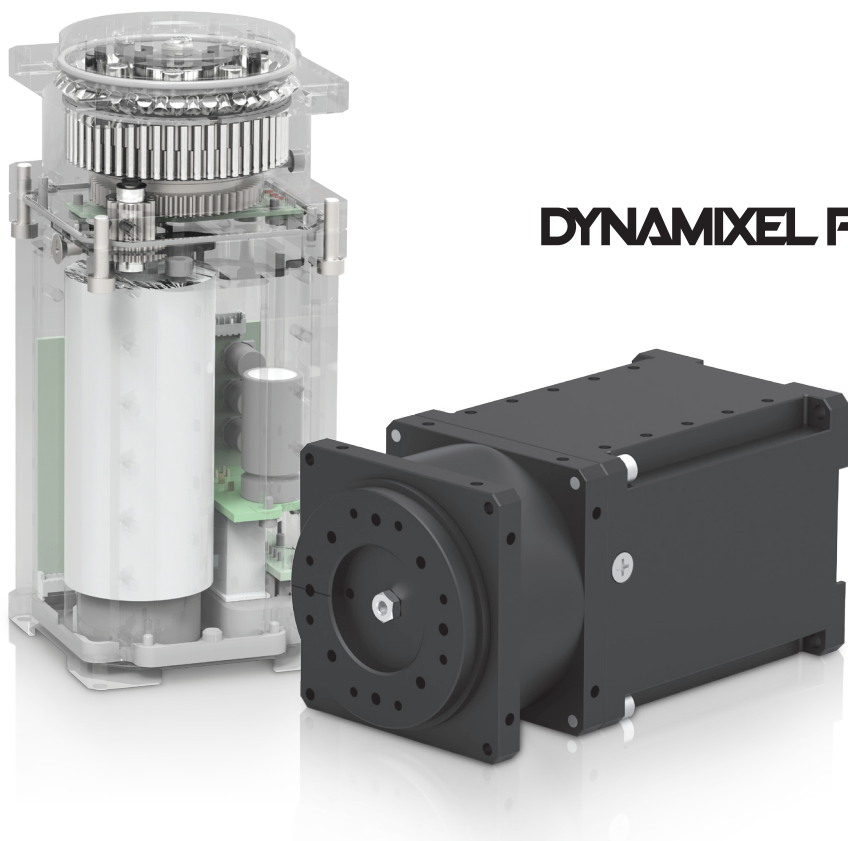


ROBOTIS

All-in-One Actuator

DYNAMIXEL SYSTEM

DC Motor + Controller + Driver + Sensor + Reduction Gear + Network = DYNAMIXEL



DYNAMIXEL PRO



DYNAMIXEL X

DYNAMIXEL X page.3



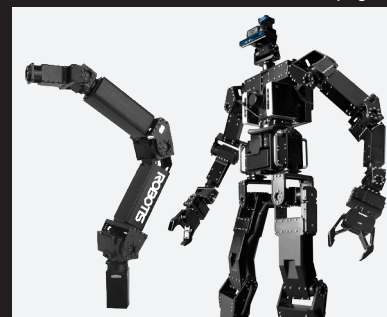
DYNAMIXEL PRO page.4



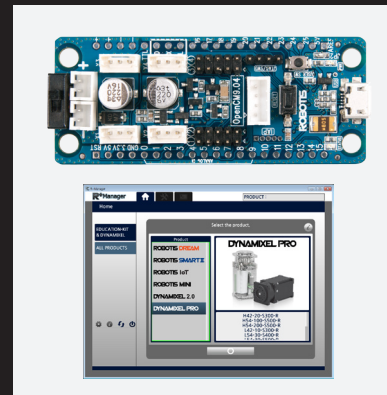
DYNAMIXEL page.6



Robot Platforms page.8



Development Support page.10



www.robotis.com

DYNAMIXEL Selection Guide

DYNAMIXEL, the smart actuator optimized for robots, consists of a wide lineup of models that vary by size, output, accuracy, and communication method.

Refer to the below chart to select the DYNAMIXEL best-suited for your application.



Model Numbering for DYNAMIXEL X-Series

X	M	4	3	0	—	W	3	5	0	—	R
Performance		Dimension			Voltage		Gear Ratio			Interface	
■ XH: High Performance ■ XM: Mid-Level Performance ■ XL: Low Cost		■ 540 / 430 / 320			■ W : 12V ■ V : 24V		■ 350 : 350:1 ■ 210 : 210:1			■ R : RS-485 ■ T : TTL	

Model Numbering for DYNAMIXEL PRO

H

5

4

1

0

0

S

5

0

0

R

Performance

■ H : High Performance

■ M : Mid-Level Performance

■ L : Low Cost

Motor output(W)

■ 10 : 10W

■ 20 : 20W

■ 30 : 30W

■ 40 : 40W

■ 50 : 50W

■ 60 : 60W

■ 100 : 100W

■ 200 : 200W

Gear Type

■ S : Straight

Gear Ratio

■ 250 : 250 :1

■ 260 : 260 :1

■ 290 : 290 :1

■ 300 : 300 :1

■ 400 : 400 :1

■ 500 : 500 :1

Interface

■ R : RS-485

Dimension(mm)

