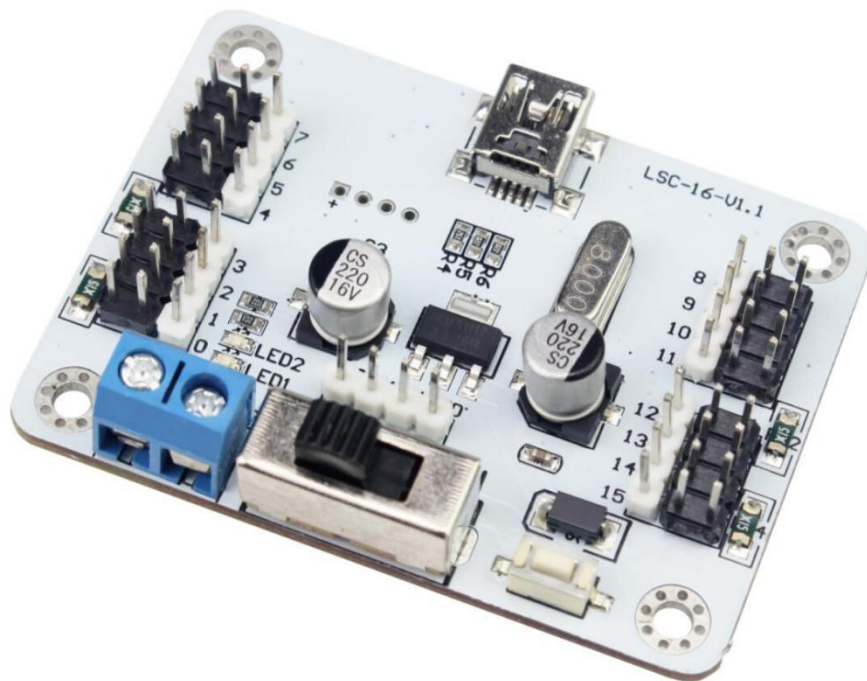


# LSC-16 Servo Controller

## User Manual



# Warm Tips

Thank you for purchasing this item. For your better use, please read the following instructions first.

1. 0-3<sup>th</sup> and 12-15<sup>th</sup> servo interfaces of this LSC-16 servo controller have over-current protection which is already shown in the picture below. Please give priority to these interfaces when connecting servos.

2. Please first fix nylon column or copper column on the servo controller to prevent it from burning out during the debugging process, because mistakes happen much more easily if the bottom of the controller touches the metal objects.

3. Please connect the positive and negative wires to the servo controller first before you connect battery to the servo controller, and then connect the battery to the wire interface, and finally turn on the switch, it is worth noting that positive and negative wires contacting can cause a short circuit. Do not expose the wire out of the controller when it is wired.

4. The servo controller module is not intended for young children! Younger users should use this module only under adult supervision.

5. The servo controller module is not intended for young children! Younger users should use this module only under adult supervision.

