

DYNAMIXEL

High-performance networked actuators for robots

Patented Technology



All-In-One Smart Servo

Smart DC servo with compact, modular design
DYNAMIXEL = DC motor + Reduction Gear + Controller + Driver + Network



Key Component for Research & Education

Proven quality and IDE support for 50,000+ developers worldwide
Best for multi-joint system (pan-tilt, manipulator, hexapod, biped)



Powerful Feedback Functions

Bilateral real-time communication to your robot including position, speed, temperature, etc



Simple Link and Easy Maintenance

Daisy chain topology provides distributed control, versatile expansion and easy maintenance

NEW DYNAMIXEL MX SERIES



Contactless Absolute Encoder

12-bit resolution, 360° operation range with super-durability



User Programmable PID Control Gain

Precise and reliable PID control



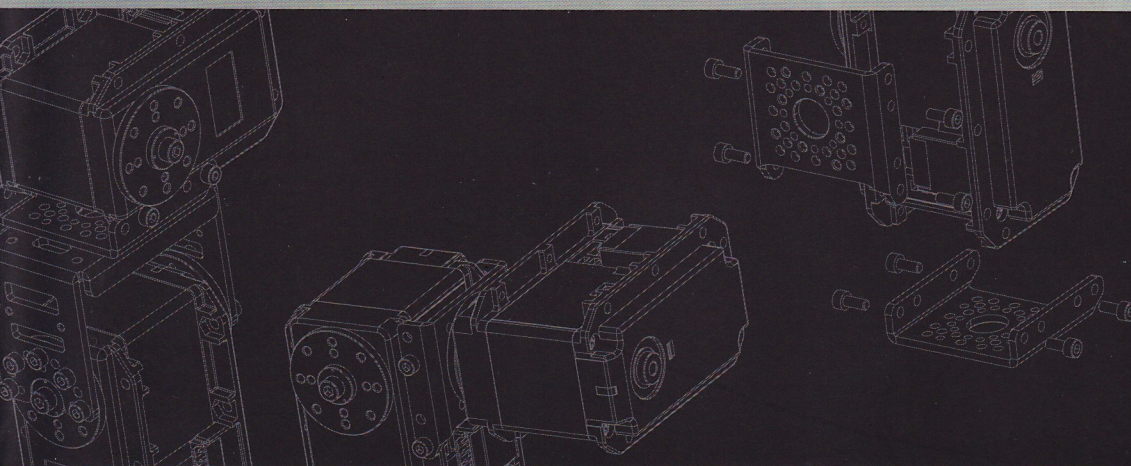
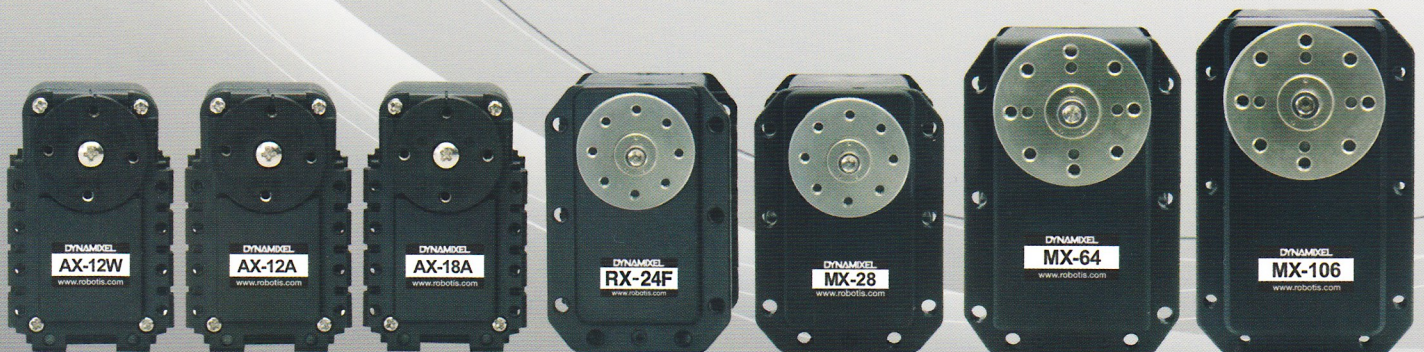
Powerful Resource & Organized Design

Maxon motor, 32-bit controller, high communication speed
RX and EX series compatible dimension

