

Page: 1	Torxis Servo	Document Number: i03943
Total Pages: 7	Date: 2013/07/16	Revision: 03



1. PRODUCT DESCRIPTION

This Torxis servo is a high torque, DC powered intelligent motor. It accepts position commands from standard Hobby Radio Control units or microcontrollers and then moves to the commanded position. It provides up to 3200 oz*in of torque.

2. APPLICATIONS

- Hobby Projects
- Robotics
- Toy Vehicle Control
- Camera Control
- Remote Instrumentation

3. FEATURES

- Up to 3200 oz*in of torque
- Speeds as quick as 60 degrees in 500 ms
- Available in standard (red housing) and rugged sealed (black housing) configurations
- Available with pwm or analog control input
- Available in position or velocity controlled versions
- Mechanically capable of 270 degrees of travel
- Rugged aluminum main body
- Includes cnc machined output horn with #10-32 tapped holes
- Thick mounting flange (0.125 inch)
- 12VDC , 3A power
- Weighs 2.2 lbm
- Dimensions (inches): 5.5 x 3.9 x 2.4

4. APPLICABILITY

Torque shown in oz*in units. Duration is shown in milliseconds. This document applies to the following part numbers:

Page: 2	Torxis Servo	Document Number: i03943
Total Pages: 7	Date: 2013/07/16	Revision: 03

4.1 STANDARD (RED HOUSING SERVOS)

The following table applies to standard red housing servos. These servos come with a 14 inch control cable with a standard RC connector installed. Tinned leads are provided for 12V power connection. These servos respond to RC PWM of 5V referenced to ground.

Part Number	Torque (Cont)	Torque (Peak)	Control	Time for 90 deg	Gear Reduction
i00600	1600	3200	Position	1500	1044:1
i00800	800	1600	Position	750	536:1
i01853	1600	3200	Velocity	1500	1044:1
i01854	800	1600	Velocity	750	536:1

4.2 RUGGEDIZED (BLACK HOUSING SERVOS)

The following servos feature extra sealing at cable entry and housing interfaces. These servos come with a 120 inch , 4 conductor control cable with tinned ends.

4.2.1 PWM Control Rugged Servos

The following table applies to black housing servos. These servos respond to RC PWM of 5V referenced to ground. Torque shown in oz*in units. Travel is based on a 90 degree input signal (standard servo signal)

Part Number	Torque (Cont)	Torque (Peak)	Travel (deg)	Control	Time for 90 deg	Gear Reduction
i01855	1600	3200	90	Position	1.5	1044:1
i01800	800	1600	90	Position	0.75	536:1
i01856	1600	3200	270	Position	1.5	1044:1
i01857	800	1600	270	Position	0.75	536:1
i01859	1600	3200	Unlimited	Velocity	1.5	1044:1
i01860	800	1600	Unlimited	Velocity	0.75	536:1
i04050	1600	3200	990	Position	1.5	1044:1
i04060	800	1600	990	Position	0.75	536:1
i04290	1600	3200	3510	Position	1.5	1044:1
i04291	800	1600	3510	Position	0.75	536:1

4.2.2 Analog Control Rugged Servos

The following table applies to standard black housing servos. These servos respond to a 0-5VDC analog voltage. Torque shown in oz*in units. Travel is based on a input of 5VDC.

Page: 3	Torxis Servo	Document Number: i03943
Total Pages: 7	Date: 2013/07/16	Revision: 03

Part Number	Torque (Cont)	Torque (Peak)	Travel (deg)	Control	Time for 90 deg	Gear Reduction
i01300	1600	3200	90	Position	1500	1044:1
i01858	800	1600	90	Position	750	536:1
i01851	1600	3200	Unlimited	Velocity	1500	1044:1
i01852	800	1600	Unlimited	Velocity	750	536:1

5. PERFORMANCE TABLES

5.1 INPUT

- Power: Input power is 10-14 VDC, up to 3A depending on load. Red lead is motor +power. Black or brown lead is motor ground. Observe proper polarity as reverse connection will damage the controller. Power supply must be able to source and sink current surges. It is recommended to put a 12V battery in parallel with the power supply to buffer surges.
- Control Signal: 0-5VDC, analog or pwm. On units with RC connector, white conductor is pwm signal black conductor is ground. On units with 4 conductor cable bundle, green is signal ground and white is pwm signal.

5.2 OUTPUT

Machined metal horn provides output interface with tapped #10-32 holes for attachment.

5.2.1 Servo Travel

All servos are mechanically capable of at least 270 degrees of total travel. The following servos are capable of multi-turn travel up to 9.75 turns. Note that position control resolution is reduced with larger travel. The housing for these units is larger. Refer to figure 2.

