

Two Axes Medium Speed Gimbaled Platform

Series iIPSC-MSG-10

Features

- Two-axes stabilized payload platform: azimuth and elevation axes for LOS (line-of-sight) control
- Adaptable to different and multiple EO/IR sensors due to customized mounting tray (IR, micro-bolometer, daylight camera, LRF etc.); balanced payload up to 10 kg or tbd (e.g. ZEISS™ ATTICA camera)
- Direct torque drives for highest resolution, negligible hysteresis and medium dynamics ($> 300 \text{ }^\circ/\text{s}^2$)
- optical sliping as an option, gold plated sliprings standard on AZ/EL
- Available Features:
 - iSCU Stabilisation and Control Unit
 - iOET² Video Target Tracker
 - Video Fusion, Image Blending
 - Joystick Control, Remote Control
 - INS/GPS for geo-referencing and blind pointing capability
- Designed to operate in harsh environment on trucks, aircrafts and under naval conditions in head-up or over-head configuration.

Description

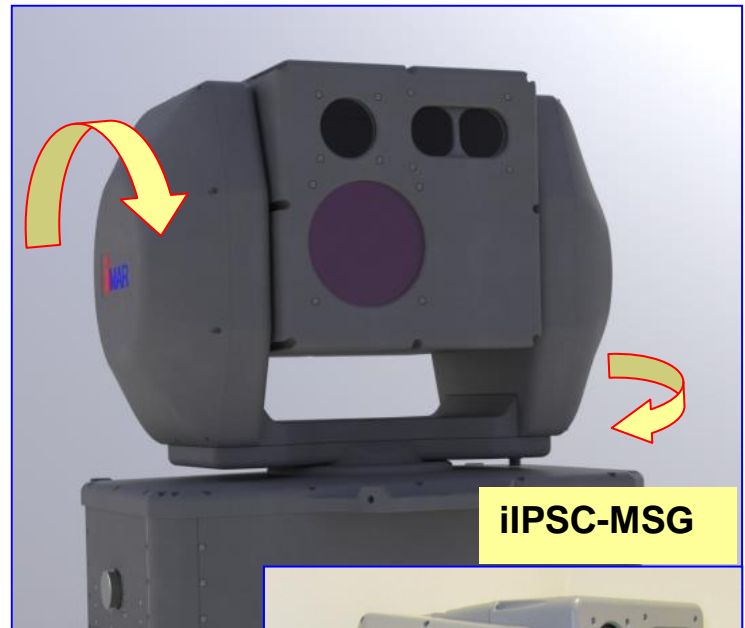
Direct drive brushless servo motors combined with direct drive high resolution encoders are ensuring the precise and smooth tracking of the iIPSC-MSG-10.

All axes are sealed. The selected materials are corrosion resistant and surface treated to withstand harsh land based, airborne or shipboard environmental conditions. Due to its open architecture the instrument can be equipped with all kinds of cameras (e.g. ZEISS™ ATTICA or other cooled thermal imager or micro bolometer, daylight camera and laser range finder).

iMAR Navigation GmbH, located in Germany, is designer, manufacturer and system integrator of the iIPSC-MSG. Customer specific adaptations can be provided on request.

Options

- integrated roll axis assembly enabling 3 DOF stabilization.
- iOET² Opto Electronic Target Tracking for Auto Video Tracking, (with multi target capability and fast 50 measurements / second).
- Dynamic Inertial stabilization with integrated INS/GPS positioning including true north referencing and geo-referencing for target localization with decimeter performance (iNAT-FSSG).
- Spring isolated base plate to prevent high frequency disturbance from the instrument.
- Window cleaning utility (wiper); water cooling.



Specification Summary

General Configuration

Payload:	customer specific or standard sensors (see separate datasheet "iIPSC Payload Selection")
Payload weight, nominal:	10 kg on centered platform (if proper balanced)
Payload Signals:	Slip rings for power supply, video and discretes, fiber optic transmission as an option; can be adapted according to application requests
Power Consumption:	up to 2'000 W, 28 VDC (depends on acceleration)
Platform Weight:	25...40 kg plus payload (depends on options)

Performance

	Azimuth	Elevation
Angular freedom (deg)	continuous	-90 to +185 (or continuous)
Position		
• encoder resolution	better 20 bit	better 20 bit
• resolution shaft	< 5 arcsec	< 5 arcsec
• repeatability	5 arcsec	5 arcsec
Rate (deg/sec)	> ±300	> ±300
Acceleration (deg/sec ²)	> ±2'000	> ±2'000
Torque cont./peak (Nm)	25/50	9/17
Wobble (arcsec)	<±2	<±5

Environment

Operating Temperature	-10 °C to +55 °C (other on request)
Altitude	up to 4'000 m above sea level or tbd
Vibration, Shock, EMI, EMC	MIL-STD810F, MIL-STD416E

Gyro Stabilization (option)

Stabilization Performance	iNAT-RQH: < 200 µrad abs roll/pitch stabil. < 1 mrad abs heading stabi. < 50...200 µrad relative stabilization
	iNAT-CFM: < 200 µrad relative stabilization
Position and Attitude Performance	< 0.05 m, 0.02 deg roll/pitch, 0.03 deg heading
Stabilization Feedback	iOET ² : 50 Hz, video target tracking, Image blending

Geo-Referencing (option)

Position and Attitude Performance

Image Target Tracker

Stabilization Feedback

Command / Remote Control

via CAN or RS232/422 or Ethernet or/and joystick (see iMAR's iSCU interface)

Payload

The system can be delivered with special adaptation to customer's payload.
Payload to be provided by the customer or factory integrated.

Pictures below:

iIPSC-MSG-40, operated on target tracking test range and on a marine vessel; joystick panel; video tracking iOET²



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