

Smart Servo MS-12A

Product Description

Smart Servo MS-12A is the next generation smart servo independently researched and developed by Makeblock, focused on resolving the issues of traditional servos, such as complex controls, a small angular range, an inability to perform continuous rotation, and single accessories.

Smart Servo MS-12A can quickly be assembled into a multi-joint robot, such as a humanoid robot, multi-legged spider robot, manipulator, etc. Its continuous rotation function can be used to make a controllable rotating platform, driving wheel and other mechanisms.

With corresponding software, Smart Servo MS-12A can record movements and perform complex actions even without programming. Smart Servo MS-12A also supports Makeblock's abundant programming platforms: mBlock, the Makeblock App, Neuron, Arduino.

Features

- **Simple Controls**

PC support is based on mBlock's scratch2.0, and mobile support is based on the Blockly Makeblock App. It supports Neuron programming, allowing you to achieve control by simply dragging and dropping blocks, thus greatly reducing the threshold for using smart servo products. It also supports Arduino for more advanced application development.

- **High Precision & High Torque**

Angular resolution up to 4096. The sophisticated technology helps your creative process. 12kgf.cm torque performance makes it easy to use in a variety of scenarios.

- **Continuous Rotation**

Complete 360° rotation without blind spots or dead zones, removing all rotation restrictions for limitless creativity.

- **Action Recorder**

Manually record the desired movements with corresponding software, eliminating the cumbersome software debugging process to easily design complex multi-joint movements.

- **Smart Protection**

When motor is overheated or the current is too large, the servo launches smart protection, making it safer to use.

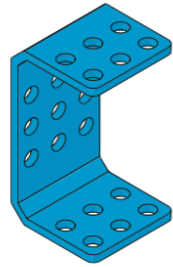
- **Extensive Hardware Support**

Combine Makeblock's 500+ metal building blocks and easy-to-use electronic modules to easily turn your fantasies into reality.

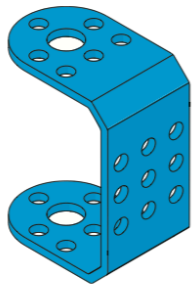
Parts List



Smart Servo MS-12A



Mounting bracket



Rudder bracket



Virtual axis



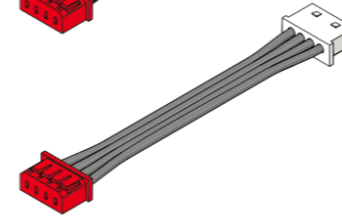
M4x8mm Screw



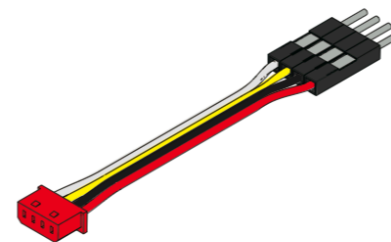
M4 Nut



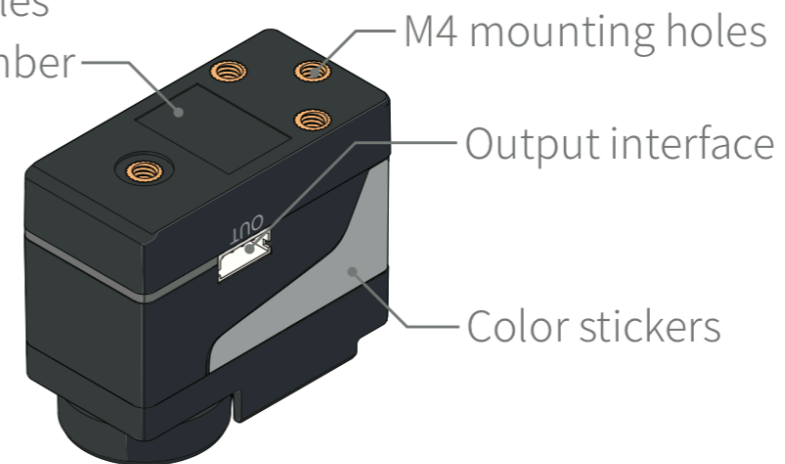
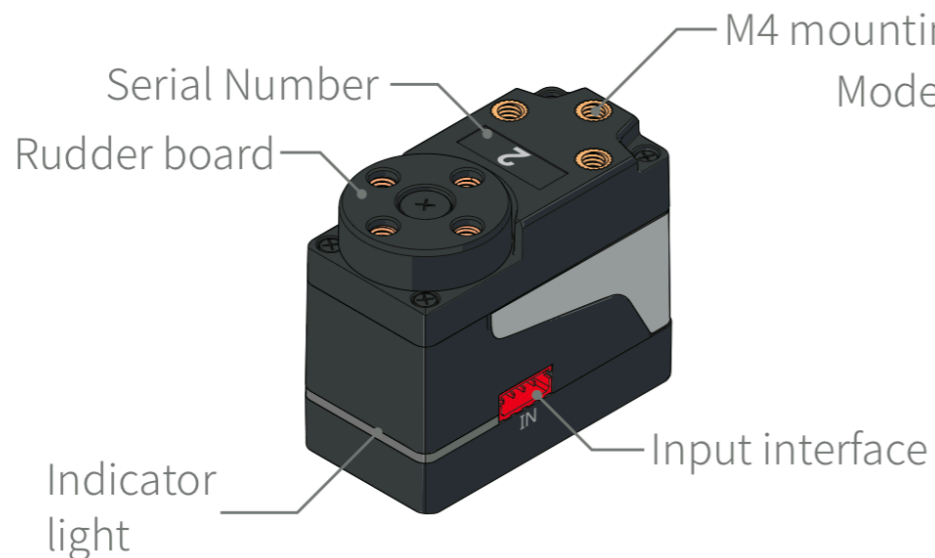
Terminal wire
(Servo motor-Servo motor
/Communication board)



Terminal wire
(Servo motor
- Auriga Mainboard)



Terminal wire
(Servo motor
- Arduino Mainboard)



Technical Parameters

Model Number	MS-12A
Motor	Iron core motor
Gear	Full metal gear (reduction ratio1: 305)
Axis bearing	Ball bearing
Cover material	PA
Mounting holes	M4 blind hole brass nut, effective depth 6mm, 16mm pitch
Rudder	4 M4 threaded holes can be fixed with bracket or other parts
Mounting bracket	Aluminum alloy material with $\phi 4$ mm and 16mm pitch mounting holes fixed by screws are compatible with Makeblock platform parts and Lego parts.
Stickers	Color stickers, ID number sticker
Dimensions	48×24×41mm
Weight	72g
Communication	Full-duplex serial port UART
Speed	50rpm
Angular resolution	4096
Torque	12kgf.cm
Rotation range	0-360°/ continuous rotation
Indicator light	RGB LED can be programmable control of light color and brightness
Terminals	Left IN (red) Right OUT (white)
Operating voltage	DC6V~DC12.6V
Position feedback	Magnetic encoding
Stall current	1.5A
Operating temperature range	0°C ~ 80°C
Protection	Overcurrent, overvoltage, overheating, undervoltage
Dead zone bandwidth	No dead zones
Feedback	Position, speed, temperature, current, voltage
Life	90,000 times
Mainboard support	Makeblock mainboard (Auriga, Servo communication board, Arduino series)