



Satellite Compass

Standard 21





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Standard 21 provides ship's heading information. It is oriented to geographical north and not affected by the earth magnetic field, latitude and ship's speed. There is no need for compensation of variation and deviation.

Standard 21 shows its strengths – heading availability and accuracy in highly dynamic situations – even in case of GPS signal loss and with the ruggedized mechanical and electronic design that guarantees a long life of the entire system.

The Standard 21 therefore is the perfect satellite compass for all kinds of professional work boats such as fishing or pilot boats and a perfect back-up for a gyro compass system for all merchant vessels.

Function

The two GPS receivers of the Standard 21 antenna unit are installed in parallel to the ship's fore-aft-line. By measuring the carrier phases of the GPS signals the precise differential range of the GPS receivers to the GPS satellites are calculated.

Based on this data a baseline vector between the two GPS receivers is determined - resulting in the ship's heading relative to geographical north.

In order to bridge short-time satellite signal loss, the Standard 21 uses 3 solid state rate sensors. Thus, the data of the rate sensors are used to provide continuous heading information. The rate sensors and accelerometers are also used to provide roll and pitch data and to compensate heading for these tilt effects.

Only the combination of these three different sensors ensures accurate and reliable heading information.

Features

In addition to ship's heading STD 21 provides latitude, longitude, rate-of-turn, course over ground, and ground speed information as NMEA output. Roll and pitch are displayed. The serial interfaces of Standard 21 can be configured as NMEA (1Hz), fast NMEA (50Hz) or as course bus. Standard 21 comes with a solid mechanical and electronic design. Mounting brackets are included in the scope of supply for a simple installation on the mast. The antenna is connected with a twisted pair cable. 30 meters of cable are provided with the system, ensuring more flexibility than systems with coaxial cables. Also longer cables can be used which are more cost-efficient compared to coaxial cables. The aluminium disks of the antenna protect the GPS receivers from multipath signals – increasing the performance and accuracy of the whole system. Standard 21 exceeds the IMO requirements for Transmitting Heading Devices (THD) noticeably – a benefit in day-to-day work. Standard 21 settles within 4 minutes, offers superior accuracy of 0.5°, is faster in follow-up and compensates longer satellite signal losses. The system does not require any regular maintenance.



Antenna unit



Processor unit



Operator unit with casing

Approval

Standard 21 is type-approved by the German Bundesamt für Seeschifffahrt und Hydrographie (BSH).

It exceeds the ISO 22090-3 requirements for Transmitting Heading Devices.

Standard 21 conforms to EN/IEC 61162 for standard and fast NMEA output.

Display modes



Benefits

- Compliant with IMO requirements for Transmitting Heading Devices (THD)
- Provides true heading unaffected by earth magnetic field, latitude and ship's speed
- BSH (Bundesamt für Seeschifffahrt und Hydrographie) type approval
- High accuracy of 0.5° (RMS)
- Unique multipath protection through aluminium discs under GPS sensors
- Short start-up time even in dynamic conditions
- Best performance in case of satellite signal loss with regard to accuracy and time
- Use of standard cable
- Redundant CAN bus connection operator unit – processor unit
- Including adjustable casing for operator unit
- Solid long life design
- No regular maintenance required

Accessories

- Self-aligning steering repeater
- Self-aligning bearing repeater
- Digital repeater
- Multi display
- Serial interface booster
- Additional output formats: Step, SIF

Technical Data

Accuracy
0.5° (RMS)

Angular resolution
0.1°

Settling time
4 minutes

Interfaces
2 x RS 422 (course bus, NMEA, fast NMEA)

Telegrams
HDT, ROT, VTG, GGA, DTM, GSA, ZDA

Alarms
Heading failure
System failure

Supply voltage
24V DC (10 - 36 V DC)