■ 42 : 42x42mm

■ 54 : 54x54mm

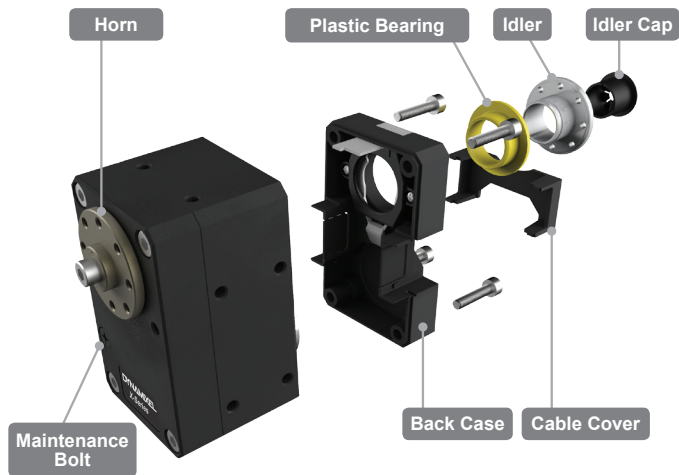


Features

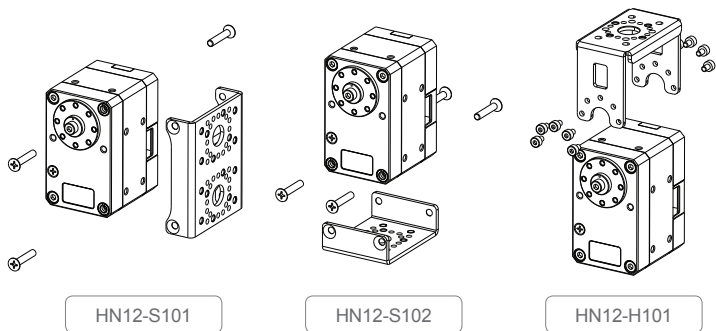
- ▀ Various Control Functions
- ▀ Sophisticated Control Architecture
- ▀ New H/W Features
 - Improved Torque, Compact Design
 - Enhanced Durability and Expandability
 - Hollow Back Case Minimizes Cable Stress (3-Way-Wiring)
 - Frames Directly Screwed onto the Case (No Nuts Needed)
 - Improved Aluminum Case Heat Sink
- ▀ Supports Various Development Environments
- ▀ 6 Operating Modes
- ▀ Current-Based Torque Control (4096 steps, 2.69mA/step)
- ▀ Profile Control for Smooth Motion Planning
- ▀ Trajectory Data and Moving Status (In-Position, Following Error, etc.)
- ▀ Energy Efficient (Standby Current Reduced from 100mA to 40mA)
- ▀ Contactless (Magnetic) Absolute Encoder (by AMS)
- ▀ Supports DYNAMIXEL Protocol 2.0



Structure



Optional Frames

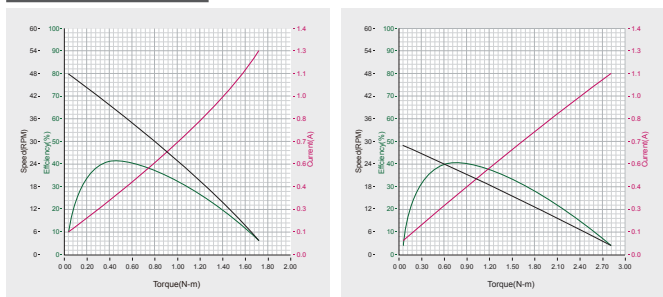


Models

XH430

	Unit	W210	W350
Dimension	mm (in)	28.5 x 46.5 x 34 (1.12 x 1.83 x 1.34)	
Weight	g (oz)	82(2.89)	82(2.89)
Operating Voltage	V	12	
Gear Ratio	-	212.6 : 1	353.5 : 1
Stall Torque	N.m (oz.in)	2.3(354)	3.4(481)
Stall Current	A	2.3	2.3
No Load Speed	RPM	50	30
Position Sensor	-	Contactless Absolute Encoder (AMS)	
Motor	-	Coreless Motor (Maxon)	
Operating Range	°	360	
Resolution	steps/turn	4096	
Network Interface	-	TTL/RS-485	
Material	Casing	Front / Middle : Aluminum Back : Enpla	
	Gear	Metal	

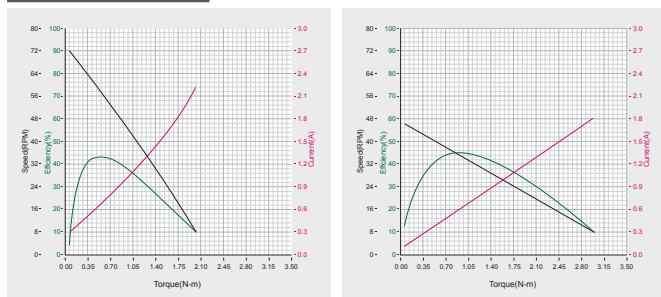
Performance Graph



XM430

	Unit	W210	W350
Dimension	mm (in)	28.5 x 46.5 x 34 (1.12 x 1.83 x 1.34)	
Weight	g (oz)	82(2.89)	82(2.89)
Operating Voltage	V	12	
Gear Ratio	-	212.6 : 1	353.5 : 1
Stall Torque	N.m (oz.in)	3.0 (425)	4.1 (581)
Stall Current	A	2.3	2.3
No Load Speed	RPM	77	46
Position Sensor	-	Contactless Absolute Encoder (AMS)	
Motor	-	Coreless Motor	
Operating Range	°	360	
Resolution	steps/turn	4096	
Network Interface	-	TTL/RS-485	
Material	Casing	Front / Middle : Aluminum Back : Enpla	
	Gear	Metal	

