RoArm-M1 Tutorial I: How To Use

From Waveshare Wiki
Jump to: navigation, search

RoArm-M1 Tutorial Directory

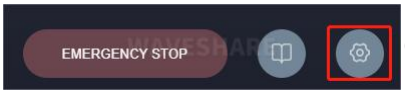
- RoArm-M1 Tutorial I: How To Use
- RoArm-M1 Tutorial II: Secondary Development Tutorial (/wiki/RoArm-M1_Tutorial_II:_Secondary_Development_Tutorial)
- RoArm-M1 Tutorial III: VMware ROS2 Getting Started Tutorial (/wiki/RoArm-M1_Tutorial_III:_VMware_ROS2_Getting_Started_Tutorial)
- RoArm-M1 Tutorial IV: URDF Model Tutorial (/wiki/RoArm-M1_Tutorial_IV:_URDF_Model_Tutorial)
- RoArm-M1 Tutorial V: ROS2 Serial Communication Node (/wiki/RoArm-M1_Tutorial_V:_ROS2_Serial_Communication_Node)
- RoArm-M1 Tutorial VI: How to assemble RoArm-M1 (/wiki/RoArm-M1_Tutorial_VI:_How_to_assemble_RoArm-M1)
- RoArm-M1 Tutorial VII: Assembly Graphics Tutorial (/wiki/RoArm-M1_Tutorial_VII:_Assembly_Graphics_Tutorial)
- RoArm-M1 Tutorial VIII: Use of rqt in ROS2 (/wiki/RoArm-M1_Tutorial_VIII:_Use_of_rqt_in_ROS2)
- RoArm-M1 Tutorial IV: URDF Model Tutorial (/wiki/RoArm-M1_Tutorial_IV:_URDF_Model_Tutorial)
- RoArm-M1 Main Page (/wiki/RoArm-M1)

How To Use

- This tutorial is based on RoArm-M1.

Using Guide

- Servo 1 controls the rotation of the entire robotic arm. Servo 2 controls the rotation of the upper arm. Servo 3 controls the rotation of the lower arm. Servo 4 controls the rotation of the clamp. Servo 5 controls the rotation of the clamp.
- Before powering on the robotic arm, align position "a" on the upper arm with position "b" on the platform.
- Connect the 12V 5A power supply to the 12V DC port on the robotic arm driver board. Power on the robotic arm by plugging in the power supply. After powering on, connect your smartphone or computer to the RoArm-M1 WiFi network named "ESP32_DEV" with the password "12345678". Once connected to the WiFi, open the Google Chrome browser and enter "192.168.4.1" in the address bar to access the web login page.
- After entering the web interface, click on the "Settings" button to access the settings page. Click on "S2 AutoConfig" to initiate automatic calibration for servo 2. The servo will perform automatic calibration 1-2 times. During the calibration process, the orange LED light will be on. Avoid clicking other buttons until the orange light is off. Take precautions to prevent hand injuries during the automatic calibration process.

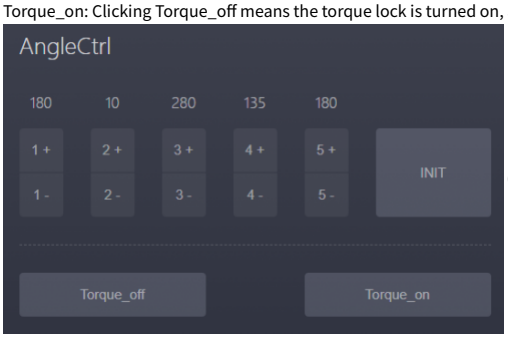


(/wiki/File:Roarm-how_to-use09.jpg)

Button Function

- AngleCtrl: Servo angle control

NO. 1~5 servos correspond to servo id1~5 respectively, the 5 numbers in the top line from left to right are the angle of servos 1~5 respectively, for example, the first 180 indicates that the angle of servo id1 is 180°, which can be adjusted by "+-". INIT: Each servo is reset to the most initial calibration INIT: Each servo is reset to the position where it was first calibrated.
Torque_off: Clicking Torque_off means the torque lock is turned off, only after the torque lock is off can the servo be turned manually when the arm is powered on.
Torque_on: Clicking Torque_off means the torque lock is turned on, and after it is turned on, the servo cannot be turned manually when the robotic arm is powered on.



