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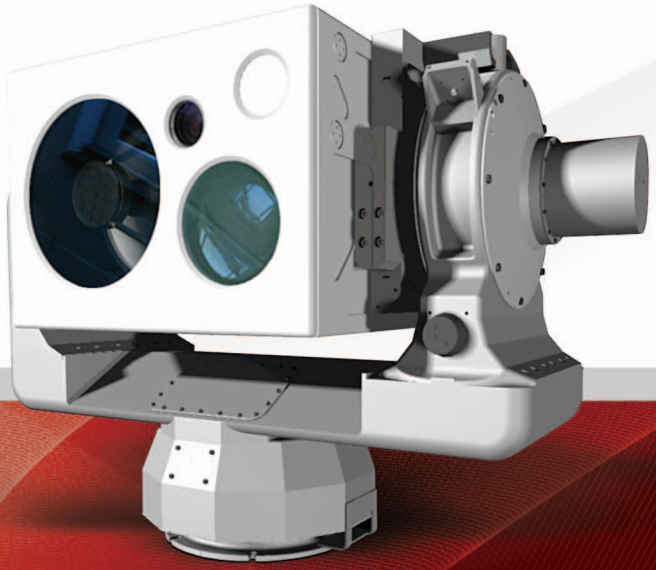

ARGC-2400

Gyro Stabilized Positioner

THE ARGC-2400 GYRO STABILIZED POSITONER'S rugged design was developed to fulfill the high stability requirements of high magnification camera (i.e small FOV) for shipborne application. It is designed to rapidly and accurately position payloads weighing up to 60 kilograms. It operates in all types of conditions for land & maritime applications, while offering a ± 200 µrad LOSS (line-of-sight stabilization). It is custom-made for the ARGC-2400 system with fittings and vibration free hardware that will suit your application's high standards. The positioner is also available with an optional side mounted braket for an additional payload.

Designed to meet the growing demand of cost-effective, highly accurate, high performance Range Gated cameras, the ARGC-2400 positioner combines an excellent payload-to-weight ratio, accuracy, stiffness and speed.

Positioner with suggested mounting plinth

The support structure/mounting plinth design must take into account the full mass of the above decks equipment under shock and vibration conditions. This structure should be fully connected into the main ships deck structure such that the overall lowest natural frequency of the ARGC-2400 gyro stabilized positioner should have a minimum mass ratio of 5:1 (the support plinth and support deck structure shall have minimum mass of 750 kg).

This gyro stabilized positioner is configured Elevation over Azimuth. Both axes use direct drive large diameter DC brushless servomotors. The structure is cast and machined from aluminium alloy for strength and integrity. Large diameter thin section angular contact bearings are used for each axis for stiffness with low friction. The elevation axis is fitted with mechanical rubber bump stops. The azimuth axis has a central hole for cabling and fitment of a range of standard or special sliprings to suit payload configurations.

Each axis is fitted with rotary optical encoders providing positional information for motor commutation as well as encoder positional data for the control system.

ARGC-2400 mounted on a gyro stabilized platform deployed on a frigate

THE OPERATOR CONTROL CONSOLE (OCC)

The operator control console (OCC) is designed for naval applications where space is a premium and conventional desk style consoles cannot fit. The OCC is floor mounted with a compact footprint and slim profile. The operator can stand or sit on a tall stool/chair if available. The OCC has locations for fitment of various control equipment around the lower section of the pedestal.

The Naval OCC consists of the following key items:

- 17" VGA Colour screen with discreet function buttons in border
- Red light night mode
- Aluminium foot mounted pedestal
- Solid hand grip with thumb joystick and dual function buttons
- Waterproof keyboard and mouse
- Local equipment PSU
- Location fitting for 1 off 3U 19" rack (side mounting)
- Location for 2 additional electronic box type enclosures
- Lower equipment protective cover
- TV Screen sun shield
- Footprint 475 mm wide x 600 mm deep
- Height 1.624 m

OCC SPECIFICATIONS	
Communications	RS 422
Voltage	Input supply 115 V AC 50/60 Hz
Power Consumption	1500 W

Note: Power consumption excluding ARGC-2400.

Shown above the naval OCC with a built-in red LED dimmable desktop illumination. This deck equipment consists of a central floor mounted pedestal with 17" monitor and control joystick. An adjustable shelf provides support for the keyboard.

HIGH ACCURACY ARGC-2400 POSITIONER'S SPECIFICATIONS

DESCRIPTION	AZIMUTH	ELEVATION
MECHANICAL		
Rotation Limits Operational	Continuous	+20° to –20°
Rotational Mechanical Stops	Continuous	+25° to –25°
Mass less ARGC-2400	100 kg	
Mass Director Control Unit (DCU)	8 kg	
Mass Power Supply Unit (PSU)	24 kg	
Estimated Inertia	3.0 kgm2	2.0 kgm2
Out of Balance (max)	0.01 kgm	0.01 kgm
External Manual Lock	Optional	Optional
Stiction/Coulomb Friction	<0.5 Nm	<0.5 Nm
Viscous Friction	<0.4 Nm	0.4 Nm
Verticality	0.5 mrad	
Orthogonality		0.5 mrad
Height x width x depth (estimated)	See Interface Drawing	
CONFIGURATION		
Direct Drive –Brushless Servo Motors	Yes	Yes
Absolute Optical Encoder	20 bit (25µrad) or less	20 bit (25µrad) or less
Azimuth Slipring – 62way	Yes	
Elevation Slipring 20way		Yes
Encoder Accuracy	18 bit (25 µrad) or less	18 bit (25 µrad) or less
PERFORMANCE		
Velocity (max)	60°/s	60°/s
Velocity (min smooth)	1°/min	1°/min
Acceleration	60°/s2	60°/s2
Peak Torque	9.25 Nm	9.25 Nm
Continuous Torque	4.63 Nm	4.63 Nm
Stabilisation Performance	±200 µrad 1σ	±200 µrad 1σ
RELIABILITY		
MTBF	10,000 hours	
MTTR	6 hours exchange of LRU's	
ELECTRICAL		
DCU Power Supply Signals Requirements	24-28VDC	
DCU Power Consumption Signals Peak	250W	
DCU Power Supply Motor Requirements	42-48 VDC	
DCU Power Consumption Motors Peak	1500W	
Communications	RS422	
With Optional PSU	Input supply 115V AC 50/60Hz	
With PSU	2000W	
EMC	MIL STD 4616 (RE02, CE03, RS03)	
CE	Compliant	

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