Performance Graph



DYNAMIXEL PRO

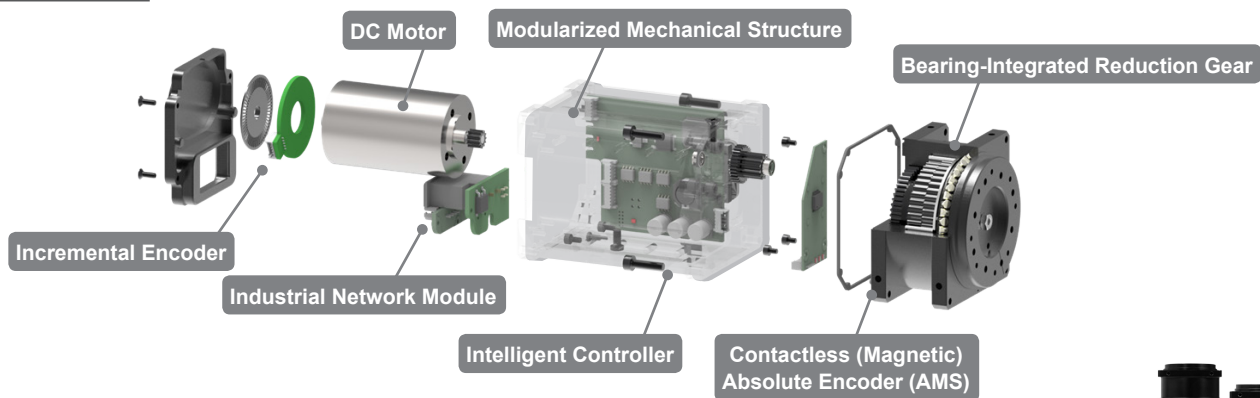


The Actuator Solution for Full-Scale Robots

Features

- **All-in-One Modular Design**
 - DC Motor + Controller + Driver + Sensor + Reduction Gear + Network
- **Compact and Lightweight**
 - Minimized module size with compact and lightweight cycloid reduction gear
 - High weight-to-output ratio (0.05 N.m/g)
 - High impact resistance (over 400%)
- **High Precision and Low Backlash**
 - Contactless (Magnetic) Absolute Encoder (by AMS) & Incremental Encoder for Precise Positioning
 - Low backlash (3-5 arcmin)
 - Performance data provided. Tested by Korea Laboratory Accreditation Scheme (KOLAS).
- **Current-Based(Torque Control)**
 - High speed current sensing algorithm and current feedback control
 - Triple-loop control for current, speed and position feedback
 - Supports DYNAMIXEL Protocol 2.0

Structure

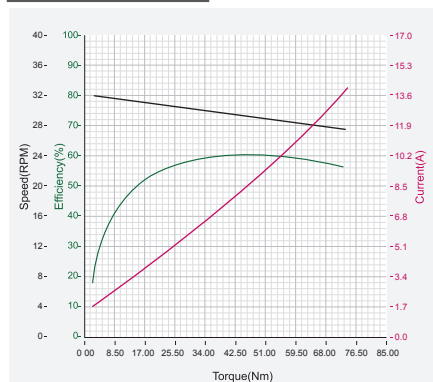


H Series

H54-200-S500-R

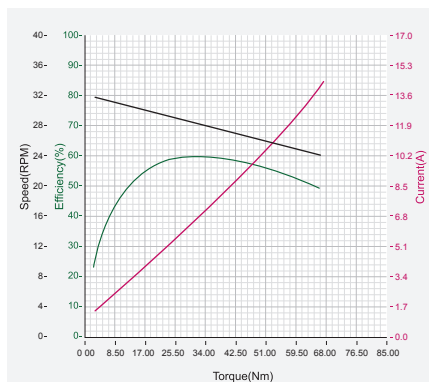
	Unit	Value
Dimension	mm (in)	54 x 54 x 126 (2.13 x 2.13 x 4.96)
Weight	g(oz)	855(30.1)
Nominal Voltage	V	24
No Load Speed	RPM	33.1
No Load Current	A	1.65
Continuous Operation	Speed	RPM 29.0
	Torque	N.m(oz.in) 44.7(6,332)
	Current	A 9.3
Resolution	steps/turn	501,923
Gear Ratio	-	501.9:1
Backlash	arcmin	3.5
Network Interface	-	RS-485
Operating Temperature	°C	5~55

Performance Graph



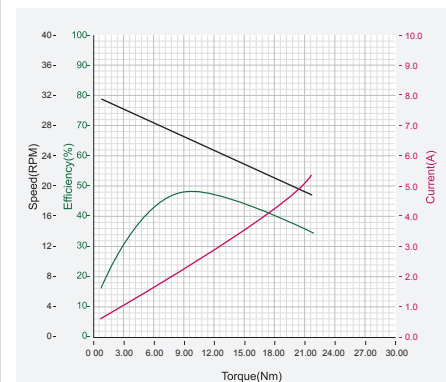
H54-100-S500-R

	Unit	Value
Dimension	mm (in)	54 x 54 x 108 (2.13 x 2.13 x 4.25)
Weight	g(oz)	732(25.8)
Nominal Voltage	V	24
No Load Speed	RPM	33.3
No Load Current	A	1.13
Continuous Operation	Speed	RPM 29.2
	Torque	N.m(oz.in) 25.3 (3,584)
	Current	A 5.5
Resolution	steps/turn	501,923
Gear Ratio	-	501.9:1
Backlash	arcmin	3.5
Network Interface	-	RS-485
Operating Temperature	°C	5~55



H42-20-S300-R

	Unit	Value
Dimension	mm (in)	42 x 42 x 84 (1.65 x 1.65 x 3.31)
Weight	g(oz)	340 (11.9)
Nominal Voltage	V	24
No Load Speed	RPM	32.7
No Load Current	A	0.57
Continuous operation	Speed	RPM 29.2
	Torque	N.m(oz.in) 5.1(722)
	Current	A 1.5
Resolution	steps/turn	303,750
Gear Ratio	-	303.8:1
Backlash	arcmin	3.8
Network Interface	-	RS-485
Operating Temperature	°C	5~55



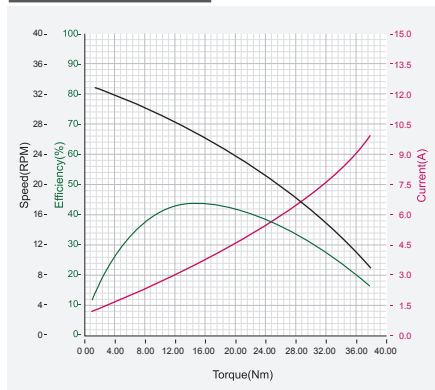


M Series

M54-60-S250-R

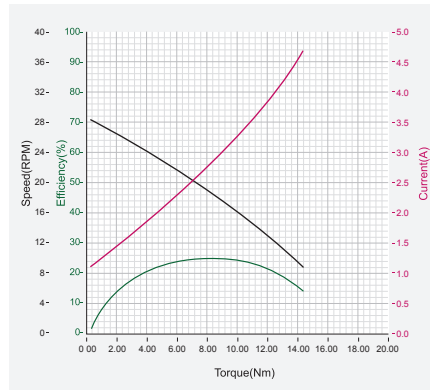
	Unit	Value
Dimension	mm (in)	54 x 54 x 126 (2.13 x 2.13 x 4.96)
Weight	g(oz)	853(30.0)
Nominal Voltage	V	24
No Load Speed	RPM	33.1
No Load Current	A	1.25
Continuous Operation	Speed	RPM 28.3
	Torque	N.m(oz.in) 10.1(1,430)
	Current	A 3.0
Resolution	steps/turn	251,417
Gear Ratio	-	251.4:1
Backlash	arcmin	3.8
Network Interface	-	RS-485
Operating Temperature	°C	5~55

