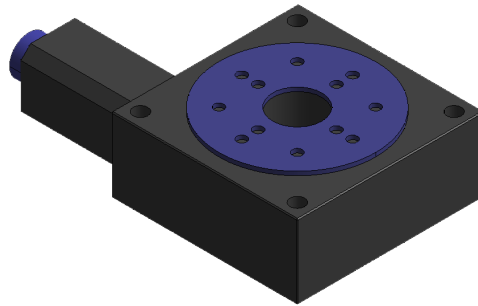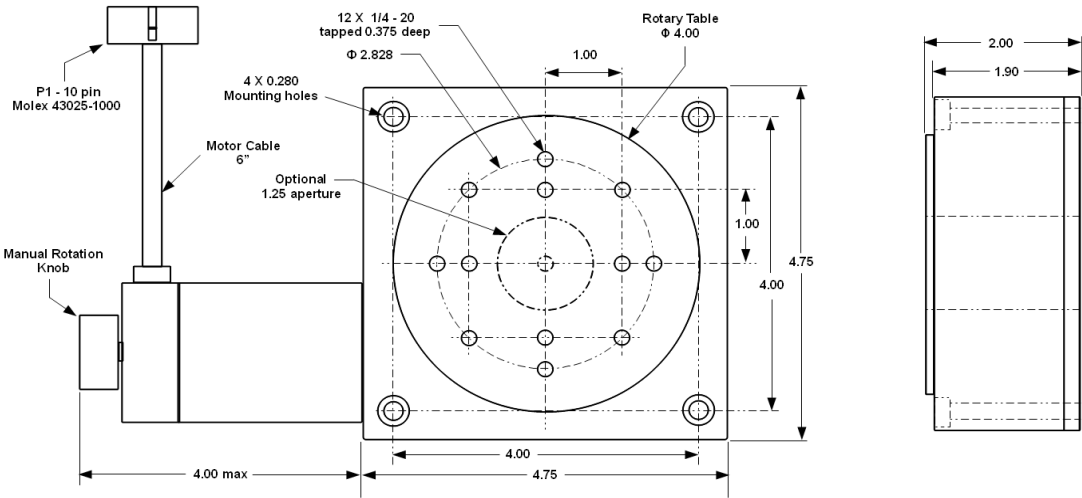# SRA4010 Rotary Stage

The SRA4010 Rotary Stage is a worm gear driven platform which provides precise rotation of payloads of up to 50lbs (22.7Kg). Typical applications include rotation of optical elements, lasers, RF sources, detectors, and any payload requiring precision angular positioning. The SRA4010 rotary stage is driven by a 0.9º/step stepper motor and micro-stepping driver which is capable of producing exceptionally smooth and high resolution rotation. A through-hole version is available which includes a 1.25" aperture for beam pass through or cable routing.
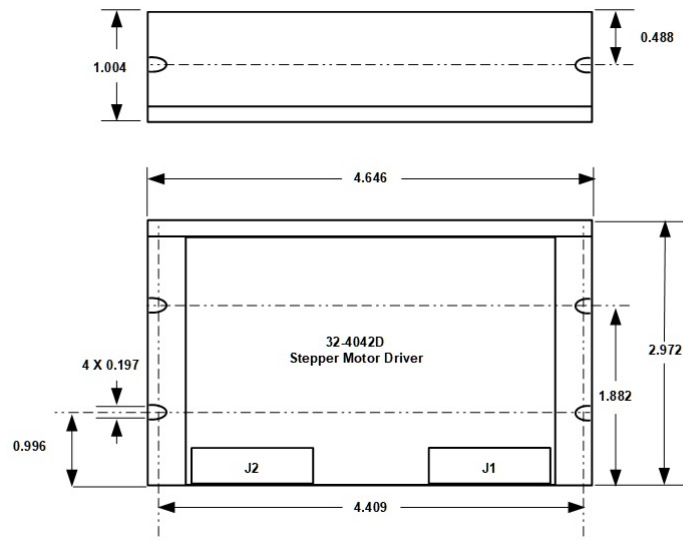
Features:

➢ Low cost system for lab and industrial applications.
➢ Anti-backlash system automatically adjusts for wear and temperature changes.
➢ Maximum speed: 36º/sec. (custom versions available for up to 360º/sec rate).
➢ Minimum step size: 0.000144º (0.518 arc-sec, 2.51μ rad) in micro-stepping mode .
➢ Accuracy: 0.05º (3 arc-min). Accuracy may be improved to 0.01º with error mapping.
➢ Rugged mechanical design & precision, long life ball bearings.
➢ Smooth 0.9º/step stepper motor drive with manual rotation knob.
➢ Continuous 360º rotation with homing signal.
➢ Power requirement: 20VDC to 36VDC, 50W max power consumption.
➢ Accommodates payloads up to 50lbs (22.73Kg).
➢ Output Torque rating: 30 inch-lbs (3.39N-m), Cantilever Torque: 50 inch-lbs (5.65N-m).
➢ -25ºC to +75ºC operating temperature range.
➢ Custom configurations available to accommodate mounting interface, speed, and control requirements.

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Outline and mounting dimensions

P1 - 10 pin
Molex 43025-1000

Motor Cable
6"

Manual Rotation
Knob

12 X 1/4 - 20
tapped 0.375 deep

Φ 2.828

4 X 0.280
Mounting holes

Optional
1.25 aperture

Rotary Table
Φ 4.00

1.00

1.00

4.00

4.75

4.00 max

4.00

4.75

2.00

1.90

SignalTronix

Controller/Driver 32-4042D

Driver Connector Pin Designations

```
           CONNECTOR PIN DESIGNATIONS

    J1-1   PUL + (Step Pulse +5VDC)
    J1-2   PUL – (Step Pulse, open collector input)
    J1-3   DIR + (Step Direction +5VDC)
    J1-4   DIR – (Step Direction, open collector input)
    J1-5   ENA + (Step Enable +5VDC)
    J1-6   ENA – (Step Enable, open collector input)

    J2-1   POWER GND (Return)
    J2-2   +20 to +36VDC Power input
    J2-3   MOTOR WINDING A+
    J2-4   MOTOR WINDING A–
    J2-5   MOTOR WINDING B+
    J2-6   MOTOR WINDING B–
```

Typical Application

Rotary Stage

Stepper Motor

Motor Cable

P1   J1

32-4042 Stepper Driver Assembly

JD1

JD1-1   PUL + (Step Pulse +5VDC)
JD1-2   PUL - (Step Pulse Input)
JD1-3   DIR + (Step Direction +5VDC)
JD1-4   DIR - (Step Direction Input)
JD1-5   ENA + (Step Enable +5VDC)
JD1-6   ENA - (Step Enable Input)

J1-1   Home Sensor +5V Power
J1-2   Home Sensor GND
J1-3   Home Sensor Output

JD2

JD2-1   Power Return
JD2-2   +24VDC Power Input
JD2-3   Motor A+
JD2-4   Motor A-
JD2-5   Motor B+
JD2-6   Motor B-

Host Controller (Customer's equipment)

Power Supply 24 – 36VDC 2.5A

P1 Motor Connector Molex 43025-1000

P1-1   Home Sensor +5V
P1-2   Home Sensor GND
P1-3   Home Sensor Output
P1-4   Reserved
P1-5   Reserved
P1-6   Motor A+
P1-7   Motor A-
P1-8   Motor B+
P1-9   Motor B-
P1-10   Shield

J1 Mating Connector Molex 43020-1001