Lesson 2 Bus Servo Learning

1. Bus Servo Instruction

Serial bus servo is based on digital servo but different from the PWM digital servo. It communicates through the asynchronous serial bus mode, that is control by sending and receiving of the command packet. It is a closed loop Control form. Based on this feature, the bus servos can be connected in series with each other. The wiring is simple and reduce the occupation of the serial port. Therefore, we need to set ID number for each servo for sending the command to specific servo.

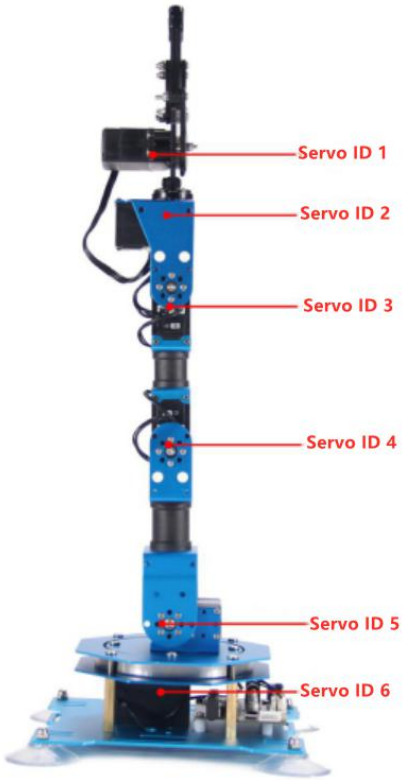
The built-in high-precision potentiometer not only has the ability to feedback position, temperature, voltage and other information but has high accuracy and linearity. These features make the robot run more stable and longer the service life of servo.

It’s required to set the servo to middle position before assembly. The middle position is the initial zero point for positive and negative rotation. when the servo is rotating, the rotating part drives the potentiometer to rotate. The software will assume that the neutral position is the "initial point", otherwise the potentiometer may enter the "blind zone", causing the entire assembly to fail to operate normally.

ID number and middle position have been set for all the servos of xArm 1S before shipping. All of them are ready to use.

---

2. xArm 1S Servo



Servo ID	Type	Location	Assembly	Note
1	Servo for gripper	Gripper	Assembled servo wire	-
2	LX-15D	Wrist	Need to install the main servo horn but not the auxiliary horn	Limit angle is 240°
3		Body	Assembled main and auxiliary horn	-
4				
5	LX-225			

6	LX-15D	Bottom	Assembled main and no need for auxiliary horn	Limit angle is 320°

Servo parameters

Attribute	Parameter
Size:	44.02 x 22.92 x 35.12mm
Gear material：	Alloy gear
Connector type:	PH2.0- 3P
Voltage：	6-8.4V
Torque：	15kg.cm 6V 17kg.cm 7.4V
Rotation：	0°-240°
Speed：	0.23sec/60° 7.4V
Control method:	UART serial command
Communication baud rate：	115200
Data feedback：	Temperature, voltage, position

	Indicator：	RGB light
	Store：	Save user settings when power off
	No-load current：	100mA
	Attribute	Parameter
	Size：	40 x 20.14 x 51.1mm
	Gear material：	Alloy gear
	Connector type:	PH2.0- 3P
	Voltage：	6-8.4V
	Torque：	25kg.cm 7.4V
	Rotation：	0°-240°
	Speed：	0.22sec/60° 7.4V
	Control method:	UART serial command
	Communication baud rate：	115200
	Data feedback：	Temperature, voltage, position

	Indicator：	RGB light
	Store：	Save user settings when power off
	No-load current：	100mA