NAVITRON SYSTEMS LTD

NT921G SMALL SHIP AUTOPILOT

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

Purpose designed by Navitron Systems Limited for professional use on Magnetic and/or Gyro based commercial vessels of all types to approximately 2000 gross registered tonnes, the Navitron NT921G is a powerfully equipped and technologically advanced Autopilot which remains simple to operate.

- **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.

Model NT921G *Dims 296mm x 175mm x 110mm (depth)*

Equally at home in new build and retrofit applications over an exceptionally wide range (fishing vessels, tugs, dredgers, ferries, coasters, survey and support units etc.) the NT921G Autopilot offers traditional Navitron performance and reliability reinforced by R.M.R.S type approval to IMO and ISO standards.

Comprehensively intelligent, standard features of the NT921G 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 NT921G 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).
- AutoTrim (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 (5A max).
- Fully programmable installation parameters.

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NT921G
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 (-1 0V to + 10Vj for independent dual rudder and analogue steering system control respectively.

NT921G 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