

# LT-1000 NRU

## Navigation Reference Unit

### What does it do?

The LT-1000 Navigation Reference Unit (NRU) is a combined electronic compass and a GNSS receiver (GPS, SBAS, GLONASS, and BeiDou). The LT-1000 NRU is providing navigational data on both NMEA 0183 and NMEA 2000. It gives you:

True heading, magnetic heading, deviation, variation, roll, pitch, rate of turn, date, time, position, satellite information, ground speed, course over ground, temperature and air pressure.



### What does it replace?

The LT-1000 NRU replaces or works as backup for a gyrocompass, satellite compass, magnetic/electrical compass, fluxgate compass, GNSS/GPS receiver, barometer, thermometer and pitch & roll sensors.

### What equipment is used together with LT-1000 NRU?

The LT-1000 NRU provides heading, speed and position data to chart-plotters, autopilots, radars, AIS, radios and displays. Either as the primary input sensor or as the secondary (back-up) sensor.

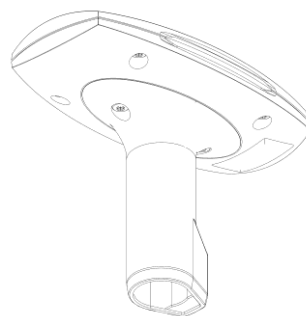
### Why use LT-1000 NRU?

The LT-1000 NRU offers high performance and functionality matching much more expensive solutions. Performance data is available on page 2. A PC application, LT-Service Tool, is available for optional configuration and installation of the LT-1000 NRU.

### What's In-the-box:

LT-1000 NRU, pole & roof mount, 10 m. cable, NMEA 2000 screw-in connector, screws, quick installation guide, safety instruction sheet, and unit test sheet.

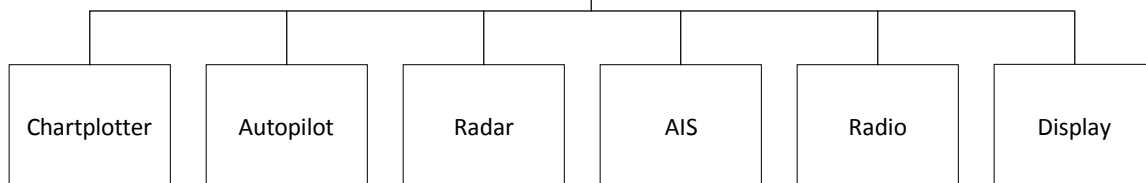
LT-1000 NRU



### Output:

- True/magnetic Heading
- Roll/pitch
- Deviation/variation
- Rate-Of-Turn (ROT)
- Position
- Course Over Ground (COG)
- Speed Over Ground (SOG)
- Satellite information
- Air pressure
- Temperature