# Catalog

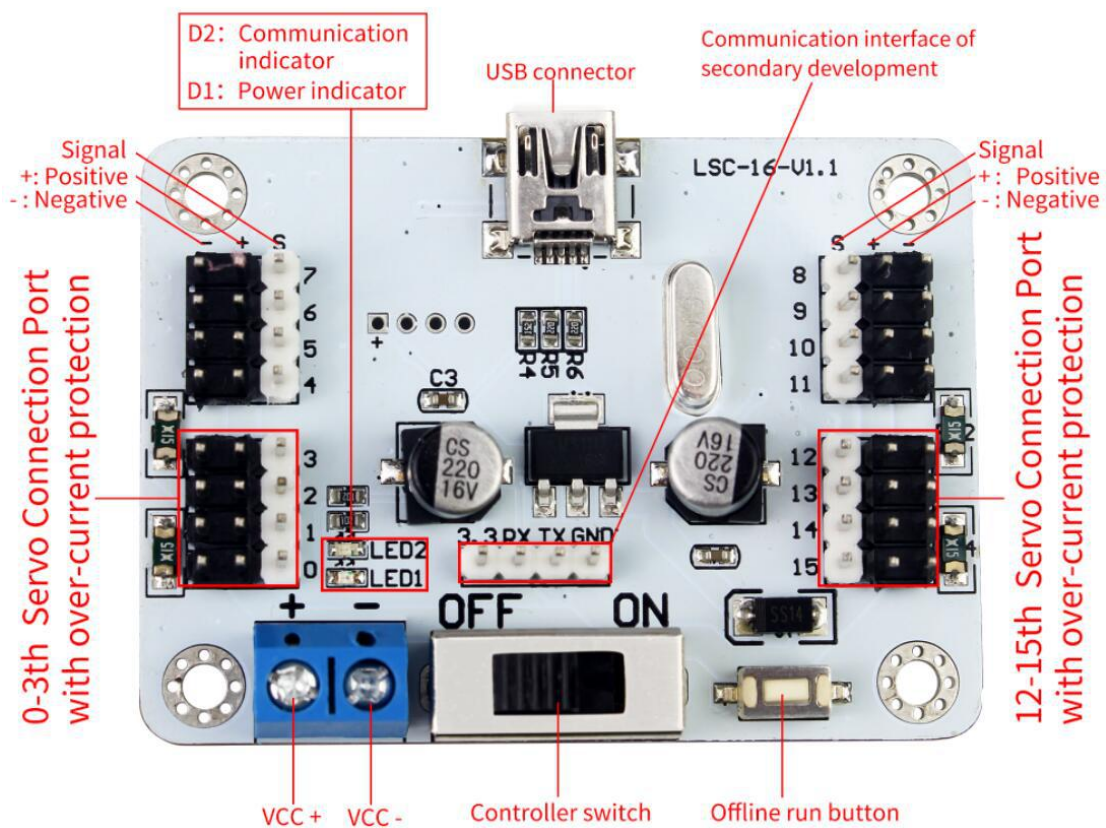
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# Introduction to the servo controller

## 1. Servo controller interface

Outline area size	2.28in*1.65in
Mounting hole size	1.93in*1.34in
Net weight	18grams
USB control	support
Wireless handle control	support
The maximum of the number of controlling servos	16
Memory	16M
Current-limiting protection	support
External single-chip(secondary development)	support
Switch built-in	support
Over-current protection	support

The instruction of servo controller are illustrated below



## 2. Servo controller power supply

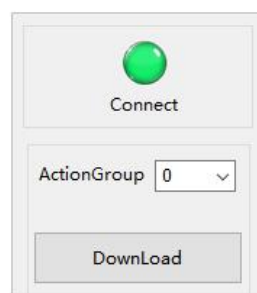
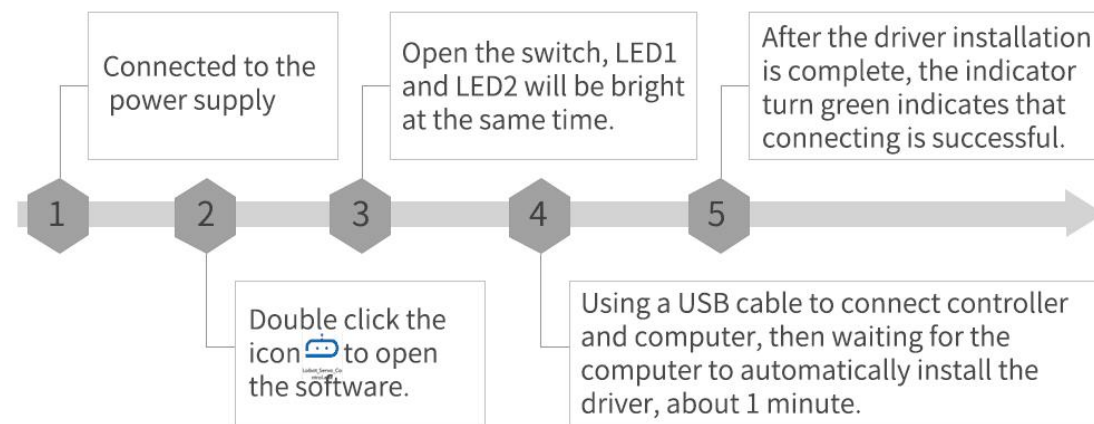
The VCC + support voltage range from 5V to 9V.

The power supply voltage depends on the voltage of the controlled servo. Both must be consistent.

Tips: Be careful of the power short circuit in the process of power connection.

## 3. Driver installation

When the servo controller is connected to the computer for the first time, the computer will automatically install the driver.



## 4. Switch on controller

First, connect the battery and servo to the controller. Then, use the USB cable to connect the controller to the computer, turn on the power on it, and LED1, LED2 will light up. The control board needs to be fixed to the nylon column to prevent short circuit damage caused by touching the metal parts.

