iIPSC-MSG-60 and iIPSC-MSG-130

Two Axes Gyro Stabilized Gimballed Naval Platform for 60 kg or 130 kg Payload

Key Features

- Two-axes stabilized payload platform: azimuth and elevation axes for gyro stabilized LOS (line-of-sight) control
- Adaptable to several RF and multiple EO/IR sensors due to customized mounting tray (IR, micro-bolometer, daylight camera, LRF, antennas, weapons etc.); balanced payload up to 60 kg for high dynamics and 130 kg for reduced dynamics
- Direct torque drives for highest resolution, negligible hysteresis and fast dynamics (> 300 °/s, 200 °/s²)
- Optical sliprings for signal transmission, gold plated sliprings for power transmission; cable wrap as option
- Available Features:
  - iSCU: Gyro based Stabilization and Control Unit
  - iOET²: Video Target Tracker
  - iJP: Joystick Panel for control
  - INS/GNSS: geo-referencing with down to centimeter-level accuracy and for blind-pointing support
  - Video Fusion, Image Blending
- Designed to operate in harsh environment on trucks and on naval vessels.

Description

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

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 imagers or micro bolometers, daylight cameras and laser range finders).

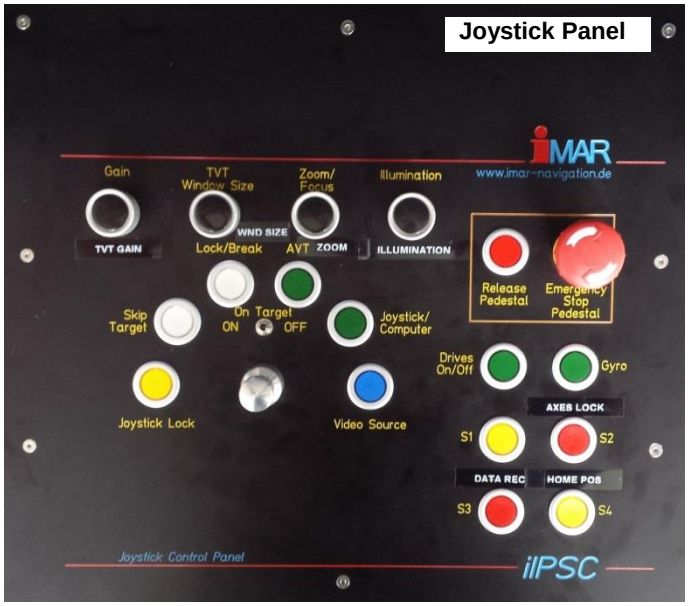
iMAR Navigation GmbH, located in Germany, is designer, manufacturer and system integrator of the entire iIPSC-MSG (mechanics, electronics, gyro stabilization, INS/GNSS data fusion and motion control). Customer specific adaptations can be provided on request.

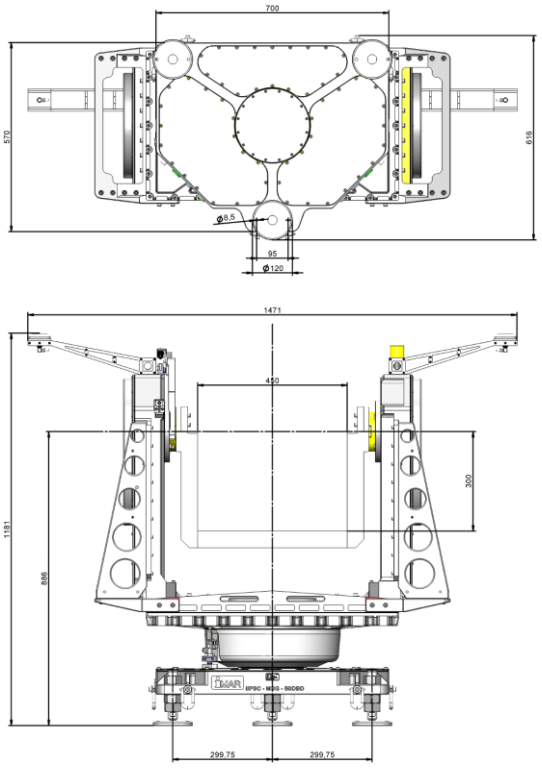
Options

- 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 gyro stabilization with integrated INS/GPS positioning including true north referencing and geo-referencing for target localization with sub-decimeter performance (iNAT-RQT, iTraceRT).
- Optional spring isolated base plate to prevent high frequency environmental disturbance from the instrument.
- Window cleaning utility (wiper); water cooling for payload.

Specification Summary

General Configuration	Payload:	customer specific or standard sensors (see separate datasheet “iIPSC Payload Selection”	
	Payload weight, nominal:	60 kg on centered, balanced platform, 130 kg with reduced dynamics	
	Payload Signals:	Slip rings for power supply, video and discretes, fiber optic transmission for signals and video, adaptable according to application requests	
	Power Consumption:	up to 3’000 W, 115…235 VAC (depends on acceleration)	
	Platform Weight:	250 kg plus payload (depends on options)	
Performance		**Azimuth**	**Elevation**
	Angular freedom (deg)	continuous	continuous
	Position		
	• encoder resolution	better 20 bit	better 20 bit
	• resolution shaft	< 5 arcsec	< 5 arcsec
	• repeatability (static)	< 100 µrad	< 100 µrad
	Rate (deg/sec)	> ±300	> ±300
	Acceleration (deg/sec^2)	> ±200	> ±200 [60 kg payload]
	Acceleration (deg/sec^2)	> ±40	> ±40 [130 kg payload]
	Torque cont./peak (Nm)	150/300	25/135
	Wobble (arcsec)	<±5	<±5
Environment	Operating Temperature	-20 °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-STD461E	
Gyro Stabilization (option)	Stabilization Performance	iNAT-RQT: < 200 µrad abs. roll/pitch stabilization < 1 mrad abs. heading stabilization < 50 µrad relative stabilization iNAT-FSSG-01: < 200 µrad relative stabilization	
Geo-Referencing (option)	Position and Attitude Performance	< 0.05 m, 0.02 deg roll/pitch, 0.03 deg heading	
True North Capability (option)	True Heading Performance	< 0.3 deg rms with dual antenna GNSS setup	
Image Target Tracker	Stabilization Feedback	iOET²: 50 Hz, video target tracking, image blending	
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 can be provided by the customer or by iMAR and integrated at iMAR facilities.		





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