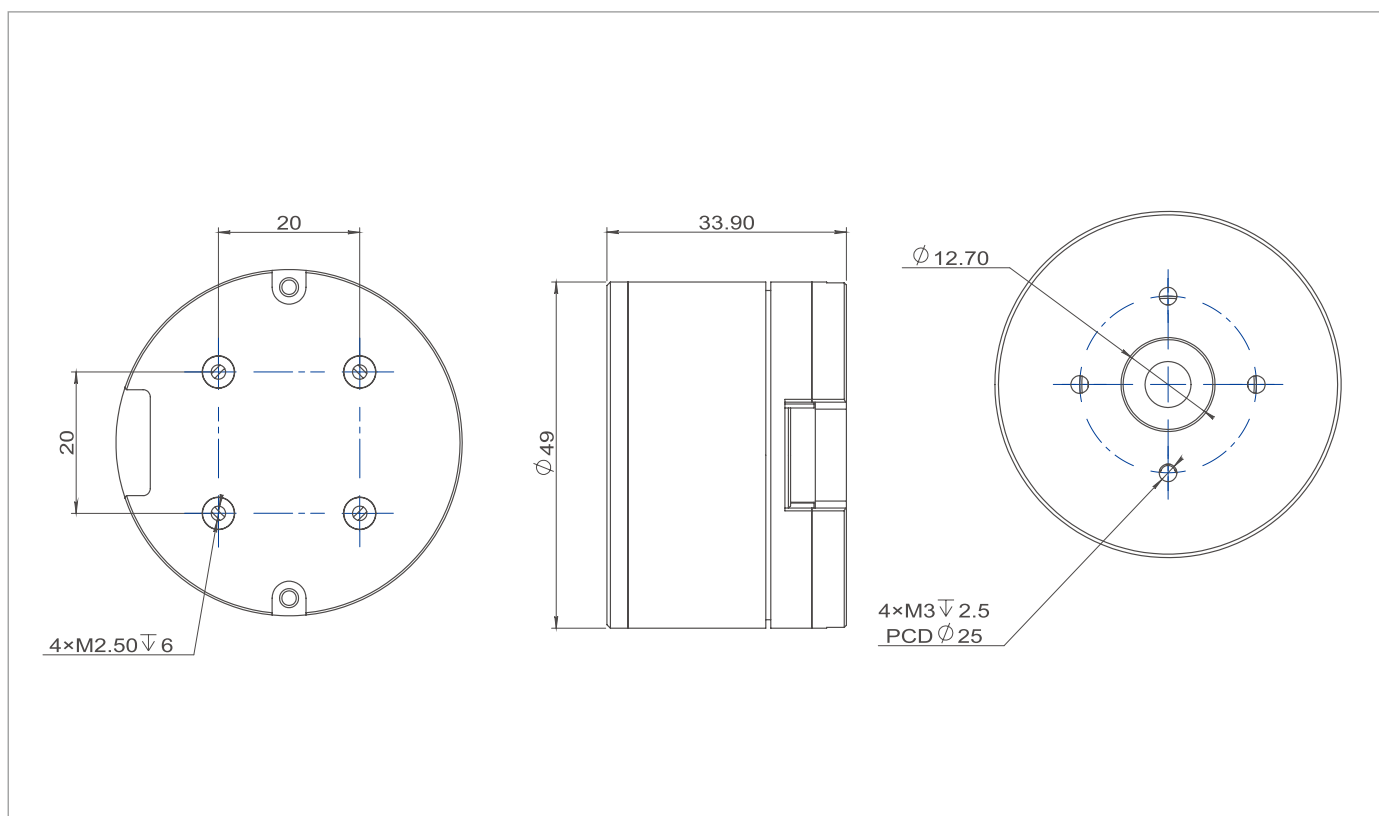
L-5015



■ SINGLE ENCODER

Actuator Full Name	Communication	Product Code
RMD-L-5015-100-C	CAN	110103033506
RMD-L-5015-100-R	RS485	110103033505

■ INSTALLATION DRAWING



PRODUCT PARAMETERS

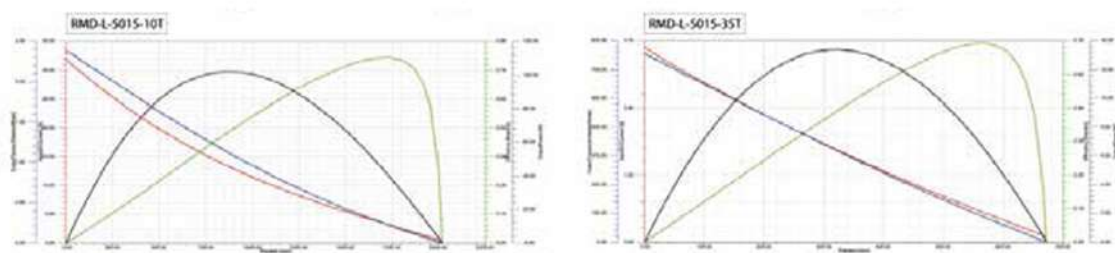
Item Name	Unit	L-5015
Nominal Voltage	V	24
Nominal Current	A	1.57
Nominal Torque	N.M	0.36
Nominal Speed	RPM	350
Max Speed	RPM	680
Max Instant Torque	N.M	0.82
Max Instant Current	A	3.62
Line Resistance	Ω	4
Wire Connect	-	Y
Phase to Phase Indctance	mH	1.76
Speed Constant	RPM/V	43
Torque Constant	N.M/A	0.23
Rotor Inertia	g.cm ²	268
Number of Pole Pairs	-	14
Motor Weight	g	174
Working Temperature	°C	(-20 ~ 55°C)
Max Demagnetize Temperature	°C	120
Control Precision	°	0.001

Matched Driver

Drive	-	MC100
Input Voltage	V	12~24
Current	A	Normal : 5A Instant : 8A
Nominal Power	W	100
Encoder	-	14-bit Magnetic Encoder
Communication Method and Baud Rate	-	CAN BUS : 1M / RS485 : 115200 / 500k / 1M / 2.5M
Control Mode	-	Torque Loop (current loop) / Speed Loop / Position Loop
S-Curve	-	YES

MOTOR CHARACTERISTIC CURVE

MOTOR CHARACTERISTIC CURVE

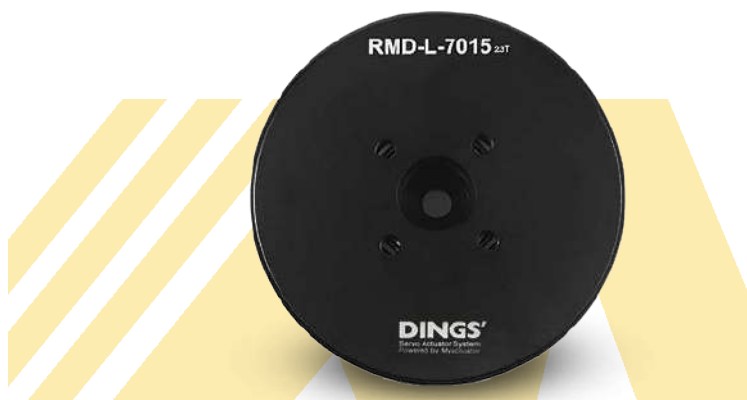


Series Name

RMD-L

Motor Simplified Name

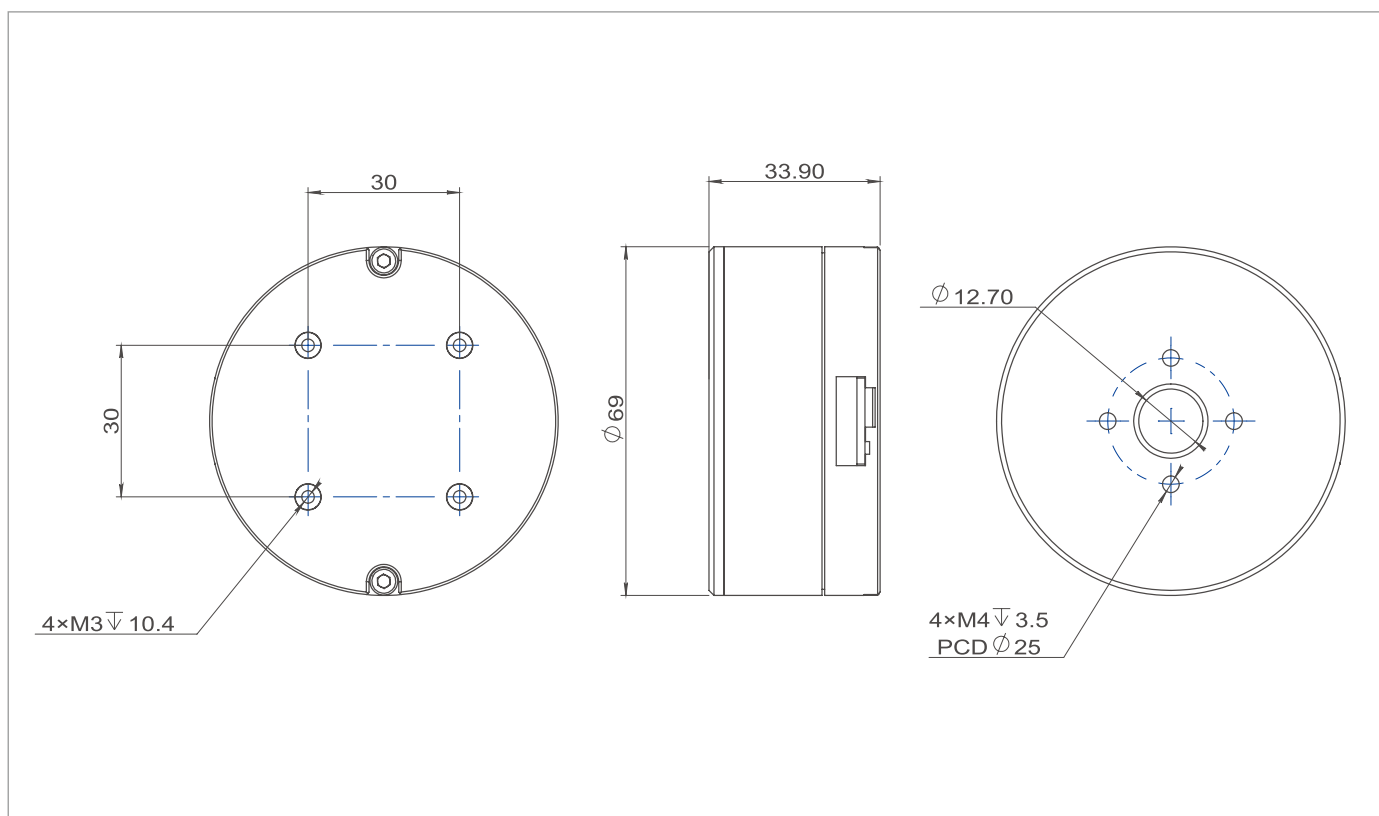
L-7015



■ SINGLE ENCODER

Actuator Full Name	Communication	Product Code
RMD-L-7015-200-C	CAN	110104022306
RMD-L-7015-200-R	RS485	110104022305

■ INSTALLATION DRAWING



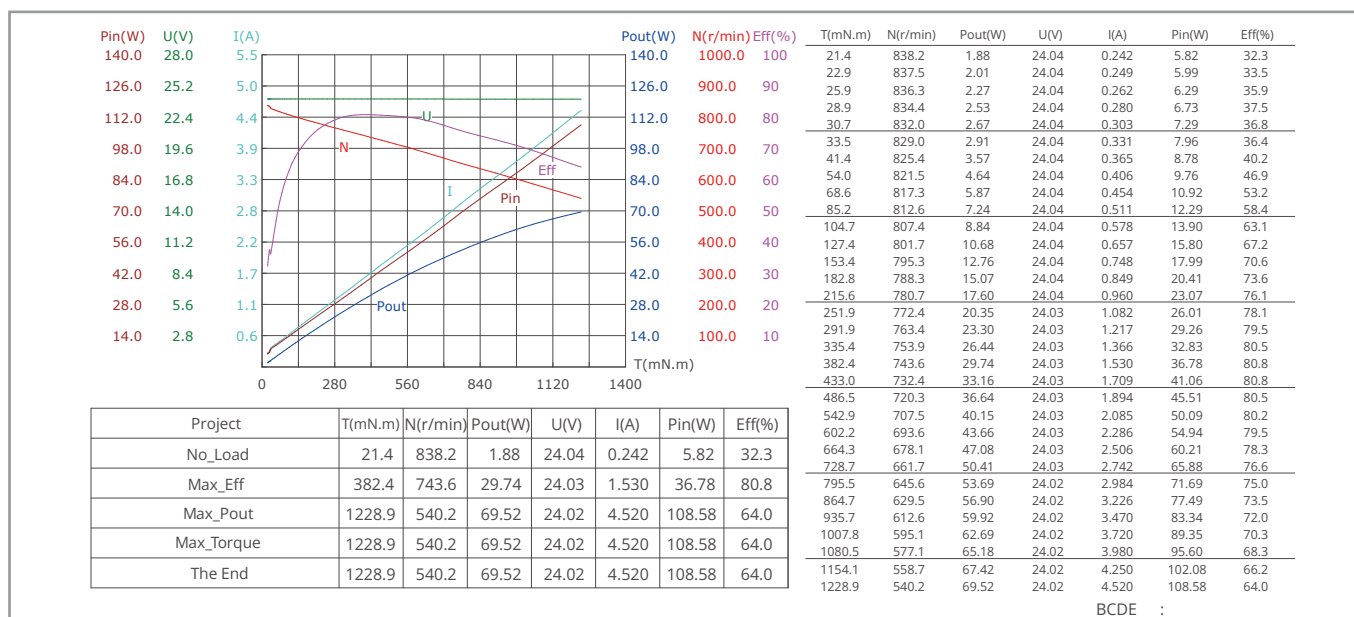
PRODUCT PARAMETERS

Item Name	Unit	L-7015
Nominal Voltage	V	24
Nominal Current	A	3.62
Nominal Torque	N.M	1
Nominal Speed	RPM	580
Max Speed	RPM	805
Max Instant Torque	N.M	3.8
Max Instant Current	A	15
Line Resistance	Ω	1.14
Wire Connect	-	Y
Phase to Phase Indctance	mH	1.25
Speed Constant	RPM/V	34
Torque Constant	N.M/A	0.28
Rotor Inertia	g.cm ²	933
Number of Pole Pairs	-	14
Motor Weight	g	360
Working Temperature	°C	(-20 ~ 55°C)
Max Demagnetize Temperature	°C	120
Control Precision	°	0.001

Matched Driver

Drive	-	MC200
Input Voltage	V	12~24
Current	A	Normal : 8A Instant : 15A
Nominal Power	W	200
Encoder	-	18-bit Magnetic Encoder
Communication Method and Baud Rate	-	CAN BUS : 1M / RS485 : 115200 / 500k / 1M / 2.5M
Control Mode	-	Torque Loop (current loop) / Speed Loop / Position Loop
S-Curve	-	YES

MOTOR CHARACTERISTIC CURVE



BCDE :