Performance Graph



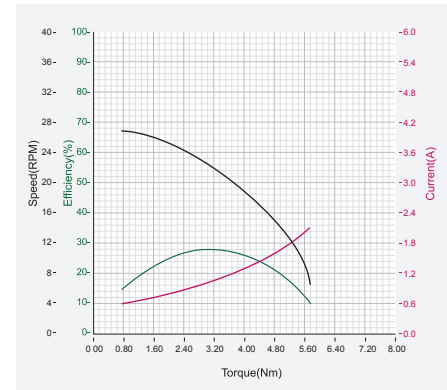
M54-40-S250-R

	Unit	Value
Dimension	mm (in)	54 x 54 x 108 (2.13 x 2.13 x 4.25)
Weight	g(oz)	710(25.0)
Nominal Voltage	V	24
No Load Speed	RPM	28.4
No Load Current	A	1.32
Continuous Operation	Speed	RPM 24.2
	Torque	N.m(oz.in) 3.9(552)
	Current	A 1.9
Resolution	steps/turn	251,417
Gear Ratio	-	251.4:1
Backlash	arcmin	3.8
Network Interface	-	RS-485
Operating Temperature	°C	5~55



M42-10-S260-R

	Unit	Value
Dimension	mm (in)	42 x 42 x 72 (1.65 x 1.65 x 2.83)
Weight	g(oz)	269(9.5)
Nominal Voltage	V	24
No Load Speed	RPM	28
No Load Current	A	0.52
Continuous Operation	Speed	RPM 26.0
	Torque	N.m(oz.in) 1.7(241)
	Current	A 0.6
Resolution	steps/turn	263,187
Gear Ratio	-	257.0:1
Backlash	arcmin	4.2
Network Interface	-	RS-485
Operating Temperature	°C	5~55

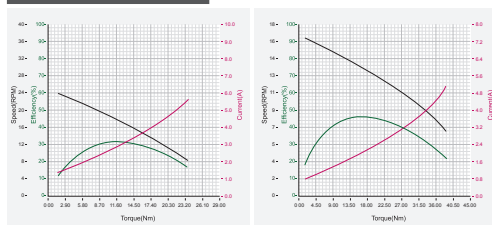


L Series

L54-50-S290-R /S500-R

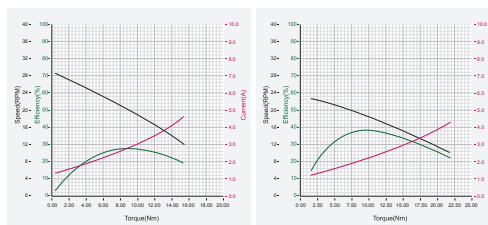
	Unit	S290-R	S500-R
Dimension	mm (in)	54 x 54 x 108 (2.13 x 2.13 x 4.25)	54 x 54 x 108 (2.13 x 2.13 x 4.25)
Weight	g(oz)	656(23.1)	656(23.1)
Nominal Voltage	V	24	24
No Load Speed	RPM	26	16
No Load Current	A	1.05	0.7
Continuous Operation	Speed	RPM 22.1	13.7
	Torque	N.m(oz.in) 4.8(680)	14(1,982)
	Current	A 1.9	1.9
Resolution	steps/turn	207,692	361,384
Gear Ratio	-	288.5:1	501.9:1
Backlash	arcmin	4.6	5
Network Interface	-	RS-485	RS-485
Operating Temperature	°C	5~55	5~55

Performance Graph



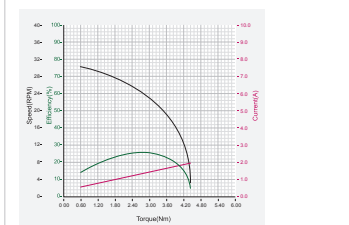
L54-30-S400-R /S500-R

	Unit	S400R	S500-R
Dimension	mm (in)	54 x 54 x 108 (2.13 x 2.13 x 4.25)	54 x 54 x 108 (2.13 x 2.13 x 4.25)
Weight	g(oz)	612(21.6)	591(20.8)
Nominal Voltage	V	24	24
No Load Speed	RPM	28.7	23
No Load Current	A	1.19	1.1
Continuous Operation	Speed	RPM 26.9	21
	Torque	N.m(oz.in) 2.5(354)	5.4(764)
	Current	A 1.6	1.6
Resolution	steps/turn	288,395	361,384
Gear Ratio	-	400.5:1	501.9:1
Backlash	arcmin	4.6	5
Network Interface	-	RS-485	RS-485
Operating Temperature	°C	5~55	5~55



L42-10-S300-R

	Unit	Value
Dimension	mm (in)	42 x 42 x 72 (1.65 x 1.65 x 2.83)
Weight	g(oz)	340 (11.9)
Nominal Voltage	V	24
No Load Speed	RPM	29.7
No Load Current	A	0.72
Continuous Operation	Speed	RPM 27.9
	Torque	N.m(oz.in) 1.2(170)
	Current	A 0.8
Resolution	steps/turn	4,096
Gear Ratio	-	303.8:1
Backlash	arcmin	4.6
Network Interface	-	RS-485
Operating Temperature	°C	5~55





All-in-One Actuators for Building Multi-Jointed Robots

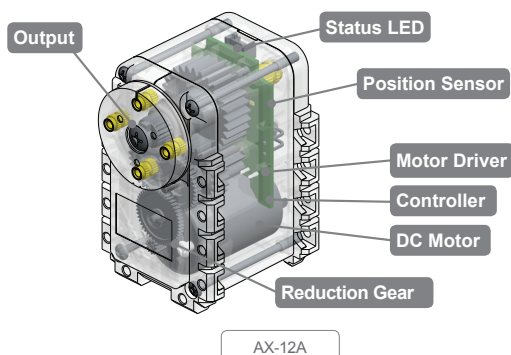
Features

- **All-in-One Modular Design**
 - DC Motor + Controller + Driver + Sensor + Reduction Gear + Network
- **Network Driven**
 - Control each DYNAMIXEL by sending packets of data through a single bus
 - Supports TTL and RS485 networks
- **Simple Linking Structure**
 - Daisy chain wiring scheme allows easy wiring and expansion
- **Torque Control**
 - Control torque from the minimum to the maximum allowable torque values

