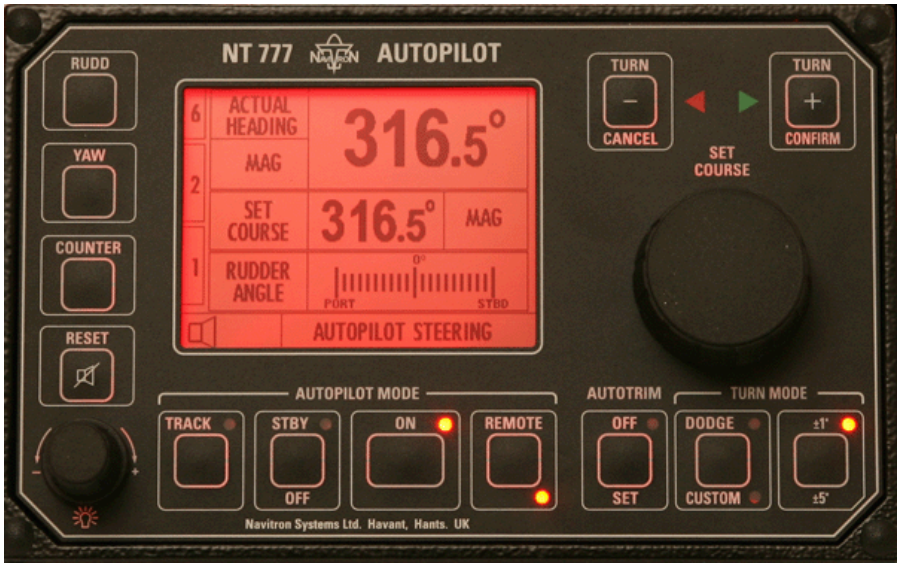
NAVITRON SYSTEMS LTD

NT777 SMALL VESSEL AUTOPILOT

Purpose developed for small professional vessel use spanning workboats, pilot and patrol craft, fishing vessels and motor yachts to 25m LOA, the NT777 model is the first of a new digital Autopilot generation designed and manufactured by Navitron Systems Ltd.

Accordingly, the NT777 Autopilot System provides Navitron steering expertise in a robust and compact package with the following standard features:-



- Dual NMEA Heading Inputs
- Mag Sensor Coil Heading Input.
- Multi Waypoint Track Steering
- Multiple Control Unit Options
- Integral Off Course Alarm
- Integral Watch Alarm
- Custom Turn & Dodge functions
- NMEA & Furuno Heading Outputs
- 11-40Vdc Power Supply
- 11-40Vdc/5A rated solid state switch Outputs to Solenoids

Model NT777 Autopilot Control Unit ***(192 x 120 x 62.4mm)***

Fully equipped yet simple to operate- and suitable for hull forms from conventional displacement to fast planing vessels - the NT777 Autopilot System can support a maximum of 3 Control Units which connect to a central Distribution Unit.

Model NT777 Distribution Unit ***(270 x 175 x 66mm)***

Optional Equipment Input/Outputs:–

These functions are available from the standard Distribution Unit and allow a range of equipment and services to be added which include:-

Combined with full PID intelligence, auto rudder stability, Auto Trim (APH), integral Alarm & Reset functions, the NT777 is equipped for precision performance and reliability.

The LCD display presentation mode can be positive or negative as selected at installation. Automatic display graphic change will occur when Track Steering Mode is selected and includes regular (18 sec.) performance and source data updates.

Suitable for console or bracket mounting, the NT777 Control Unit can be externally located and the overall system is normally supplied complete with Heading Sensor Coil and Rudder Reference Unit for installation to solenoid hydraulic systems (11-40Vdc/5A max).

Alternative Distribution Units may also be employed to provide ±10Vdc/4-20mA outputs for analogue steering machines.