Part Number	Torque (Cont)	Torque (Peak)	Travel (deg)	Control	Time for 90 deg	Gear Reduction
i04050	1600	3200	990	Position	1.5	1044:1
i04060	800	1600	990	Position	0.75	536:1
i04290	1600	3200	3510	Position	1.5	1044:1
i04291	800	1600	3510	Position	0.75	536:1

6. DRAWING

All dimensions in inches.

Page: 4	Torxis Servo	Document Number: i03943
Total Pages: 7	Date: 2013/07/16	Revision: 03

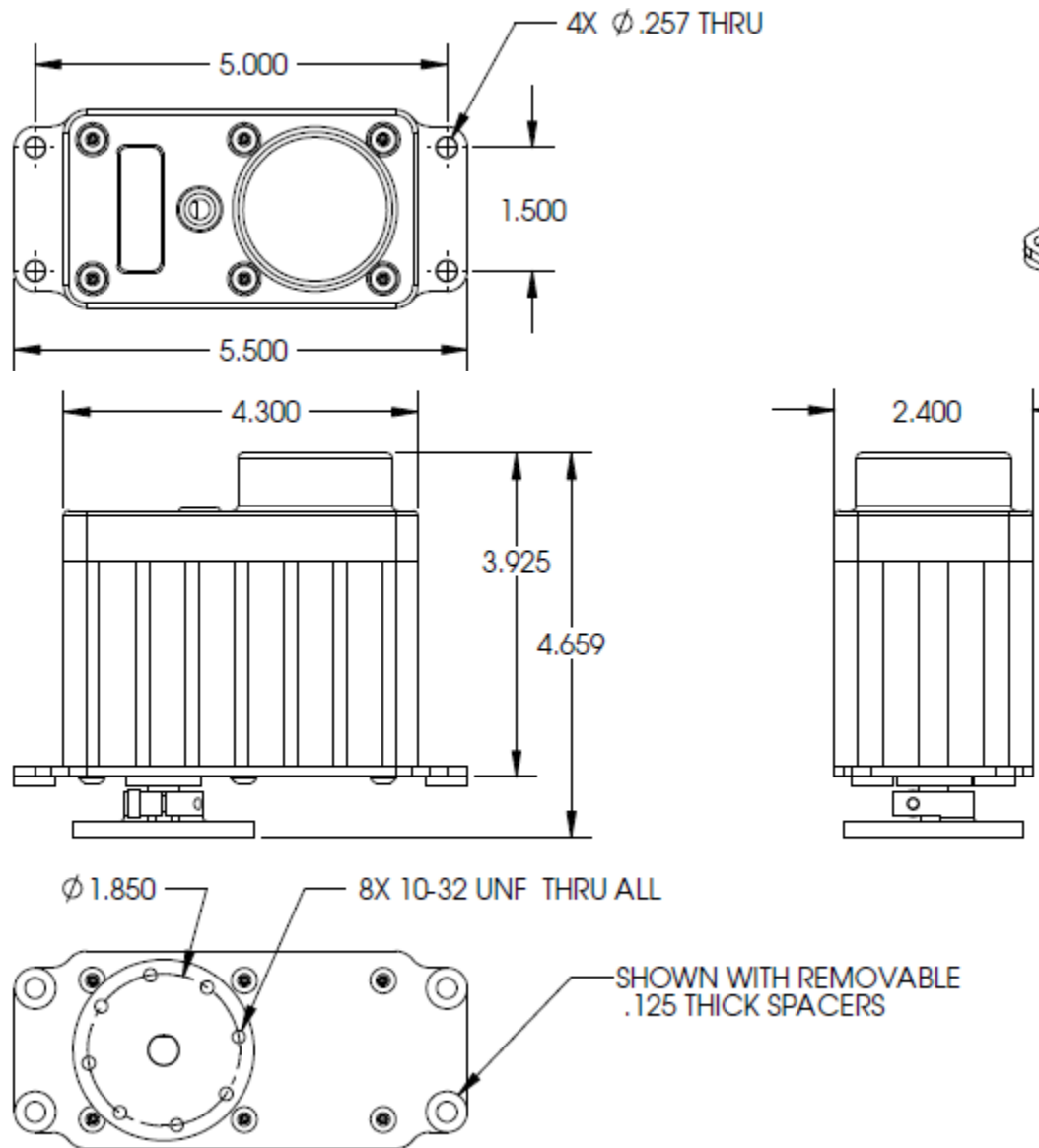


Figure 1 Standard Torxis

Page: 5	Torxis Servo	Document Number: i03943
Total Pages: 7	Date: 2013/07/16	Revision: 03