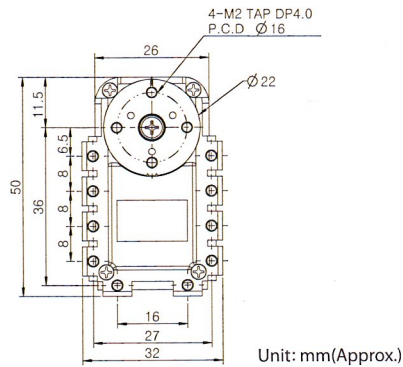
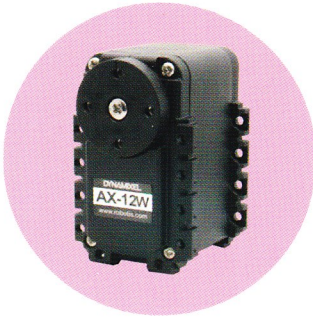


Current Based Torque Control

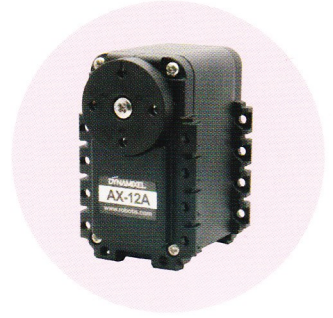
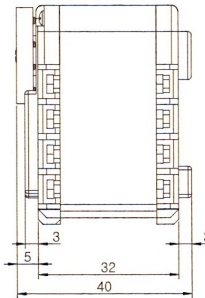
Position and speed control with dual-loop current control (MX-64, MX-106 only)



◆ AX-12W

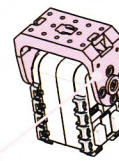


◆ AX-12A / AX-18A

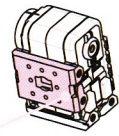


Option Frame (plastic)

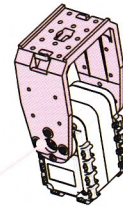
	AX-12W			AX-12A	AX-18A
Weight	52.9 g (1.86 oz)			54.6 g (1.88 oz)	54.6 g (1.88 oz)
Dimension(mm) / (inch)	32×50×40(mm) 1.25×1.97×1.57(inch)			32×50×40(mm) 1.25×1.97×1.57(inch)	32×50×40(mm) 1.25×1.97×1.57(inch)
Gear Ratio (material)	32 : 1 (enpla)			254 : 1 (enpla)	254 : 1 (enpla+metal)
Network Interface	TTL			TTL	TTL
Position Sensor (Resolution)	Potentiometer (300°/1024)			Potentiometer (300°/1024)	Potentiometer (300°/1024)
Motor	Cored Motor			Cored Motor	Coreless Motor
Operation Voltage (V)	9.0	11.1	12.0	9.0~12.0	9.0~12.0
Stall Torque (N.m)	N/A			1.5 at 12.0V	1.8 at 12.0V
Stall Current (A)	1.1	1.3	1.4	1.5	2.2
No Load Speed (RPM)	360	430	470	59	97



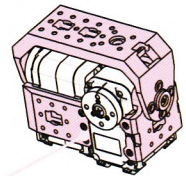
FP04-F2



FP04-F3



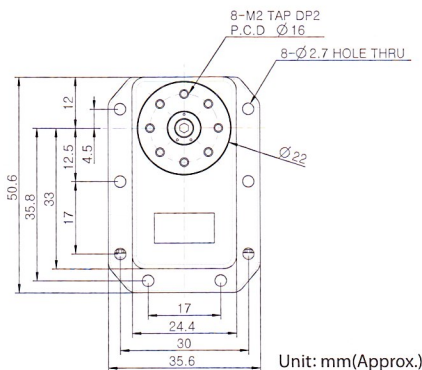
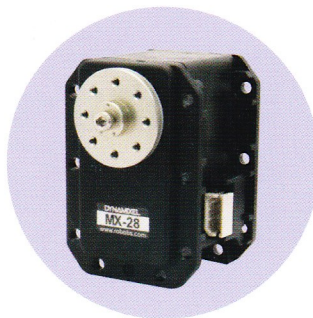
FP04-F4



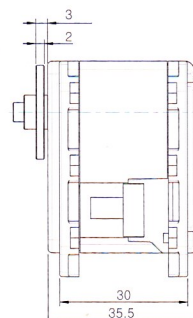
FP04-F6

NEW

◆ MX-28

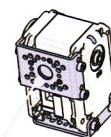


◆ RX-24F / RX-28

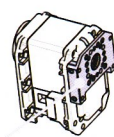


Option Frame (aluminium)