Series Name

RMD-L

Motor Simplified Name

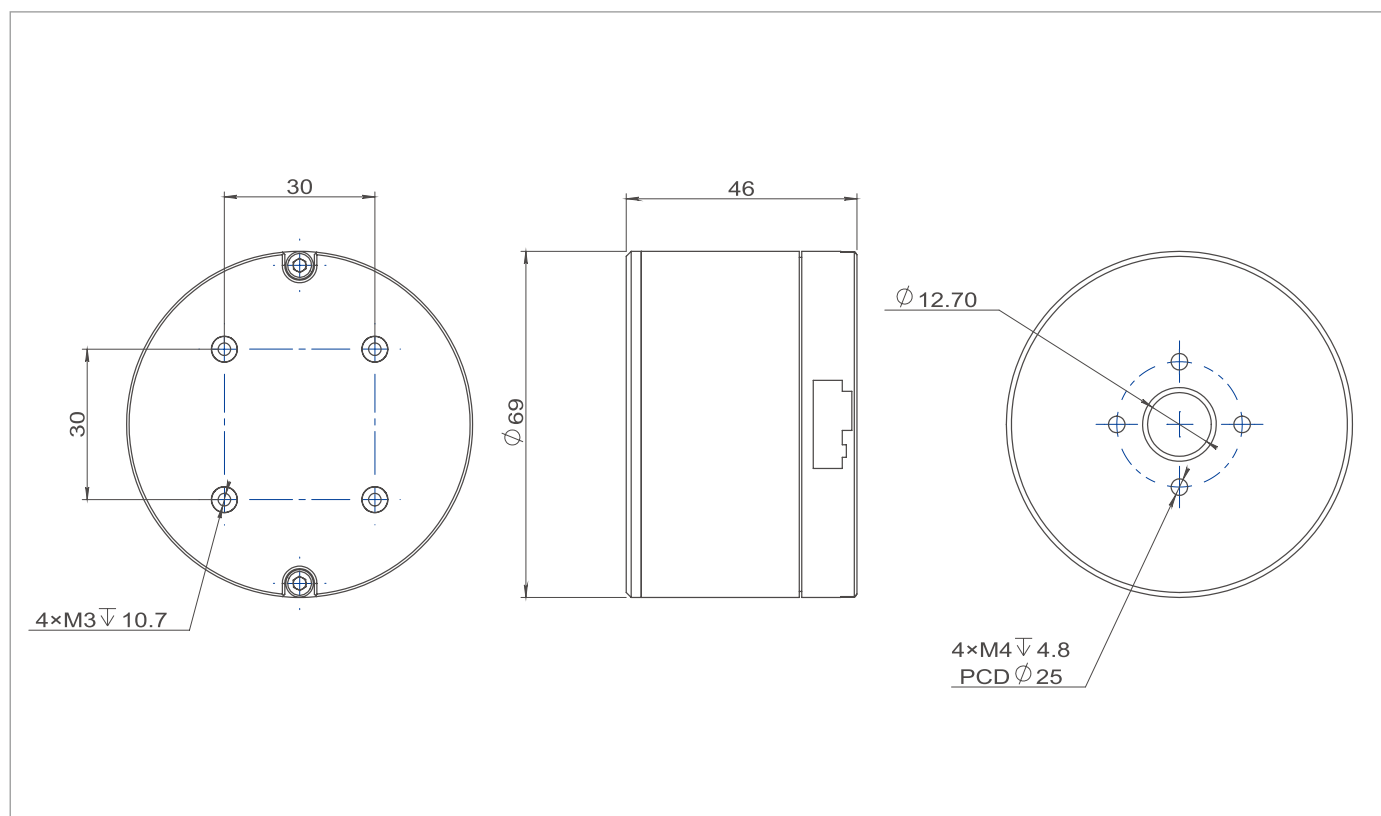
L-7025



■ SINGLE ENCODER

Actuator Full Name	Communication	Product Code
RMD-L-7025-200-C	CAN	110104032806
RMD-L-7025-200-R	RS485	110104032805

■ INSTALLATION DRAWING



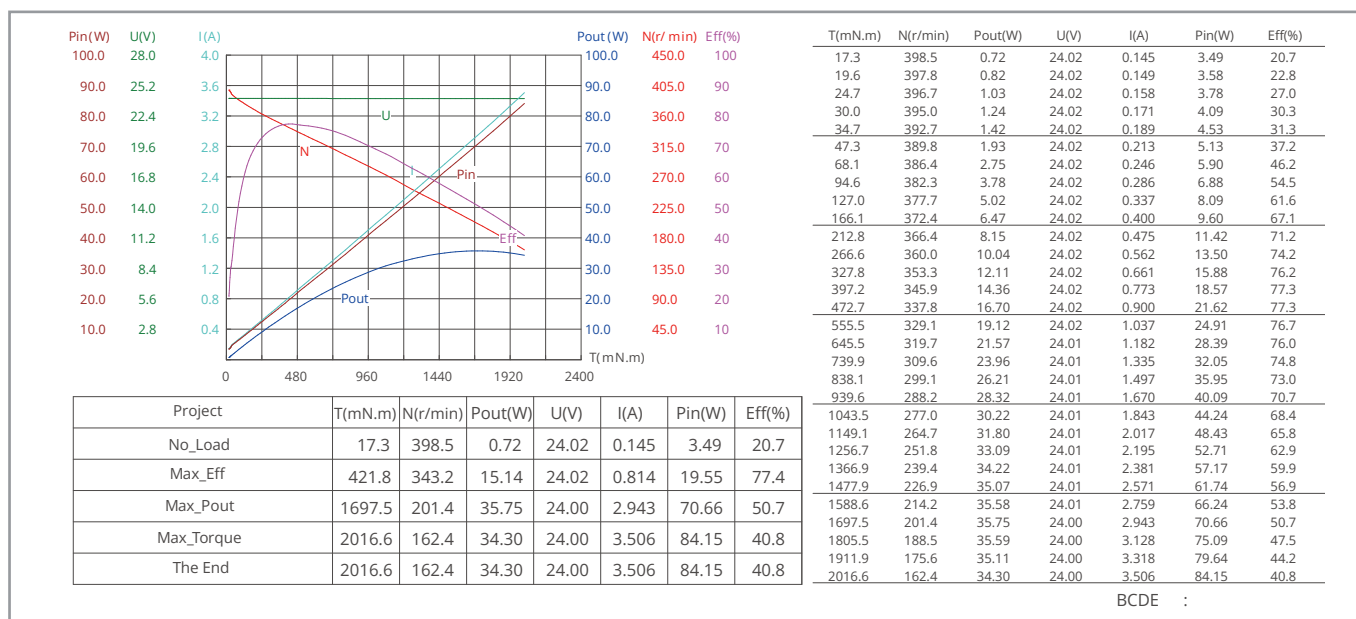
PRODUCT PARAMETERS

Item Name	Unit	L-7025
Nominal Voltage	V	24
Nominal Current	A	3
Nominal Torque	N.M	1.6
Nominal Speed	RPM	280
Max Speed	RPM	510
Max Instant Torque	N.M	4.1
Max Instant Current	A	8.5
Line Resistance	Ω	2.2
Wire Connect	-	Y
Phase to Phase Indctance	mH	2.95
Speed Constant	RPM/V	21
Torque Constant	N.M/A	0.53
Rotor Inertia	g.cm ²	1040
Number of Pole Pairs	-	14
Motor Weight	g	540
Working Temperature	°C	(-20 ~ 55°C)
Max Demagnetize Temperature	°C	120
Control Precision	°	0.001

Matched Driver

Drive	-	MC200
Input Voltage	V	12~24
Current	A	Normal : 8A Instant : 15A
Nominal Power	W	200
Encoder	-	18-bit Magnetic Encoder
Communication Method and Baud Rate	-	CAN BUS : 1M / RS485 : 115200 / 500k / 1M / 2.5M
Control Mode	-	Torque Loop (current loop) / Speed Loop / Position Loop
S-Curve	-	YES

MOTOR CHARACTERISTIC CURVE



BCDE :

83

Series Name

RMD-L

Motor Simplified Name

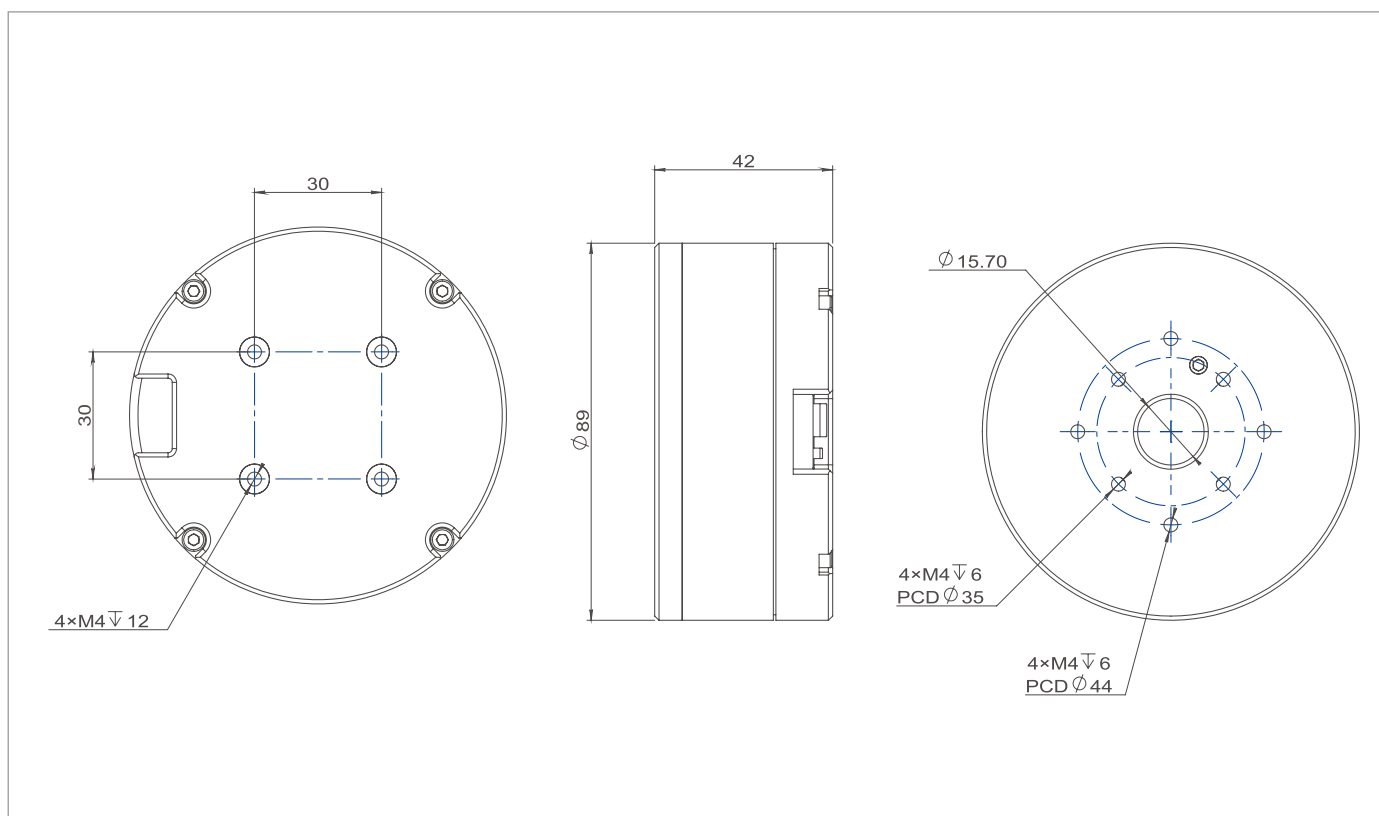
L-9015



■ SINGLE ENCODER

Actuator Full Name	Communication	Product Code
RMD-L-9015-200-C	CAN	110105023506
RMD-L-9015-200-R	RS485	110105023505

■ INSTALLATION DRAWING



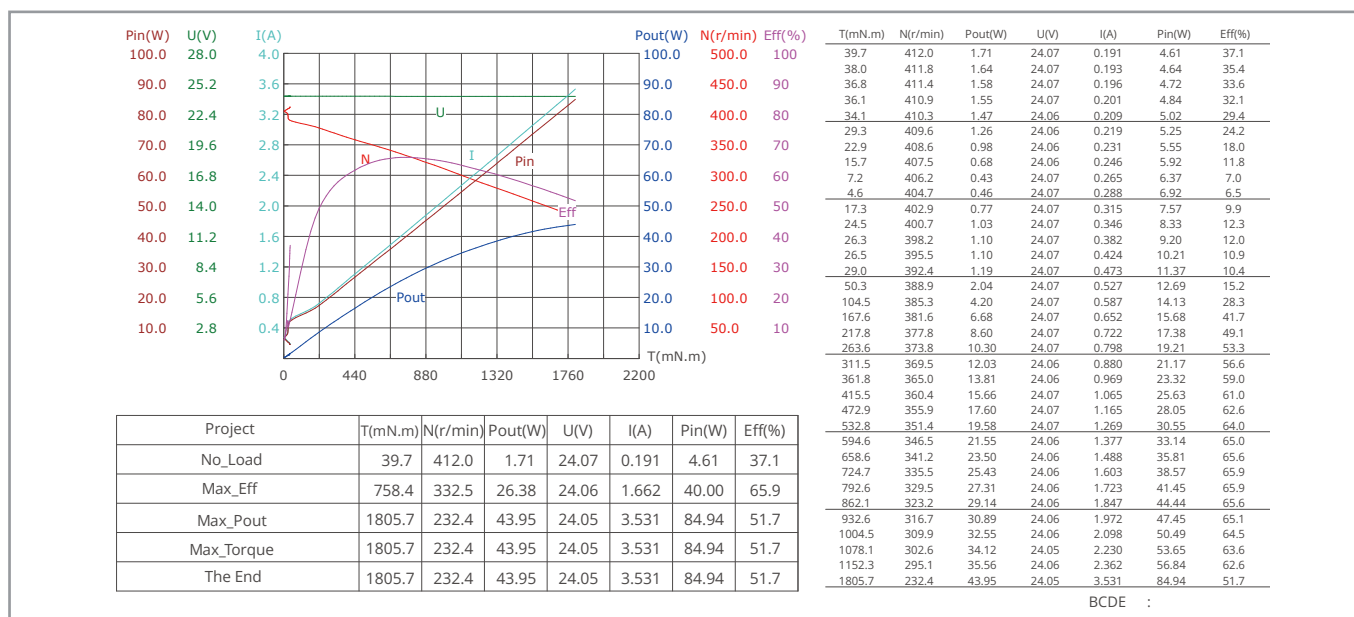
PRODUCT PARAMETERS

Item Name	Unit	L-9015
Nominal Voltage	V	24
Nominal Current	A	3.34
Nominal Torque	N.M	1.67
Nominal Speed	RPM	290
Max Speed	RPM	500
Max Instant Torque	N.M	5
Max Instant Current	A	11
Line Resistance	Ω	1.51
Wire Connect	-	Y
Phase to Phase Indctance	mH	1.05
Speed Constant	RPM/V	21
Torque Constant	N.M/A	0.45
Rotor Inertia	g.cm ²	3271
Number of Pole Pairs	-	14
Motor Weight	g	650
Working Temperature	°C	(-20 ~ 55°C)
Max Demagnetize Temperature	°C	120
Control Precision	°	0.001

Matched Driver

Drive	-	MC200
Input Voltage	V	12~24
Current	A	Normal : 8A Instant : 15A
Nominal Power	W	200
Encoder	-	14-bit Magnetic Encoder
Communication Method and Baud Rate	-	CAN BUS : 1M / RS485 : 115200 / 500k / 1M / 2.5M
Control Mode	-	Torque Loop (current loop) / Speed Loop / Position Loop
S-Curve	-	YES

MOTOR CHARACTERISTIC CURVE



BCDE :

Series Name

RMD-L

Motor Simplified Name

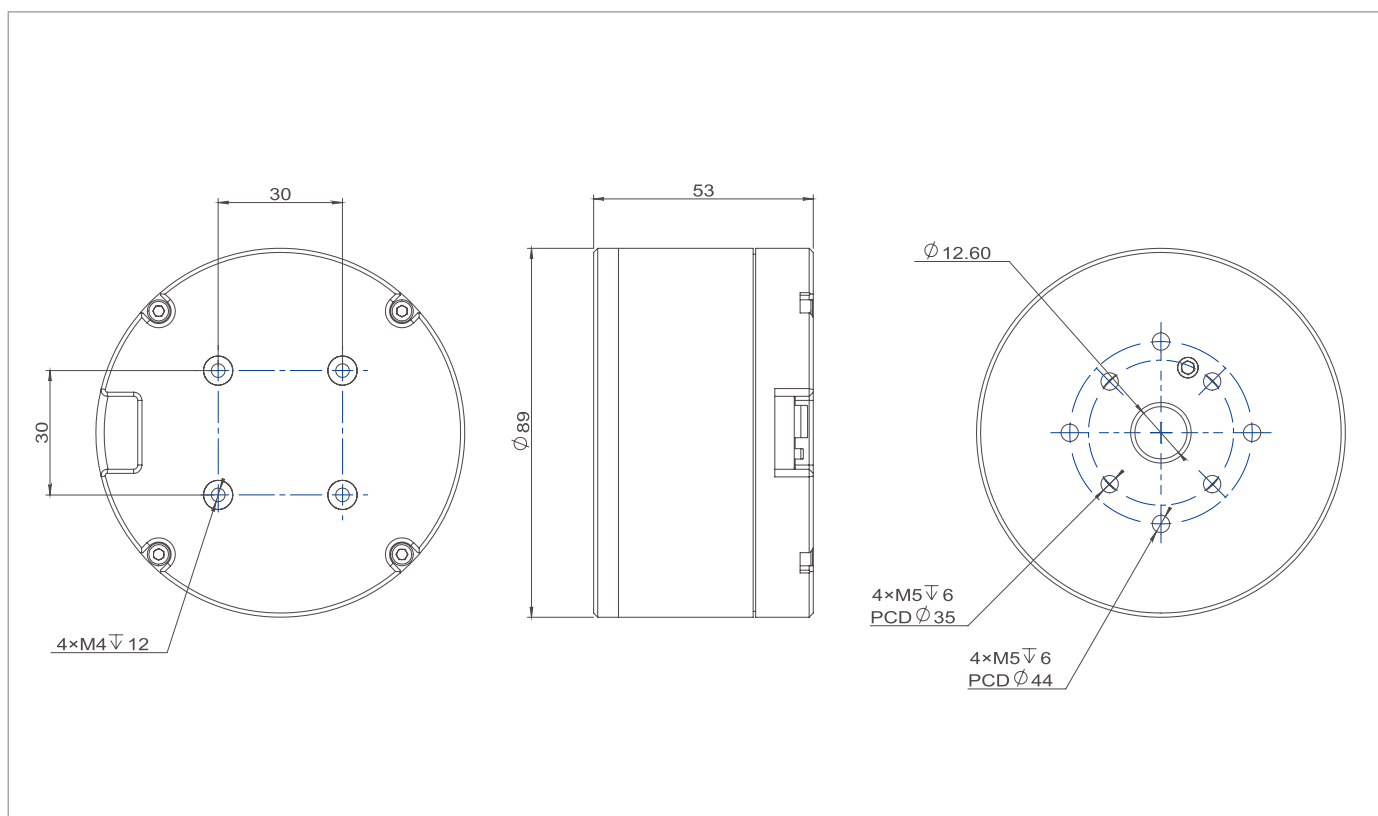
L-9025



■ SINGLE ENCODER

Actuator Full Name	Communication	Product Code
RMD-L-9025-200-C	CAN	110105033506
RMD-L-9025-200-R	RS485	110105033505

