



# 01™ ZEUS 14bit SMS V3.0

The Strongest and most Versatile continuous servos  
No DEAD ZONE – Continuous Rotation – Full PID Control  
14bit ABSOLUTE ENCODER



## Overview

Our ZEUS supermodified servos are based on 360deg version of SAVOX 1230SG (Xmetal gearbox) servo and are manufactured for continuous rotation of the output shaft (by removing in the factory the mechanical stop from the output servo gear) offering innovative PID position / speed control, rendering appropriate solutions for most robotics applications. And don't worry we offer you also a legacy PPM interface.

The **ZEUS** servos are powered by **SAVOX** technology. The gears and the motor of this specific servo are manufactured by **SAVOX** and their torque rating is 500ozin (36kgcm) @ 6V. The equipped coreless motor can operate also up to 7Volts.

The stray field of the coreless motors are so strong that the GMR sensor array of infineon's TLE 5012B of our 15bit Magenc-LowRev cannot operate reliably. So we use ams ICs that are stray field immuned @ 14bit resolution.

Based on a very sophisticated implementation of HALL effect MEMS sensors **ams** chip 5047D give us the opportunity to bring to the market a set of VERY EFFICIENT and ROBUST servos.



**... and don't worry we are offering a warranty of 2 years .**

# Specifications



## 14bit SMS V3.0

<b>Weight (gr)</b>	70	<b>Actuator Mode</b>	Yes
<b>Dimension (mm)</b>	40.3 x 20.2 x 45.0	<b>Wheel Mode</b>	Yes
<b>Resolution</b>	0.022 degs	<b>Communication without additional electronics</b>	RS-485/Uart/I2C/TTL standard/TTL 1kHz
<b>Rotation Measurement</b>	Continuous ( <b>64bit position counter</b> )	<b>Position Feedback</b>	Yes
<b>Encoder Type</b>	Absolute Magnetic Encoder	<b>Load Voltage Feedback</b>	Yes
<b>Ticks/rev</b>	16384	<b>Input Voltage Feedback</b>	Yes
<b>Torque (oz-in)</b>	<b>500 @ 6V / 550 @ 7V</b>	<b>Compliance/PID</b>	Yes
<b>Torque (kg-cm)</b>	<b>36 @ 6V / 39.6 @ 7V</b>	<b>Current Measurement</b>	Yes
<b>Speed (No Load) RPM</b>	80	<b>Overload Protection</b>	See our manual commands 11.2.6 & 11.2.7 (pp28,29)
<b>Maximum Current</b>	4900 mA	<b>Velocity</b>	Can be provided as ticks/sec
<b>Motor Type</b>	Coreless Brushed	<b>Realtime tick</b>	YES
<b>Standby</b>	30 mA	<b>Joint Torque Sensing</b>	Via command getcurrent (11.2.6)
<b>Gear</b>	<b>X-METAL</b>	<b>Setpoints</b>	YES – (velocity & Position)
		<b>Actual Motor</b>	Savox SA-1230SG

## Also keep in mind ...

- Modified for continuous rotation (360 degrees) with 16384 ticks/rev (14BIT) ams IC !
- Magnetic stray field immuned
- Highly responsive & accurate
- Continuous Rotation WITHOUT DEAD BAND and 39.6 kgcm torque (@7V)
- Absolute Position measurement (repeatability up to 5 ticks).
- Dual Ball Bearings-Not oilite bushings! aluminium /plastic casing
- 64 bit position measurement.
- coreless motors (stronger than ferrite ones)
- 25T spline
- premium quality by Savox™ specially made for 01™ Mechatronics

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