RSB1

Motorized rotary actuator

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Overview

Universal lightweight motorized rotary actuator for automated 360° product photography

- Black anodized aluminium
- Modular construction
- GT2 belt drive for smooth operation
- Double preloaded instrumentation bearings zero backlash
- 12.7mm through hole for wire harness or slip-ring
- Magnetic Hall sensor for [illegible]
- Reduction ratio 1:5



Specifications

Parameter	Value	Units
Reduction ratio	5:1	
Stepper motor step angle	1.8	deg
Motor current	1	A
Rotary stage max torque	0.5	Nm
Weight	475	g
Slewing hole diameter	12.7	mm
Radial load	>20	N
Axial load	>100	N

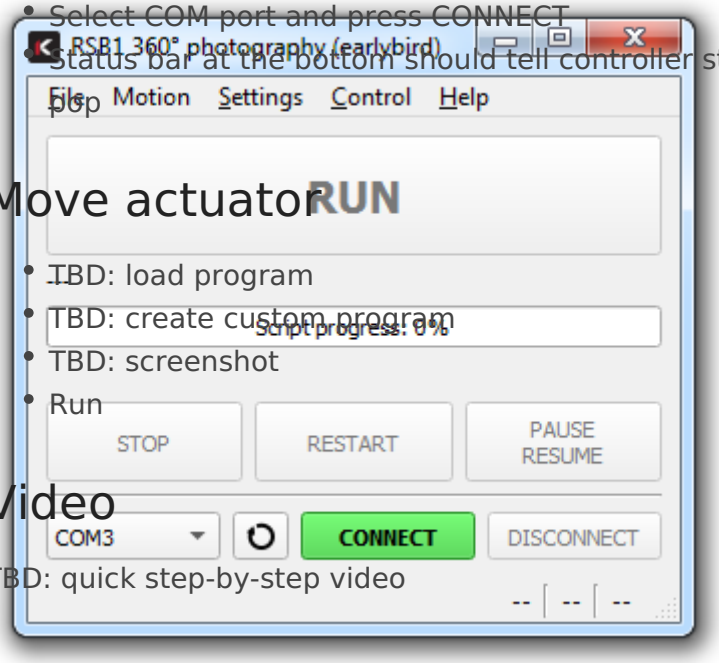
How to start using

Start program

- Connect actuator to port A
- Connect cables (USB and power)

TBD: picture

- Install serial port driver if needed STM32 Virtual COM Port Driver
- Download latest Windows release from GitHub
- Extract zip file and run **RSB1_360_photography** program
- You should be greeted with window



- Select COM port and press CONNECT
- Status bar at the bottom should tell controller status and version. Or error message will pop