■ INSTALLATION DRAWING



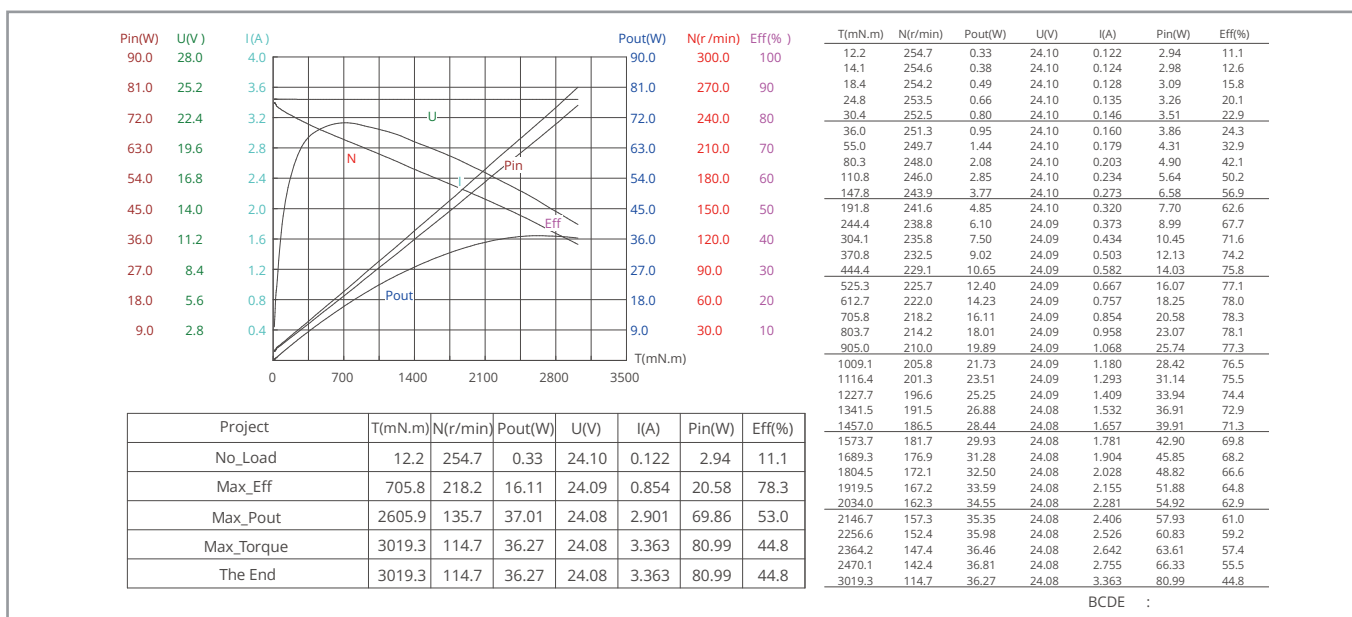
PRODUCT PARAMETERS

Item Name	Unit	L-9025
Nominal Voltage	V	24
Nominal Current	A	3.46
Nominal Torque	N.M	2.79
Nominal Speed	RPM	130
Max Speed	RPM	280
Max Instant Torque	N.M	5.8
Max Instant Current	A	7.6
Line Resistance	Ω	1.9
Wire Connect	-	Y
Phase to Phase Indctance	mH	4.71
Speed Constant	RPM/V	12
Torque Constant	N.M/A	0.76
Rotor Inertia	g.cm ²	4656
Number of Pole Pairs	-	14
Motor Weight	g	880
Working Temperature	°C	(-20 ~ 55°C)
Max Demagnetize Temperature	°C	120
Control Precision	°	0.001

Matched Driver

Drive	-	MC200
Input Voltage	V	12~24
Current	A	Normal : 8A Instant : 15A
Nominal Power	W	200
Encoder	-	14-bit Magnetic Encoder
Communication Method and Baud Rate	-	CAN BUS : 1M / RS485 : 115200 / 500k / 1M / 2.5M
Control Mode	-	Torque Loop (current loop) / Speed Loop / Position Loop
S-Curve	-	YES

MOTOR CHARACTERISTIC CURVE



BCDE :

RH Series Harmonic Actuator (Dual encoder)





Understand What You Need In Heart
And Know How To Make Effort Diligently



Low Speed Steady



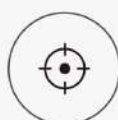
Low Noise



High Precision



High Load Capacity



Precise Control



Easy To Operate

Diversified Application Scenarios



Robotic Arm



Food Processing



Medical Equipment



CNC Bed

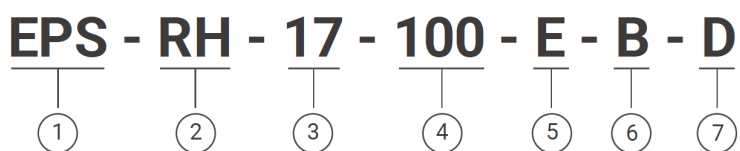


Shipbuilding Industry



Aviation Industry

EPS-RH Series Part Number Construction



- ① **EPS**: Brand Name E - Efficiency P - Precision S - Smart
- ② **RH**: RH Stands For The Series Name: Harmonic Actuator
- ③ **17**: Harmonic Model e.g: 14/17/20/25/32 etc
- ④ **100**: Reduction ratio 100:1
- ⑤ **E**: Communication E: CAN BUS & EtherCAT
- ⑥ **B**: N: Without Brake B: with Brake
- ⑦ **D**: D: Dual Encoder S: Single Encoder

For example

Model EPS-RH-20-100-E-N-D

Illustrate EPS: Brand Name
 RH: Harmonic Module
 20: Harmonic Model
 100: Gear ratio 100:1
 E: Communication E: CAN BUS & EtherCAT
 N: Without Brake
 D: Dual encoder

Series Name

EPS-RH

Motor Simplified Name

RH-14

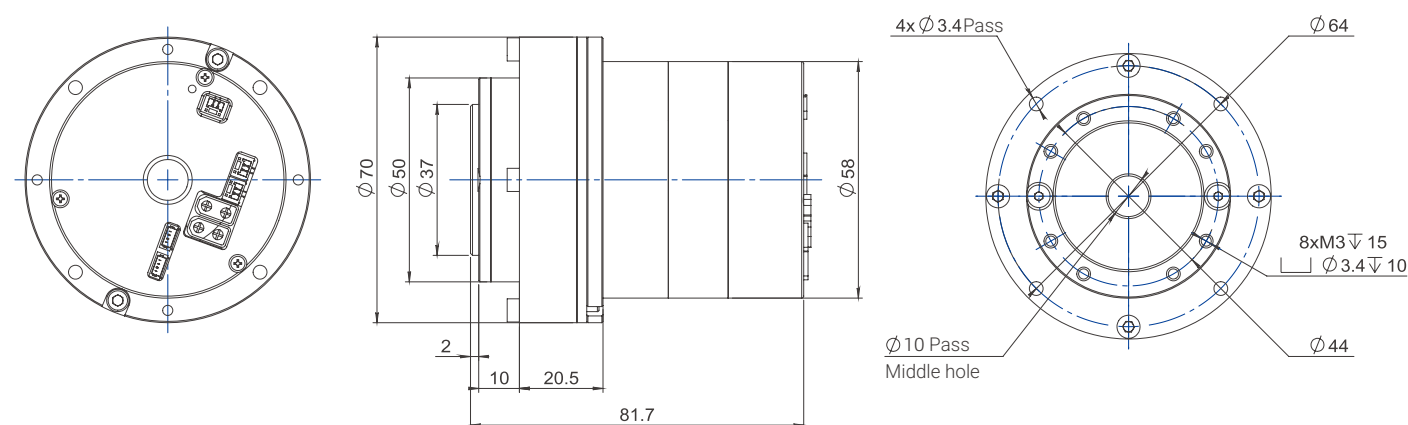


DUAL ENCODER

Actuator Full Name	Communication	With Brake / Without Brake	Gear Ratio
EPS-RH-14-100-E-N-D	CAN BUS & EtherCAT	N (without brake)	100

- * 1. The standard model only supports without brake.
- * 2. The standard model does not have waterproof function for IP54, please contact sales before ordering.
- * 3. 50:1 gear ratio is available, please contact sales to confirm the lead time before ordering.

INSTALLATION DRAWING



PRODUCT PARAMETERS

Item Name		Unit	RH-14
Gear Ratio		-	50 100
Input Voltage		V	48
No Load Speed		RPM	60 30
No Load Current		A	0.4 0.4
Rated Speed		RPM	50 25
Rated Torque		N.m	5.5 11
Rated Power		W	28
Rated Current		A(rms)	2.8
Peak Torque		N.m	14 28
Peak Current		A(rms)	5.7
Motor Back-EMF Constant		Vdc/Krpm	19.2
Module Torque Constant		N.m/A	2 4
Motor Phase Resistance		Ω	0.62
Motor Phase Inductance		mH	0.43
Pole Pair		-	10
3 Phase Connection		-	Y
Backlash		Arcsec	< 40
Radial Load	Static load	KN	8.6
	Dynamic load	KN	5.8
Axial Load	Static load	KN	58.7
	Dynamic load	KN	16.2
Inertia	N	kg.m ²	0.11 0.29
	B	kg.m ²	- -
Encoder Type		-	Dual Encoder ABS-17BIT (Input) ABS-17BIT (Output)
Repeat Position Accuracy		Degree	< 0.01
Communication		-	CAN BUS & EtherCAT
Weight	N	kg	0.78
	B	kg	/
Insulation Grade		-	F

*Rated torque test method When the ambient temperature is 24 degrees Celsius (no other heat 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.

STALL TORQUE DATA

	Torque (N.m)	Temperature rise (°C)	Stall time (s)	Phase current (Arms)
RH-14	16.5	3	15	3.7
	22	4	10	4.8
	27.5	6	8	6.6

Series Name

EPS-RH

Motor Simplified Name

RH-17



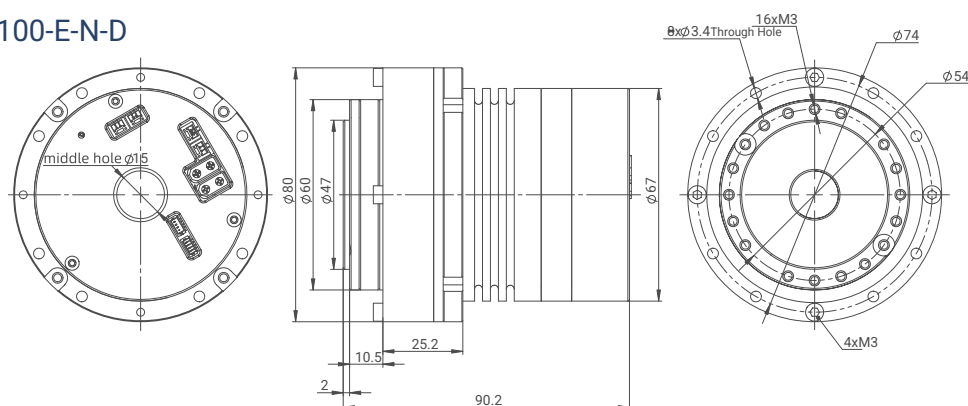
DUAL ENCODER

Actuator Full Name	Communication	With Brake / Without Brake	Gear Ratio
EPS-RH-17-100-E-N-D	CAN BUS & EtherCAT	N (without brake)	100
EPS-RH-17-100-E-B-D	CAN BUS & EtherCAT	B (with brake)	100

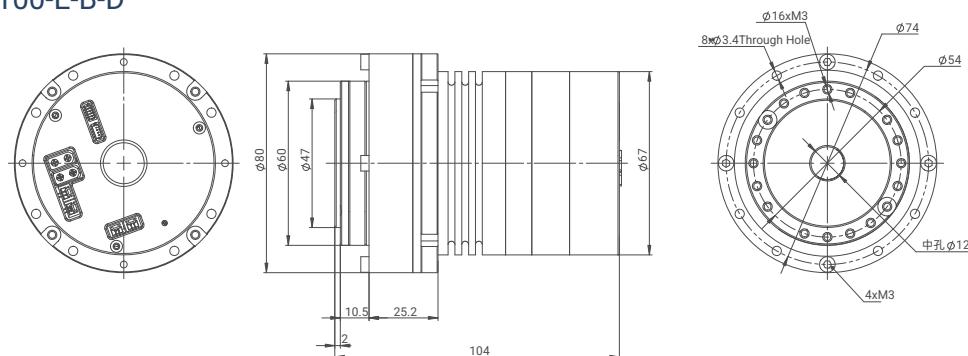
- * 1. The standard model supports brake or without brake.
- * 2. The standard model supports both CAN BUS & EtherCAT.
- * 3. The standard model does not have waterproof function for IP54, please contact sales before ordering.
- * 4. 50:1 gear ratio is available, please contact sales to confirm the lead time before ordering.

INSTALLATION DRAWING

EPS-RH-17-100-E-N-D



EPS-RH-17-100-E-B-D



PRODUCT PARAMETERS

Item Name		Unit	RH-17
Gear Ratio		-	50 100
Input Voltage		V	48
No Load Speed		RPM	60 30
No Load Current		A	0.6 0.6
Rated Speed		RPM	50 25
Rated Torque		N.m	17.5 35
Rated Power		W	91
Rated Current		A(rms)	4.7
Peak Torque		N.m	27 54
Peak Current		A(rms)	7.4
Motor Back-EMF Constant		Vdc/Krpm	19.2
Module Torque Constant		N.m/A	3.7 7.4
Motor Phase Resistance		Ω	0.7
Motor Phase Inductance		mH	0.47
Pole Pair		-	10
3 Phase Connection		-	Y
Backlash		Arcsec	< 40
Radial Load	Static load	KN	16.3
	Dynamic load	KN	10.4
Axial Load	Static load	KN	78.2
	Dynamic load	KN	20.8
Inertia	N	kg.m ²	0.16 0.52
	B	kg.m ²	0.18 0.56
Encoder Type		-	Dual Encoder ABS-17BIT (Input) ABS-17BIT (Output)
Repeat Position Accuracy		Degree	< 0.01
Communication		-	CAN BUS & EtherCAT
Weight	N	kg	1.11
	B	kg	1.28
Insulation Grade		-	F

*Rated torque test method When the ambient temperature is 24 degrees Celsius (no other heat 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.

