

DUAL-AXIS STABILIZED GIMBAL (DSG)



The DSG system provides inertial stabilization of a sighting system for reconnaissance, target acquisition, tracking and engagement. The TRL 8 system consists of a two-axis electro-mechanical yoke paired with Moog's MC100D dual axis motor controller, and is designed for compatibility with several sighting systems currently in USG inventory. The gimbal includes servo driven brushless DC

motors, position sensors and gyros, and provides power and signal cable routing from the payload to inside the vehicle.

KEY FEATURES

- High Torque Brushless DC Motors
- High Resolution Encoders
- Dual-Axis Gyro Located at Payload
- Balanced Payload in Three Axes
- Power and Signal Pass Through***
- Soft Stops at End of Travel
- Travel Locks (Manual)
- Sight Mounting Bracket (Customized for Payload)
- CAN-BUS Communication
- Fault / Status Feedback
- Extensive Built In Test (BIT)
- Over Temperature / Over Current Protection



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GIMBAL PHYSICAL ATTRIBUTES

Description		Data
Height	Above Mounting Surface	25.3 in
	Vehicle Ingress	2.5 in
Width		29.5 in
Base Diameter		16 in
Weight		190 lb
Payload Capability		150 lb

PERFORMANCE

Description	Data
Azimuth Travel*	$\pm 12^\circ$
Base Diameter	$+60^\circ$ to -85°
Peak Speed	1.2 rad/s
Peak Acceleration	5 rad/s ²
Azimuth Peak Torque	490 in-lb _i
Elevation Peak Torque	230 in-lb _i
Position Accuracy	<0.05 mrad
Position Resolution	<1 μ rad
Open Loop Cross Over	>10 Hz
Stabilization Mobile	<150 μ rad (1 σ)
Stabilization Fixed	<100 μ rad (1 σ)

ELECTRICAL REQUIREMENTS

Description	Data
Voltage	18-32 VDC
Power	900 W

ENVIRONMENTAL

- Operating Temperature -40 to +71°C
- Ground Mobile Conditions per MIL-STD-810
- EMI/EMC per MIL-STD-461G**
- Operation in Close Proximity of Weapons

NOTES ON OPERATION

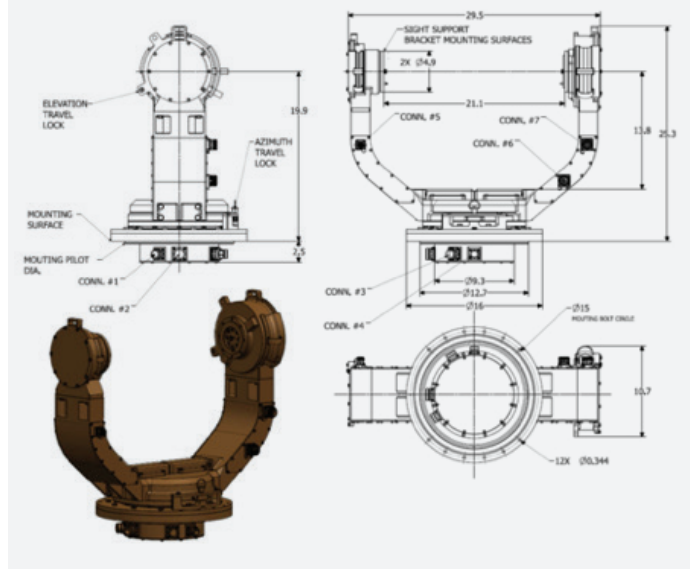
- Stabilization, Position and Velocity Modes
- Enabled or Locked

* Additional travel available including slip ring integration for > 360° rotation

** CE102, CS101, CS114, CS116, RE102 and RS103

*** Examples: 28VDC / RS422 / 1553 / HDMI / HD-SDI

GIMBAL DIMENSIONS (INCHES)



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