



# MINIPOS2



INERTIAL NAVIGATION  
DVL, GPS, DEPTH INPUT  
WGS84 OUTPUT  
HEADING PITCH ROLL O/P

ROV AND AUV NAVIGATOR  
PACKAGED WITH DVL  
6,000M DEPTH OPTION  
RLG OPTICAL TECHNOLOGY  
- NO MOVING PARTS

ROV and AUV operations are constantly being pushed to perform more sophisticated tasks in deeper water. MiniPOS2 has the potential to make significant performance improvements in two important areas. Firstly it has a sophisticated kalman filter which can take aiding inputs from external sensors to give an accurate vehicle position in real-world co-ordinates. Secondly, it can form the heart of a closed-loop ROV control system, acting as a valuable pilot aid for such functions as waypoint navigation, docking, and auto-hover.

MiniPOS2 uses the same inertial measurement unit as the MiniRLG2 but it uses the full power of the IMU to give fast and accurate 3D navigation outputs in WGS84 co-ordinates. The performance of MiniPOS2 is fully realised when external sensors are used to aid the inertial position solution. MiniPOS2 can take input from GPS, DVL, and depth sensors. For very high accuracy applications, a higher performance sensor is available as shown in the specifications.

System outputs from the MiniPOS2 include: heading, pitch, roll, depth, X,Y & Z velocities, X,Y & Z accelerations, X,Y & Z angular rates as well as full positional information.

CDL can supply the MiniPOS2 with DVL and depth sensors, preconfigured and calibrated ready to install on your ROV or AUV.

**Performance:**

Standard T16 IMU	High performance T24 IMU
Free inertial drift	
Under 5 nautical miles per hour	Under 1 nautical miles per hour.
GPS and Log aiding	
10m CEP	10m CEP (circular error probability)
EM log only	
0.5 nautical miles per hour	0.2 nautical miles per hour
DVL aiding	
20 metres per hour CEP	3 metres per hour CEP

**Standard T16 IMU**

Heading accuracy	+/-0.17 degrees up to 65 degrees latitude
Pitch and roll	0.028 degrees rms
Angular random walk	0.02 degrees/root hour
Bias Repeatability	0.1 degrees/hour
Scale factor repeatability	75 ppm
Axis alignment	20 arc-seconds
Heave, surge, sway	5% or 5 cm
Settling Time 15 minutes from switch on	

Telemetry Interface:

Bi-Directional RS422 or RS232
1 x 115kbaud 50/100Hz inertial data with fixed format
2 x Up to 115kbaud, up to 50Hz ascii data with a variety of user-selectable formats
inputs for GPS, DVL, and depth

Depth Rating:

3,000 metres (Standard)
6,000 metres (Optional)

Power requirements:

Consumption Between 20 and 35W (depends on configuration)	
Supply Voltage (both available as standard)	
AC	100-260Vac
DC	18-30Vdc

Subsea unit	177mm dia x 268 mm	(7.0" dia. X 10.6")
Weight dry	9.8kg	(21.6lbs )
Weight in water	2.33kg	(5.13lbs )
Mounting (4 holes)	M10 144 x 144 mm	(M10 5.67 x 5.67")