

# 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 + 10V) 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<br>XX HDG<br>XX HCC<br>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<br>XX HDM<br>XX HDG<br>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<br>XX APB<br>XX RMB<br>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<br>HCHDG<br>APHCC<br>APHDG | HEHDT<br>AGHDT |
|   | 11                             | HCHDM<br>HCHDG                   | HEHDT<br>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  |