STALL TORQUE DATA

RH-17	Torque (N.m)	Temperature rise (°C)	Stall time (s)	Phase current (Arms)
	52.5	15	15	6.9
	70	7	10	9.8
	87.5	35	8	11.9

Series Name

EPS-RH

Motor Simplified Name

RH-20



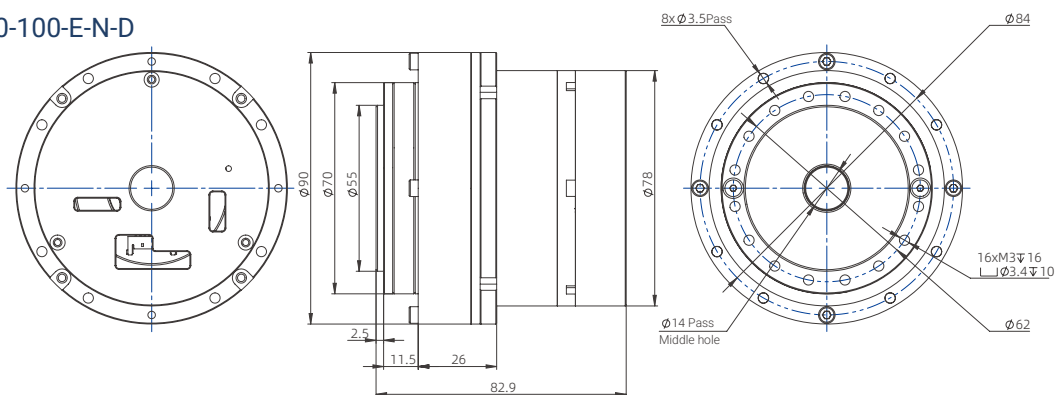
DUAL ENCODER

Actuator Full Name	Communication	With Brake / Without Brake	Gear Ratio
EPS-RH-20-100-E-N-D	CAN BUS and EtherCAT	N (without brake)	100
EPS-RH-20-100-E-B-D	CAN BUS and EtherCAT	B (with brake)	100

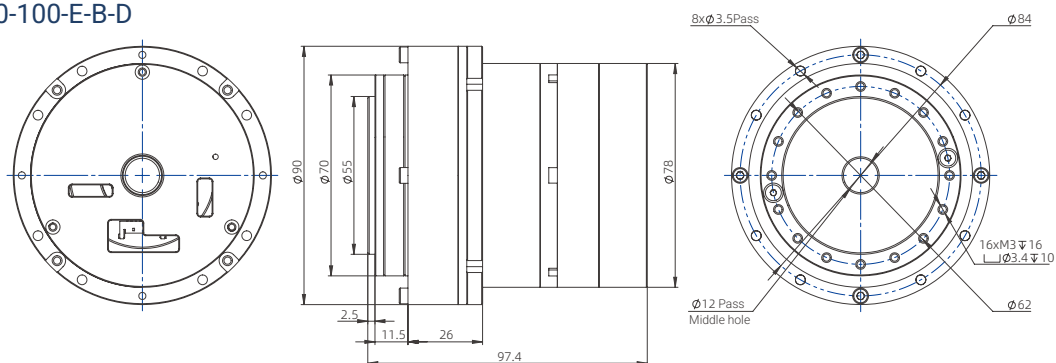
- * 1. The standard model supports brake or without brake.
- * 2. The standard model supports both CAN BUS & EtherCAT.
- * 3. The standard model does not have waterproof function for IP54, please contact sales before ordering.
- * 4. 50:1 gear ratio is available, please contact sales to confirm the lead time before ordering.

INSTALLATION DRAWING

EPS-RH-20-100-E-N-D



EPS-RH-20-100-E-B-D



PRODUCT PARAMETERS

Item Name		Unit	RH-20
Gear Ratio		-	50 100
Input Voltage		V	48
No Load Speed		RPM	60 30
No Load Current		A	1.1 1.2
Rated Speed		RPM	50 25
Rated Torque		N.m	25 50
Rated Power		W	130
Rated Current		A(rms)	6.8
Peak Torque		N.m	40 80
Peak Current		A(rms)	10.6
Motor Back-EMF Constant		Vdc/Krpm	19.2
Module Torque Constant		N.m/A	3.65 7.3
Motor Phase Resistance		Ω	0.36
Motor Phase Inductance		mH	0.51
Pole Pair		-	10
3 Phase Connection		-	Y
Backlash		Arcsec	< 40
Radial Load	Static load	KN	22
	Dynamic load	KN	14.6
Axial Load	Static load	KN	132.7
	Dynamic load	KN	34
Inertia	N	kg.m ²	0.21 0.87
	B	kg.m ²	0.24 0.95
Encoder Type		-	Dual Encoder ABS-17BIT (Input) ABS-17BIT (Output)
Repeat Position Accuracy		Degree	< 0.01
Communication		-	CAN BUS & EtherCAT
Weight	N	kg	1.45
	B	kg	1.75
Insulation Grade		-	F

*Rated torque test method When the ambient temperature is 24 degrees Celsius (no other heat 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.

STALL TORQUE DATA

RH-20	Torque (N.m)	Temperature rise (°C)	Stall time (s)	Phase current (Arms)
	75	12	15	10.5
	100	8	10	13.5
	125	15	8	18

Series Name

EPS-RH

Motor Simplified Name

RH-25



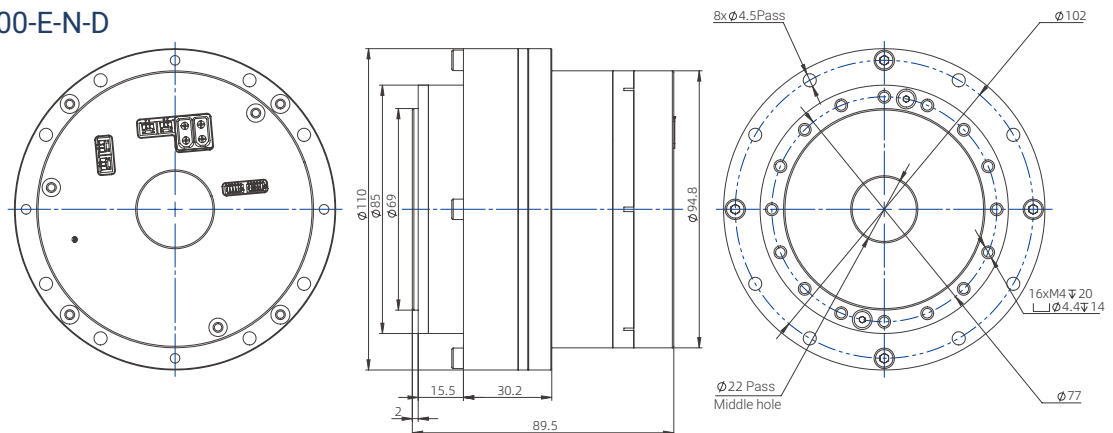
DUAL ENCODER

Actuator Full Name	Communication	With Brake / Without Brake	Gear Ratio
EPS-RH-25-100-E-N-D	CAN BUS and EtherCAT	N (without brake)	100
EPS-RH-25-100-E-B-D	CAN BUS and EtherCAT	B (with brake)	100

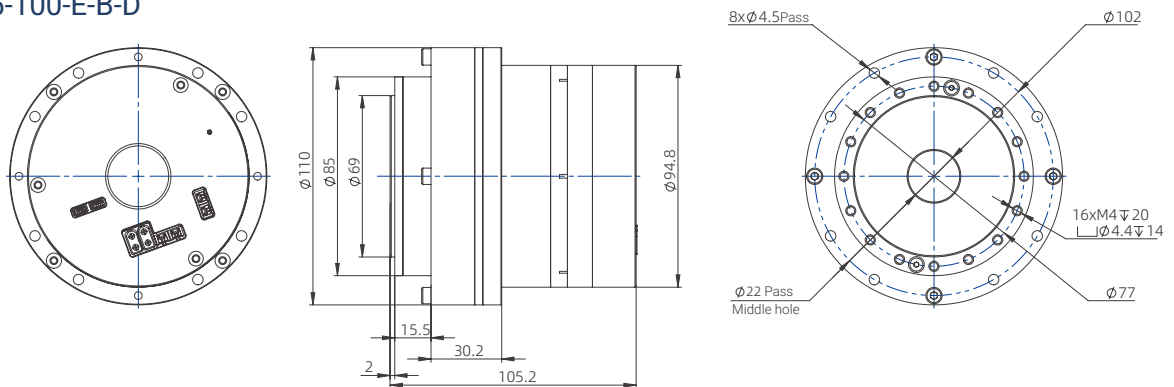
- * 1. The standard model supports brake or without brake.
- * 2. The standard model supports both CAN BUS & EtherCAT.
- * 3. The standard model does not have waterproof function for IP54, please contact sales before ordering.
- * 4. 50:1 gear ratio is available, please contact sales to confirm the lead time before ordering.

INSTALLATION DRAWING

EPS-RH-25-100-E-N-D



EPS-RH-25-100-E-B-D



PRODUCT PARAMETERS

Item Name		Unit	RH-25
Gear Ratio		-	50 100
Input Voltage		V	48
No Load Speed		RPM	60 30
No Load Current		A	1.8 2
Rated Speed		RPM	50 25
Rated Torque		N.m	54 108
Rated Power		W	282
Rated Current		A(rms)	10.6
Peak Torque		N.m	78.5 157
Peak Current		A(rms)	14.1
Motor Back-EMF Constant		Vdc/Krpm	19.2
Module Torque Constant		N.m/A	5.05 10.1
Motor Phase Resistance		Ω	0.16
Motor Phase Inductance		mH	0.33
Pole Pair		-	10
3 Phase Connection		-	Y
Backlash		Arcsec	< 40
Radial Load	Static load	KN	35.8
	Dynamic load	KN	21.8
Axial Load	Static load	KN	198.2
	Dynamic load	KN	49.1
Inertia	N	kg.m ²	0.51 1.94
	B	kg.m ²	0.59 2.32
Encoder Type		-	Dual Encoder ABS-17BIT (Input) ABS-17BIT (Output)
Repeat Position Accuracy		Degree	< 0.01
Communication		-	CAN BUS & EtherCAT
Weight	N	kg	2.42
	B	kg	2.74
Insulation Grade		-	F

*Rated torque test method When the ambient temperature is 24 degrees Celsius (no other heat 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.

STALL TORQUE DATA

RH-25	Torque (N.m)	Temperature rise (°C)	Stall time (s)	Phase current (Arms)
	162	3	15	18
	216	9	10	22.1
	256	39	5	24.6

Series Name

EPS-RH

Motor Simplified Name

RH-32



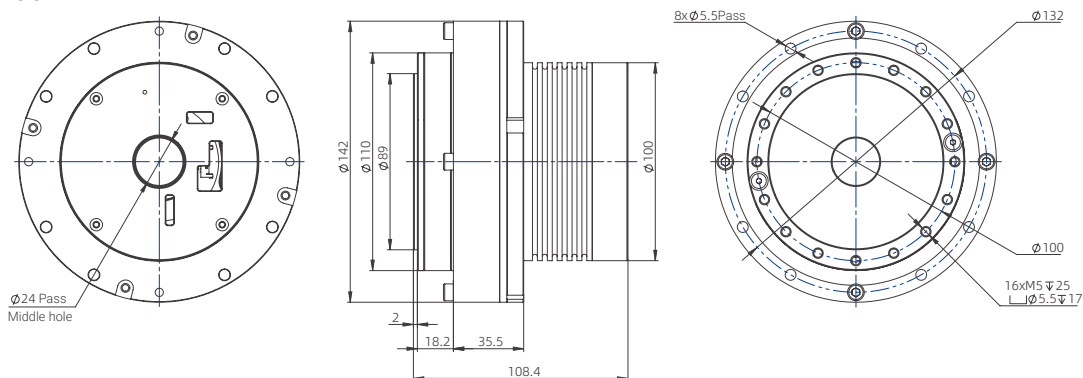
DUAL ENCODER

Actuator Full Name	Communication	With Brake / Without Brake	Gear Ratio
EPS-RH-32-100-E-N-D	CAN BUS and EtherCAT	N (without brake)	100
EPS-RH-32-100-E-B-D	CAN BUS and EtherCAT	B (with brake)	100

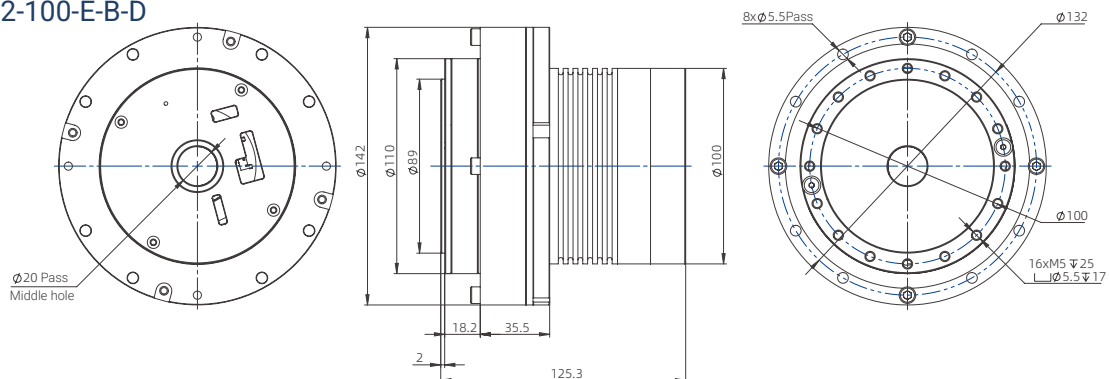
- * 1. The standard model supports brake or without brake.
- * 2. The standard model supports both CAN BUS & EtherCAT.
- * 3. The standard model does not have waterproof function for IP54, please contact sales before ordering.
- * 4. 50:1 gear ratio is available, please contact sales to confirm the lead time before ordering.

INSTALLATION DRAWING

EPS-RH-32-100-E-N-D



EPS-RH-32-100-E-B-D



PRODUCT PARAMETERS

Item Name		Unit	RH-32
Gear Ratio		-	50 100
Input Voltage		V	48
No Load Speed		RPM	40 20
No Load Current		A	2.6 2.8
Rated Speed		RPM	36 18
Rated Torque		N.m	75 150
Rated Power		W	282
Rated Current		A(rms)	21.8
Peak Torque		N.m	114.5 229
Peak Current		A(rms)	32.1
Motor Back-EMF Constant		Vdc/Krpm	26.7
Module Torque Constant		N.m/A	3.45 6.9
Motor Phase Resistance		Ω	0.08
Motor Phase Inductance		mH	0.18
Pole Pair		-	10
3 Phase Connection		-	Y
Backlash		Arcsec	< 40
Radial Load	Static load	KN	65.4
	Dynamic load	KN	38.2
Axial Load	Static load	KN	342.6
	Dynamic load	KN	81.8
Inertia	N	kg.m ²	0.82 6.86
	B	kg.m ²	2.05 8.32
Encoder Type		-	Dual Encoder ABS-17BIT (Input) ABS-17BIT (Output)
Repeat Position Accuracy		Degree	< 0.01
Communication		-	CAN BUS & EtherCAT
Weight	N	kg	4.32
	B	kg	4.74
Insulation Grade		-	F

*Rated torque test method When the ambient temperature is 24 degrees Celsius (no other heat 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.