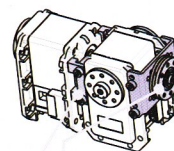
	MX-28			RX-24F	RX-28
Weight	72 g (2.53 oz)			67 g (2.36 oz)	72 g (2.53 oz)
Dimension(mm) / (inch)	35.6×50.6×35.5(mm) 1.40×1.99×1.40(inch)			35.6×50.6×35.5(mm) 1.40×1.99×1.40(inch)	35.6×50.6×35.5(mm) 1.40×1.99×1.40(inch)
Gear Ratio (material)	193 : 1 (metal)			193 : 1 (metal)	193 : 1 (metal)
Network Interface	TTL / RS-485			RS-485	RS-485
Position Sensor (Resolution)	Contactless Absolute Encoder (360° / 4096)			Potentiometer (300°/1024)	Potentiometer (300°/1024)
Motor	Maxon Motor			Coreless Motor	Maxon Motor
Operation Voltage (V)	11.1	12.0	14.8	9.0~12.0	12.0~18.5
Stall Torque (N.m)	2.3	2.5	3.1	2.6 at 12.0V	2.5 at 14.8V
Stall Current (A)	1.3	1.4	1.7	2.4	1.5
No Load Speed (RPM)	50	55	67	126	67



FR07-S101 Set

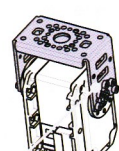


FR07-B101 Set



FR07-F101 Set

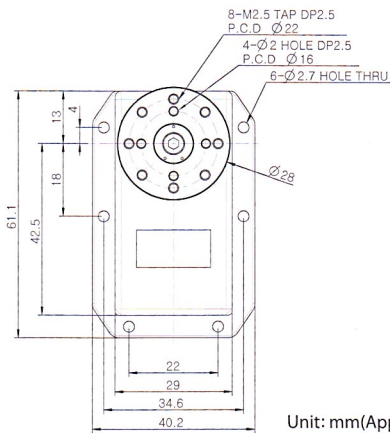
FR07-X101 Set



FR07-H101 Set

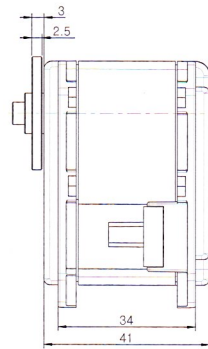
NEW

◆ MX-64



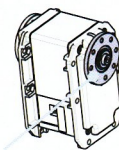
Unit: mm(Approx.)

◆ RX-64

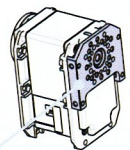


Option Frame (aluminium)

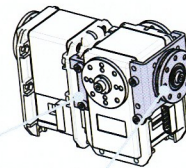
	MX-64			RX-64
Weight	126 g (4.44 oz)			125 g (4.40 oz)
Dimension(mm) / (inch)	40.2x61.1x41(mm) 1.58x2.41x1.61(inch)			40.2x61.1x41(mm) 1.58x2.41x1.61(inch)
Gear Ratio (material)	200:1 (metal)			200:1 (metal)
Network Interface	TTL / RS-485			RS-485
Position Sensor (Resolution)	Contactless Absolute Encoder (360° / 4096)			Potentiometer (300° / 1024)
Motor	Maxon Motor			Maxon Motor
Operation Voltage (V)	11.0	12.0	14.8	12.0~18.5
Stall Torque (N.m)	5.5	6.0	7.3	4.0 at 14.8V
Stall Current (A)	3.9	4.1	5.2	2.1
No Load Speed (RPM)	58	63	78	49



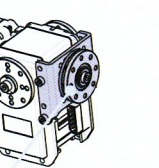
HN05-I101 Set



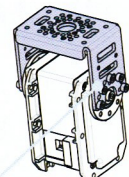
FR05-B101 Set



FR05-X101 Set



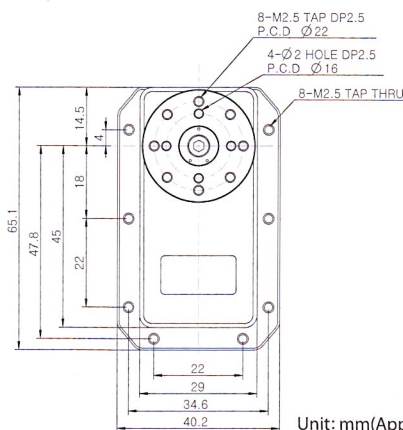
FR05-F101 Set



FR05-H101 Set

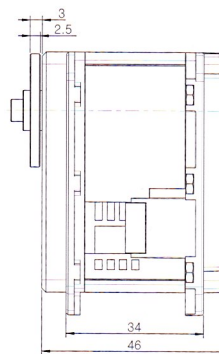
NEW

◆ MX-106



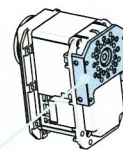
Unit: mm(Approx.)

