

NAVITRON SYSTEMS LTD

NT990G GYRO/MAG AUTOPILOT

Russian Maritime Register of Shipping Type Approved to
IMO A342(IX) as amended by MSC 64/67 Annex 3

Designed and developed by Navitron Systems Ltd for commercially operated ocean going vessel of all types from typically 1800 to 20,000 gross registered tonnes, the Navitron NT990G Autopilot is R.M.R.S and Morsviasputnik type approved to IMO and ISO Standards.



Model NT990G Dims 296mm x 175mm x 110mm (depth)

- **Dual Mag Inputs:-**
Sensor Coil and/or NMEA.
- **Dual Gyro Inputs:-**
1:1 Synchro and/or NMEA.
- **Built in RadioNav:-**
GPS/Plotter Input.
- **Built in Off Course Alarm.**
- **Automatic Stability:-**
Compensates for Rudder speed variations.
- **3 Channel Heading Outputs:-**
NMEA, Step by Step and Furuno formats.

Available in various system configurations the NT990G can be supplied for immediate compatibility with most gyro compass and steering system types rendering it an extremely cost effective solution for new build and retrofit installations. The NT990G Autopilot offers traditional Navitron performance and reliability reinforced by full type approvals to latest IMO and ISO standards.

Comprehensively intelligent, standard features of the NT990G Control Unit include a built in Radio Navigator interface, Dual Mag and Gyro Heading Inputs, Heading Outputs for Radar Stabilisation/Nav Computer use etc, fully Automatic Stability Compensation to accommodate Two Speed Rudder Systems and programmable Rate Of Turn.

Simple to operate via a traditional and clearly marked rotary Course Setter, the NT990G is immediately compatible with existing Navitron equipment including Watch Alarms, Heading Repeaters, Rudder Angle Indicators and Power Steer Controls.

- Full P.I.D Intelligence.
- Servo Drive Heading Repeater (Standby mode).
- Auto Trim (Automatic Permanent Helm).
- Digital Heading and Cross Track Error display.
- Bargraph and digital Rudder Angle display.
- Operator variable control panel illumination.
- 11 - 40Vdc Power Supply compatible.
- Solid State Output stages (11 - 40 Vdc / 5A max.)
- Fully programmable installation parameters.



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NT990G

Outline Specifications

All Navitron Autopilot systems are covered by comprehensive warranty terms and are supplied standard complete with Mag Heading Sensor Coil, Rudder Reference Unit and Control Unit incorporating 11 - 40Vdc 5A rated solid state switches for the control of solenoid hydraulic steering systems. Various optional equipment includes dual solenoid and dual channel analogue outputs (-10V to +10V) for independent dual rudder and analogue steering system control respectively.

NT990G Autopilot Input/Output Specifications

Inputs: -

| | |
|----------------------|---------------|
| Supply Voltage Range | 11-40Vdc |
| Power Consumption | 2.5W (@24Vdc) |
| Illumination Max | 8.1W (@24Vdc) |

Mag Heading Input Ports

| | |
|--|--------------------------------------|
| Navitron Heading Sensor Coil mounted above/below Existing Mag Compass | Coil type HSC1 or HSC2 |
| Resolution | 0.25° |
| NMEA 0183 Heading Sentence from Electronic Compass (Priority as shown) | XX HDM XX HDG XX HCC XX HDT |
| Resolution | 0.1° |

Gyro Heading Input Ports

| | |
|--|--------------------------------------|
| Isolated 1:1 Synchro available in Gyro | 400Hz Excitation from Autopilot |
| Resolution | 0.25° |
| NMEA 0183 Heading Sentence from Gyro (Priority as shown) | XX HDT XX HDM XX HDG XX HCC |
| Resolution | 0.1° |

Follow Up Rate (Minimum)

| | |
|-------------------------|-----------|
| All Heading Input types | 30° / Sec |
|-------------------------|-----------|

Cross Track Error Signal Input (GPS etc)

| | |
|--------------------------|--------------------------------------|
| NMEA 0183 Sentence types | XX APA XX APB XX RMB XX XTE |
| NMEA 0180 | (CTE only) |

| | |
|-----------------------------|---------------|
| Operating Temperature Range | -20 to +60 °C |
|-----------------------------|---------------|

Operator Controls

| |
|-------------------|
| Yaw |
| Rudder |
| Counter Rudder |
| Rudder Limit |
| Illumination |
| Mode Switch |
| Gyro/Mag Selector |

Outputs: -

NMEA 0183 (Isolated RS422)

| | | | |
|---|--------------------------------|----------------------------------|----------------|
| Update Rate | Selectable @ 1Hz, 11Hz or 22Hz | | |
| Sentence types (Mag/Gyro v Update Rate) | Hz | Mag | Gyro |
| | 1 | HCHCC HCHDG APHCC APHDG | HEHDT AGHDT |
| | 11 | HCHDM HCHDG | HEHDT ADHDT |
| | 22 | HCHDM | HEHDT |
| Resolution | 0.1° | | |

Furuno Format

| | |
|------------------|-----------------------------|
| Update Rate | Selectable @ 5Hz or 40Hz |
| Resolution | Selectable @ 0.166° or 0.1° |
| Signal Amplitude | Selectable @ 5Vdc or 12Vdc |

Step by Step

| | |
|------------------|-----------------------------|
| Steps per Degree | Selectable @ 3, 6, 12 or 24 |
| Signal Amplitude | 5Vdc |

Navitron Serial Data

| |
|-----------------------------------|
| To Navitron Digital Repeaters Etc |
|-----------------------------------|

Solenoid Switching

| | |
|------------|---------------------------|
| Polarity | Selectable Common +VE/-VE |
| Max Rating | 5A @ 40Vdc |

Panel Alarms

| |
|----------------------|
| Power Fail |
| Steering System Fail |
| Heading Input Fail |
| Data Input Fail |
| Off Course |
| Remote Engaged |
| Alarm Test Facility |