STALL TORQUE DATA

RH-32	Torque (N.m)	Temperature rise (°C)	Stall time (s)	Phase current (Arms)
	195	24	10	24
	225	40	8	28
	270	49	5	33.5

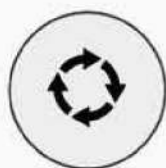
**Integrated
Harmonic Module**

RH - HARMONIC - SERIES

Integrated Design, Vibration Resistance



Understand what you need in heart and
know how to make effort diligently



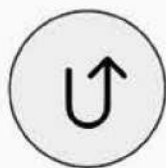
STABLE AT LOW SPEED



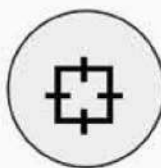
LOW NOISE



HIGH PRECISION



STRONG CARRYING CAPACITY



PRECISE CONTROL



EASY TO OPERATE

DIVERSIFIED APPLICABLE SCENATIOS



Robotic Arm



Food Processing



Medical Equipment



CNC Bed



Shipbuilding Industry



Aviation Industry

EPS-RH Series Part Number Construction

EPS-RH-17-100-C-B-S

① ② ③ ④ ⑤ ⑥ ⑦

- ① Brand Name : E-Efficiency P-Precision S-Smart
- ② RH Stands For The Series Name : Integrated Harmonic Actuator
- ③ Harmonic Model e.g:14 / 17 / 20 / 25 / 32 etc
- ④ Reduction Ratio 1:100
- ⑤ Communication C: CAN BUS
- ⑥ N: Without Brake B: with Brake
- ⑦ S: Single Encoder D: Dual Encoder

For example

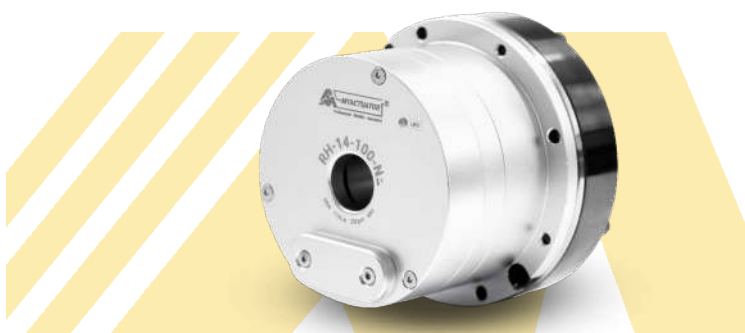
Model	EPS-RH-20-100-C-N-S
Illustrate	EPS : Brand name RH : Hollow harmonic module 20 : Harmonic model 100 : Harmonic gear ratio 100:1 C: Communication C : CAN BUS N : Without brake S : Single encoder

Series Name

EPS-RH

Motor Simplified Name

RH-14



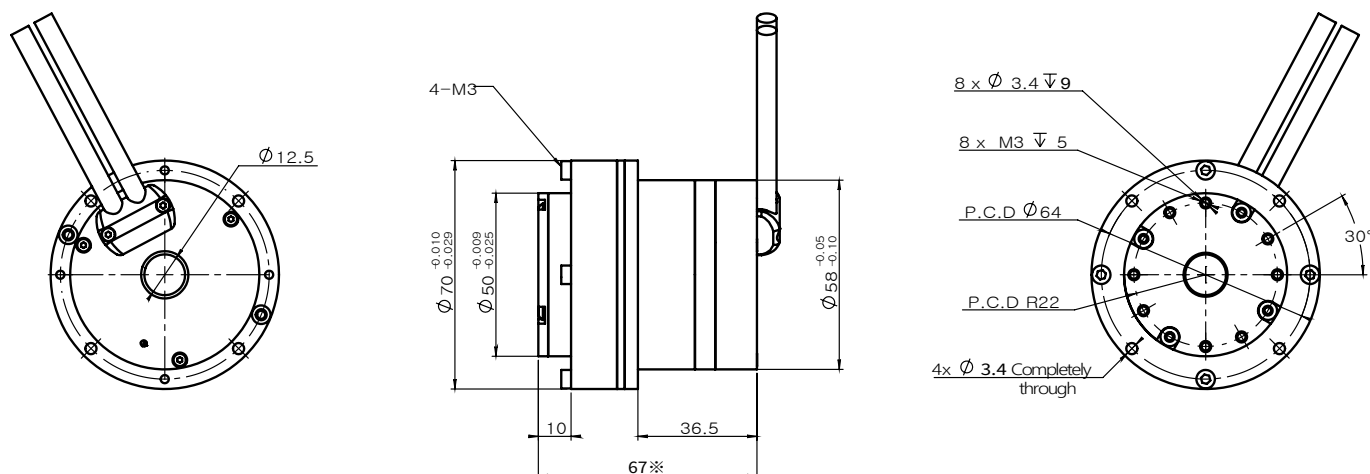
■ SINGLE ENCODER+CAN BUS / OFF AXIS ENCODER

Actuator Full Name	With Brake / Without Brake	Encoder
EPS-RH-14-100-C-N-S	N (without brake)	Single Encoder

- * 1. The standard motor can support both brake or without brake.
- * 2. The standard motor no IP protection. If need IP54 please contact salesman before order.
- * 3. The standard motor only support CAN BUS communication.

■ INSTALLATION DRAWING

EPS-RH-14--C-N**



PRODUCT PARAMETERS

Item Name	Unit	RH-14
Gear Ratio	-	100
Input Voltage	V	48
No Load Speed	RPM	30
No Load Current	A	0.9
Rated Speed	RPM	25
Rated Torque	N.m	11
Rated Power	W	100
Rated Current	A	6.5
Peak Torque	N.m	28
Peak Current	A	16.25
Back-EMF Constant	Vdc/Krpm	1.39
Torque Constant	N.m/A	0.02
Phase Resistance	Ω	0.9
Phase Inductance	mH	0.4
Pole Pair	-	10
3 Phase Connection	-	Y
Backlash	Arcsec	< 20
Encoder Type & Interface	-	ABS-17bit
Repeat Position Accuracy	Degree	< 0.01
Communication	-	CAN BUS
Weight (N)	Kg	0.71
Weight (B)	Kg	/
Insulation Grade	-	F

*Rated torque test method When the ambient temperature is 24 degrees Celsius (no other heat 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.

Series Name

EPS-RH

Motor Simplified Name

RH-17



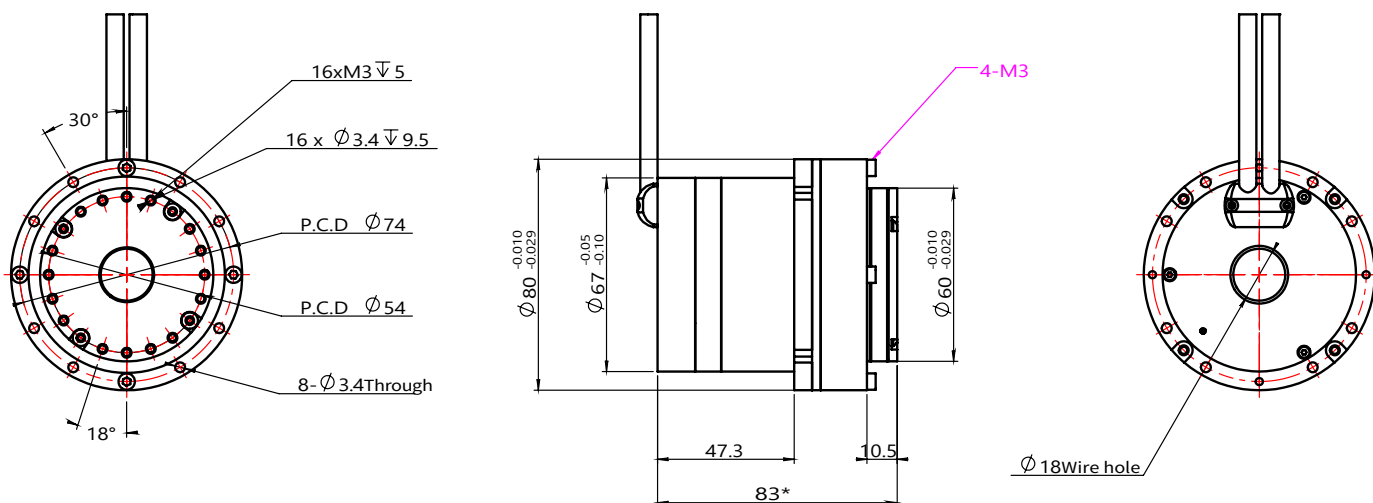
■ SINGLE ENCODER+CAN BUS / OFF AXIS ENCODER

Actuator Full Name	With Brake / Without Brake	Encoder
EPS-RH-17-100-C-N-S	N (without brake)	Single encoder
EPS-RH-17-100-C-B-S	B (with brake)	Single encoder

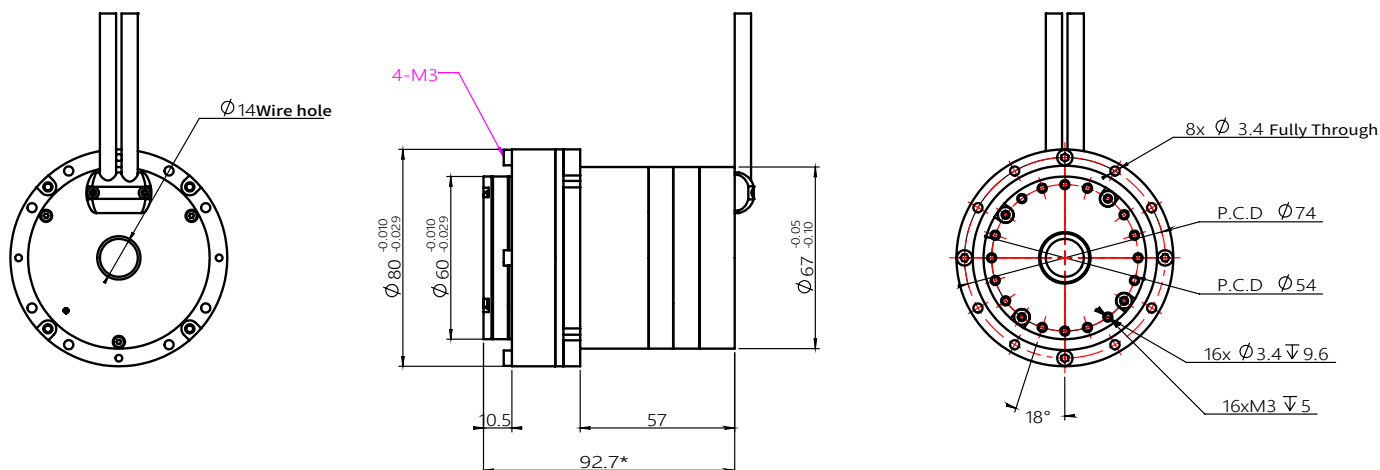
- * 1. The standard motor can support both brake or without brake.
- * 2. The standard motor no IP protection. If need IP54 please contact salesman before order.
- * 3. The standard motor only support CAN BUS communication.

■ INSTALLATION DRAWING

EPS-RH-17-**-C-N



EPS-RH-17-**-C-B



PRODUCT PARAMETERS

Item Name	Unit	RH-17
Gear Ratio	-	100
Input Voltage	V	48
No Load Speed	RPM	30
No Load Current	A	1.45
Rated Speed	RPM	25
Rated Torque	N.m	35
Rated Power	W	180
Rated Current	A	9
Peak Torque	N.m	54
Peak Current	A	13.86
Back-EMF Constant	Vdc/Krpm	2.79
Torque Constant	N.m/A	0.04
Phase Resistance	Ω	0.77
Phase Inductance	mH	0.38
Pole Pair	-	10
3 Phase Connection	-	Y
Backlash	Arcsec	< 20
Encoder Type & Interface	-	ABS-17bit
Repeat Position Accuracy	Degree	< 0.01
Communication	-	CAN BUS
Weight (N)	Kg	1.1
Weight (B)	Kg	1.25
Insulation Grade	-	F

*Rated torque test method When the ambient temperature is 24 degrees Celsius (no other heat 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.

Series Name

EPS-RH

Motor Simplified Name

RH-20



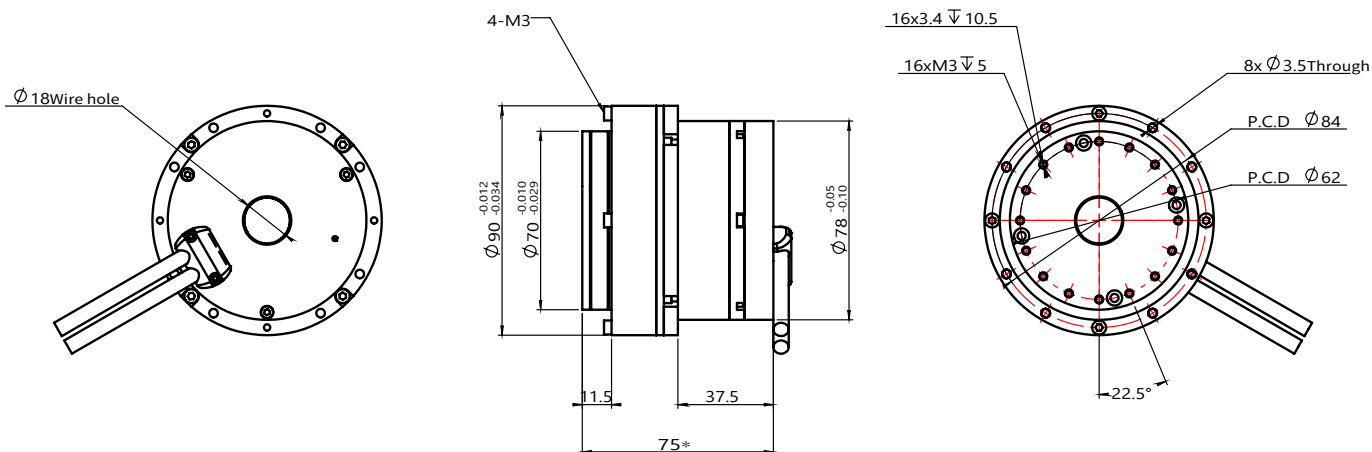
■ SINGLE ENCODER+CAN BUS / OFF AXIS ENCODER

Actuator Full Name	With Brake / Without Brake	Encoder
EPS-RH-20-100-C-N-S	N (without brake)	Single encoder
EPS-RH-20-100-C-B-S	B (with brake)	Single encoder

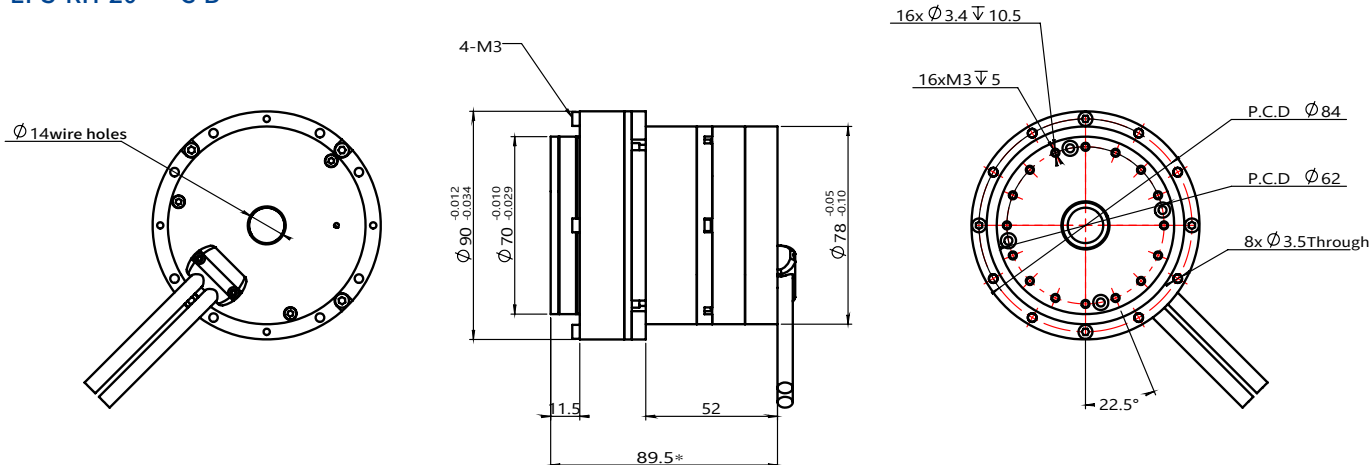
- * 1. The standard motor can support both brake or without brake.
- * 2. The standard motor no IP protection. If need IP54 please contact salesman before order.
- * 3. The standard motor only support CAN BUS communication.

■ INSTALLATION DRAWING

EPS-RH-20-**-C-N



EPS-RH-20-**-C-B



PRODUCT PARAMETERS

Item Name	Unit	RH-20
Gear Ratio	-	100
Input Voltage	V	48
No Load Speed	RPM	30
No Load Current	A	2.59
Rated Speed	RPM	25
Rated Torque	N.m	50
Rated Power	W	250
Rated Current	A	13
Peak Torque	N.m	80
Peak Current	A	20.8
Back-EMF Constant	Vdc/Krpm	2.79
Torque Constant	N.m/A	0.04
Phase Resistance	Ω	0.38
Phase Inductance	mH	0.33
Pole Pair	-	10
3 Phase Connection	-	Y
Backlash	Arcsec	< 20
Encoder Type & Interface	-	ABS-17bit
Repeat Position Accuracy	Degree	< 0.01
Communication	-	CAN BUS
Weight (N)	Kg	1.45
Weight (B)	Kg	1.6
Insulation Grade	-	F

*Rated torque test method When the ambient temperature is 24 degrees Celsius (no other heat 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.

