



### X991-P – Pitch and Roll Display

Accepts \$INXDR message from a ship's inclinometer or similar equipment and displays the Pitch and Roll information in clear numerical characters on-screen.

Maximum reached values are also displayed to give an 'at a glance' indication of the severity of the ship's movement.

Various input baud rates are selectable. Data is updated at a maximum of 10Hz.



### X991-H – Tape Heading Repeater

The X991-H is used to display the heading received from the ship's gyro or magnetic compass, in a number of signals such as a stepper, synchro and NMEA 0183 data.



The received information is also converted into industry standard NMEA 0183 data and output as RS422 serial data.

The display can be changed from a tape display to large digits at the press of a button.

Available as Off Course Alarm or optional Compass Comparator (*please specify with your order*).

Selection of display types:

- Off-Course Alarm Function
- Stepper, synchro or NMEA input
- NMEA 0183 data output
- Night filter available in request
- Flush mount available on request

### X991-R – Digital Rate of Turn Indicator

The unit will accept all standard gyro signals such as a stepper, synchro, and all valid NMEA 0183 rate of turn or heading sentences.

Specific 'rate of turn' data takes priority if both the rate of turn and heading are received. If the rate of turn is not available, then the unit will calculate the rate of turn from the received heading input.

An NMEA 0183 heading and Rate of Turn data output are generated for connection to external devices.



### X991-C – Course Recorder with Heading Display

Heading and GPS data inputs, with large numeric heading display or tape heading display.



The X991-C is both a course recorder and a multi-function display. It offers a user-selectable moving tape heading, numeric heading display, and heading plus GPS data. It accepts gyro and GPS data and is compatible with most gyro signal types and standard GPS equipment.

Gyro and GPS data is output at selective intervals and can be sent for archiving to a PC and also to the optional dot-matrix PRN-0001 printer.

### X991-L – Water and Ground Speed Indicator

Display to show ship's ground or water speed in knots, forward and astern in the direction of the ship's Bow.

In addition, the display will show the speed in knots athwartships at the bow or location of the speed log transducer.

The display will also show the total distance run derived from the parent log equipment.



The universal course recorder with a printer can be used as a direct replacement for the old electro-mechanical course recorders.

## SPECIFICATIONS

- INPUT 1:** DC stepper, 4 to 90v.  
360:1 Synchro up to 115v/90v. 50/60 400/500 Hz.  
90X 400 Hz contactless transmitter.  
Tracking rate = Frequency / 3deg/sec. (DC step 333 deg/sec)  
NMEA 0183 input, Input 1 must be \$HEHDT, x.x, T  
NMEA 0183 heading input at 4800 Baud
- INPUT 2:** NMEA 0183, all heading sentences, gyro input takes priority. – all at 4800 Baud
- OUTPUT 1:** NMEA 0183 \$HEHDT, x.x, T cr and \$HEROT. at 4800 Baud  
Rate 1 per second and whenever heading changes.
- OUTPUT 2:** 3 x 5v CMOS ports to sink or source 5 mA.  
Alarm output as default.  
Options: A 5 volt low power audible alarm.  
Stepper 5v to drive a step amplifier or electronic interface.  
Cetrek data, Furuno data, Yokogawa data.  
166 x 41 mm viewing area. Variable brightness, keypad control.
- POWER:** Nominal 24 volts at 12 watts. Switch on surge 2 amps.
- ENCLOSURE:** 330 x 180 x 90mm 2.8kg Supplied with trunnion. Optional flush mount.
- APPROVALS:** IEC60945

## DISPLAY INFORMATION



X991-P - Pitch and Roll



X991-R - Digital Rate Of Turn and rate of turn indicator. (Degrees per minute).



X991-L - Speed Log



X991-H - Tape repeater at 8 pixels per degree showing > +/- 30 degrees.



X991-H - Off Course Screen 1



X991-H - Off Course Screen 2



X991-H - Tape repeater at 10 pixels per degree showing > +/- 25 degrees



X991-H - Very large heading display. (Rounded to nearest degree).



X991-C - Course Recorder, with Printer

\*\*The X991 Display Units are also supplied with the AMI Marine Ship Movement Information Display System (SMIDS)