# Quick operation

## 1. Start up PC software



Lobot\_Servo\_Controller.exe

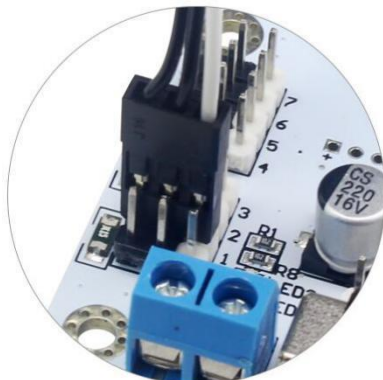
Double click the icon and open the software.

## 2. Single servo debugging

(1)when servo controller is connected to the computer, the interface indicator turn green indicates that connecting is successful.

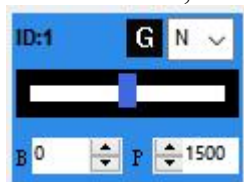
(2)Make sure that the voltage of the 7.4V lithium battery is not lower than 6.4V (the 7.4V lithium battery is fully charged at 8.4V, please make sure that the voltage is not lower than 6, 4V, preferably full). If the blue light on the controller is flashing, it means the battery voltage is too low and it needs to be charged in time to prevent the battery from overcharging.

(3)Connect the servo to the No. 1 control port. Please do not insert the wrong line



(4)Pull the No. 1 slider

Pull the slider, the servo will rotate as the slider moves.



(5)Place the slider to the position of 500, 1000, 1500, 2000, and 2500 respectively and add actions in turn.

1		500	2		1000
3		1500	4		2000
5		2500			

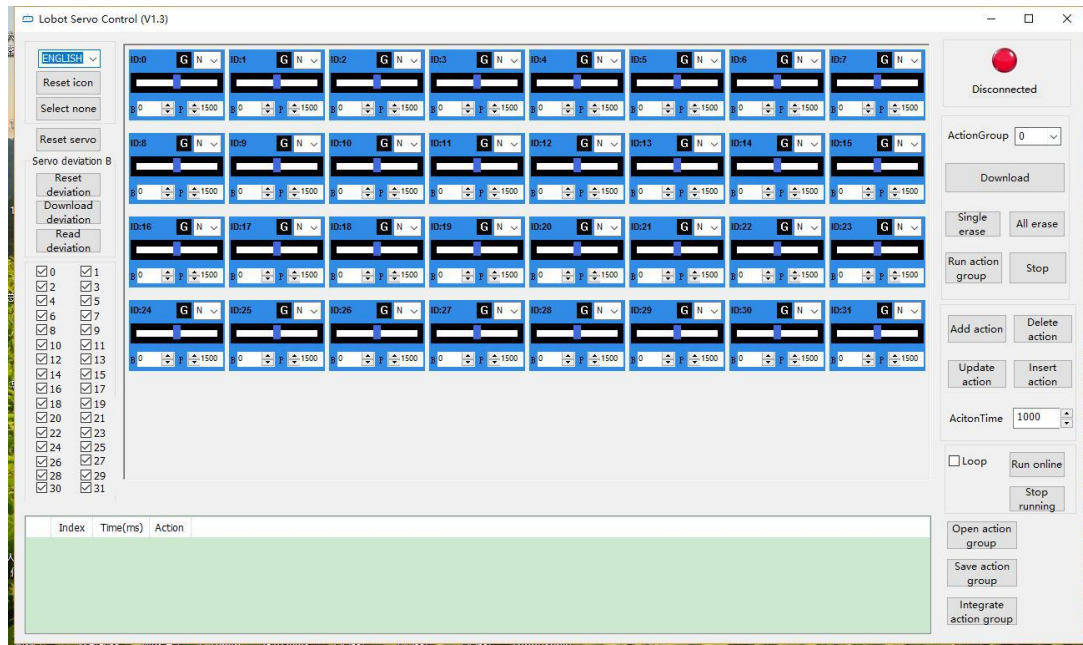
(6)Click “Run Online” button and observe the rotation effect of servo.

(7)Click “Save Action Group” to save the action group you edited and name the file name.

(8)Restart the software, then click “Open Action Group” to open the file you just saved.

