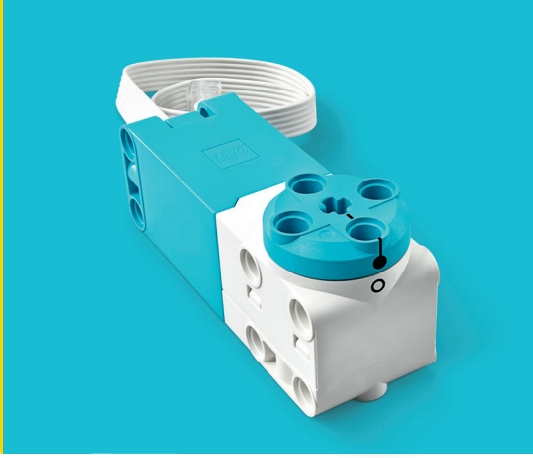
LEGO® Education SPIKE™ Prime Technical Specifications

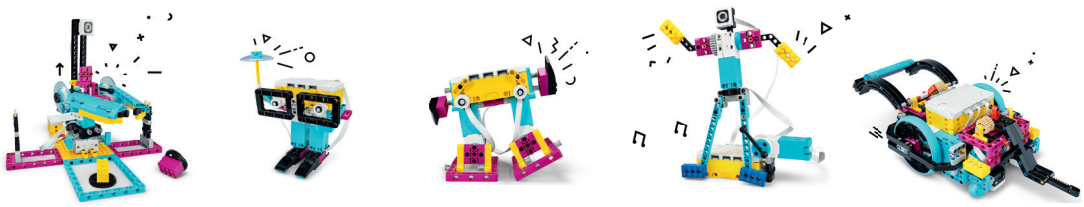
Technic™ Medium Angular Motor



Hardware name	Technic™ Medium Angular Motor
Description	The motor is designed to function in as both a motor and sensor. With the integrated advanced Rotation Sensor, the motor can report both speed and position. The motor can also sense direct user input measures if the output is rotated by hand.
Key features	• Speed sensor (measures percentage of maximum design speed) • Relative position in degrees • Absolute position in degrees (-/+ 180 degrees) • Crosshole output on one side, rotating disc with crosshole and building interface on the other side • The motor has a Technic build geometry that allows for versatile building and easy integration into models
Connector type	LEGO® Power Functions 2.0 (LPF2) for connection to LEGO Smarthubs
Wire length	250 mm
Motor output	Voltage range: • Min: 5V • Max: 9V No load: • Torque: 0 Ncm • Speed: 185 RPM +/- 15% • Current consumption: 110mA +/- 15% Maximum efficiency: • Torque: 3.5 Ncm • Speed: 135RPM +/- 15% • Current consumption: 280mA +/- 15% Stall: • Torque: 18 Ncm • Speed: 0 RPM • Current consumption: 800mA +/- 15% All performance data is based on a 7.2V power supply.

Sensor input	Rotation Sensor:
	• *Resolution*: 360 counts per revolution
	  • Resolution is the number of counts the sensor makes for every full revolution (360 degrees) on the output axle
	• Accuracy: ≤+/- 3 degrees
	  • *Accuracy* is defined as the tolerances in the sensor combined with the gearbox slack
	• Update rate: 100 Hz
	  • *Update rate* is defined as the frequency at which a new sensor reading, position, and speed are available

The LEGO® Education SPIKE™ app may not support all hardware features and functionalities.



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