

# R40 Datasheet

## General Description

The R40 series provides a fully integrated motion solution for Elliptec’s piezoelectric motor technology. The modules include the complete motor control electronics and have built-in position feedback. The modules can be wired like a DC or a stepper motor.

## Features

- Piezoelectric motor technology
- Integrated control electronics and position sensor
- Pin-selectable modes of operation
- Blocking force when idle
- Arc minute motor steps
- Fast response times
- Compact form factor and simple mechanical mounting
- Weight only approx. 20 g

## Module Characteristics

(TA = 25°C unless otherwise noted.)

Symbol	Parameter	Ratings			Units	Notes
		min.	typ.	max.		
$V_{CC}$	Supply Voltage	4.5	5.0	5.5	V	
	Supply Current @ Maximum Speed		450	600	mA	
$I_{CC}$	Supply Current during Self-Calibration			800	mA	
	Supply Current in Idle Mode			1	mA	
$M_H$	Unpowered Holding Torque	5	8	10	mNm	
$M_0$	Motor Driving Torque	see Figure 1				
$f_{Forward}$	Internal Driving Frequencies: clockwise	77	80	84	kHz	The internal driving frequency is automatically determined after every reset
$f_{Backward}$	Internal Driving Frequencies: counterclockwise	93	98	108	kHz	The internal driving frequency is automatically determined after every reset
$T_{ambient}$	Operating Temperature	-10	20	65	°C	
$n$	Resolution (R40S-HR01)		1200	steps/revolution		Other resolutions see order information
$\varphi$	Angular Resolution (R40S-HR01)		0.3	°		Other resolutions see order information

## Typical Torque, Velocity and Dynamical Behaviour

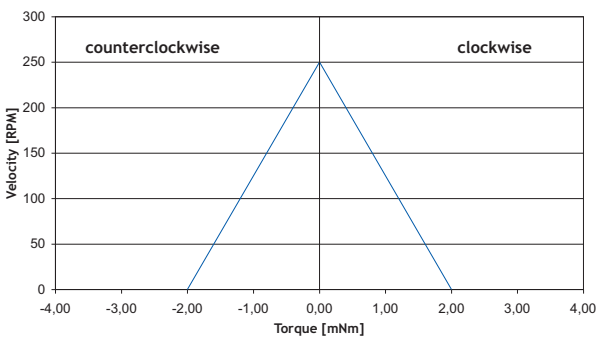


Figure 1: Velocity vs. torque (VCC=5V)

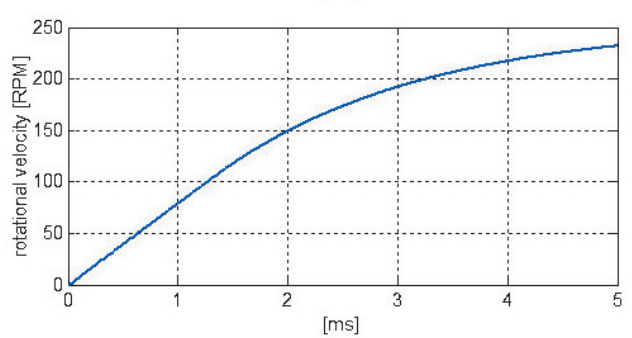


Figure 2: Typical rotational velocity

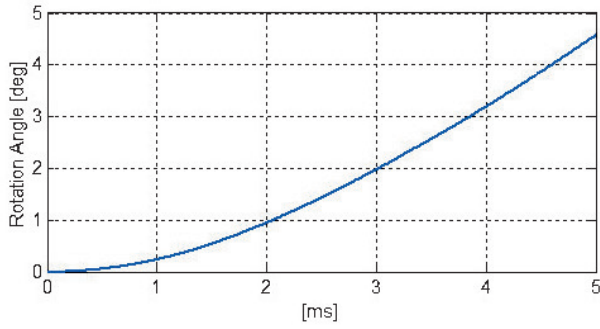


Figure 3: Typical rotation angle

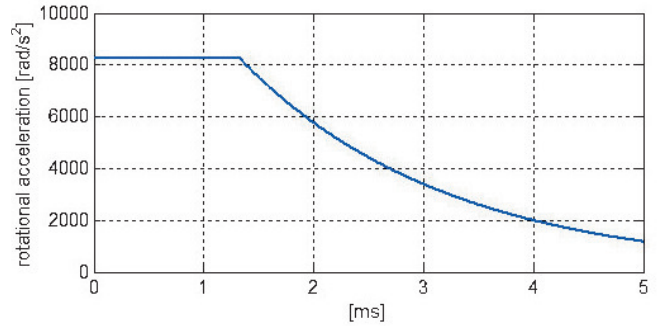
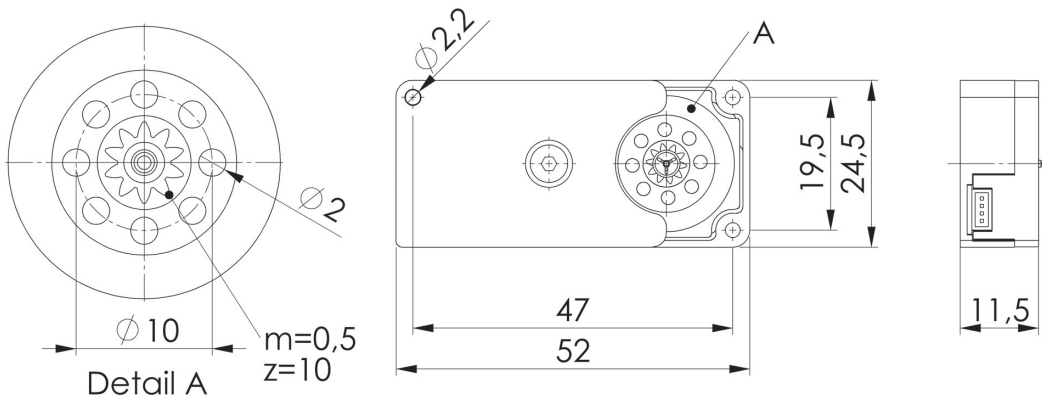
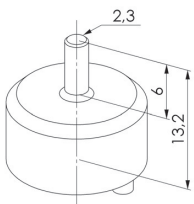


Figure 4: Typical rotational acceleration

## Dimensions (mm)



## Adapter with motor shaft



## Order information

Article Number	Description
R40N	No position encoder. Connecting cable AWG25 length 200 mm with plugs GSN Greatecs CABL-CE-1633 1.0. Motor speed is controlled by a digital or analog input voltage. Including adapter.
R40S-LR01	Position encoder with 40 steps (9° angular resolution). Connecting cable AWG25 length 200 mm with plugs GSN Greatecs CABL-CE-1633 1.0. Motor moves in steps controlled by a pulse input signal. Including adapter.
R40S-HR01	Position encoder with 1,200 steps (0.3° angular resolution). Connecting cable AWG25 length 200 mm with plugs GSN Greatecs CABL-CE-1633 1.0. Motor moves in steps controlled by a pulse input signal. Including adapter.

For further information please refer to the module manual or visit our website at [www.elliptec.com](http://www.elliptec.com)

Subject to change without notice.

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