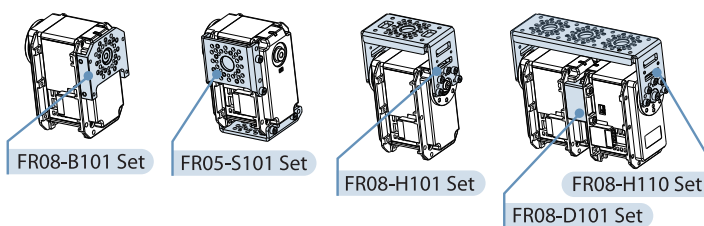
MX Series Features

- **Contactless (Magnetic) Absolute Encoder(by AMS)**
 - 12-bit resolution, 360° operating range with super-durability
- **User-Programmable PID Control**
 - Precise and reliable PID control
- **Powerful Internal Components and Organized Design**
 - Maxon motor, 32-bit controller, high communication speed
 - RX and EX series compatible
- **Current-Based Torque Control**
 - Speed and position control with dual-loop current control available on the MX-64 and MX-106 models

Structure



Optional Frames



MX-106 Compatible Frames



AX / XL Series

AX-18A

	Unit	Value
Dimension	mm(in)	32 x 50 x 40 (1.26 x 1.97 x 1.57)
Weight	g(oz)	55.9(1.97)
Operating Voltage	V	12
Gear Ratio	-	254 : 1
Stall Torque	N.m (oz.in)	1.8(255)
Stall Current	A	2.2
No Load Speed	RPM	97
Position Sensor	-	Potentiometer
Motor		Cored
Operating Range	°	300
Resolution	steps/turn	1024
Network Interface	-	TTL
Material	Casing	Enpla
	Gear	Enpla + Metal

AX-12A

	Unit	Value
Dimension	mm(in)	32 x 50 x 40 (1.26 x 1.97 x 1.57)
Weight	g(oz)	54.6 (1.93)
Operating Voltage	V	12
Gear Ratio	-	254 : 1
Stall Torque	N.m (oz.in)	1.5(212)
Stall Current	A	1.5
No Load Speed	RPM	59
Position Sensor	-	Potentiometer
Motor		Cored
Operating Range	°	300
Resolution	steps/turn	1024
Network Interface	-	TTL
Material	Casing	Enpla
	Gear	Enpla

XL-320

	Unit	Value
Dimension	mm(in)	24 x 36 x 27 (0.94 x 1.42 x 1.06)
Weight	g(oz)	16.7(0.59)
Operating Voltage	V	7.4
Gear Ratio	-	238 : 1
Stall Torque	N.m (oz.in)	0.39(55)
Stall Current	A	1.1
No Load Speed	RPM	114
Position Sensor	-	Potentiometer
Motor		Cored
Operating Range	°	300
Resolution	steps/turn	1024
Network Interface	-	TTL
Material	Casing	Enpla
	Gear	Enpla + Metal

High Speed Models



AX-12W

	Unit	Value
Dimension	mm(in)	32 x 50 x 40 (1.26 x 1.97 x 1.57)
Weight	g(oz)	52.9(1.86)
Operating Voltage	V	12
Gear Ratio	-	32 : 1
Stall Torque	N.m (oz.in)	0.2(0.007)
Stall Current	A	1.4
No Load Speed	RPM	470
Position Sensor	-	Potentiometer
Motor	-	Cored
Operating Range	°	300
Resolution	steps/turn	1024
Network Interface	-	TTL
Material	Body	Enpla
	Gear	Enpla

MX-12W

	Unit	Value
Dimension	mm(in)	32 x 50 x 40 (1.26 x 1.97 x 1.57)
Weight	g(oz)	54.6 (1.93)
Operating Voltage	V	12
Gear Ratio	-	32 : 1
Stall Torque	N.m (oz.in)	-
Stall Current	A	0.6
No Load Speed	RPM	470
Position Sensor	-	Contactless Absolute Encoder(AMS)
Motor	-	Cored
Operating Range	°	360
Resolution	steps/turn	4096
Network Interface	-	TTL
Material	Casing	Enpla
	Gear	Enpla + Metal

RX-24F

	Unit	Value
Dimension	mm(in)	35.6 x 50.6 x 35.5 (1.40 x 1.99 x 1.40)
Weight	g(oz)	67(2.36)
Operating Voltage	V	12
Gear Ratio	-	193 : 1
Stall Torque	N.m (oz.in)	2.6 (368)
Stall Current	A	2.4
No Load Speed	RPM	126
Position Sensor	-	Potentiometer
Motor	-	Cored
Operating Range	°	300
Resolution	steps/turn	1024
Network Interface	-	RS-485
Material	Casing	Enpla
	Gear	Metal

MX Series



MX-28A T/R

	Unit	Value
Dimension	mm(in)	35.6 x 50.6 x 35.5 (1.40 x 1.99 x 1.40)
Weight	g(oz)	72 (2.53)
Operating Voltage	V	12
Gear Ratio	-	193 : 1
Stall Torque	N.m (oz.in)	2.5 (354)
Stall Current	A	1.4
No Load Speed	RPM	55
Position Sensor	-	Contactless Absolute Encoder(AMS)
Motor	-	Coreless Motor (Maxon)
Operating Range	°	360
Resolution	steps/turn	4096
Network Interface	-	TTL/RS-485
Material	Casing	Front : Aluminum Middle/Back : Enpla
	Gear	Metal