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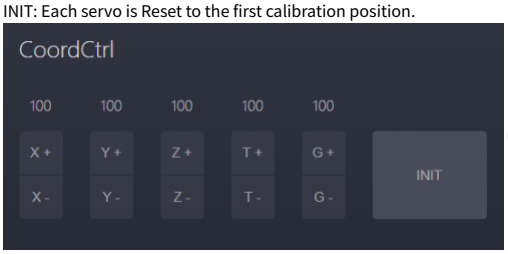
- CoordCtrl: Servo Coordinate Control

X, Y, and Z represent the position coordinates of the end effector of the robotic arm, T represents the tilt angle of the end of the robotic arm, and G represents the rotation angle of the end of the robotic arm, these five can be adjusted through the "+-", the end effector of the robotic arm refers to the lowest point of the clamp, which is labeled in the first diagram.
INIT: Each servo is Reset to the first calibration position.



(/wiki/File:RoArm-M1_Tutorial_I03.png)

- GET_DEV_INFO&GET_ANGTOP_INFO: get more information about RoArm-M1.

GET_DEV_INFO: Get the basic information about RoArm-M1. You can see the device name, company name, official URL, etc.

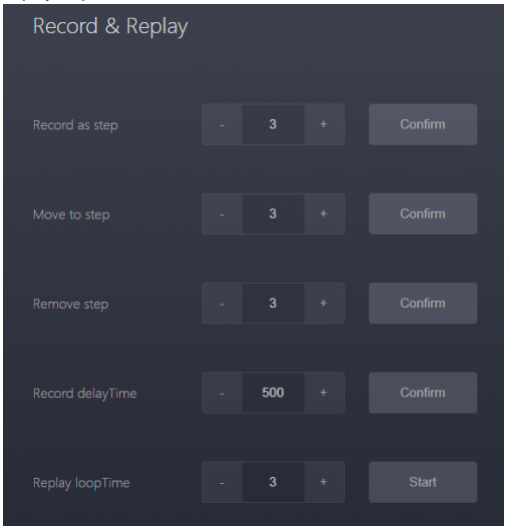
GET_ANGTOR_INFO: Get the coordinates and angles of RoArm-M1. Here A indicates the position of each servo, and 0-4096 bits correspond to 0-360 degrees. T indicates the load of each servo.

(/wiki/File:RoArm-M1_Tutorial_I04.png)

(/wiki/File:RoArm-M1_Tutorial004.png)

- Record & Replay: record and reproduce actions.

Record as step: Turn the servo on the robotic arm to the position you want, select the action number, and click "Confirm" to save.
Move to step: Select the saved motion number, click "Confirm" and the robotic arm will automatically reproduce the motion.
Remove step: Select the saved action number, and click "Confirm" to delete.
Record delayTime: Fill in the pause time of the robotic arm, and click "Confirm" to enter, the pause time is the pause time after completing all recorded actions.
Replay loopTime: Select the number of times to record actions in a loop, and click "Start" to start the loop.



(/wiki/File:RoArm-M1_Tutorial_I05.png)

- Servo Configuration: servo setting.

1~5 correspond to five servos respectively, and "+-" is used to adjust the position of the parts controlled by each servo. You can also click "Torque_off" to turn off the torque lock, and then manually rotate the servo position and click the corresponding SET to save the servo position, which will be recorded in INIT.
This setting is generally used to record the first calibrated position for each servo, after which it will be reset whenever INIT is clicked.

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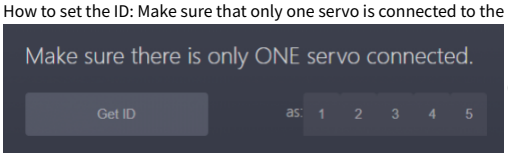
- Setting.

Servo ID Setting

As the servo ID is set in the product you bought, you do not need to set the ID.
If the customer needs to assemble the robotic arm or needs to replace the servo on the robotic arm, change the servo ID to the corresponding one according to the servo 1~5 corresponding to the servo mounting position.
How to set the ID: Make sure that only one servo is connected to the robot arm driver board, click Get ID in the settings, and select the ID you want to set.



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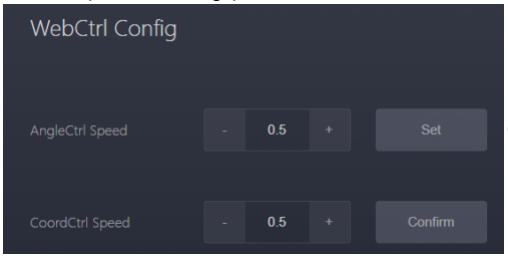
WebCtrl Config

AngleCtrl Speed: the rotating speed of the servo when the angle is controlled.

CoordCtrl Speed: the rotating speed of the servo when the coordinate is controlled.



(/wiki/File:RoArm-M1_Tutorial_I08.png)

Main Page: return to the main page.

- For more content about RoArm-M1, please refer to the following tutorials.