

FEETECH FS90R Micro Continuous Rotation Servo



Pololu



Pololu

Bottom view of FEETECH FS90R micro continuous rotation servo showing middle-point adjustment potentiometer.

Overview

The FS90R is a micro-sized servo that has been built by FEETECH (formerly known as Fitec) specifically for continuous rotation. At 6 V, it has a maximum rotation speed of around 130 RPM (no-load) and can produce up to 21 oz-in (1.5 kg-cm) of torque. The servo can be controlled using a direct connection to a single microcontroller I/O line without any additional electronics, which makes it a great miniature actuator for beginner robotics projects.

The FS90R continuous rotation servo converts standard RC servo position pulses into continuous rotation speed. The default rest point is 1.5 ms, but this can be adjusted by using a small slotted screwdriver to turn the middle-point positioner. Pulse widths above the rest point result in counterclockwise rotation, with speed increasing as the pulse width increases; pulse widths below the rest point result in clockwise rotation, with speed increasing as the pulse width decreases.

The servo has a 7" (180 mm) lead that is terminated with a JR-style connector and includes additional servo horns and mounting hardware. The following picture shows an example of the hardware that might be included (actual hardware could vary):



www.pololu.com

This robotics servo, which is a continuous rotation version of the FEETECH (Fitec) FS90, is compatible with our servo controllers. If you are looking for a similar servo that is capable of limited-range position control as opposed to continuous rotation speed control, consider the Power HD micro servo HD-1900A, which has almost the same weight, speed, and torque as the FS90R.

Continuous rotation servo comparison



Continuous rotation servo size comparison. From left to right: SpringRC SM-S4303R, Power HD AR-3606HB, Parallax, and FEETECH FS90R.

	SpringRC SM-S4303R	PowerHD AR-3606HB	Parallax (Futaba S148)	FEETECH FS90R
Max Speed @ 6 V:	54 RPM	71 RPM	50 RPM	130 RPM
Stall torque @ 6 V:	71 oz-in	93 oz-in	42 oz-in	21 oz-in
Max Speed @ 4.8 V:	43 RPM	62 RPM	39 RPM	100 RPM
Stall torque@ 4.8 V:	46 oz-in	83 oz-in	33 oz-in	18 oz-in
Weight:	41 g	40 g	43 g	9 g
Size (mm):	41.3×20.7×40.2	40.5×20.0×38.0	40.5×20.0×38.0	23.2×12.5×22
Price:	\$12.95	\$14.95	\$13.95	\$4.95

[Documentation on producer website.](#)