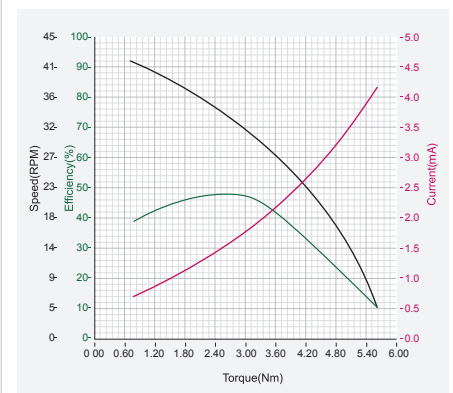
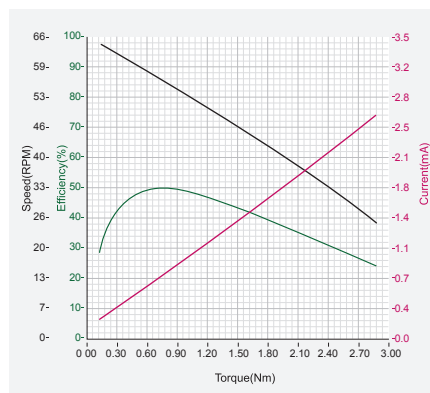
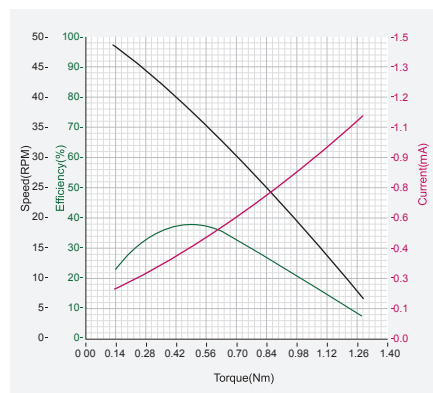
MX-64A T/R

	Unit	Value
Dimension	mm(in)	40.2 x 61.1 x 41 (1.58 x 2.41 x 1.61)
Weight	g(oz)	126 (4.44)
Operating Voltage	V	12
Gear Ratio	-	200 : 1
Stall Torque	N.m (oz.in)	6.0 (850)
Stall Current	A	4.1
No Load Speed	RPM	63
Position Sensor	-	Contactless Absolute Encoder(AMS)
Motor	-	Coreless Motor (Maxon)
Operating Range	°	360
Resolution	steps/turn	4096
Network Interface	-	TTL/RS-485
Material	Casing	Front : Aluminum Middle/Back : Enpla
	Gear	Metal

MX-106 T/R

	Unit	Value
Dimension	mm(in)	40.2 x 65.1 x 46 (1.58 x 2.66 x 1.81)
Weight	g(oz)	153 (5.40)
Operating Voltage	V	12
Gear Ratio	-	225 : 1
Stall Torque	N.m (oz.in)	8.4 (1,190)
Stall Current	A	5.2
No Load Speed	RPM	45
Position Sensor	-	Contactless Absolute Encoder(AMS)
Motor	-	Coreless Motor (Maxon)
Operating Range	°	360
Resolution	steps/turn	4096
Network Interface	-	TTL/RS-485
Material	Casing	Front : Aluminum Middle/Back : Enpla
	Gear	Metal

Performance Graph



ROBOTIS Robot Platforms

Modular Robot Platforms Optimized for Research and Education

Modular

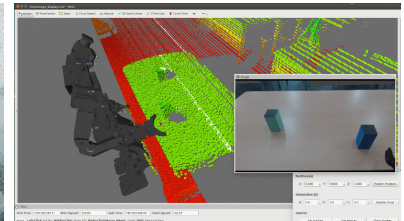
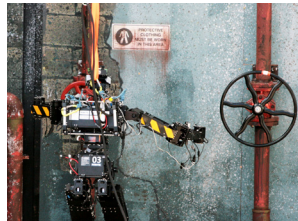
Smart

Open Source

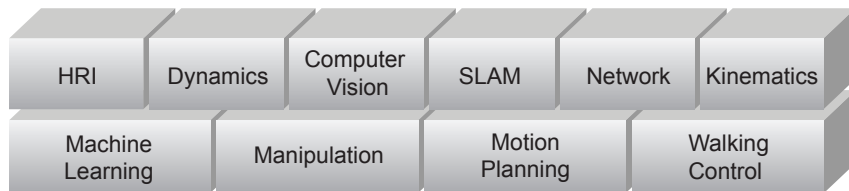
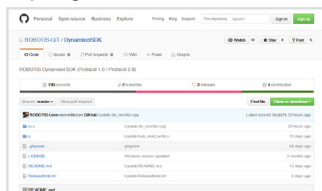
Expandable

Easy Maintenance

- Hardware information and source code open to public
- Optimized for universities and research institutions
- Fully-assembled robots allow for increased focus on software development
- Expandable & easy maintenance based on DYNAMIXEL technology



<https://github.com/ROBOTIS-GIT>



ROBOTIS OP2

DARWIN R&D Collaboration Project

Open Source Humanoid Platform for Education & Research

- Standard PC-Based Robot Platform that runs Linux or Windows
- DYNAMIXEL MX-28T Actuators (20DOF)
- Powerful Built-in PC (Intel Atom Dual Core Processor)
- 2MP Camera for Real-Time Image Processing
- CM-740 Embedded Board with Built-in Gyroscope and Accelerometer
- Optimized for Computer Vision, Human-Robot Interaction & Walking Control Research
- Recommended for RoboCup/FIRA Competitions

Specifications

	ROBOTIS OP2
Weight	3kg (6.6 lb)
Height	45.4cm (1.49 ft)
Controller (PC)	Intel Atom Processor N2600 x 1
Sensor	Logitech C905 HD Camera x 1 3-Axis Gyroscope x 1 & 3-Axis Accelerometer x 1
Actuator	DYNAMIXEL MX-28T
DOF	Head & neck : 2DOF Shoulder & Arm : 3DOF x 2 Legs : 6DOF x 2
Battery	LIPO 11.1V 1,800mAh
Control Environment	OS : Linux Ubuntu 12.04 LTS 32bit Compiler : GNU C & C++ Programming Language : C++ Library : Motor Control, Head Control, Walking Engine