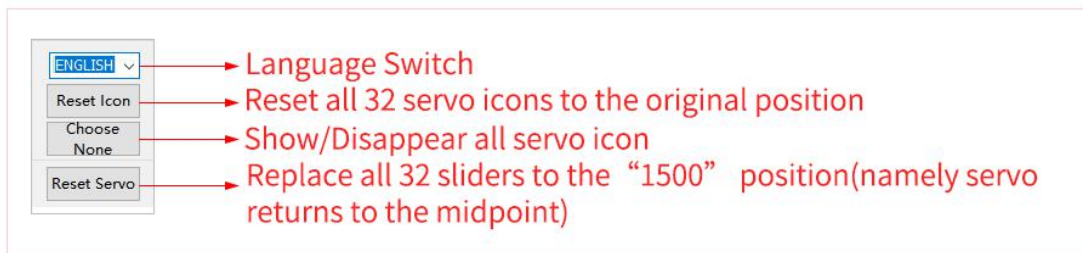
## Introduction to the PC software interface

### The global window of the PC software

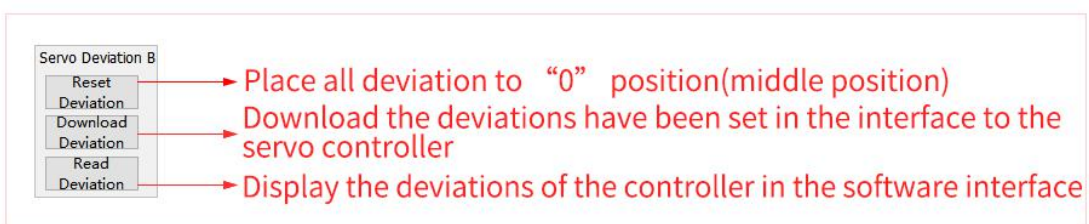




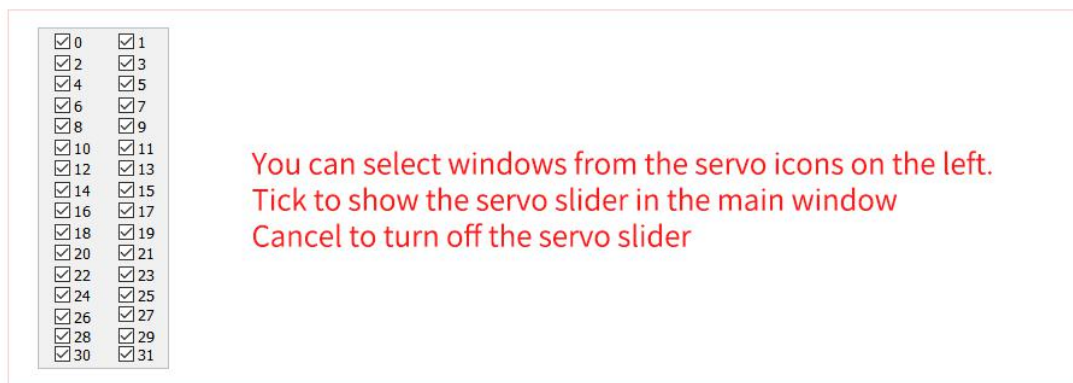
## 1. Global Operation Window



## 2. Deviation Operation Window

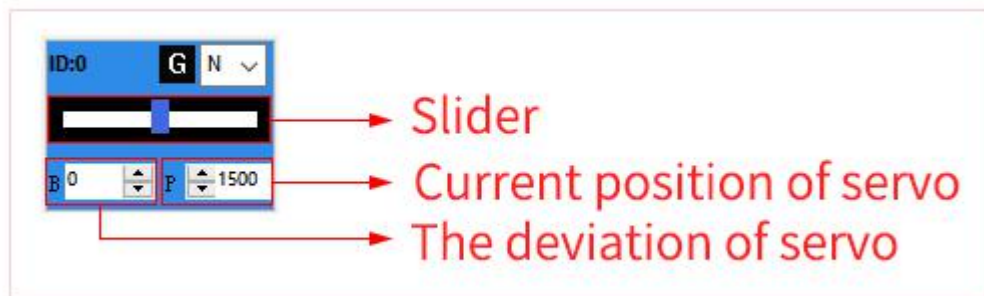


## 3. Servo Icon Selection Window





#### 4. The Introduction of the Servo Window function



The servo slider can be free to drag ( the range is 500-2500). The P value will change as the slider moves, and it can visually show the rotation position of the servo at this time.