■Rudder Angle Indicators ■Analogue and Digital Heading Repeaters ■NMEA Heading Outputs (Radar etc.) ■Power Steer Controls ■ Universal Relay Box

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NT777Outline Specifications

NT777 Autopilot Input/Output Specifications

Inputs: -

Supply Voltage Range	11-40Vdc	
Power Consumption	12V	24V
Off	4.2W	4.3W
Standby	4.6W	4.8W
On	5.1W	5.3W
Illumination (max)	+1.5W	+1.5 W

Mag Heading Input Ports	
Navitron Heading Sensor Coil mounted above/below Existing Mag Compass	Coil type HSC1 or HSC2
Resolution	0.25°
Dual NMEA 0183 Heading Sentences from Electronic Compasses etc. (Priority as shown)	XX HDM XX HDG XX HCC XX HDT
Resolution	0.1°

Cross Track Error Signal Input (GPS etc)	
NMEA 0183 Sentence types	XX APA XX APB XX RMB XX XTE
NMEA 0180	(CTE only)

Heading to Steer Track Data (GPS etc.)	
NMEA 0183 Sentence types	XX HTC XX HSC XX APB

Operating Temperature Range	-20 to +60 °C

Operator Controls
Course Selector (rotary)
Yaw (keypad + rotary)
Rudder (keypad + rotary)
Counter Rudder (keypad + rotary)
Autopilot Mode (Off/Standby & On keys)
Track (keypad)
Autotrim (keypad)
Illumination (rotary)

Unit Weights	
NT777 Control Unit	1.2kg
NT777 Distribution Unit	1.5kg

Outputs: -

NMEA 0183 (Isolated RS422)			
Update Rate	Selectable @ 1Hz, 11Hz or 22Hz		
Sentence types (Mag/Gyro v Update Rate)	Hz	Mag	Gyro
	1	$HCHDG $HCHCC $APHDG $APHCC	$HEHDT $AGHDT
	11	$HCHDG $HCHDM	$HEHDT
	22	$HCHDM	$HEHDT
Resolution	0.1°		

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

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

Operational Display Data (Prog LCD)	
Actual Heading	XXX.X º Mag / True
Set Course	XXX.X º Mag / True
Rudder Angle	Bar graph + 2 digit
XTE Track Data	nM Left/Right + dat type
HTS Track Data	Hdg/Err to WP + dat type
Rudder Setting	Value 1-9
Yaw Setting	Value 1-9
Counter Setting	Value 1-9

Alarm Display Data (Prog LCD)	
Watch Alarm	Sample shown of total 33 alarm types
Off Course Alarm	
Heading Data Fail	
Track Data Fail	
Steering System Fail	

Compass Safe Distance	
NT777 Control Unit	0.4m
NT777 Distribution Unit	0.4m

NAVITRON SYSTEMS LTD

NT888G GYRO/MAG AUTOPILOT

Type Approved for HSC & Conventional Deep Hull Vessels - Notified Body 0191 / 07

ISO 16329 & 11674 / IMO A342 (IX) as amended by MSC 64/67 Annex 3

Designed and developed by Navitron Systems Ltd for professional use on Magnetic and/or Gyro based vessels of all types – including High Speed Craft (HSC) – to approximately 3000 gross tonnes, the Navitron NT888G is a technologically advanced and powerfully equipped Autopilot which is clearly displayed and simple to operate.

Model NT888G

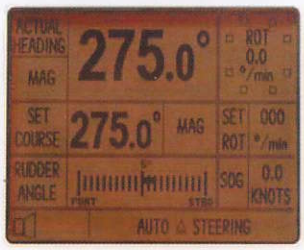
Dims 204mm x 132mm x 48.4mm (depth)

- **3 Mag/Gyro Heading Inputs :-** Sensor Coil and/or 2 x NMEA.
- **Track Steer :-** Multi waypoint steering via Plotter/ECDIS NMEA data.
- **NMEA Speed Input**
- **4-20mA Draft Input**
- **Bowthruster & Rudder Control**
- **Off Course and Watch Alarms**
- **Programmable Turns :-** RAD / ROT & U turns etc.
- **Automatic Stability :-** Compensates for Rudder speed variations.
- **Heading / VDR output Data :-** NMEA, Step by Step and Furuno Heading. $HTD & $RSA VDR

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 NT888G Autopilot offers traditional Navitron reliability reinforced by Adaptive control technology. The adaptive function automatically monitors and self tunes the Autopilot parameters to provide optimum steering performance whether operating on a fishing vessel in a low speed work mode or on a high speed passenger ferry underway at 50 knots.