ROS
Enabled



R&D Collaboration



Virginia
Tech

PURDUE
UNIVERSITY

Penn
Engineering

ROBOTIS Manipulator



Lightweight & Modular Manipulator

- Features H-Series DYNAMIXEL PRO Actuators (6 DOF)
- Modular Structure for Easy Expandability and Maintenance
- Lightweight Design for Easy Setup and Mobility
- Handles Payloads Suitable for Small to Mid-Size Operations
- Wide Workspace
- Optimized for Repetitive and Highly Precise Operations
- USB interface, RS-485 communication
- SDK with Kinematics Engine Provided (Examples: FK, IK, Profile Control)

Specifications		
	Unit	Manipulator H
Input Voltage	V	24
DOF	-	6
Payload	kg (lb)	3 (6.61)
Repeatability	mm (in)	±0.05 (±0.002)
Speed(Each joint)	deg/sec	180
Weight	kg (lb)	5.5 (12.12)
Reach	mm (in)	645 (25.39)
Rated Voltage	VDC	24
Communication	-	RS-485 (Multi Drop Bus)
Power (Joint)	-	200W x 2 100W x 2 20W x 2
Software	-	ROBOTIS Manipulator SDK
Main Controller	-	PC or Embedded Board (Not Included)



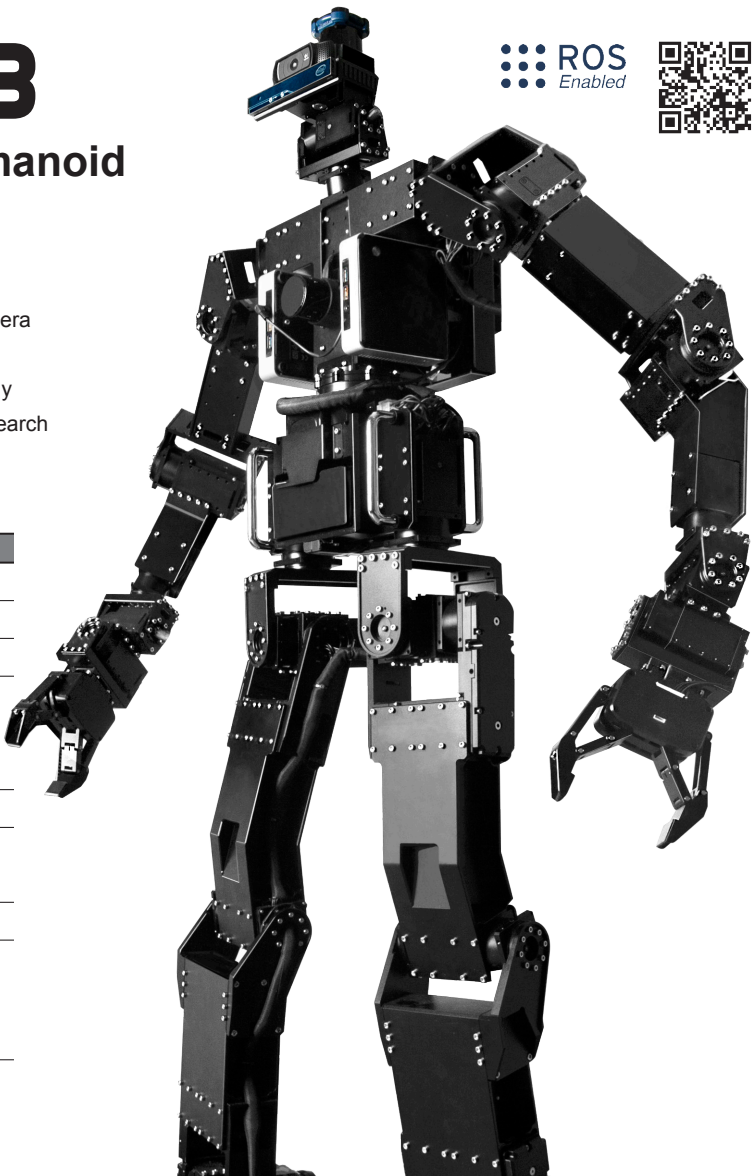
THORMANG3



Full-Sized Open Platform Humanoid

- Full-Sized Platform with Stable Walking Capabilities
- Mission Capability using Adaptive Gripper
- Features Two Powerful Intel NUC PCs
- Various Sensors including F/T Sensor, LIDAR, IMU, and Camera
- Full ROS Support with 3D CAD Data and Open-Source SDK
- DYNAMIXEL PRO based Modular Design with Full Metal Body
- Optimized for SLAM, Locomotion, Manipulation and HRI Research
- DRC (DARPA Robotics Challenge) Finalist

Specifications	
	THORMANG3
Weight	42kg (92.6 lb)
Height	137.5cm (4.51 ft)
PC	Intel NUC5i5RYK (2Set)
Sensors	Logitech C920 HD Camera x 1 Intel RealSense x 1 Hokuyo UTM-30LX-EW x 1 F/T Sensor : ATI Mini58-SI-2800-120 x 2 IMU : MicroStrain 3DM-GX4-25 x 1
Actuators	DYNAMIXEL PRO H-Series x 29
DOF	Head & Neck x 2 Shoulder & Arm : 7DOF x 2 / Waist : 1DOF Legs : 6DOF x 2 / (gripper x 2)
Battery	LIPO 22.2V 22,000mA & 18.5V 11,000mA
Control Environment	OS : Linux Ubuntu 14.04.3 64bit SW : ROS indigo / Compiler : GNU C++(g++) Library : Motor Control, Manipulation, Head Control, Walking Engine, Sensor Control



Controllers

PC-Based Control

- Control DYNAMIXEL from your PC via USB2Dynamixel
- Easy-to-use DYNAMIXEL SDK designed for USB2Dynamixel
- Support for C++, LabVIEW, MATLAB, C#, eclipse, JAVA, etc.



