DPS 116

KONGSBERG

The High Integrity GPS - SBAS Navigation and Positioning Reference System

The DPS 116 is a DGPS system that fully utilises the free of charge SBAS services.

In addition to the SBAS services the DPS 116 has a built-in capability to utilise DGPS corrections from a wide variety of service providers used simultaneously, taking full advantage of a unique multiple reference stations (MULTIREF) solution. Thus, the DPS 116 system is designed for applications where extremes with respect to reliability, accuracy and autonomous integrity monitoring are required.

Well proven technology

Based on years of experience with DGPS and the latest in GPS receiver technology, Kongsberg Seatex has set the standard for high performance navigation. The DPS 116 has a built-in autonomous real-time quality control feature continuously monitoring the quality of calculated position. Alarms and warnings are activated if critical tolerances are exceeded or if position quality degrades.

DGPS corrections

The DPS 116 will primarily utilise the SBAS services where all differential correction data can be received free of charge. However, the DPS 116 can also in parallel make use of DGPS correction signals received from a large number of reference stations. In order to increase the reliability and accuracy multiple positions are calculated. This results in a primary position with improved quality compared to a traditional DGPS solution. Simultaneous reception and use of correction signals in MF and UHF frequency bands, Inmarsat standard A, B and M terminals and SeaSTAR Spot, are possible.

Target monitoring

The DPS 116 includes a target-monitoring feature that provides a graphical display of vessel position relative to a desired target and associated quality information. Three circular position limits may be defined along with various visual and audible alarms.

Navigation planning software

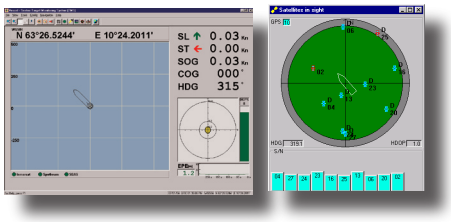
The DPS 116 is delivered with navigation software with route planning capability. The number of routes and waypoints are unlimited.

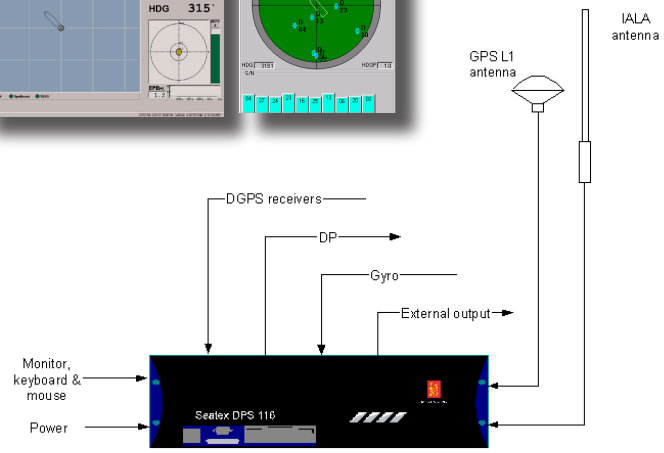
Satelitte display and prediction

The DPS 116 has both a real-time satellite display and a satllite prediction functionality. Satelitte prediction is a helpful tool to plan an operation where good accuracy throughout the operation is nessecary. The feature will help the operator to plan when safety operation could take place and foresee when the coverage and satelitte geometry is good.

Features

- Compliant to WAAS, EGNOS and MSAS Satellite Based Augmentation Systems
- A 14-channel “all-in-view” GPS L1/SBAS receiver
- Capable of DGPS multi-reference station processing
- UKOOA compliant
- Modular software and hardware provides high flexibility
- On-line monitoring and display of QC data
- Graphical user interface, tailored to safety critical DP operations
- Lever arm compensation
- Interface to heading sensors (gyro)
- Automatic logging and post-processing capability
- Satellite prediction functionality
- Target monitoring





Technical specifications

Performance

DGPS position accuracy with SBAS service	< 1.5 m, 95% CEP (*) 0.6 m, 1σ (*)
DGPS position accuracy (Multiref)	< 1 m, 95% CEP (**) 0.4 m, 1σ (**)
Velocity accuracy	0.05 m/s, 95% CEP (**) 0.02 m/s, 1σ (**)
Output rate	1 Hz

(*) Accuracy specifications are based on real-life tests conducted using WAAS and an open view to the sky in Houston, Texas.

(**) Accuracy specifications are based on real-life tests conducted under low multi-path conditions and an open view to the sky in Trondheim, Norway. Tests at different locations under different conditions may produce different results.

Interfaces

Serial data

Default configuration	10 x RS-232 and 5 x RS-422 (7 galvanically isolated) 7 of the total 15 ports are configurable between RS-232 and RS-422
Baud rate	Max. 57.6 kBaud

Data outputs

Message formats	NMEA 0183 v. 1.5-3.0, Proprietary
Message types	ABBDP, DPGGA, DTM, GBS, GEM80P, GGA, GLL, GNS, GRS, GSA, GST, GSV, RMC, SYLEDIS, VBW, VTG, ZDA, WSTRAND

Data inputs

DGPS corrections	RTCM-SC104 ver. 2.2
Gyro compass	NMEA 0183 HEHDT and Robertson LR22 BCD format

Weight and dimension

DPS 116 main unit	12 kg, 430 mm x 132 mm x 482 mm
GPS antenna	0.4 kg, 177.8 mm x 78.7 mm

Environmental specification

Temperature range

DPS 116 main unit	-15 to +55°C(*)
GPS antenna	-40 to +70°C

(*)Recommended +5 to +40°C

Humidity

DPS 116 main unit	Max. 95% non-condensing
GPS antenna	Hermetically sealed

Power

DPS 116 main unit	110 - 240 V AC 50/60 Hz
Consumption	75 W
GPS antenna	5 V DC from processing unit

Product safety

Low voltage	IEC 945 / EN60950

Electromagnetic compatibility

Immunity/radiation	IEC 945 / EN60945
Vibration	IEC 945 / EN60945

Specification subject to change without further notice.

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