Because some of the installation deviations will happen in the process of robot production. sometimes we need to use the function of “Deviation Adjustment” to make some fine-tuning. B represents servo deviation which ranges from 100~100.

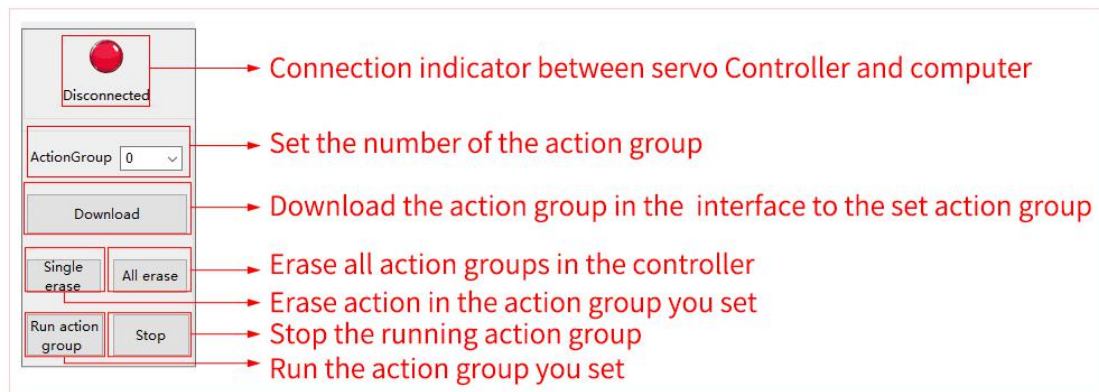
When the deviation of each servo is adjusted, click the "Download Deviation" button, then the all deviations will be downloaded to the controller. If you want to modify the deviation later, please click on the "Read Deviation" button, the deviation will automatically show in the interface.

#### 5. The introduction of Action Date Display Area

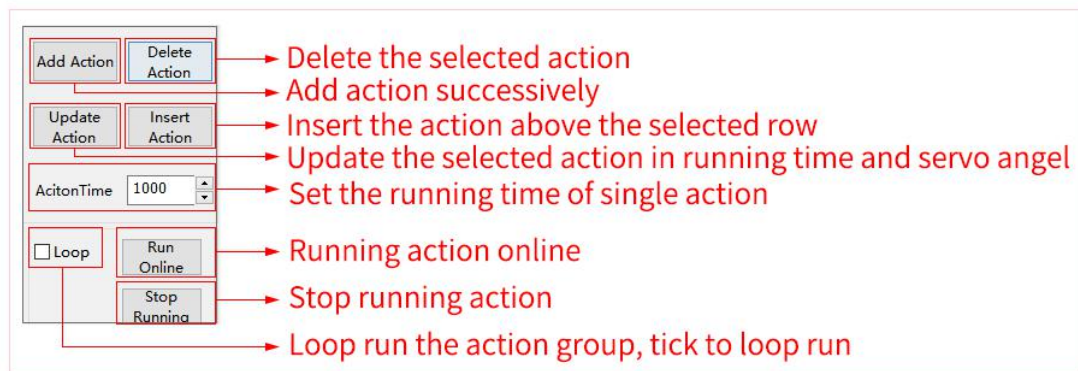
Index	Time(ms)	Action
1	1000	#0 P1500 #1 P1500 #2 P1500 #3 P1500 #4 P1500 #5 P1500 #6 P1500 #7 P1500 #8 P1500 #9 P1500 #10 P1500 #11 P1500 #12 P1500 #13 P1500 #14 P1500 #15 P1500 #16
2	1000	#0 P1500 #1 P1500 #2 P1500 #3 P1500 #4 P1500 #5 P1500 #6 P1500 #7 P1500 #8 P1500 #9 P1500 #10 P1500 #11 P1500 #12 P1500 #13 P1500 #14 P1500 #15 P1500 #16
3	1000	#0 P1500 #1 P1500 #2 P1500 #3 P1500 #4 P1500 #5 P1500 #6 P1500 #7 P1500 #8 P1500 #9 P1500 #10 P1500 #11 P1500 #12 P1500 #13 P1500 #14 P1500 #15 P1500 #16

# Indicates what is the number of the servo, P indicates the position of the servo, and T indicates the time that the servo is running to that position.

