

# NAVITRON SYSTEMS LTD

## NT951G SMALL SHIP AUTOPILOT

Fully Type Approved  
Notified Body 0191/05



ISO 11674 & 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 NT951G 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.
- **Programmable ROT:-**  
(Degress/Sec).
- **Built in Off Course Alarm.**
- **Automatic Stability:-**  
Compensates for Rudder speed variations.
- **Heading / VDR Out:-**  
NMEA, Step by Step and Furuno Heading.  
\$HTD & \$RSA VDR

**Model NT951G** 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 NT951G Autopilot offers traditional Navitron performance and reliability reinforced by full type approvals to latest IMO and ISO standards.

Comprehensively intelligent, standard features of the NT951G Control Unit include Dual Mag and Gyro Heading Inputs, Serial data outputs for Radar Stabilisation/Nav Computer/VDR 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 NT951G 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 ROT data 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.



NAVITRON SYSTEMS LTD

**NAVITRON SYSTEMS LTD** (Registered in England 2607869)  
17 The Tanneries, Brockhampton Lane, Havant, Hampshire PO9 1JB  
TEL: (UK) 023 9249 8740 FAX: (UK) 023 9249 8783  
(INT) +44 23 9249 8740 (INT) +44 23 9249 8783  
E-mail: sales@navitron.co.uk Web: www.navitron.co.uk

# NT951G

## 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.

### NT951G 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 |
|-------------------------|-----------|

#### Operator Controls

|                |                   |
|----------------|-------------------|
| Yaw            | Illumination      |
| Rudder         | Mode Switch       |
| Counter Rudder | Off Course Alarm  |
| Rudder Limit   | Gyro/Mag Selector |
| Turn Rate      | Auto Trim         |

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

|                       |      |
|-----------------------|------|
| Compass Safe Distance | 0.6m |
|-----------------------|------|

#### Mechanical Data

|                      |       |
|----------------------|-------|
| Width                | 297mm |
| Height               | 176mm |
| Depth – behind bezel | 110mm |
| Weight               | 3.3kg |

#### Outputs: -

#### NMEA 0183 (Isolated RS422)

|   |                                |                                  |                      |
|---|--------------------------------|----------------------------------|----------------------|
| Update Rate                             | Selectable @ 1Hz, 10Hz or 20Hz |                                  |                      |
| Sentence types (Mag/Gyro v Update Rate) | Hz                             | Mag                              | Gyro                 |
|   | 1                              | HCHDM<br>HCHDG<br>APHDM<br>APHDG | HEHDT<br>AGHDT       |
|   | 10                             | HCHDM (5Hz)<br>HCHDG             | HEHDT<br>ADHDT (5Hz) |
|   | 20                             | HCHDM                            | HEHDT                |
| Resolution                              | 0.1°                           |                                  |                      |
| Autopilot Status Data                   | 1                              | APRSA<br>APHTD                   | AGRSA<br>AGHTD       |

#### 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           | Off Course      |
| Steering System Fail | Rudder Limit    |
| Heading Input Fail   | Turn Rate Limit |
| Alarm Test facility  | Remote Engaged  |