◆ EX-106+

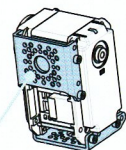


Option Frame (aluminium)

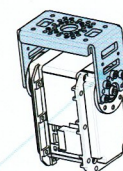
	MX-106			EX-106+
Weight	153 g (5.39 oz)			154 g (5.43 oz)
Dimension(mm) / (inch)	40.2x65.1x46(mm) 1.58x2.56x1.81(inch)			40.2x65.1x46(mm) 1.58x2.56x1.81(inch)
Gear Ratio (material)	225:1 (metal)			184:1 (metal)
Network Interface	TTL / RS-485			RS-485
Position Sensor (Resolution)	Contactless Absolute Encoder (360° / 4096)			Magnetic Encoder (251° / 4096)
Motor	Maxon Motor			Maxon Motor
Operation Voltage (V)	11.0	12.0	14.8	12.0~18.5
Stall Torque (N.m)	8.0	8.4	10.0	8.0 at 14.8V
Stall Current (A)	4.8	5.2	6.3	6.1
No Load Speed (RPM)	41	45	55	69



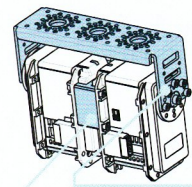
FR08-B101 Set



FR05-S101 Set



FR08-H101 Set



FR08-H110 Set

FR08-D101 Set

DYNAMIXEL Development Guide

Controller

USB2Dynamixel



RS-232/TTL/RS-485

PC



CM-530



32-bit ARM Cortex M3 (TTL)

CM-700

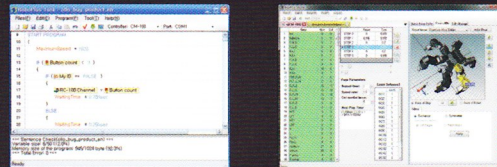


ATMega 2561 (TTL/RS-485)

IDE support



RoboPlus



DYNAMIXEL Management Tool

Firmware Version, Position, Speed, Load
Internal Temperature, Input Voltage

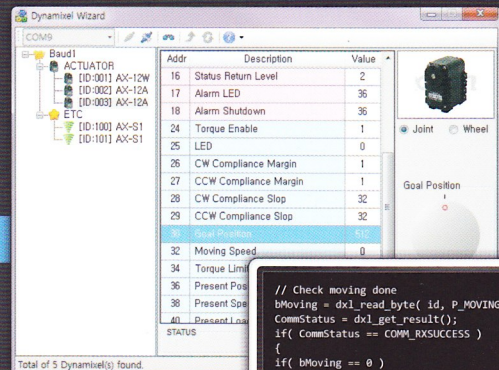


48 Feedback

35 Control

Position, Speed, Angle Limit, Max Torque
Internal Temperature, Input Voltage
PID Gain (MX-Series only)

DYNAMIXEL Wizard (S/W tool on PC)



Embedded Programming

SMD

各種ロボティクス製品開発販売
再生可能エネルギー機械設計施工

有限会社 杉浦機械設計事務所
SUGIURA MACHINE DESIGN OFFICE

<http://www.machinedesign.co.jp>

〒230-0073 横浜市鶴見区獅子ヶ谷2-17-4
Tel : 045-585-2502 Fax : 045-585-2752
E-Mail : info@machinedesign.co.jp

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ROBOTIS

[KOREA]

#1506 Ace High End Tower No. 3, 371-50 Gasandong
Geumcheongu, Seoul, Korea (153-787)

Tel : +82-70-8671-2600 Fax : +82-70-8230-1336

E-mail : korea@robotis.com

[USA]

16 Technology Dr. Suite 106 Irvine, CA 92618

Tel : 949-333-3635 Fax : 949-333-3634

E-mail : america@robotis.com

[JAPAN]

Tel : +81-3-4330-3660

E-mail : japan@robotis.com

[Other countries] contactus2@robotis.com