C-NAV DGPS

The C-Nav1000 R4 Navigation system is a stand-alone DGPS sensor which includes a 12-channel GPS receiver and a control/ display unit with a 6-inch sunlight-readable VGA screen. The system accepts differential correction data from WAAS, EGNOS, MSAS and other satellite-based DGPS transmissions in addition to land-based IALA beacons.

THE C-NAV1000 NAVIGATION SYSTEM:

- The **C-Nav1000 R4** Navigation system is fully compliant with IMO and IEC specifications for shipboard GPS. (Wheelmark and US Coast Guard compliant)
- The **C-Nav1000 R4** Navigation Control and Display panel has red, yellow and green "traffic lights" in accordance with IEC RAIM specifications. This visual indication allows for the user to monitor the integrity of the GPS solution in real time.
- The **C-Nav1000 R4** Navigation system can connect to existing or future SAAB AIS systems to ensure that the vessel operates in full compliance with all relevant regulations.
- The **C-Nav1000 R4** Navigation system, combined with the SAAB AIS configuration, will display and control navigation data and AIS information.

*IMO require all SOLAS class ships to carry a type-approved GPS and further that any new GPS installation shall be compliant with the new performance standard for GPS. This was defined by MSC 112(73) and resulted in the associated test standard IEC 61108-1 Ed. 2.

TECH SPECS

FEATURES

GENERAL

- Waypoints: 2,000 waypoint memory
- Routes: 100 routes, using a total of 2,000 waypoints
- Functions: Navigation, Position, Route, Waypoint, Event mark, Plot, Sail To, MOB, GPS/DGPS, Alarms, Speed, Graph, Configuration, Trip Log, Anchor Watch, Scheduled Alerts
- Integrity: The product performs RAIM calculations in accordance with IEC 61108-1 Ed.2
- Supply: 10.5 - 30V DC, 12.5W
- Display: High resolution 6 inch, 1/4 VGA monochrome, sunlight readable
- LEDs: 1 power and 3 RAIM status (R/Y/G)
- Mounting: Yoke or flush mounting of display unit

PHYSICAL/ENVIRONMENTAL

DIMENSIONS (W x H x D)

- Control and Display Unit: 10" x 8" x 4" (270 x 207 x 102 mm)
- Navigation Sensor: 5" x 1" x 5" (128 x 39 x 137 mm)

WEIGHT

- Control and Display Unit: 2.4 lbs (1.1 kg)
- Navigation Sensor: 1 lbs (0.5 kg)

ENVIRONMENTAL

- Control and Display Unit Operating temperature: -15° C to +55° C
- Navigation Sensor: Operating temperature: -30° C to +70° C
- Protected environment: (IEC 60945)

CABLES

- Power/data cable to Navigation Sensor: 7' (2m), 18 pin MaxiCon–pigtail
- Data cable to Control and Display Unit: 7' (2m), 18 pin MaxiCon–pigtail
- Power cable to Control and Display Unit: 7' (2m), 3 pin MaxiCon–pigtail
- GPS Antenna Cable (recommended): LMR400; Max length 150' (45m); TNC connector

*Dependent upon ionospheric activity and multipath

**SVs > 5,HDOP < 2,RTCM SC-104correction data from a dual frequency reference station, short baseline and low multipath environment.

PERFORMANCE

GPS RECEIVER

- 12 channel L1, C/A-code with carrier phase smoothing (10 channels, when tracking WAAS, EGNOS and MSAS)
- Update rate: 1Hz default, 5 Hz max
- Position accuracy: GPS*:5m, DGPS**:1m
- Cold start time: 1 minute typical

DGPS BEACON RECEIVER

- Dual receiver; manual or automatic tuning
- Frequency: 283.5 to 325.0 kHz
- MSK Bit Rates: 50, 100 and 200 bps
- Cold start time: < 1 minute typical
- Reacquisition: < 2 minute typical
- Sensitivity: 2.5µV/m for 6dB SNR@200 bps

INTERFACE

- 2 bi-directional user ports RS422
- 1 output port RS422
- Ports are configurable 4,800 – 38,400 bps
- 1 alarm output for relay activation
- 1 input
- Log pulse output

COMPLIANCE/APPROVALS

- Compliance with the following standards:
  - > IMO performance standard for GPS
  - > IEC 61108-1 Ed2, GPS
  - > IEC 61162-1/2 Ed2, NMEA 0183, versions 2.0 through 3.0
- Type approvals:
  - > Wheelmark
  - > USCG

I/O CONNECTOR ASSIGNMENTS

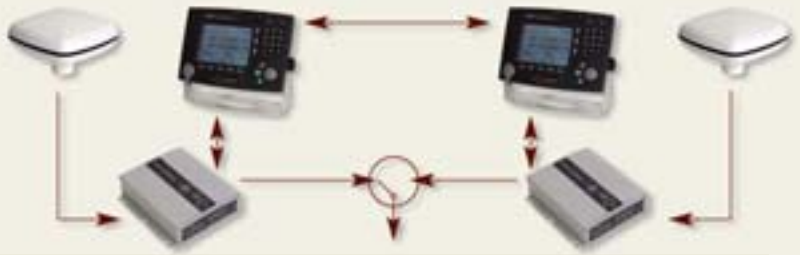
INPUT/OUTPUT DATA MESSAGES

- NMEA Messages: APB, BOD, BWC, BWR, DBT, DPT, DTM, GBS, GGA, GLL, GNS, GSV, HDG, HDT, HSC, RMB, RMC, Rnn, RTE, VHW, BTG, WPL, XTE, ZDA
- Proprietary messages: For RAIM control and display
- RTCM SC-104: Type 1, 2, 9

CONFIGURATIONS

Stand-alone GPS or DGPS System

Redundant DGPS System



Combined AIS/DGPS System

Combined AIS/Redundant DGPS System

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