Move actuator

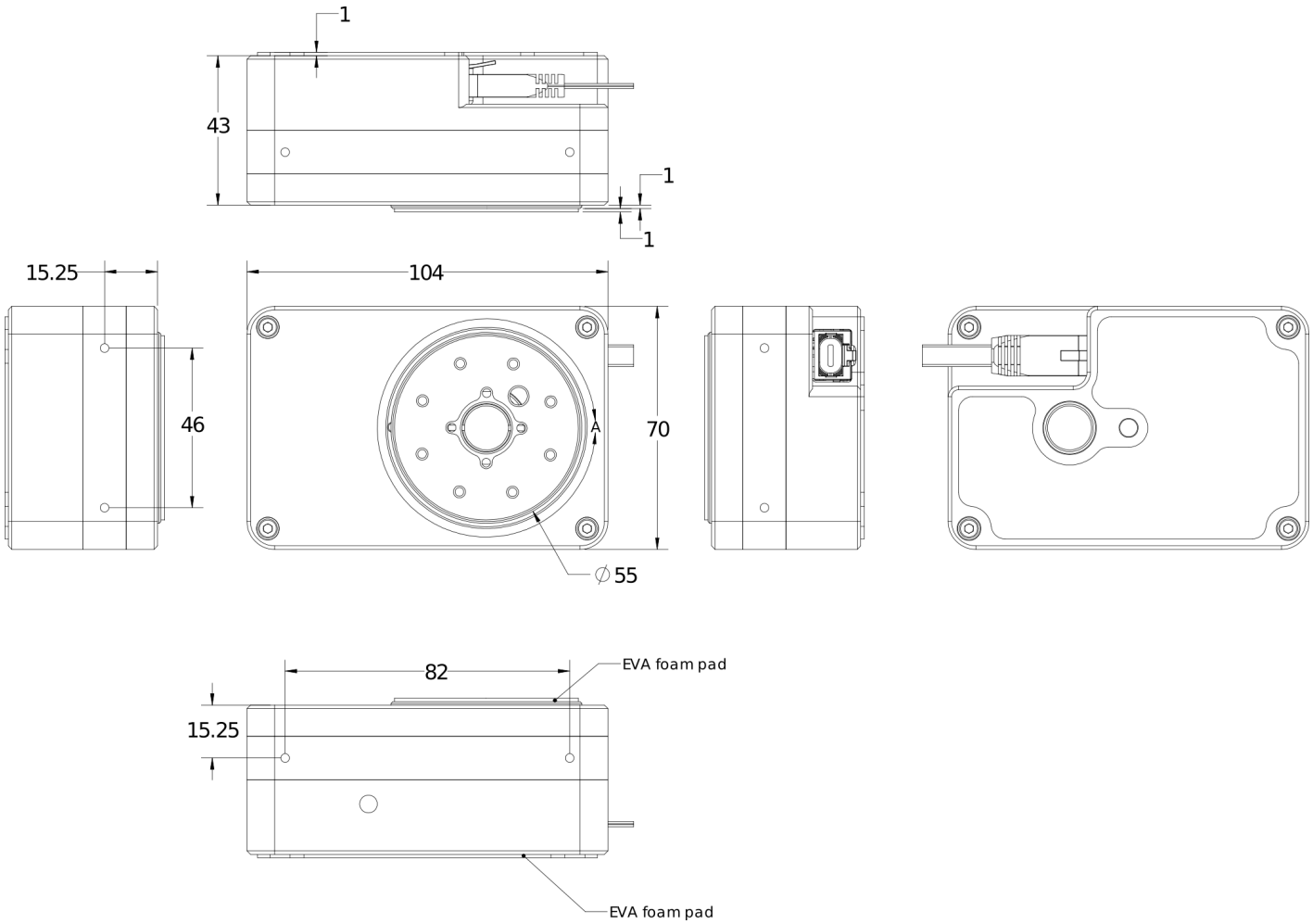
- TBD: load program
- TBD: create custom program
- TBD: screenshot
- Run

Video

TBD: quick step-by-step video

Dimensions

RSB1 dimensions



Detailed platform dimensions

Wiring

RJ45 pinout

Pin	Signal
1	GND
2	5V
3	SIG1
4	A1
5	A2
6	SIG2
7	B1
8	B2

SIG1 is used for homing signal

Drive train specifications

Belt reducer

RSB1 has GT2 belt in order to transfer power to plate. 12/60 tooth pulleys provide 1:5 reduction rate.

Motor

Parameter	Value	Unit
Size	NEMA17	
Step angle	1.8 ±5%	deg
Phase count	2	
Mass	150	g
Rated voltage	3.5	V
Rated current	1.0	A
Resistance per phase	3.5 ±10%	Ω
Inductance per phase	4.5 ±20%	mH
Holding torque	160	mN*m

GRBL motion settings

Recommended GRBL parameters

Motion controller needs to know about actuator capabilities.

GRBL parameter	Value	Definition
$100	111.110	X steps/mm
$110	20000.000	X Max rate, mm/min
$120	2000.000	X Acceleration, mm/sec^2
$130	90.000	X Max travel, mm

> Assume motor is connected to X axis.

Ordering

RSB1 rotary actuator can be ordered directly on Kurokesu e-store