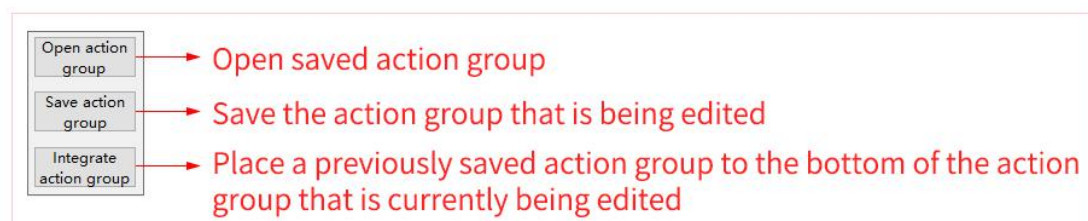
## 6. Download and invoke action group window



## 7. Online action debugging window



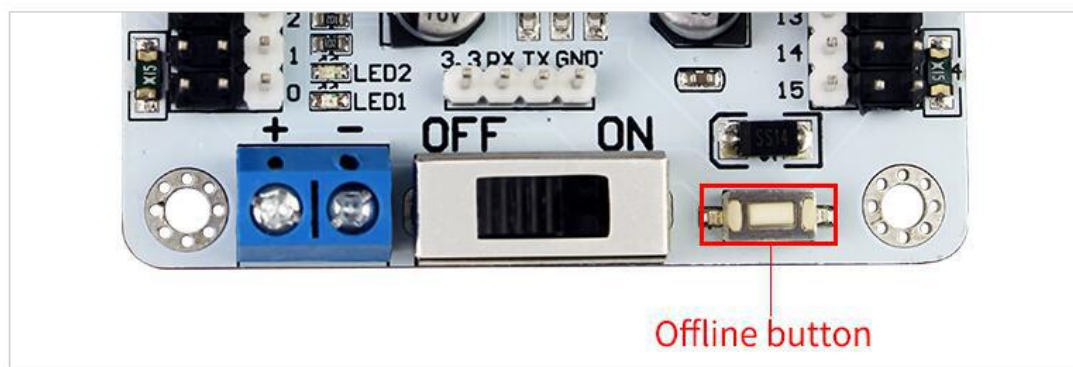
## 8. File operation window



# About offline running

**Offline running means:** disconnected from the computer and the robot works automatically

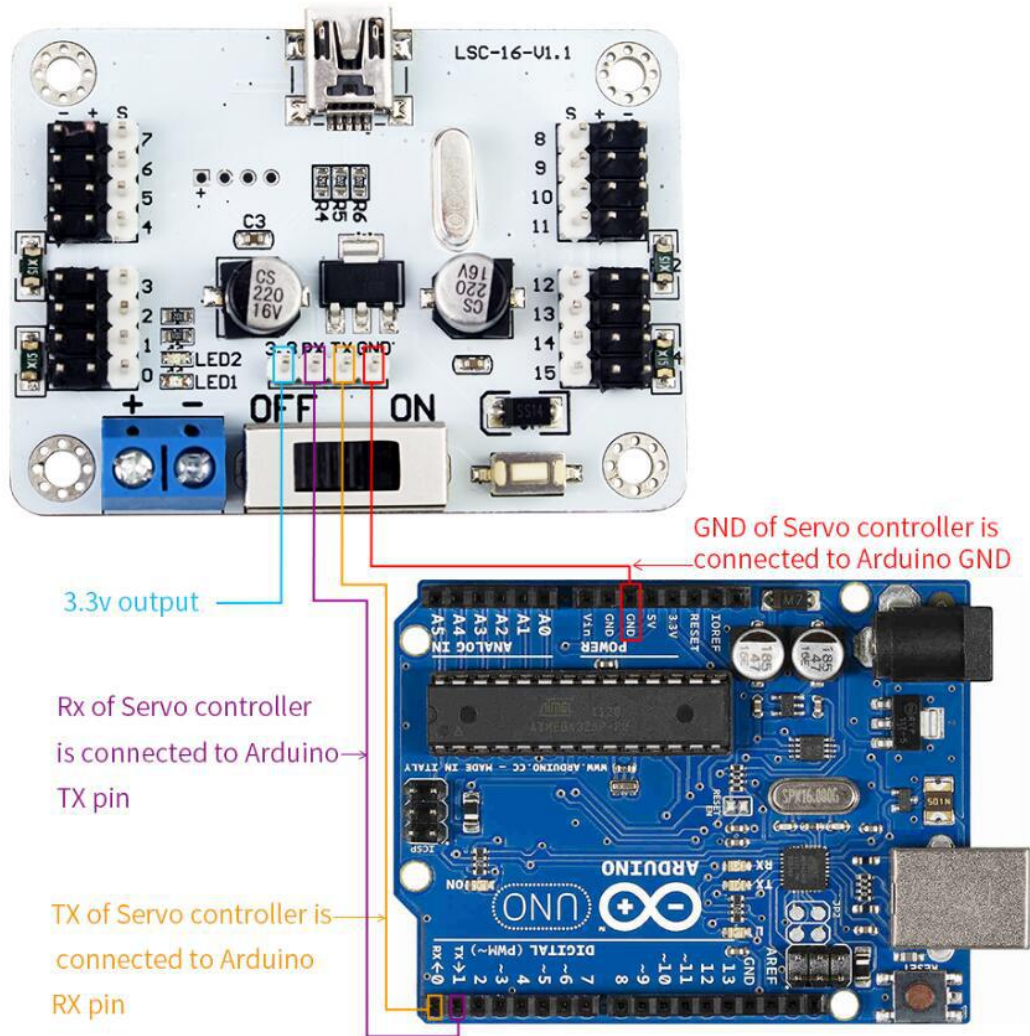
- 1. Download the action file that needs to be run offline to No.100 action group;**
- 2. Press the flexible button on the controller.**

