



# Navigation Data Recorder



The simplest and smartest solution for collecting navigation parameters and activity information for yachting and professional purposes

NDR is particularly suitable for :

- Yacht builder's customer services to manage after-sales incidents (warranty period),
- Charter fleet managers,
- Owners or builders who need to entrust a boat to a crew (superyachts, charter, delivery...),
- Architects and technical teams who want to organise a measurement campaign simply and cost-effectively.



NDR is available either as a stand-alone device or as an external **UpSideUp** module, adding an **advanced recording function**. Both devices share data via a single CAN bus cable.

NDR is suitable for either a **permanent installation** or for a **one-shot use** (occasional chartering or deliveries - measurement campaigns).



## Features

As soon as the boat starts sailing, **NDR** continuously records the activities on board. It can save many years of data, depending on the logging configuration.

In addition to continuous sequential recording, contextual recording can be set up to keep a complete history of atypical sailing conditions and traceable events throughout the vessel's life. Other recordings can be set up such as maximum value reached, sails configuration history or any other purpose.

**NDR** is available with a full range of equipment interfaces, including NMEA2000, NMEA183, CAN Bus, analogue and digital inputs. A built-in 9dof motion sensor is also available, as well as an external attitude reference system for improved accuracy.

Even in the event of serious vessel injury, data can be recovered and post-processed. The casing is robust and waterproof. Data is stored on a solid-state memory with low vulnerability to moisture ingress, shock, vibration and heat.

Data are protected against tampering and deletion. Restricted access to data can be set up using password protection.

We have made the **NDR** flexible to allow easy integration into many different systems. It can be adapted to any specific application. This range of capabilities has been achieved without sacrificing the key advantages of simplicity and reliability. The on-board equipment operates fully automatically, requiring no specific attention other than for data processing.

The information recorded by the **NDR** can be replayed on any PC to accurately reproduce on-board activity prior and during an incident. Investigations can be achieved quickly and efficiently without any specialized skills.

The "**Incident**" button activates data storage for the last 48h for post analysis.

### Type of data saved (typically):

- Date / time (GPS or PC synchronisation)
- Position - Ground Speed and Heading
- Water speed and Heading
- Wind
- Water depth
- Heel, Trim, Roll, Pitch, Yaw and any attitude variables
- AIS Data
- Barometric pressure
- Hydraulic pressures - loads
- Max Ever reach and Max Daily reach data set
- Current sail configuration
- Engine Data
- Battery voltage

### Actually

- Any NMEA 183 or NMEA 2000 input
- Any analogue signal (miscellaneous sensors)
- Any digital sensor (detector - manual command)
- Any traceable event (user action, system, vessel activity, engine, signal from detector, trigger on any data, etc.)
- Any calculated variable (Max, Min, Average, Sum, ...)

### Data Storage

Numerical data can be saved as average, maximum, minimum or last value over a time set.

The recording is context-sensitive, according to the user's configuration (triggers on signal, data, event, command button...).

Several data sets can be configured independently: continuous sequential logging, atypical conditions and activity history, system events, maximum value tracking, sail configuration,...

Data can be retrieved simply by plugging a USB key, or by connecting directly to the computer via USB or FTP.

### Data Transmission

The **RX/TX** option on the **NDR** enables the data transmission, offering the following functions:

- Log files catch up remotely from the back office,
- Advanced tracking with enriched relevant data set,
- Remote access to the UpSideUp/NDR system for adjustment and maintenance.

Features	
9-degrees-of-freedom motion sensor	On option
Analogue inputs (standard/option/extension)	5/ 7/ unlimited
Digital inputs (standard/option/extension)	2/ 5/ unlimited
NMEA0183 / NMEA2000 (CAN bus) input	1 / 1
CAN Bus (standard/option)	1 HS / 2 HS or LS
Ethernet for FTP access and optional ControlCenter	1
USB Client to PC (USB Mass storage Class)	1
USB Host for plug-in USB Key	1
Data protection / Restricted access to the data	Yes / Yes
Storage capacity	32Gb or more
File format (Text file MS Excel compatible)	*.CSV
Ruggedized aluminium housing / protection	Yes / up to IP67
Internal buzzer / Keys / Status LEDs	1 / 5 / 8
Software updates using plug-in USB Key or FTP	Yes
Power supply: Voltage / power	8/32 Vdc - 1.6 W
Storage temperature	-40°C to +85°C
Working temperature	-20°C to +70°C
Weight	450 g
Dimensions	H120 x L130 x P36