Series Name

EPS-RH

Motor Simplified Name

RH-25



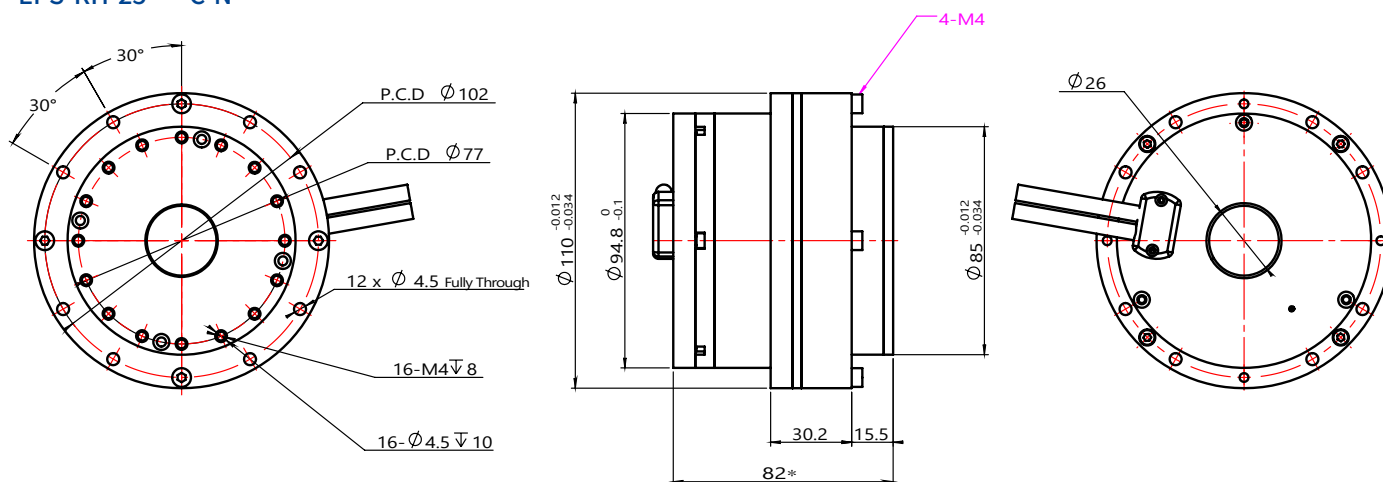
■ SINGLE ENCODER+CAN BUS / OFF AXIS ENCODER

Actuator Full Name	With Brake / Without Brake	Encoder
EPS-RH-25-100-C-N-S	N (without brake)	Single encoder
EPS-RH-25-100-C-B-S	B (with brake)	Single encoder

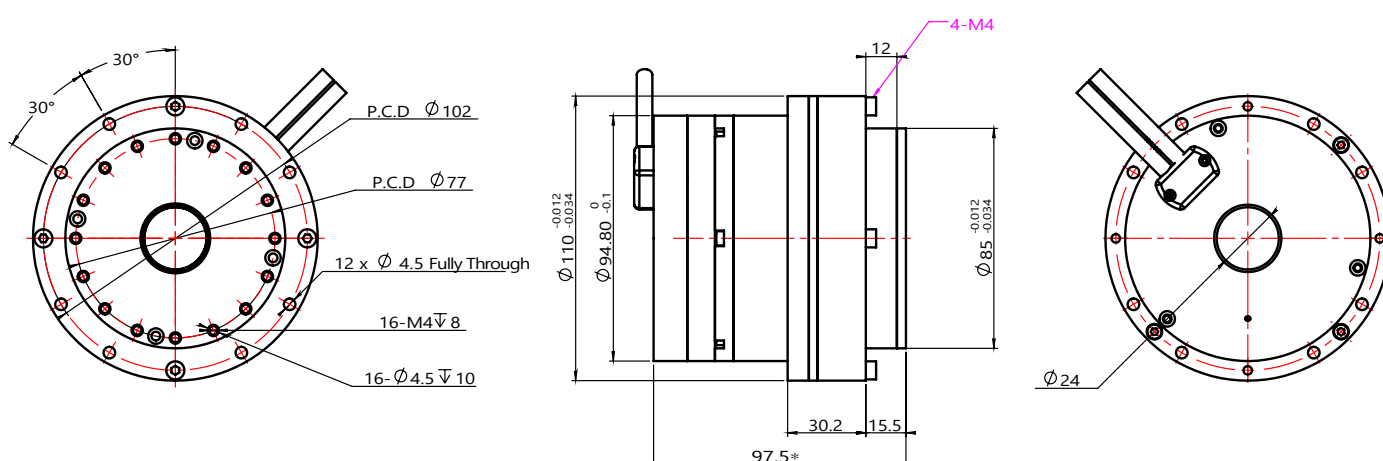
- * 1. The standard motor can support both brake or without brake.
- * 2. The standard motor no IP protection. If need IP54 please contact salesman before order.
- * 3. The standard motor only support CAN BUS communication.

■ INSTALLATION DRAWING

EPS-RH-25-**-C-N



EPS-RH-25-**-C-B



PRODUCT PARAMETERS

Item Name	Unit	RH-25
Gear Ratio	-	100
Input Voltage	V	48
No Load Speed	RPM	30
No Load Current	A	1.61
Rated Speed	RPM	25
Rated Torque	N.m	108
Rated Power	W	400
Rated Current	A	16
Peak Torque	N.m	157
Peak Current	A	23.2
Back-EMF Constant	Vdc/Krpm	4.89
Torque Constant	N.m/A	0.07
Phase Resistance	Ω	0.23
Phase Inductance	mH	0.3
Pole Pair	-	10
3 Phase Connection	-	Y
Backlash	Arcsec	< 20
Encoder Type & Interface	-	ABS-17bit
Repeat Position Accuracy	Degree	< 0.01
Communication	-	CAN BUS
Weight (N)	Kg	2.3
Weight (B)	Kg	2.82
Insulation Grade	-	F

*Rated torque test method When the ambient temperature is 24 degrees Celsius (no other heat 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.

Series Name

EPS-RH

Motor Simplified Name

RH-32



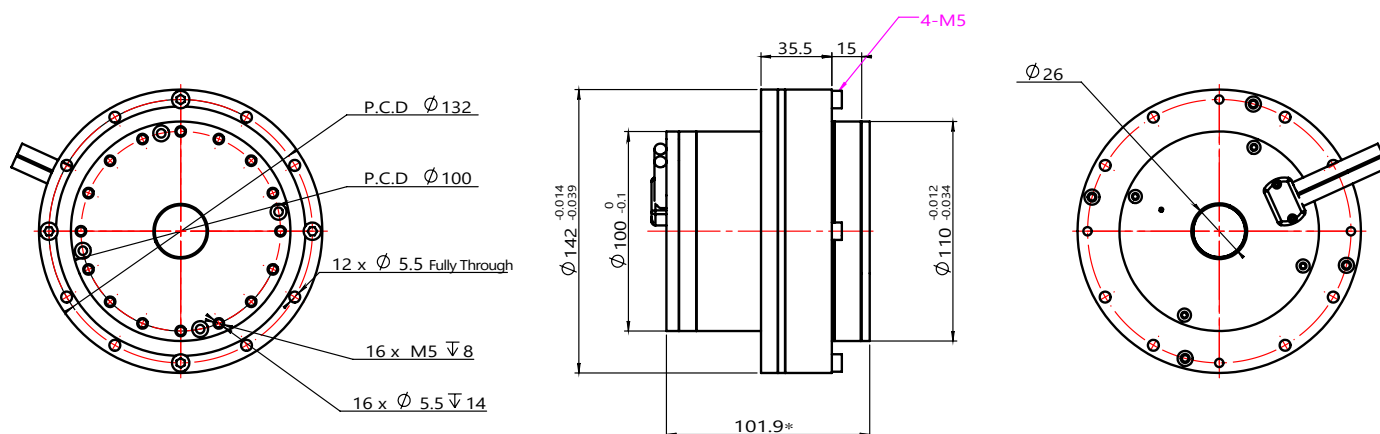
■ SINGLE ENCODER+CAN BUS / OFF AXIS ENCODER

Actuator Full Name	With Brake / Without Brake	Encoder
EPS-RH-32-100-C-N-S	N (without brake)	Single encoder
EPS-RH-32-100-C-B-S	B (with brake)	Single encoder

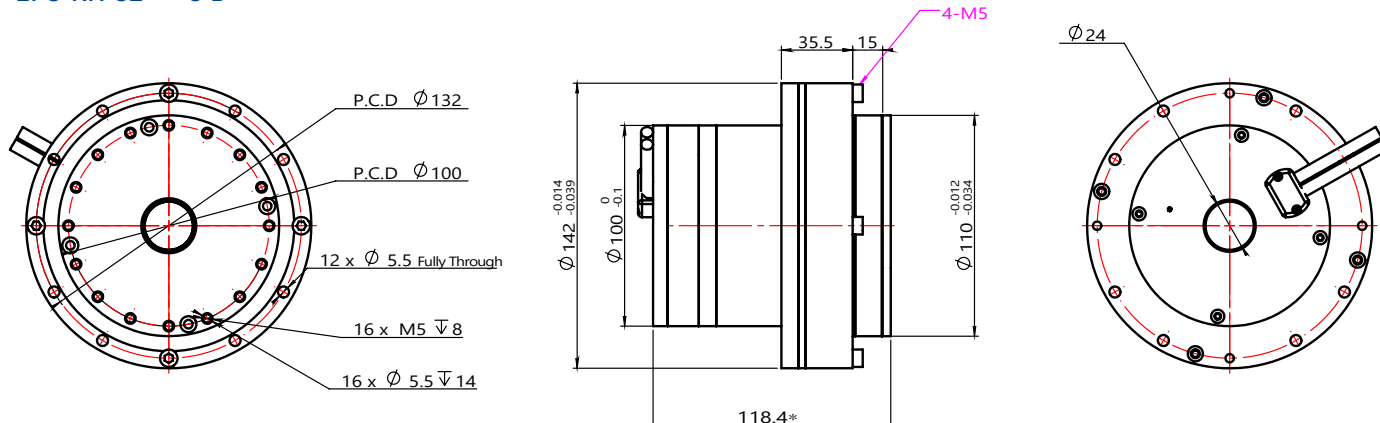
- * 1. The standard motor can support both brake or without brake.
- * 2. The standard motor no IP protection. If need IP54 please contact salesman before order.
- * 3. The standard motor only support CAN BUS communication.

■ INSTALLATION DRAWING

EPS-RH-32-**-C-N



EPS-RH-32-**-C-B



PRODUCT PARAMETERS

Item Name	Unit	RH-32
Gear Ratio	-	100
Input Voltage	V	48
No Load Speed	RPM	20
No Load Current	A	3.9
Rated Speed	RPM	18
Rated Torque	N.m	150
Rated Power	W	700
Rated Current	A	20
Peak Torque	N.m	229
Peak Current	A	33.44
Back-EMF Constant	Vdc/Krpm	6.28
Torque Constant	N.m/A	0.09
Phase Resistance	Ω	0.08
Phase Inductance	mH	0.13
Pole Pair	-	10
3 Phase Connection	-	Y
Backlash	Arcsec	< 20
Encoder Type & Interface	-	ABS-17bit
Repeat Position Accuracy	Degree	< 0.01
Communication	-	CAN BUS
Weight (N)	Kg	4.3
Weight (B)	Kg	4.7
Insulation Grade	-	F

*Rated torque test method When the ambient temperature is 24 degrees Celsius (no other heat 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.

OUTER ROTOR
FRAMELESS TORQUE MOTOR MODULE

FRAMELESS MOTOR

Vacuum potting | Good heat dissipation | High efficiency | High power



FLO Series Part Number Construction

RMD-FLO-70-15-200

① ② ③ ④ ⑤

- ① RMD : Brand Name R-Reducer M-Motor D-Drive
- ② FLO : FLO Stands For The Series Name: Outer rotor frameless torque motor
- ③ 70 : Rotor outer diameter 70mm
- ④ 15 : Stator stack height 15mm
- ⑤ 200 : Rated power 200W

For example

Model RMD-FLO-90-15-400

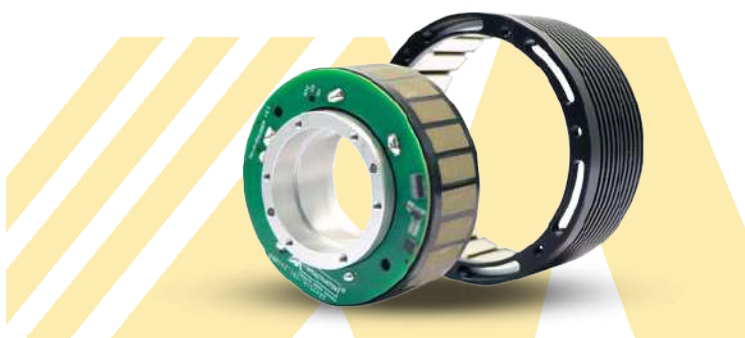
Illustrate RMD : Brand Name
 FLO : Outer rotor frameless torque motor
 90 : Rotor outer diameter
 15 : Stator stack height
 400 : Rated power