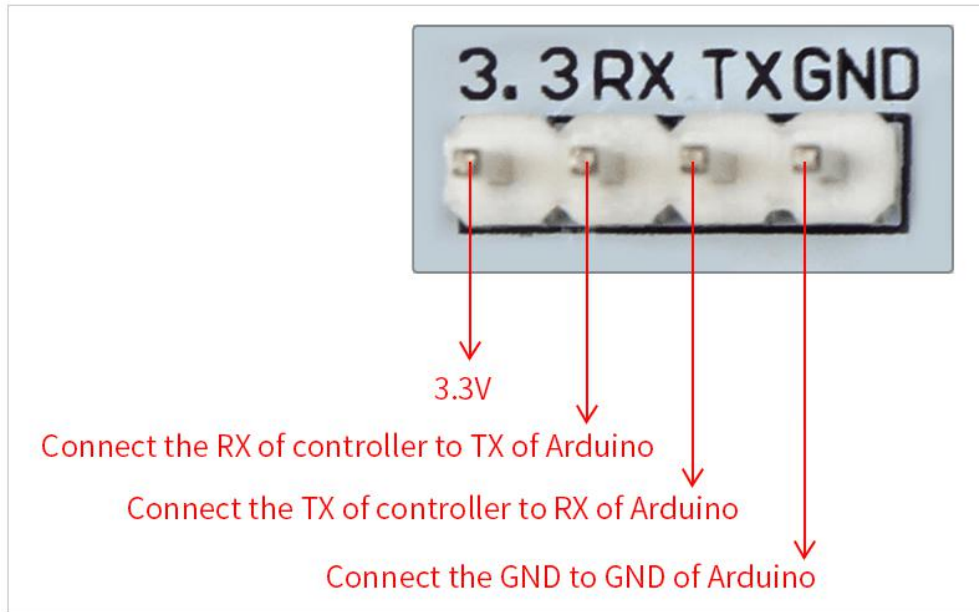


- 3. Press once to run offline once; press and hold for 3 seconds (until the blue light flashes), it will be running all the time.**
- 4. Restart the controller to remove the cycle run.**

## Advanced Control(Serial Port Communication , Secondary Development)

The communication wiring diagram of connecting  
16-channel servo controller to external Arduino .





Note: Please read the <secondary development documentation>

for a full understanding on how to use the servo control secondary development instruction.

**We hope that you can carefully read the instructions and watch the video instruction so that you can have a good command of 16 channel servo controller.**

## Technical Support

If there is anything that you do not understand, please check the instructions or the accompanying video tutorial, if the problem still can not be solved, please feel free to contact us by email at [support@lewansoul.com](mailto:support@lewansoul.com)

Please visit the following link or scan the QR code to get related instructions and video tutorial.

	Get instructions	Get video tutorial
Link	<a href="http://bit.ly/2rJshh6">http://bit.ly/2rJshh6</a>	<a href="http://bit.ly/2t4MNwS">http://bit.ly/2t4MNwS</a>
QR code		