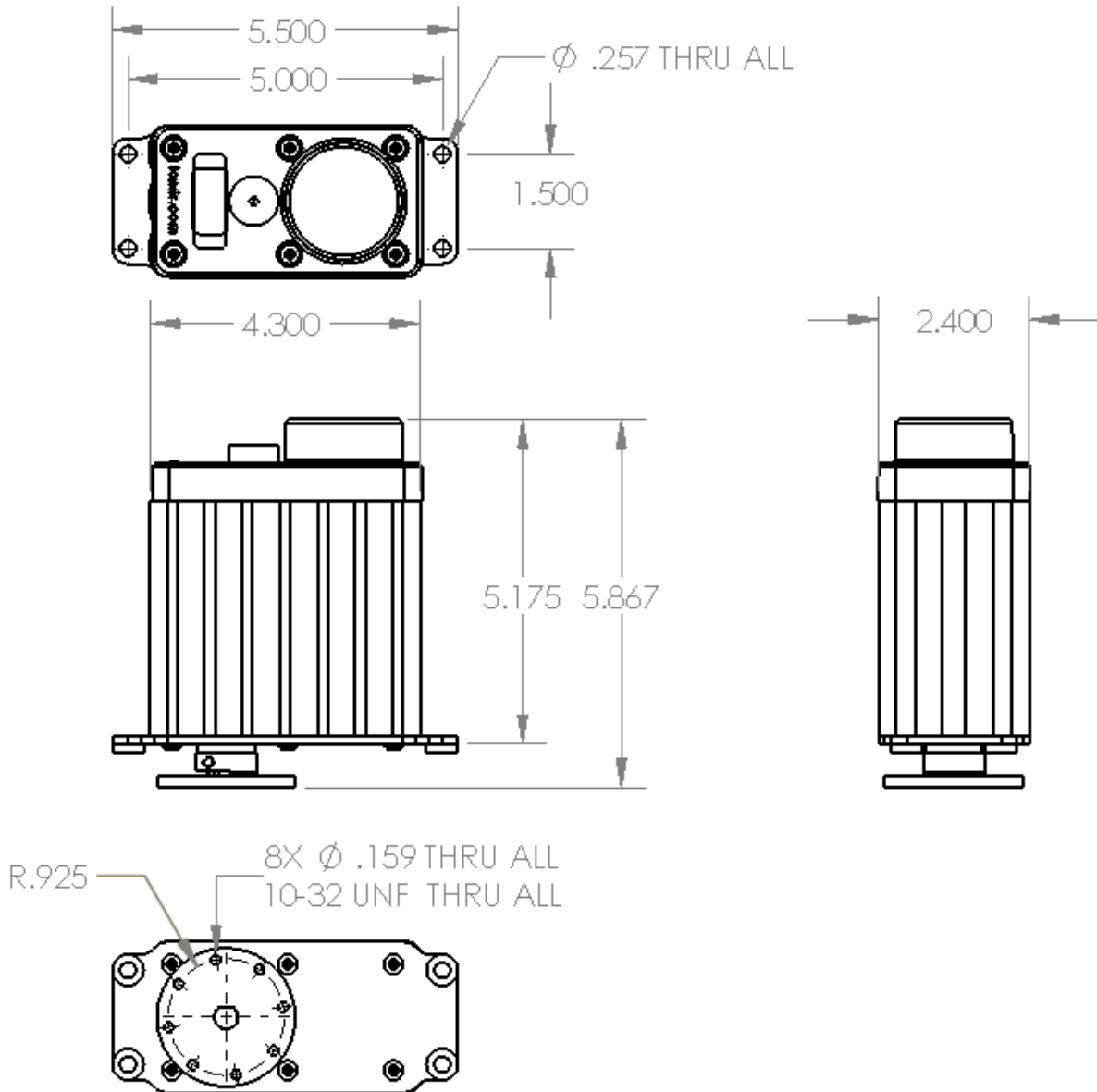


Figure 2 Multi-Turn Torxis

7. RELATED PRODUCTS

The following products are related to or accessories for this product.

The information contained in this document is the sole property of Invenscience LC. Any reproduction in part or whole without the written permission of Invenscience LC is prohibited. All rights reserved. © 2013.

Page: 6	Torxis Servo	Document Number: i03943
Total Pages: 7	Date: 2013/07/16	Revision: 03

Part Number	Description
i03637	Stainless output horn, 316
i00631	Controller board
i01348	Mounting Base Bracket
i01351	Joint Kit
i02000	Pan/Tilt Assembly
i03672	Pan/Tilt Assembly
i03673	Pan/Tilt Assembly
i03674	Pan/Tilt Assembly

8. PACKAGING DETAILS

No power supply is included. Spacers are supplied for flush mounting to plates to allow screw clearance.

Page: 7	Torxis Servo	Document Number: i03943
Total Pages: 7	Date: 2013/07/16	Revision: 03

9. CHANGE LOG

Revision	Date	Description of Changes
01	130514	Document Initial Release