

3011[™]



The Precise GPS Compass

Position, Heading, Pitch or Roll

The 3011 is a low cost GPS compass suitable for many dredging / construction / offshore / hydrography applications. The unit provides accurate position and heading data, as well as providing pitch or roll information and accurate velocity computation

Simple & Flexible

The 3011's performance is similar to most widely used traditional gyrocompass. Due to its lower cost, absence of periodic maintenance, small size and portability, the unit is ideally suited for temporary installations, hoppers, small survey vessels and Anchor Handling Vessels (AHVs).

To accommodate specific installation the 3011 base line (distance between the antennas) is variable as the two antennas can be set apart up to 2 meters

Easy to install – Easy to start-up

The 3011 GPS Compass, consists of a dual-antenna pod connected via a single cable to the 16-channel GPS receiver. The receiver contains an automatic calibration routine, which is only performed once, after installation or when the antenna is moved. The calibration allows misalignment between the antenna and the longitudinal centreline of the vessel, whether mounted perpendicular or parallel.

Precise, Fast & Reliable

The 3011 GPS Compass measures the vessel's heading with a precision of 0.5° with the standard antenna pod. It can be operational in less than 80 seconds after power is supplied, and less than 15 seconds in signal re-acquisition. Thanks to the unique patented Magellan GYROSKY[®] technology, innovative algorithms are used to reach a fast and accurate determination of the vessel's heading. 3011 offers sub-meter real-time precision from a variety of DGPS source, either internal (WAAS/EGNOS, HF, MF-IALA Beacon) or external. Its fast 10-Hz (raw data) and 20-Hz (computed data) output rates make it the ideal tool for many types of applications.

For high demanding marine survey / construction applications, 3011 now includes a unique full BACKUP[™] feature where a second position fix is computed to guarantee an extreme position availability.



Features

- Accurate and reliable position
- Vessel's heading with a precision of 0.5°
- Auto-calibration function

3011 Technical Specifications

Applications

- Dredging
- Construction
- Hydrography
- Offshore : Anchor Handling Vessels (AHVs)
- OVERLAY radar, ARPA radar, automatic pilot

Main Features

- L1 sub-meter real-time positioning
- Heading: 0.5° RMS accuracy (standard antenna pod)
- Maximum angular speed: 25°/sec
- Pitch and roll precision: 0.8° RMS
- Angular resolution: 0.01°
- Position accuracy in GPS mode: 3 meters RMS
- Position accuracy in DGPS HF mode: 0.5 to 1 meter RMS
- Speed accuracy: 0.05 m/s (0.1 knots)
- User Coordinate System:
 - Local datum, projection, geoid model
- BACKUP

Standard Supply List

- 1 3011 calculator
- 1 NAP 011 dual antenna
- 1 NAP 011 antenna attachment
- 1 CD-ROM containing TRM 100 PC software (Windows 95, 98, NT, 2000, XP)
- 1 power supply cord, 2 meters long
- 1 RS232 DB9 male/DB9 female cord, 2 meters long
- 1 RG223 TNC male/TNC male antenna cord, 30 meters long
- 1 user manual

Performance Figures¹

Real-Time Metric WAAS/EGNOS Mode

- Service area as defined for the system of satellites used. The different systems available are: WAAS in North America, EGNOS in Europe and MSAS in Japan
- Precision: 1 to 2 meters, XY; 3 meters, Z

Raw Data:

10 Hz output rate

Computed Data:

20 Hz output rate - Latency < 5 ms (0.005 s)

Technical Specifications

GPS/GNSS Characteristics

- L1 Receiver, 16 parallel channels (12 GPS channels and other channels for WADGPS satellites, i.e. WAAS, EGNOS or MSAS)
- C/A code and L1 phase, P code with multi-path processing
- GYROSKY Technology for dual antenna acquisition with a single cable and for fast and non-ambiguous determination of the heading
- Acquisition time : 80s on start up, 15s in re-acquisition
- Refresh rate: 10 Hz
- Acceleration: 4g
- Automatic calibration
- Differential modes: WAAS/EGNOS, Numeric RTCM Version 2.2, messages 1, 3, 5, 9, 16

Interfaces

- GPS and Radio Antenna connectors: all female TNC
- 3 two-way I/O ports (one RS232, two RS422) with baud rates from 1200 to 115200 bauds
- AUX port (1 PPS output, external event input, MOB input , RTCM input on RS422, etc.)
- TRM100 display also available on VGA output
- 1 output for VGA screen
- Protocol: NMEA183 version 3.0
- NMEA 183 sentences: GGA, GLL, GSA, VTG, GSA, ZDA, RMC, GRS, GST, GSV, GMP, HDT, HDG, ROT, VBW, VHW, OSD, and proprietary sentences
- User messages via ConfigPack™ software

Electrical

- Power source: 9 to 36V DC, floating input
- Power consumption: 7 to 15 Watts

Environmental

- Watertightness: Calculator IP52, antenna IP66
- Operation temperature:
 - 3011 Calculator: - 20°C to +55°C
 - 3011 Antenna: - 40°C to +70°C
- Storage temperature: - 40°C to +70°C
- Vibration: EN 60945 & ETS 300 019 (Shocks)
- EMI: EN60945, Class B FCC Part15

Physical

- Calculator: W 264 x H 64 x D 215 mm (10.39" x 2.51" x 8.66")
- Antenna: W 560 x H 132 x D 160 mm (22.04" x 5.19" x 6.30")
- Weight: calculator 1.9 kg (4.19 lb), antenna 2.1 kg (4.63 lb) (including the pole)

Radio Module Options

Rx 1635 HM-Link HF/MF Reception (1 built-in module)

- Reception module designed to be integrated into the receiver
- Dual-channel in HF band 1.6 to 3.5 MHz; BPSK modulation (NDS 200 type)
- Dual-channel in MF band 270 to 330 kHz; MSK modulation
- DHM 5000 dual-band antenna - H x Diameter: 245 x 135 mm (9.64 x 5.31")
- KX 15 TNC/TNC antenna cable, 30 metres long

TRM100 Keyboard & Screen Option

- 1/4 VGA screen and keyboard terminal
- Dimensions (H x W x D): 125 x 255 x 40 mm (4.92 x 10.0 x 1.57")
- One-meter cable for connection of TRM100 unit to receiver
- TRM100 mounting kit

Associated with the TRM 100 Terminal option, the 3011 offers the required navigation functions thanks to its 1000 waypoints, 20 routes, MOB, etc



TRM 100 keyboard/screen terminal

¹ All performance figures are 1 RMS values based on test conducted in Nantes, France, in normal conditions of GPS receptions, (normal ionospheric activity, 5 SVs used and HDOP < 4) on a clear site.

¹ Tests in different locations under different conditions may produce different results.

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