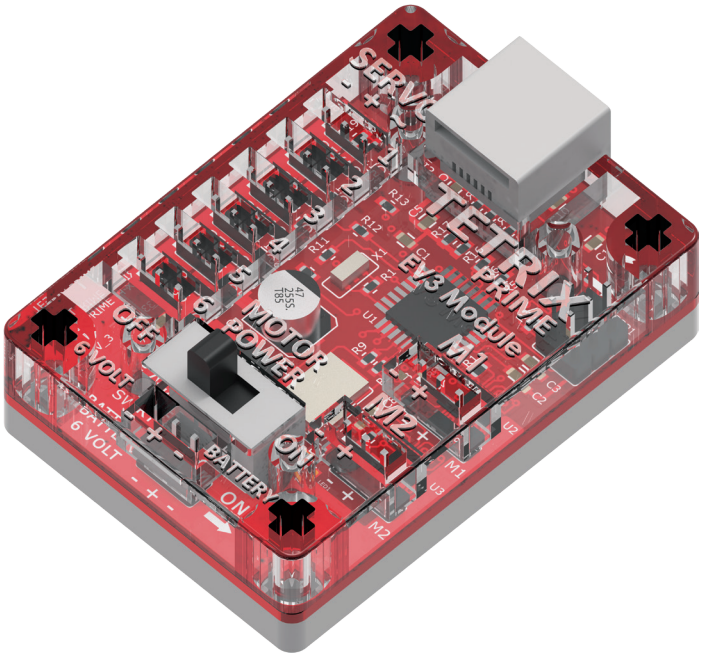
TETRIX® PRIME EV3 Module Guide

In order to control TETRIX PRIME servos using the LEGO EV3 Brick, a robot must include the TETRIX PRIME EV3 Module depicted here.



This module attaches to a sensor port on the EV3 using LEGO cables. When attached, it allows the connection of up to six TETRIX standard or continuous rotation servos to the brick. Up to two DC motors, available in additional TETRIX products, can also be connected.

Note that because the module occupies one sensor port, a robot incorporating the module may utilize up to only three additional sensors.

The module is compatible with LEGO components.

When securing it to a robot, up to four LEGO Cross Axles can be directly connected to the module and used with LEGO hardware.

To supply the servos with power, a TETRIX PRIME 6 V NiMH Battery Pack must be connected to the battery slot and the power switch must be turned ON.

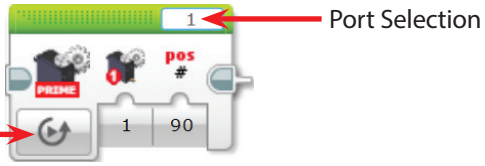
If properly powered, a blue light should be visible inside the module.

Programming standard or continuous rotation servos on an EV3 Brick with an TETRIX PRIME EV3 Module requires the TETRIX PRIME Servo Motor block to be downloaded and imported into the MINDSTORMS environment.

When installed, the block can be accessed in the green Action blocks tab and can be dragged into a program to control any servos connected with the module.

Inside the programming environment, the Servo Motor block will look like this.

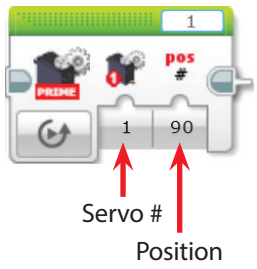
Available Modes:
Read Servo Position
Move
Set Servo Speed



Port Selection

Note that the port in the top right must match the sensor port to which the module is attached for the block to function.

Move



The Servo Motor block has three main modes of operation. Depicted above is the first and most commonly used: Move.

A block in Move mode can control the movement of one, or all, of the attached servos. To do this, the block requires a servo number and a position as inputs.

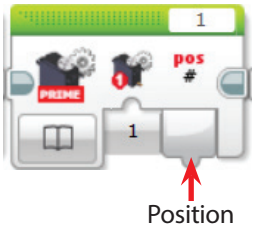
The servo number will be selected from a drop-down menu ranging from 1 to 6 and corresponds to the six available servo locations on the module; a seventh option, ALL, allows every servo to be controlled simultaneously.

The function of the position input, a range from 0 to 180, varies with servo type.

A standard servo will rotate to the designated position, whereas a continuous rotation servo will maintain rotation at a speed proportional to the difference from 90.

The direction of rotation depends on the value and whether it is greater than or less than 90.

Read Servo Position



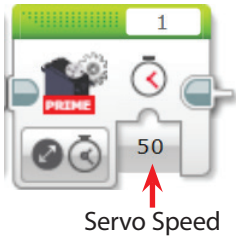
The Read Servo Position mode changes the position input to an output.

In this mode, the block will access the servo's motor encoder and output its current position value, ranging between 0 and 180.

For a standard servo, this will be the position to which it is set.

For a continuous rotation servo, this will be proportional to its speed.

Set Servo Speed



The last mode, Set Servo Speed, determines the speed of rotation for all standard servos connected to the module.

The available speeds range from 0% to 100% motor power.

This speed affects only the rotation of standard servos. Continuous rotation servos are still controlled within Move mode.