NMEA 0183  
 NMEA 2000



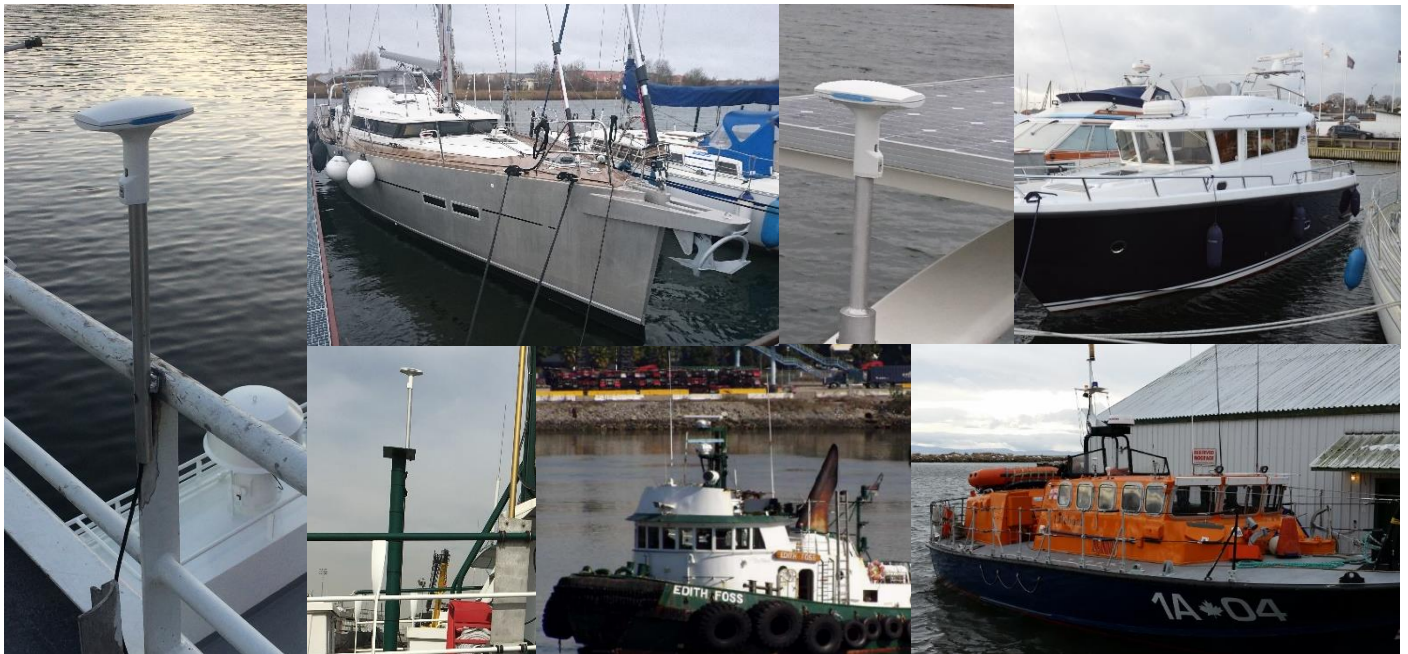
*Performance:*

Data	Accuracy	Resolution	Range/Comments
Heading	Static: < 0.5° (rms) Dynamic: < 1.5° (rms)	0.1°	Heading is calculated with input from Sensor-fusion technology and Kalman filtering.
Position	GNSS: < 1.0 m (63% of time) < 2.0 m (96% of time)	0.1 m	By default, the GNSS receiver is configured for GPS/GLONASS & SBAS reception. Time-To-First-Fix (cold acquisition): 27 s.
Speed	0.1 knot	0.1 knot	0 to 195 knots
Roll/Pitch	Static: < 0.5° (rms)	0.1°	±90°
Rate of Turn	< 1°/s	0.1°/s	0 to 45°/s
Air Pressure	1 hPa	0.1 hPa	800 to 1100 hPa
Air Temperature	1°C (1.8°F) 2°C (3.6°F)	0.1°C (0.1°F)	0°C to +55°C (+32°F to +131°F) -25°C to 0°C (-13°F to +32°F)

*Specifications:*

- Dimensions: 151.4 x 81.6 x 128.0 mm (5.96 x 3.21 x 5.04 in)
- Weight: 240 g. (0.53 lbs.)
- Temperature (ambient), operational: -40°C to +55°C (-40°F to +131°F)
- Dust and waterproof rating: IP46
- Communication Interface: 8-pin female connector for NMEA 0183, NMEA 2000 and power
- Input power: 9-40 VDC
- Power consumption: < 1W
- Compass safe distance: 0.3 m (1 feet)

*Examples of installations:*



**ABOUT LARS THRANE A/S**

Lars Thrane A/S specializes in design and manufacturing high-performance navigation sensors using the latest sensor technology. The aim of the company is to provide customers worldwide access to high quality, fully calibrated navigational sensors with state-of-the-art digital filtering technology. With a strong background in engineering and experience in the development and testing of maritime communications and navigation equipment, Lars Thrane A/S brings high performance filtering and calibration techniques into the marine world. Lars Thrane A/S is a privately owned company headquartered in Copenhagen, Denmark.