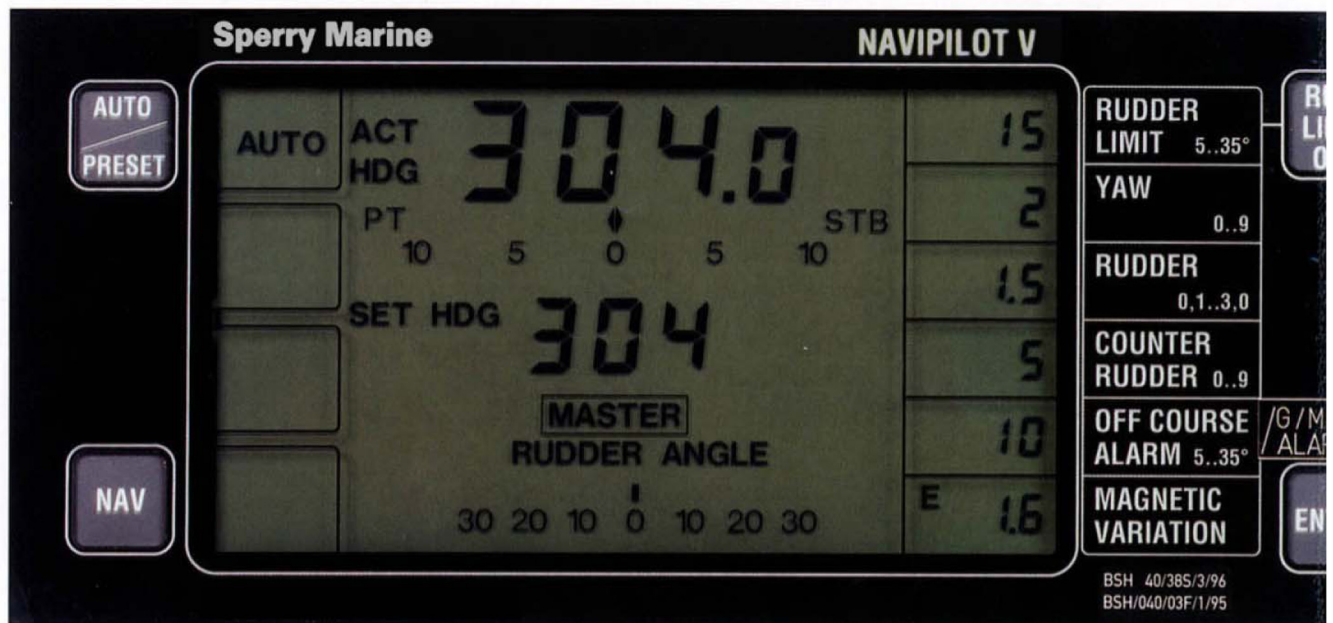


NORTHROP GRUMMAN*Electronic Systems***NAVIPILOT V****The Versatile Multipurpose Autopilot****NAVIPILOT V CONTROL AND DISPLAY UNIT****SYSTEM OVERVIEW**

NAVIPILOT V is a general-purpose, multifunction, micro-processor controlled autopilot. Created with the most modern computer programs to provide the highest fuel economy and low operational demands, **NAVIPILOT V** is suitable for application on all classes of ships ranging from small yachts to the largest supertanker. The very modern design of the control unit includes a tailor-made and clearly laid out transfective liquid crystal display, which permanently indicates all information required by contemporary navigation demands:

- Current heading (digital)
- Heading difference $\pm 10^\circ$ analogue
- Set heading (course to steer)
- Rudder angle (analogue $\pm 35^\circ$)
- Steering mode (AUTO/MAN/NAV)
- Parameters for:
 - rudder limit
 - yaw
 - rudder
 - counter rudder
 - off course alarm
 - magnetic variation

Changes in parameters and heading settings are carried out by a single analogue cardinal control disk.

**MODEL VARIATIONS**

In order to meet the many and varying demands made by today's modern shipbuilding industry, C.PLATH's multi-purpose autopilot **NAVIPILOT V** is offered in four basic versions. These are:

NAVIPILOT V / G

This version accepts a gyrocompass heading input and is intended for ships with no transmitting magnetic compass system.

NAVIPILOT V / GM

GM denotes that this version features inputs for both gyrocompass and magnetic compass heading information. This is today's most widely used configuration because the autopilot will operate on the heading information from the magnetic compass should failure of the gyrocompass occur. During the normal operation mode, the headings from both gyrocompass and magnetic compass are processed in the **independent course monitor** (complies with IMO Res. A.342(XI) integrated in the **NAVIPILOT V / GM**.