Series Name

RMD-FLO

Motor Simplified Name

FLO-50-15



■ OUTER ROTOR

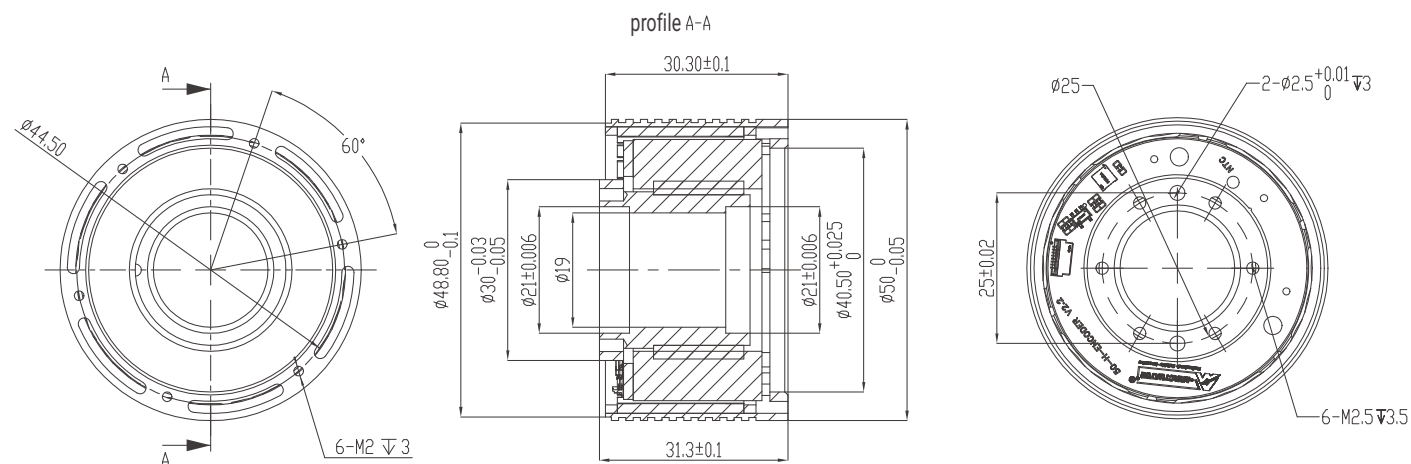
Actuator Full Name

RMD-FLO-50-15-100

Encoder/Sensor

Hall+INC

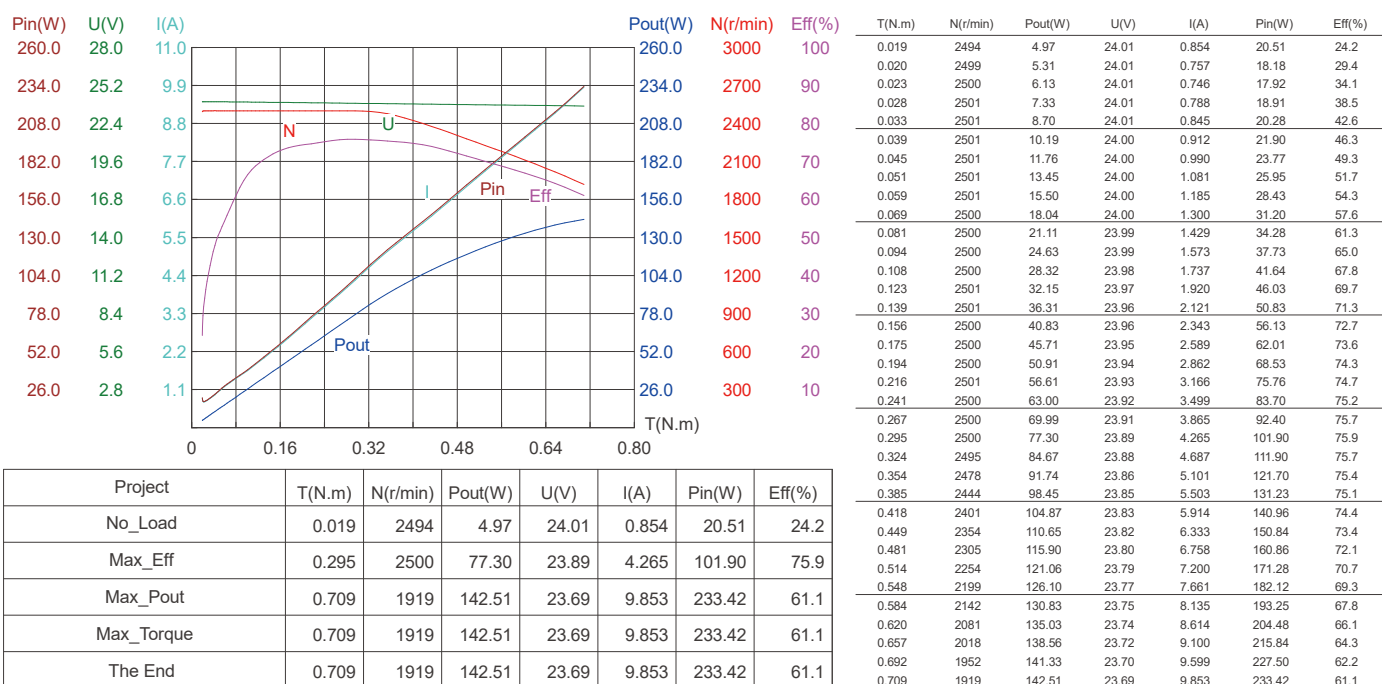
■ INSTALLATION DRAWING



PRODUCT PARAMETERS

Item Name	Unit	FLO-50-15
Input Voltage	V	24
No Load Current	A	0.32
Rated Speed	RPM	2500
Rated Torque	N.m	0.35
Rated Power	W	91.6
Rated Current	A	4.9
Peak Torque	N.m	0.87
Peak Current	A	14.7
Efficiency	%	>83
Back-EMF Constant	Vdc/Krpm	7.93
Torque Constant	N.m/A	0.07
Phase Resistance	Ω	0.4
Phase Inductance	mH	0.19
Pole Pair	-	13
Cogging Torque	N.m	12
3 Phase Connection	-	Y
Encoder Type & Interface	-	Hall+INC
Weight	kg	0.19
Insulation Grade	-	F

MOTOR CHARACTERISTIC CURVE

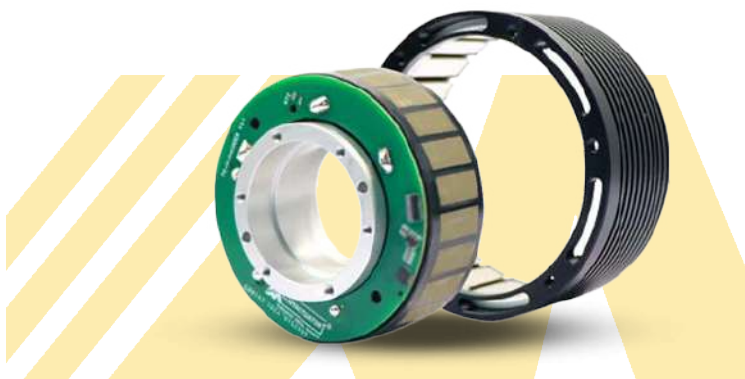


Series Name

RMD-FLO

Motor Simplified Name

FLO-70-15



■ OUTER ROTOR

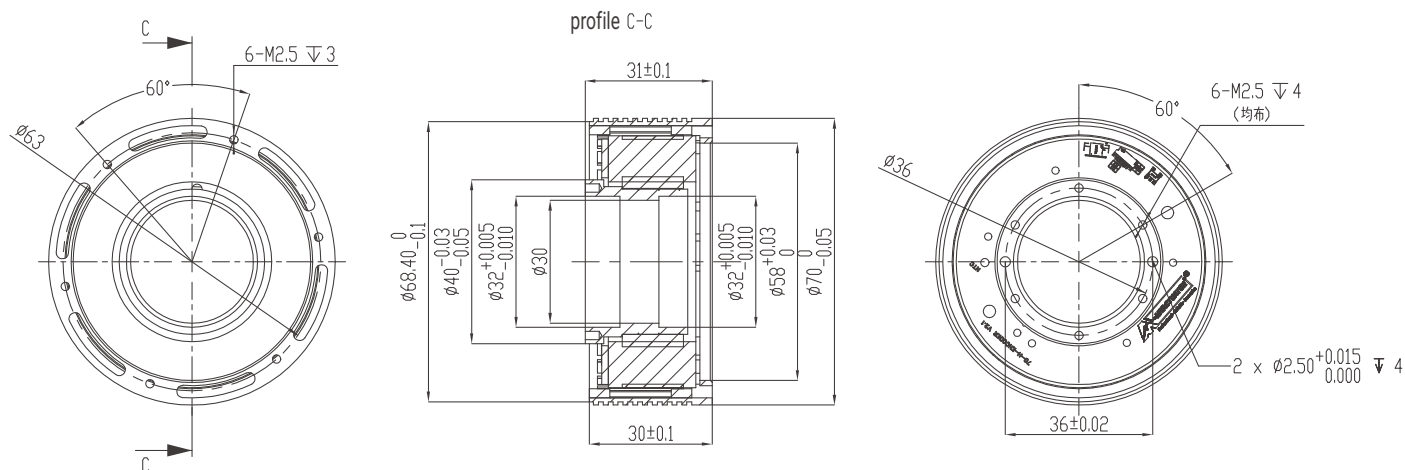
Actuator Full Name

RMD-FLO-70-15-200

Encoder/Sensor

Hall+INC

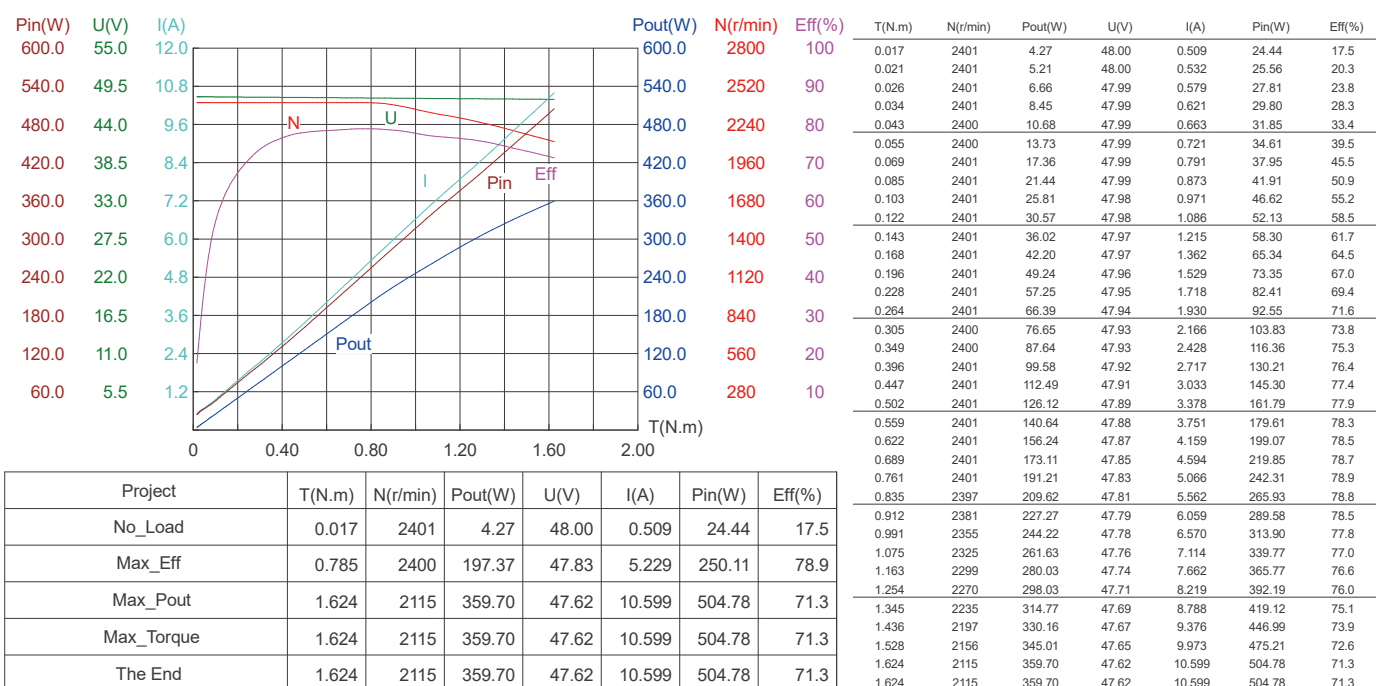
■ INSTALLATION DRAWING



PRODUCT PARAMETERS

Item Name	Unit	FLO-70-15
Input Voltage	V	48
No Load Current	A	0.21
Rated Speed	RPM	2400
Rated Torque	N.m	0.8
Rated Power	W	200
Rated Current	A	4.4
Peak Torque	N.m	2
Peak Current	A	13.2
Efficiency	%	>84
Back-EMF Constant	Vdc/Krpm	17
Torque Constant	N.m/A	0.18
Phase Resistance	Ω	0.5
Phase Inductance	mH	0.55
Pole Pair	-	13
Cogging Torque	N.m	30.83
3 Phase Connection	-	Y
Encoder Type & Interface	-	Hall+INC
Weight	kg	0.33
Insulation Grade	-	F

MOTOR CHARACTERISTIC CURVE



FLO-90-15



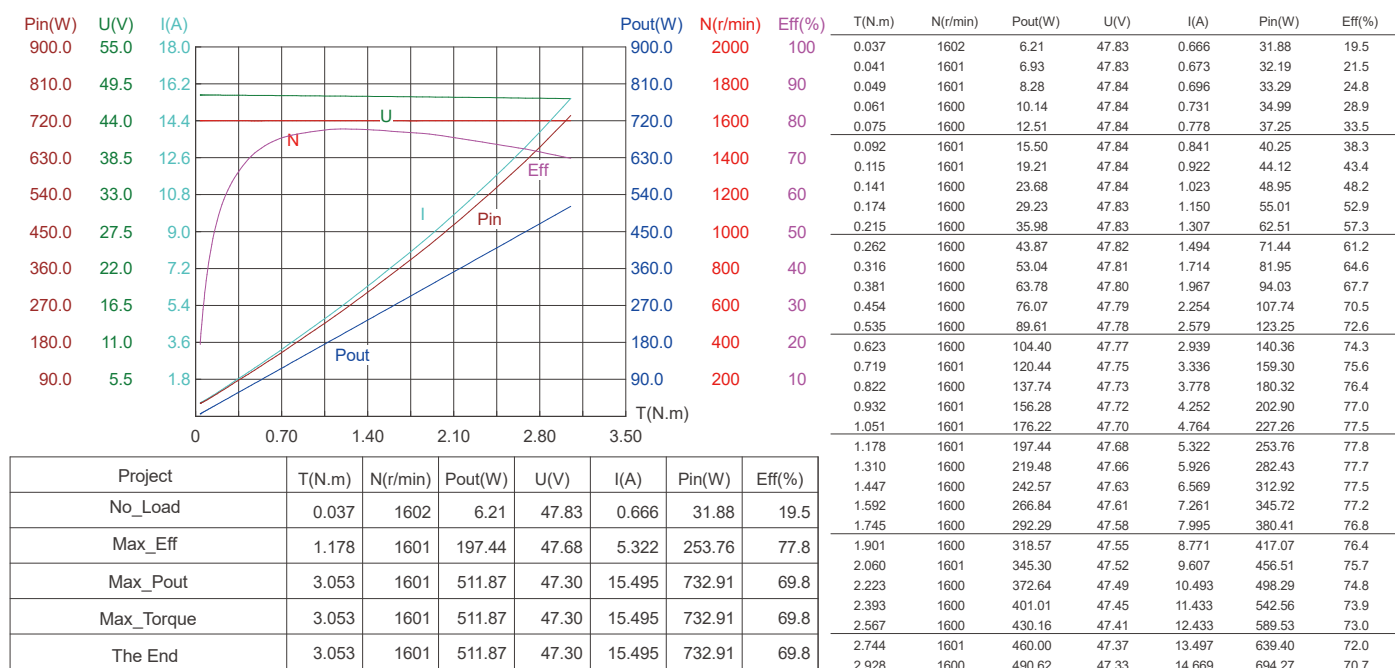
■ INSTALLATION DRAWING



PRODUCT PARAMETERS

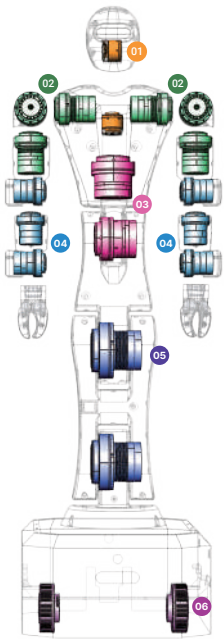
Item Name	Unit	FLO-90-15
Input Voltage	V	48
No Load Current	A	0.35
Rated Speed	RPM	1600
Rated Torque	N.m	1.5
Rated Power	W	252
Rated Current	A	6.6
Peak Torque	N.m	3.75
Peak Current	A	19.8
Efficiency	%	>83
Back-EMF Constant	Vdc/Krpm	21.1
Torque Constant	N.m/A	0.23
Phase Resistance	Ω	0.35
Phase Inductance	mH	0.28
Pole Pair	-	17
Cogging Torque	N.m	64
3 Phase Connection	-	Y
Encoder Type & Interface	-	Hall+INC
Weight	kg	0.46
Insulation Grade	-	F

MOTOR CHARACTERISTIC CURVE



1.6m Humanoid Robot Drive Solution

CAN BUS



Total DOF	Machine Weight	Overall Height	Arm Speed	Wrist Payload	Rated Power
20	80 kg	160 cm	1 m/s	5 kg	5 - 240 W

- 1 Head**
Direct Drive Actuator
L-5015 * 2



- 4 Lower arm**
Harmonic Actuator
RH-14 * 6



- 2 Upper arm**
Harmonic Actuator
RH-17 * 6



- 5 Legs**
Harmonic Actuator
RH-32 * 2



- 3 Waist**
Harmonic Actuator
RH-25 * 2



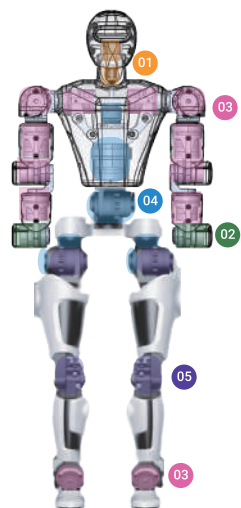
- 6 Bottom**
Planetary Actuator
X10-40 * 2



Parameters		Unit	L-5015	X10-40	RH-14	RH-17	RH-25	RH-32
Gear Ratio		-	-	7	100	100	100	100
Rated Voltage		V	24	48	48	48	48	48
Rated Power		W	100	265	28	91	282	282
Rated Torque		N.m	0.36	15	11	35	108	150
Rated Speed		PRM	350	165	25	25	25	18
Rated Current		A(rms)	1.57	6.5	2.8	4.7	10.6	21.8
Peak Torque		N.m	0.82	40	28	54	157	229
No Load Speed		PRM	680	-	30	30	30	20
Torque Constant		N.m/A	0.23	-	4	7.4	10.1	6.9
Back-EMF Constant		Vdc/Krpm	-	-	19.2	19.2	19.2	26.7
Efficiency		%	-	82	-	-	-	-
Control Accuracy		Degree	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Inertia	N	kg.cm ²	0.268	39.7	0.29	0.52	1.94	6.86
	B	kg.cm ²	-	-	-	0.56	2.32	8.32
Weight	N	Kg	0.174	1.15	0.78	1.11	2.42	4.32
	B	Kg	-	-	/	1.28	2.74	4.74
Communication		-	CAN BUS					
Encoder		-	14-BIT	-	Dual Encoder ABS-17BIT/ABS-17BIT			

