R-SERIES ACTUATOR®

This series of robotic actuators allow engineers and end-users to make custom robotic systems that can be deployed directly into wet/dirty industrial and outdoor environments. R-Series Actuators are sealed to IP67 and are designed with a lightweight and rugged form factor that allows them to be used in challenging field applications.

Each actuator integrates a brushless motor, gear reduction, force-sensing, encoders, and control electronics into a compact package that runs on anything from 24V-48V DC and communicates using standard 100Mbps Ethernet. This keeps the overall robotic system lightweight, low-power, simple, and safe.

The R-Series Actuator is 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 of wiring. This enables the actuators to be used in everything from wheeled robots to collaborative robotic arms.

HEBI Robotics provides cross-platform software tools that make configuring and controlling the R-Series a breeze, with features such as live plotting, control from mobile devices like phones and tablets, and APIs for MATLAB, ROS, C/C++, and Python.

R-SERIES ACTUATOR – TECHNICAL SPECIFICATIONS

Configuration	R8–3+	R8–9+	R8–16+	R25–8	R25–20	R25–40
Peak Torque **Cont. Torque** **Max Speed**	8 N-m 4 N-m 110 RPM	23 N-m 10 N-m 39 RPM	44 N-m 20 N-m 20 RPM	16 N-m 8 N-m 118 RPM	40 N-m 20 N-m 47 RPM	80 N-m 40 N-m 23 RPM
Mass	670 g	685 g	715 g	1.9 kg	1.9 kg	1.9 kg
Dimensions *(w/ connector cover)*	156mm x 78mm x 51mm 15mm hollow bore			198mm x 112mm x 69mm 20mm hollow bore		
Power	24-48V DC Cont. Current: 1.0 A @ 36V Peak Current: 2.5A @ 36V			36-48V DC Cont. Current: 1.5A @ 36V Peak Current: 5A @ 36V		
Temperature	-10°C to 50°C Ambient / IP67					
Communication	2x 100 Mbps Plastic Optical Fiber (OptoLock ®)					
Angular Resolution	0.005° Resolution +/- 0.2° Accuracy					
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 Internal Pressure					
API Support	Python (Windows / Linux / macOS) C/C++ (Windows / Linux / macOS) ROS/ROS2 (Linux) MATLAB (Windows / Linux / macOS)					

Each individually purchased R-Series Actuator® includes:
A-2456-02: R/T-Series Standard Wiring Kit
Additional technical documentation at **docs.hebi.us**

Updated on Mar 13, 2025. Specifications subject to change without notice.