NAVIPILOT V / G-TMC

In addition to the features of the GM version, the G-TMC configuration provides the operator with three permanent and separate outputs of the magnetic compass heading in the format of 6 steps per one degree of azimuth.

In the event of a gyrocompass failure, all major receivers of the gyrocompass heading, such as radar, Satcom, GPS, digital repeaters, etc., can be switched over immediately to the heading of the magnetic compass.

Left: **Lena**, heavy-lifter, built by J.J. Sietas for Schiffsahrtkontor Altes Land.
Cover: **Baumwall**, built by J.J. Sietas for J. Ohle.

(actual size)



SPECIAL FEATURE

NAVIPILOT V / M

The M version of **NAVIPILOT V** has been conceived for those who do not consider the installation of a complete gyrocompass system to be cost effective, but still require a heading reference for distribution to peripheral equipment, for example heading repeaters, electronic chart systems (ECDIS), radars, GPS and SATCOM. For this purpose, **NAVIPILOT V / M** provides three separate magnetic compass heading outputs, each in the format of 6 steps per one degree of azimuth. Furthermore, the integrated magnetic compass heading correction table coupled with the magnetic compass variation parametr facility result in an emulated gyrocompass true north heading output. This very versatile autopilot is available with this outstanding and unique feature at very little extra cost.



Sinan Pasa and Piyale Pasa, 40 meter catamarans built by Austal Ships for Istanbul Deniz Otobusleri.

MAJOR FEATURES

- Gyrocompass heading interfaces: RS 422, 6 steps/°, synchro 1:360
- Magnetic compass interfaces: NMEA 0183, sine and cosine.
- Nav. interface with 9 unidirectional and 7 bidirectional protocols.
- A maximum of 20 remote Control and Display units possible.
- Operational data remain stored during power failure.
- Digital PID controller with nonlinear weather control.
- Clear error indication and identification.
- Manual off-course alarm.
- Clearly arranged Liquid Crystal Display (LCD).
- Logical arrangement of sealed foil keyboard and ergonomic, user-friendly operation.
- Analogue output for thruster control, rudder propellers and water jets.
- Complies with IMO Resolution A.342 (IX).
- Display and controls illuminated by electroluminescent foil.
- Analogue selection of set heading and all other major parameters by means of an ergonomically designed cardinal control disk safe guarded against unintentional operation.
- Type approved (BSH 40/38S/3/96) by the German Federal Maritime and Hydrographic Agency (BSH).
- GM, G-TMC and M versions have also been type approved (BSH 040/03F/1/95) by the German Federal Maritime and Hydrographic Agency (BSH) as transmitting compass systems (TMC).

ACCESSORY EQUIPMENT

NAVIDATA Multifunction Digital Repeater



Height 96 mm
Width 288 mm
Depth 65 mm

24 VDC (18 V to 36 V)
Consumption 6 W max.
D-type plug connectors

Displays: gyrocompass heading, magnetic compass heading, set heading (course to steer), rate of turn, ship's speed, latitude and longitude, distance travelled in daily miles and total miles, tendency of rate and direction of turn. Type approved (BSH/040/31G/1/94) by the German Federal Maritime and Hydrographic Agency (BSH).

Universal Digital Repeater



Console version

Front plate 96 mm x 96 mm to DIN standard
Depth 140 mm
Weight 0.5 kg

Watertight Housing with Bracket Attachment

Width 158 mm
Height 155 mm
Depth 154 mm
Weight 1.0 kg

Power 24 VDC (18 V to 36 V). Power consumption 7 W.

Signal input one RS 422 input

Protocols:

NMEA 0183: heading gyro, heading magnetic, roll, pitch, rate of turn, X-rate, Y-rate, water speed, ground speed, transverse water speed, transverse ground speed, total/daily miles, wind speed, wind angle, rudder angle, depth, air temperature, water temperature, time, revolutions/minute.

C.PLATH: heading gyro, heading magnetic, rate of turn, roll, pitch.
Lehmkuhl: heading.

Course to Steer Indicator steer

Status Input opto-coupler, 24 V / 10 mA freeze mode, 180° heading change mode.

Signal output 1 RS 422 with protocols for the C.PLATH Voyage Data Printer.

Status Output open collector, 50 V / 500 mA. Status change according to speed input (threshold selectable in the setup menu).

Type approved (BSH/040/29L/97) by the German Federal Maritime and Hydrographic Agency.

Import & Selling by OSCONA Co., Ltd.

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