With a standard scope of supply comprising NT888G Control Unit suitable for foot bracket or panel mounting, robust Rudder Reference Unit and central Distribution Unit, the Autopilot System is immediately compatible with a wide range of vessel steering configurations including single and dual solenoid systems and voltage (±10Vdc) or current driven (4-20mA) Steering Amplifiers.

Up to a maximum of 3 Control Units may be installed per system and each Control Unit is equally equipped with comprehensive displays of Actual Operating Mode, Heading, Rudder Angle, Rate of Turn and Speed Data which is enhanced by Track Steering graphics when the Track Mode is engaged.



The display mode itself (light characters on a dark background or vice versa) is also installation selectable with operator adjustable red backlight illumination to suit individual preference.

Track Mode operation provides single or multi waypoint steering performance based on data received from a proprietary ECDIS/Plotter including – when used in conjunction with an Approved ECDIS – remotely instructed constant radius turns etc.

Other standard features provide programmable Custom and Dodge turns plus permanent Heading changes in 1°/ 5°/10° steps etc.

Standard outputs produce NMEA, Furuno and Step by Step heading data for Radar stabilisation etc. and optional equipment includes Power Steer Controls, Analogue / Digital Heading Repeaters and Rudder Indicators.

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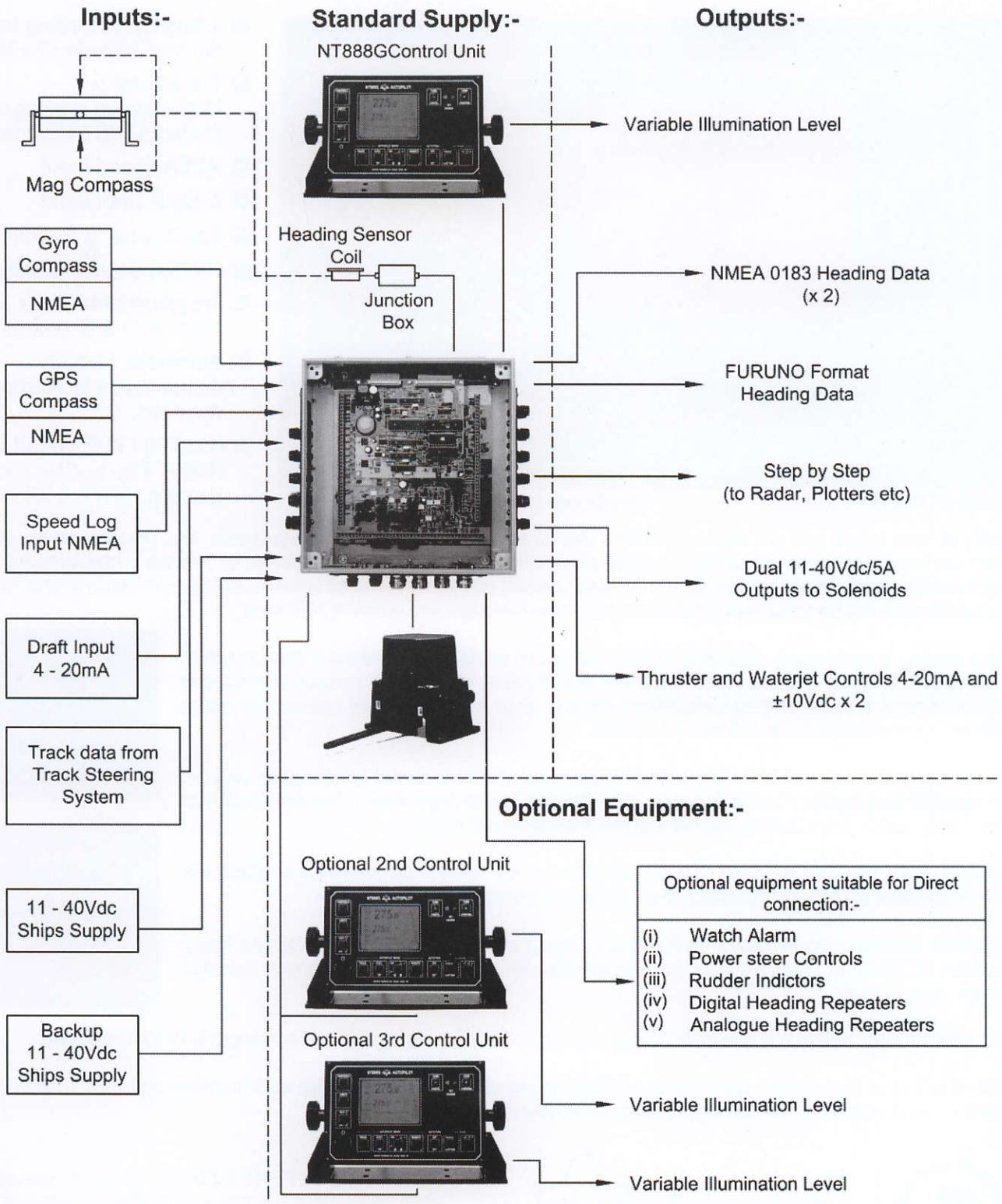
NT888G System Configuration