Power consumption
Approx. 15 W

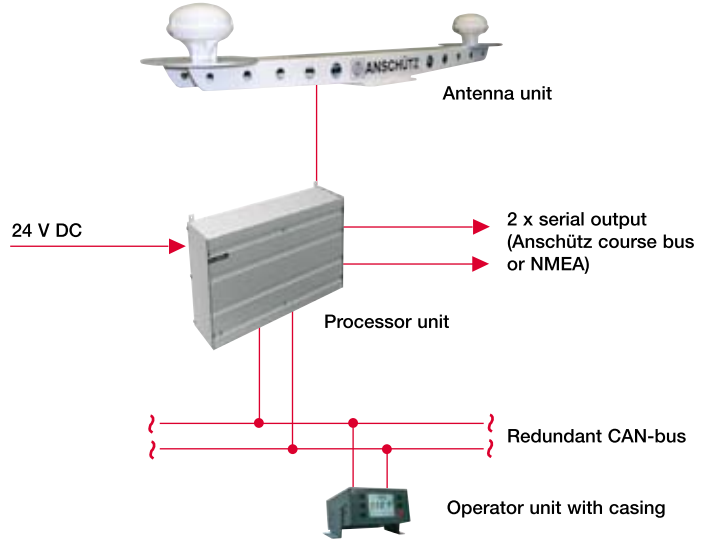
Ambient temperature
Operator unit: -15°C to +55°C
Processor unit: -15°C to +55°C
Antenna unit: -25°C to +55°C

Type of enclosure acc. to IEC/EN 60529
Operator unit with casing IP22
Processor unit IP 22
Antenna unit IP 56

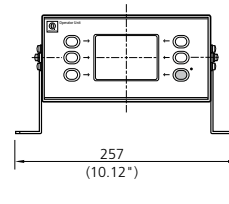
In accordance with
ISO 22090-3, EN 60945, EN/IEC 61162

Scope of supply
1 operator unit with casing
1 processor unit
1 antenna unit
1 antenna cable (30 m)
2 connection cables (6 m)
1 power cable (6 m)
1 set cable glands
1 operator manual

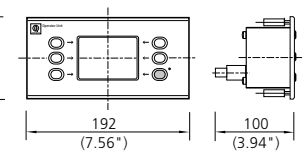
Block diagram



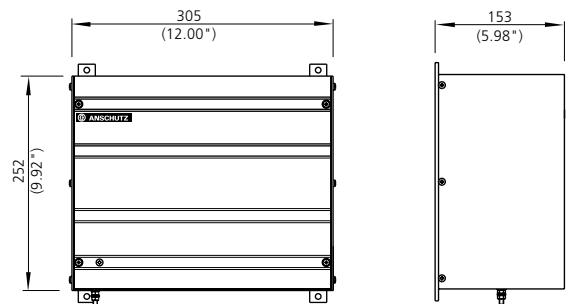
Operator unit with casing



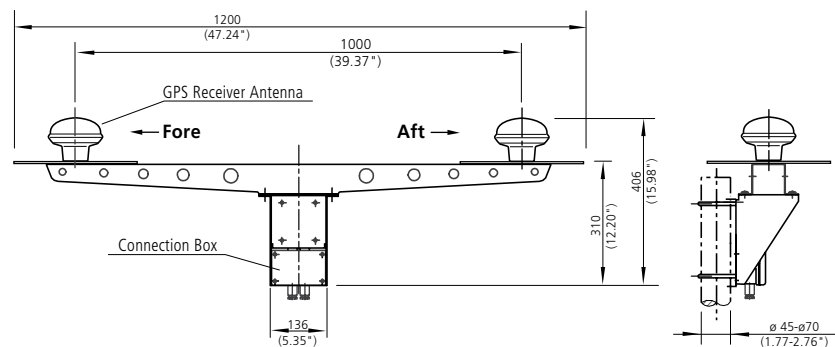
Operator unit



Processor unit



Antenna unit



Subject to change due to technical developments without notice.

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Raytheon Anschütz Singapore Pte. Ltd.
Marine Navigation and Radio Communication
Systems & Services
51 Bukit Batok Crescent
#07-08, Unity Centre
Singapore 658077

Raytheon Anschütz GmbH
D-24100 Kiel, Germany
Tel +49(0)431-30 19-0
Fax +49(0)431-30 19-291
Email sales@raykiel.com
www.raytheon-anschuetz.com