NAVITWIN IV HEADING MANAGEMENT SYSTEM

Reliable and Easy to Use

The NAVITWIN IV Heading Management System displays and monitors a minimum of one and a maximum of four heading sources (3 gyrocompass headings and 1 magnetic heading) from a variety of heading sensors.

The NAVITWIN IV is Northrop Grumman Sperry Marine's central, all-embracing multiple heading reference management system. The NAVITWIN IV can be used as heading source selector for:

- Heading difference monitor
- Off heading monitor
- Magnetic heading
- Central gyro compass control unit

Key Benefits of the NAVITWIN IV:

- Current heading from all available heading sources on a colour TFT LCD screen
- Monitors the difference between any two of the displayed headings, including a Heading Difference Alarm
- Independent back-up magnetic heading source (TMC) for autopilots, repeaters, radar, etc.
- Active heading source distribution to subscribers such as Repeaters, Autopilots, Radars, ECDIS
- Automatic and controlled takeover of the heading from an alternative source when the active heading source fails (DNV Grounding Avoidance System)

NAVITWIN IV Functions

The NAVITWIN IV is a central control and display device for multi-compass systems. Depending on the system at hand, it may be configured to perform a number of different functions:

- Heading source selector

– The NAVITWIN IV displays heading data from up to three true heading sources and one magnetic compass heading source. By selecting the active heading source at the NAVITWIN IV, the operator determines which source is to be used as the reference for distribution via the Switch-Over Unit to other equipment, such as compass repeaters, heading control systems, radar, ECDIS etc.

- Heading difference monitor

– NAVITWIN IV can monitor the difference between any two of the connected heading sources. Should this difference exceed a user defined threshold, a "Heading Difference Alarm" is raised.

- Off heading monitor

– In automatic steering modes, NAVITWIN IV can monitor the difference between the actual heading from the active source and the commanded set heading. Should this difference exceed a user-defined threshold, an "Off Heading Alarm" is raised. The set heading may be received automatically from a heading control system or may be entered manually.

- Magnetic heading

– In conjunction with a Northrop Grumman Sperry Marine fluxgate sensor type 4863, fitted to a compatible magnetic compass, NAVITWIN IV senses the vessel' s magnetic heading and converts it to the NMEA 0183 (IEC 61162) format, including automatic correction for magnetic variation and sensor calibration values.

- Central gyro compass control unit

Control and Display

In single, dual and triple gyro compass systems comprising current models from the NAVIGAT gyro compass line, the NAVITWIN IV acts as the system's central control and display unit. System-wide alarm messages from the gyro compasses are indicated and may be acknowledged at the NAVITWIN IV.

NAVITWIN IV Features

NAVITWIN IV Heading Management System

The NAVITWIN IV displays and monitors a minimum of one and a maximum of four heading sources (three gyro compass headings and one magnetic heading) from the Northrop Grumman Sperry Marine range of heading sensors:

- NAVIGAT 3000 Fiber-Optic Gyrocompass and Attitude Reference System
- NAVIGAT X MK 1 Digital Gyrocompass
- NAVIGAT X MK 2 Digital Gyrocompass*

Standard Features:

- Monitors and controls all heading sources of a multi-compass heading reference system
- Automatic acceptance of set heading input from an autopilot or a manual input
- Reads the sine / cosine analogue signals from a Northrop Grumman Sperry Marine magnetic compass flux gate and converts these into magnetic heading data in National marine electronics association (NMEA) format
- Automatic correction for magnetic variation and deviation
- Serial dimmer input from a central dimmer control
- True heading and status protocol (THS)
- Selectable display colours

System Units

NAVITWIN IV Heading Management System

See below the specifications of the NAVITWIN IV console with and without a console frame or Bulkhead / Desktop Version with Bracket Attachment, for easy placement and installation.

CONSOLE MOUNTING WITH OR WITHOUT A CONSOLE FRAME	
Operation	-15° C to +55° C
Storage	25° C to +70° C
Protection grade installed	IP23 to DIN 40050
Weight	Approx. 1.7 kg (2.4 kg with frame) with cable
Required depth	Approx. 150 mm
Supplied with an installation kit and a 3.2 m cable for connection to a terminal board	

BULKHEAD/ DESKTOP VERSION WITH BRACKET ATTACHMENT	
Operation	-15° C to +55° C
Storage	-25° C to +70° C
Protection grade installed	IP32 to DIN 40050

BULKHEAD/ DESKTOP VERSION WITH BRACKET ATTACHMENT	
Weight	Approx. 3.2 kg with cable
Supplied with a 3.2 m cable for connection to a terminal board	

SWITCH-OVER UNIT	
Operation	-15° C to +55° C
Storage	-25° C to +70° C
Protection grade installed	IP23 to DIN 40050
Weight	Approx. 4.5 kg with cable
Magnetic clearance	0.3 m.

NAVITWIN IV Specifications

NAVITWIN IV Heading Management System

The NAVITWIN IV Heading Management System has a list of specifications relating to displays, data inputs, signal and status inputs, alarm and status outputs, type approval, environmental requirements and EMC. View the full list of NAVITWIN IV specifications below:

Displays

The following data can be displayed on the TFT LCD:

- Gyro 1 heading

- Gyro 2 heading
- Gyro 3 heading
- Magnetic compass heading
- Speed, manual or auto (when provided)
- Position in lat. and lon. (when provided)
- Date and time, manual or auto (when provided)
- Alarms
- Heading difference alarm threshold
- Off heading alarm threshold
- North speed error correction

Data Inputs

- Three gyrocompass headings: NMEA 0183 or PLATH protocol
- One magnetic heading, analogue: sine / cosine from fluxgate
- One magnetic heading, serial: NMEA 0183, PLATH protocol or NAVIPILOT protocol
- Autopilot set heading: NMEA 0183 or NAVIPILOT protocol
- Speed, position, time and date, magnetic variation from GPS: NMEA 0183

Signal and Status Inputs

- Magnetic compass heading from fluxgate (sine/cosine)
- Steering mode status (auto / man)
- External alarm acknowledgement status (mute)
- Heading offset 180°
- External dim

Alarm and Status Outputs

- Power failure / general alarm*
- Heading difference alarm*
- Off heading alarm*
- Watch alarm timer reset

**through potential-free relay contacts rated 30 W max. or 125 V, 1A*

Type Approval

- Germanischer Lloyd to the Marine Equipment directive (MED) 96 / 98 / EC (Wheelmark)
- Fulfills IMO Resolution A.694 (17) as well as IEC 60945, IEC 61162 and NMEA-0183

Environmental Requirements and EMC

- In accordance with EN 60945 (IEC 945 +A1)
- Magnetic clearance to:
  - standard magnetic compass 0.7 m
  - steering magnetic compass 0.4 m
- Reduced magnetic clearance to:
  - standard magnetic compass 0.45 m

- steering magnetic compass 0.30 m
- Ambient temperature range:
  - operation -15°C to +55°C
  - storage -25°C to +70°C