1.3m Humanoid Robot Drive Solution

CAN BUS



Total DOF	Machine Weight	Overall Height	Arm Reach	Wrist Payload	Repeatability
29	35 kg	130 cm	420 mm	3 kg	0.1 mm

- 1 Head**
Planetary Actuator
X2-7 * 2



- 2 Wrist**
Planetary Actuator
X4-10 * 4



- 3 The upper arm and elbow, forearm/ankle**
Planetary Actuator
X4-36 * 12



- 4 Hip side / Hip rotation / Waist**
Planetary Actuator
X6-60 * 7

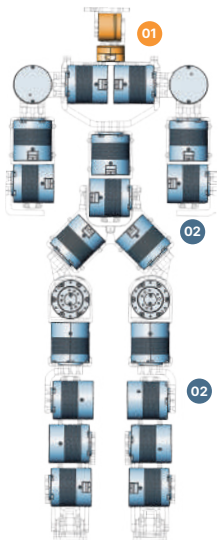


- 5 Front of the hip/ Knee**
Planetary Actuator
X8-120 * 4



Parameters	Unit	X2-7	X4-10	X4-36	X6-60	X8-120
Gear Ratio	-	28.17	12.6	36	19.612	19.612
Rated Voltage	V	24	24	24	48	48
Rated Power	W	37	100	100	320	574
Rated Torque	N.m	2.5	4	10.5	20	43
Rated Speed	PRM	142	238	83	153	127
Rated Current	A(rms)	3	7.8	6.1	9.5	17.6
Peak Torque	N.m	7	10	34	60	120
No Load Speed	PRM	178	317	111	176	158
Torque Constant	N.m/A	0.8	0.8	1.9	2.1	2.4
Back-EMF Constant	Vdc/Krpm	4.3	6	6	16	19.2
Efficiency	%	63	69.5	63.1	72.7	79
Control Accuracy	Degree	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Inertia	kg.cm ²	0.17	0.25	0.3	0.66	1.5
Weight	kg	0.26	0.26	0.36	0.82	1.4
Communication	-	CAN BUS				
Encoder	-	Dual Encoder ABS-17BIT/18BIT			Dual Encoder ABS-17BIT/17BIT	

0.8m Humanoid Robot Drive Solution **CAN BUS**



Total DOF	Machine Weight	Overall Height	Arm Speed	Wrist Payload	Rated Power
24	20 kg	80 cm	1 m/s	2 kg	10 - 50 W

1 Head
Direct Drive Actuator
L-4005 * 1

Direct Drive Actuator
L-4015 * 1



2 Upper body
Planetary Actuator
X4-36 * 12



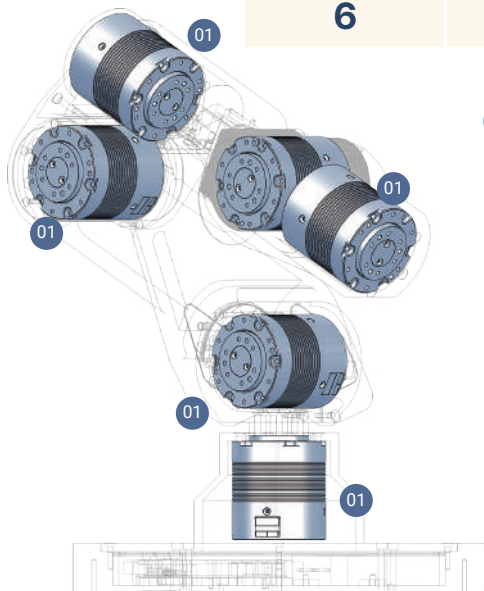
Legs
Planetary Actuator
X4-36 * 10

Parameters	Unit	L-4005	L-4015	X4-36
Gear Ratio	-	-	-	36
Rated Voltage	V	12	16	24
Rated Power	W	100	100	100
Rated Torque	N.m	0.07	0.22	10.5
Rated Speed	PRM	1600	520	83
Rated Current	A(rms)	1.44	1.88	6.1
Peak Torque	N.m	0.25	0.49	34
No Load Speed	PRM	2390	1010	111
Torque Constant	N.m/A	0.05	0.12	1.9
Back-EMF Constant	Vdc/Krpm	-	-	6
Efficiency	%	-	-	63.1
Control Accuracy	Degree	< 0.01	< 0.01	< 0.01
Inertia	kg.cm ²	0.056	0.105	0.3
Weight	kg	0.065	0.12	0.36
Communication	-		CAN BUS	
Encoder	-		18BIT	Dual Encoder ABS-17BIT/18BIT

Small Robot Arm Drive Solution. I

CAN BUS

Total DOF	Max Reach	Robot Weight	Max Payload	Repeatability	Max Linear Speed
6	420 mm	4.6 kg	3 kg	±0.2 mm	1 m/s



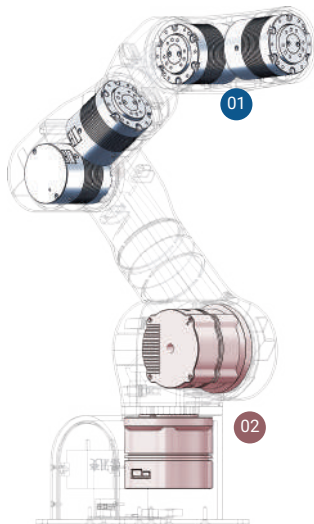
1 Full axis
 Planetary Actuator
 X4-36 * 6



Parameters	Unit	X4-36
Gear Ratio	-	36
Rated Voltage	V	24
Rated Power	W	100
Rated Torque	N.m	10.5
Rated Speed	PRM	83
Rated Current	A(rms)	6.1
Peak Torque	N.m	34
No Load Speed	PRM	111
Torque Constant	N.m/A	1.9
Back-EMF Constant	Vdc/Krpm	6
Efficiency	%	63.1
Control Accuracy	Degree	< 0.01
Inertia	kg.cm ²	0.3
Weight	kg	0.36
Communication	-	CAN BUS
Encoder	-	Dual Encoder ABS-17BIT/18BIT

Small Robot Arm Drive Solution. II **CAN BUS**

Total DOF	Max Reach	Robot Weight	Max Payload	Repeatability	Max Linear Speed
6	550 mm	5.5 kg	5 kg	±0.2 mm	1 m/s



1 Upper axis
Planetary Module
X4-36 * 4



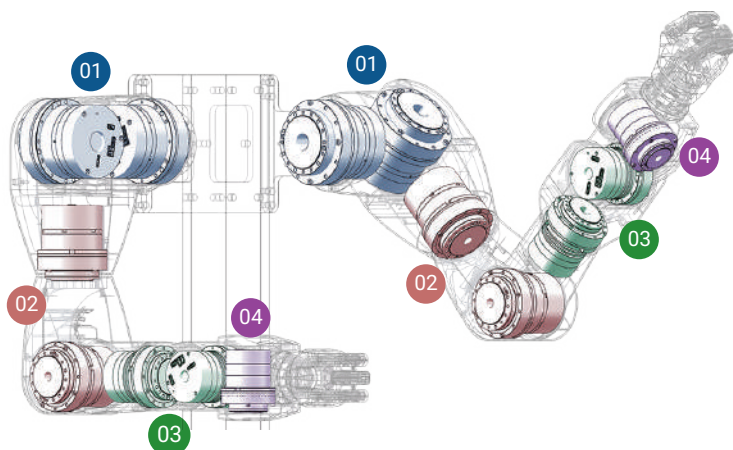
2 Lower shaft
Planetary Module
X6-60 * 2



Parameters	Unit	X4-36	X6-60
Gear Ratio	-	36	19.612
Rated Voltage	V	24	48
Rated Power	W	100	320
Rated Torque	N.m	10.5	20
Rated Speed	PRM	83	153
Rated Current	A(rms)	6.1	9.5
Peak Torque	N.m	34	60
No Load Speed	PRM	111	176
Torque Constant	N.m/A	1.9	2.1
Back-EMF Constant	Vdc/Krpm	6	16
Efficiency	%	63.1	72.7
Control Accuracy	Degree	< 0.01	<0.01
Inertia	kg.cm ²	0.3	0.66
Weight	kg	0.36	0.82
Communication	-	CAN BUS	CAN BUS
Encoder	-	Dual Encoder ABS-17BIT/18BIT	Dual Encoder ABS-17BIT/17BIT

Small Robot Arm Drive Solution. III **CAN BUS**

Total DOF	Max Reach	Robot Weight	Max Payload	Repeatability	Max Linear Speed
14	680 mm	11.2 kg	10 kg	±0.05 mm	1 m/s



- 1 Shoulders**
Harmonic Module
RH-25-100-E-B * 2
- 2 Arm**
Harmonic Module
RH-20-100-E-B * 2
- 3 Forearm**
Harmonic Module
RH-17-100-E-N * 2
- 4 Wrist joint**
Harmonic Module
RH-14-100-E-N * 1

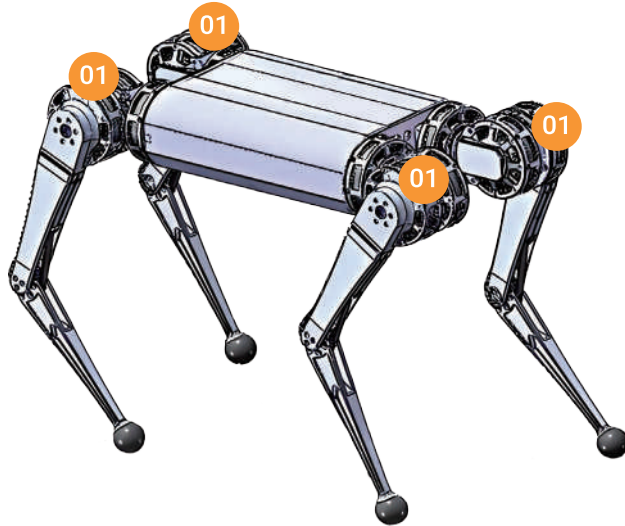


Parameters		Unit	RH-14	RH-17	RH-20	RH-25
Gear Ratio		-	100	100	100	100
Rated Voltage		V	48	48	48	48
Rated Power		W	28	91	130	282
Rated Torque		N.m	11	35	50	108
Rated Speed		PRM	25	25	25	25
Rated Current		A(rms)	2.8	4.7	6.8	10.6
Peak Torque		N.m	28	54	80	157
No Load Speed		PRM	30	30	30	30
Torque Constant		N.m/A	4	7.4	7.3	10.1
Back-EMF Constant		Vdc/Krpm	19.2	19.2	19.2	19.2
Efficiency		%	-	-	-	-
Control Accuracy		Degree	< 0.01	< 0.01	< 0.01	< 0.01
Inertia	N	kg.cm ²	0.29	0.52	0.87	1.94
	B	kg.cm ²	-	0.56	0.95	2.32
Weight	N	Kg	0.78	1.11	1.45	2.42
	B	Kg	/	1.28	1.75	2.74
Communication		-	CAN BUS			
Encoder		-	Dual Encoder ABS-17BIT/ABS-17BIT			

Lightweight Quadruped Drive Solution

CAN BUS

Max Torque	Rated Voltage	Max Speed	Rated Power
30 N.m	24 V	224 RPM	380 W



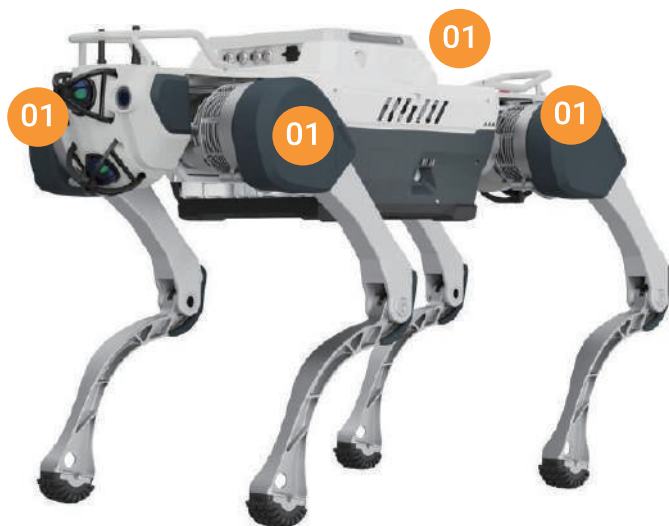
- 1 Four joints**
Planetary Actuator
X8-32 * 12



Parameters	Unit	X8-32
Gear Ratio	-	9
Rated Voltage	V	24
Rated Power	W	380
Rated Torque	N.m	16
Rated Speed	PRM	224
Rated Current	A(rms)	12
Peak Torque	N.m	30
No Load Speed	PRM	300
Torque Constant	N.m/A	1.3
Back-EMF Constant	Vdc/Krpm	11.9
Efficiency	%	82
Control Accuracy	Degree	<0.01
Inertia	kg.cm ²	1.43
Weight	kg	0.55
Communication	-	CAN BUS
Encoder	-	Single Encoder ABS-18BIT

High-Power Quadruped Drive Solution **CAN BUS**

Max Joint Torque	Rated Voltage	Max Speed	Rated Power
320 N.m	48 V	100 RPM	1000 W



- 1 Four joints**
Planetary Actuator
X12-320 * 12

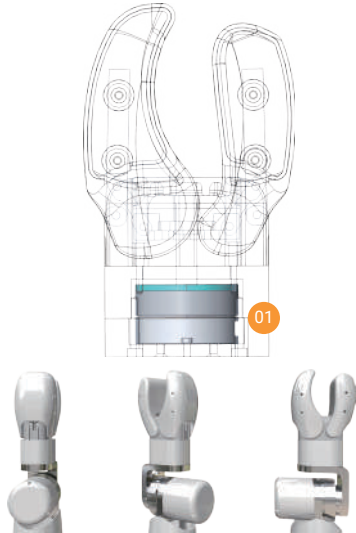


Parameters	Unit	X12-320
Gear Ratio	-	20
Rated Voltage	V	48
Rated Power	W	1000
Rated Torque	N.m	85
Rated Speed	PRM	100
Rated Current	A(rms)	30
Peak Torque	N.m	320
No Load Speed	PRM	125
Torque Constant	N.m/A	3.3
Back-EMF Constant	Vdc/Krpm	17.9
Efficiency	%	75
Control Accuracy	Degree	<0.01
Inertia	kg.cm ²	12.9
Weight	kg	2.37
Communication	-	CAN BUS
Encoder	-	Dual Encoder ABS-17BIT/17BIT

2-Finger Gripper System Solution

CAN BUS

Clamping Force	Robot Weight	Rated Voltage	Rated Current	Operating Temperature	Size
20 N	0.3 kg	24 V	1.44 A	-20~55 °C	75 × 61 × 136 mm (L×W×H)



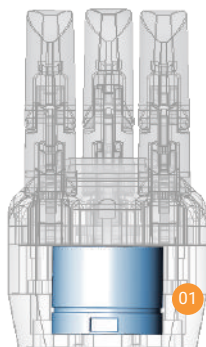
1 Joints
Direct Drive Actuator
L-4015 * 1



Parameters	Unit	L-4015
Gear Ratio	-	-
Rated Voltage	V	16
Rated Power	W	100
Rated Torque	N.m	0.22
Rated Speed	PRM	520
Rated Current	A(rms)	1.88
Peak Torque	N.m	0.49
No Load Speed	PRM	1010
Torque Constant	N.m/A	0.12
Back-EMF Constant	Vdc/Krpm	-
Efficiency	%	-
Control Accuracy	Degree	<0.01
Inertia	kg.cm ²	0.105
Weight	kg	0.12
Communication	-	CAN BUS
Encoder	-	18-BIT

3-Finger Gripper System Solution
CAN BUS

Clamping Force	Robot Weight	Rated Voltage	Rated Current	Operating Temperature	Size
20 N	0.28 kg	24 V	1.44 A	-20~55 °C	85 × 72 × 130 mm (L×W×H)



1 Joints
 Direct Drive Actuator
 L-4015 * 1



Parameters	Unit	L-4015
Gear Ratio	-	-
Rated Voltage	V	16
Rated Power	W	100
Rated Torque	N.m	0.22
Rated Speed	PRM	520
Rated Current	A(rms)	1.88
Peak Torque	N.m	0.49
No Load Speed	PRM	1010
Torque Constant	N.m/A	0.12
Back-EMF Constant	Vdc/Krpm	-
Efficiency	%	-
Control Accuracy	Degree	<0.01
Inertia	kg.cm ²	0.105
Weight	kg	0.12
Communication	-	CAN BUS
Encoder	-	18-BIT

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