

X-SERIES ACTUATOR[®]

This series of powerful robot actuators allows engineers, researchers, and industrial integrators to quickly and easily create world-class custom robots of any configuration. X-Series Actuators[®] are packed with sensors that enable controllable position, velocity, and sensitive torque control as well as three axis inertial measurement.

Each actuator is a series-elastic actuator that integrates a brushless motor, gear train, spring, encoders, and control electronics into a compact package that runs on anything from 24V-48V DC and communicates using standard 10/100Mbps Ethernet.



The X-Series Actuator[®] is designed to function as a full-featured robotic component as opposed to a simple servo motor. The output rotates continuously, requires no calibration or homing on boot-up, and contains a thru-bore for easy daisy-chaining and wiring. This enables these actuators to be used in everything from wheeled robots to multi-degree of freedom collaborative robotic arms.

HEBI Robotics provides cross-platform software tools that make configuring and controlling the X-Series a breeze, with features such as live plotting, APIs for MATLAB, ROS, C/ C++, and Python.

X-SERIES ACTUATOR — TECHNICAL SPECIFICATIONS

CONFIGURATION	X5-1	X5-4	X5-9	X8-3	X8-9	X8-16
Peak Torque	2.5 N-m	7 N-m	13 N-m	7 N-m	20 N-m	38 N-m
Cont. Torque	1.3 N-m	4 N-m	8 N-m	3 N-m	8 N-m	16 N-m
Max Speed	90 RPM	32 RPM	14 RPM	84 RPM	30 RPM	15 RPM
Mass	330g	345g	360g	455g	475g	490g
Dimensions	110mm x 73mm x 31mm 15mm hollow bore			110mm x 73mm x 45mm 15mm hollow bore		
Power	24-48V DC Cont. Current: 0.5 A @ 36V Peak Current: 1.6 A @ 36V			24-48V DC Cont. Current: 1.3 A @ 36V Peak Current: 3.0 A @ 36V		
Temperature	-10°C to 50°C Ambient					
Communication	100 Mbps Ethernet (dual port)					
Angular Resolution	0.005°					
Torque Resolution	0.01 Nm					
Backlash	+/- 0.25°					
Sensing	Angular Position (multi-turn absolute, +/- 4 turns) Angular Velocity Output Torque 3-axis Accelerometer / Gyro Temperature Voltage Current					
API Support	MATLAB (Windows / Linux / OS X) ROS (Linux) Python (Windows / Linux / OS X) C/C++ (Windows / Linux / OS X) C# (Windows)					
<p>Each individually purchased X-Series Actuator® includes a standard connection kit: 3' Ethernet cable, 12" Power cable, 12" Power pigtail and Power splitter board. Additional technical documentation at docs.hebi.us</p> <p>Updated on October 1, 2021. Specifications subject to change without notice.</p>						

