

# 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)

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.



- **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.



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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
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#### 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
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#### 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
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#### 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