DYNAMIXEL

USB2Dynamixel



- Supports TTL/RS485/RS232 Communication

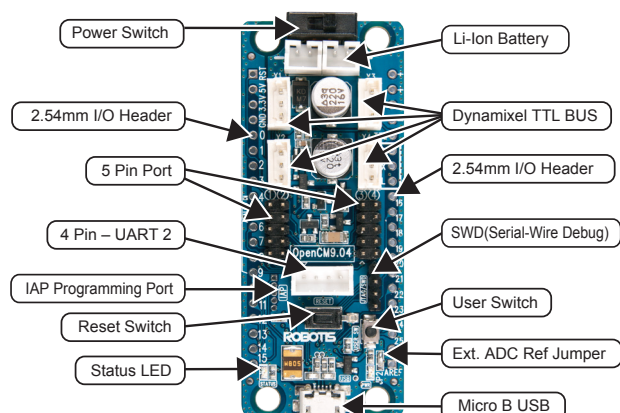


For convenient development

OpenCM

OpenCM9.04, the Open-Source Embedded Controller

- 32-bit ARM Cortex-M3 processor with Arduino-style IDE
- Circuit diagram and source code available
- Expansion board with TTL/RS-485 buses and 12/24V power available connectors



Optional Parts

Bluetooth
Ultrasonic Sensor
Color Sensor
Magnetic Sensor
IR Sensor
DMS
Actuator
(AX-12W, XL-320,
and many others)
...



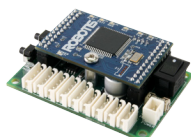
CM-Series

- Program DYNAMIXEL with an exclusive controller
- Develop firmware with embedded C
- Compatible with RoboPlus software



DYNAMIXEL

CM-700



- Features a TTL/RS485 communication circuit
- Supports AX and MX series DYNAMIXELS
- ATmega2561 CPU
- GPIO ports for connecting analog sensors
- Includes ZigBee and Bluetooth connectors

CM-530



- Supports TTL-based AX and MX series DYNAMIXELS
- 32-bit ARM Cortex-M3 processor
- GPIO ports for connecting analog sensors
- Supports IR, ZigBee, and Bluetooth wireless protocols
- Main controller for ROBOTIS PREMIUM

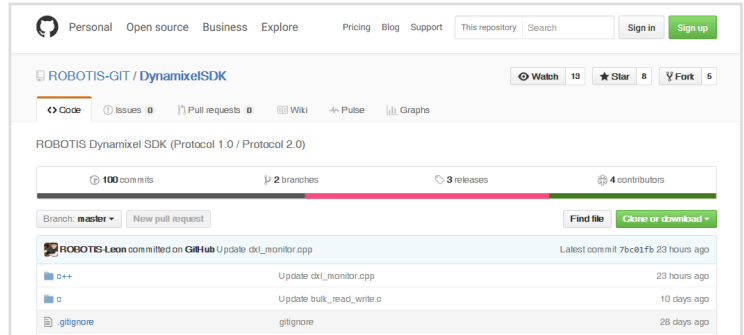


For system integration

Development Environment

DYNAMIXEL SDK

- Standard programming library for developing S/W that controls DYNAMIXEL
- Multi-port control, cross-platform version available at official github (<https://github.com/ROBOTIS-GIT/DynamixelSDK>)



OpenCM IDE & Arduino IDE

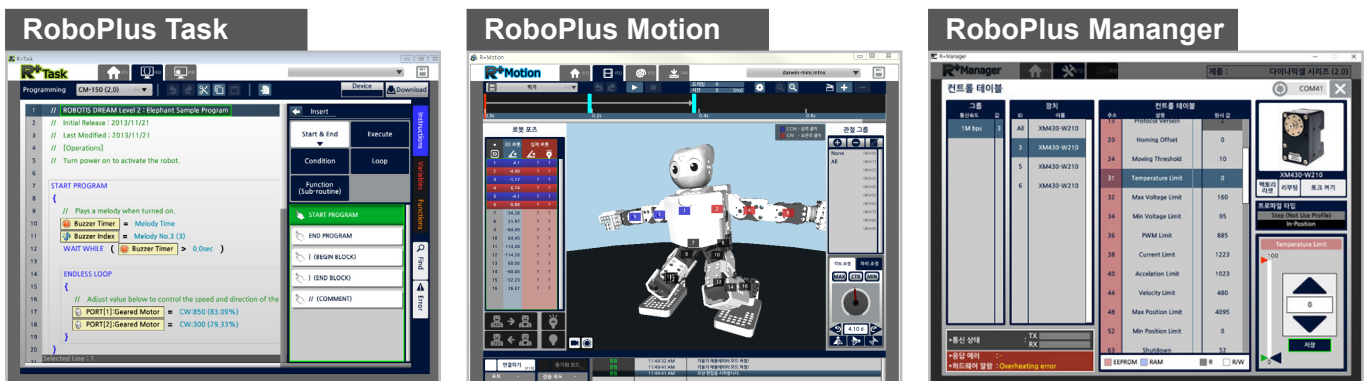
- Supports both OpenCM IDE and Arduino IDE
- Cross platform IDE that supports various libraries



RoboPlus

GUI-Based Programming Suite

- GUI-based programming tool
- Motion editing/creation tool using animated 3D robot
- Parameter setting and firmware management tool



DYNAMIXEL Worldwide

More than 1 million modules powering the robotic world

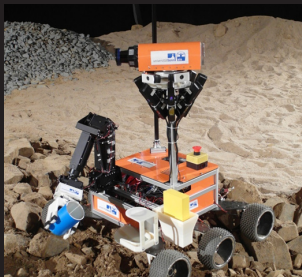
Machine Vision/Automation

Cyton Robotic Arm (USA)



Rescue/Space

NimbRo Explorer for SpaceBot Cup Challenge
University of Bonn (Germany)



Art/Exhibition

Robots with Traditional Costume (Korea)



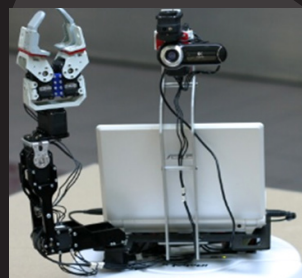
Media Service

kubi : Robotic Tablet Stand
Revolve Robotics (USA)



Research/Education

Metabot (France)
<http://metabot.cc>



Research/Education

CHIARA & Calliope for Cognitive Robotics
Carnegie Mellon University (USA)



Medical/Healthcare

E-bot PRO video magnifier
HIMS International (Korea)



Medical/Healthcare

SaDaCo: Detacheable Manipulator on Wheelchair
Ritsumeikan University (Japan)



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