Standard 22 Naval
Gyro Compass System
Our worldwide sales and service network provides product and service support wherever needed. More than 200 service stations all around the world.

Standard 22 Naval

The Standard 22 Naval Gyro Compass system is a modern, modular state-of-the-art system, specifically designed for applications on board of naval vessels and incorporates the latest technologies for gyro compass systems, based on 100 years of experience. Operational safety was dramatically increased due to a patented data transmission technology that completely replaces the use of slip rings and a dual CAN bus for redundant data distribution. It is compatible with all Anschütz gyro compasses and steering systems and meets the latest international approval requirements.

The Standard 22 Naval generates an accurate directional reference signal to indicate the ship’s heading relative to true north. It can be used as a main heading reference or as a back-up system for inertial navigation systems. The Standard 22 Naval is equipped with an optical pick up system, enabling digital signal processing. The sensor and system electronics, which incorporate microprocessor techniques, convert the gyro signal into a high speed serial data format. Its modular construction of both hardware and software enables it to be custom-fit to any installation requirement and makes it exceptionally easy to operate.

The inherent speed error of a gyro compass, which is caused by a physical dependence on latitude, ship’s speed and heading, is corrected automatically by the use of position and speed input from GPS and Log. Alternatively the user could input this data manually via the control unit. Automatic monitoring of the Standard 22 is realized by integrated BITE.

Digital processing is also used to improve the dynamic behaviour of the compass. In quick settling mode, heading information is available within just one hour. The Standard 22 Naval uses the technology of the world’s leading gyro compass Standard 22 which is type approved in accordance with the International Maritime Organisation (IMO) standards and has been approved in compliance with the high speed craft code but is adapted to the specific requirements on board of naval vessels.
SYSTEM COMPONENTS

The STD22 Naval basic system consists of
- Standard 22 gyro compass Type 110-234NG001
- Shock absorbing mount for gyrocompass Type 148-610NG001
- Operator unit (desk or bulkhead mounted) Type 130-614
- Distribution unit Type 138-118NG002 (NG003 for serial HDG inputs)
- Power supply unit with auto-switch over Type FM212ADG documentation incl. set of drawings, certificates

OUTSTANDING FEATURES

- Inductive, slip ring-free power transmission
- Advanced technology guarantees highest system reliability
- Anschütz dual redundant CAN bus
- System-wide BITE
- Highest heading accuracy
- Highest dynamic up to 100 °/s
- Speed / latitude error correction / dynamic correction
- Quick settling mode
- Absolute digital pick up
- Flexible interface to log and GPS
- Easy to operate and service-friendly
- Low life cycle cost
- Easy to extend; extensions practically unlimited – can be fully integrated into Integrated Navigation Systems (INS)

MODULAR SYSTEM ARCHITECTURE
TECHNICAL DATA

Accuracy
– Settle point error:  +/-0.1° secLat., RMS
– Static error:  +/-0.1° secLat., RMS
– Dynamic error:  +/-0.4° secLat., RMS
(periodic roll and pitch (+/-45°) + horizontal acceleration)

secLat. = 1/cosLatitude

System availability
– Settling time (accuracy ≤ 2°):  3 hours
– Quick settling time (ship at pier)  1 hour
– MTBF  > 100,000 hours for system
– MTBF  > 40,000 hours for gyrosphere
– MTTR  < 30 min.

Power supply  24 V DC

Power consumption
– Gyro compass  80 W to 140 W (start-up)
– Distribution unit  36 W
– Operator unit  5 W

Signal Outputs
– 3x RS 422, Anschütz course bus
– 12 x RS422 individually configurable as
course bus or NMEA
– 1 x RS232 for course printer
– Rate of turn +/-10V DC

Inputs
– Log: NMEA acc. to IEC 61162, 200 P/NM
– GPS: NMEA acc. to IEC 61162
– other formats on request

Environmental conditions
IEC 60945

Distribution unit
Operator unit
Gyro compass

Gyro Compass additionally

Temperature
MIL-STD-810 F
– Operation -10 °C … +55 °C
– Humidity +60 °C > 95 % r.h.
– Storage -33 °C … +71 °C

Magnetic measurements
VG 95577 A

Acoustic
BV 0450

Shock
BV 0430

Vibration
BV 0440

EMC / EMI
MIL-STD-461 E

Type of enclosure
IP 23

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