NAVITRON SYSTEMS LTD

NT999G GYRO/MAG AUTOPILOT

Type Approved for HSC & Conventional
Deep Hull Vessels - Notified Body 0191 / 07

ISO 16329 & 11674 / IMO A342 (IX)
as amended by MSC 64/67 Annex 3

Designed and developed by Navitron Systems Ltd for professional use on Magnetic and/or Gyro based vessels of all types – including High Speed Craft (HSC) – from approximately 3000 to 100,000 gross tonnes plus, the Navitron NT999G is a technologically advanced and powerfully equipped Adaptive Autopilot which is clearly displayed and simple to operate.

Model NT999G

Dims 252mm x 156mm x 48.4mm (depth)

- 5 Mag/Gyro Heading Inputs :- Mag Coil, 3 x NMEA, 1 x Step.
- Track Steer :- Multi waypoint steering via Plotter/ECDIS NMEA data.
- NMEA & Pulse Speed Inputs
- 4-20mA Draft Input
- Bowthruster & Rudder Control
- Off Course and Watch Alarms
- Programmable Turns :- RAD / ROT, Next Course etc.
- Automatic Stability :- Compensates for Rudder speed variations.
- Heading / VDR output Data :- NMEA, Step by Step & Furuno Heading. $HTD & $RSA VDR

Equally at home in new build and retrofit applications over an exceptionally wide range (ocean going tugs, passenger & cargo vessels, tankers to high speed craft etc.) the NT999G Autopilot offers traditional Navitron reliability reinforced by Adaptive control technology. The Adaptive function automatically monitors and self tunes the Autopilot parameters to provide optimum steering performance whether operating in a low speed towing mode or on a high speed passenger ferry underway at 50 knots.

With a standard scope of supply comprising NT999G Control Unit suitable for foot bracket or panel mounting, robust Rudder Reference Unit and central Distribution Unit, the Autopilot System is immediately compatible with a wide range of vessel steering configurations including single and dual solenoid systems and voltage (±10Vdc) or current driven (4-20mA) Steering Amplifiers.

Up to a maximum of 3 Control Units may be installed per system. Each Control Unit is equally equipped with comprehensive displays of Actual Operating Mode, Heading, Rudder Angle, Rate of Turn and Speed Data which is enhanced by Track Steering graphics when the Track Mode is engaged.

The display mode itself (light characters on a dark background or vice versa) is also installation selectable with operator adjustable red backlight illumination to suit individual preference.

Track Mode operation provides single or multi waypoint steering performance based on data received from a proprietary ECDIS/Plotter including – when used in conjunction with an Approved ECDIS – remotely instructed constant radius turns etc.

Other standard features provide “Next Course”, “U Turn” and permanent Heading changes in 1º/ 5º/10º steps etc via dedicated keys.

Standard outputs produce NMEA, Furuno and Step by Step heading data for Radar stabilisation etc. Optional equipment includes Power Steer Controls, Analogue / Digital Heading Repeaters, Rudder Indicators and Dual Ethernet I/O ports.

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NT999G System Configuration