

# Standard 22 NX

Anschütz Gyro Compass System



# Standard 22 NX

## Anschütz gyro compass system

Standard 22 NX is the successor of the popular Standard 22 gyro compass. It comes with completely renewed electronics and provides more interfaces – for serial data communication, communication via Ethernet and Bridge Alert Management, and above all, easier installation and integration.

Standard 22 NX maintains the quality characteristics of Standard 22 – proven over 15 years with more than 20,000 installations. System integration is realised with a real time

redundant CAN bus ensuring that Standard 22 NX can be used with the existing heading distribution systems and in combination with Standard 22 and the maintenance free Standard 30 MF.

### BENEFITS AT A GLANCE

- High accuracy and reliability
- Designed for highest operational safety under harshest environmental conditions
- Ease of integration with short installation time
- Long maintenance periods, high lifetime value
- Manual and automatic speed / latitude error correction
- Quick settling reduces the settling time to 1 hour
- Intelligent features as a heading management system
- Modular product range to meet individual requirements on a cost efficient basis
- Seamless integration into various system environments due to a multitude of interfaces and formats
- Bridge Alert Management compliance
- Compliance to Ethernet data communication according to IEC 61162-450.
- IMO approved for standard and high-speed crafts and as rate-of-turn gyro





## A LONG TIME SECURE INVESTMENT

The Standard 22 NX gyro compass offers customers an attractive price / performance ratio over lifetime:

- Easy to integrate, even into existing systems
- Long-term stability of heading information
- Long maintenance intervals
- Long lifetime of gyrosphere (in average five years)
- Worldwide immediate spare part and service support

Standard 22 NX is a smart solution and a secure investment in your ship – for a long time.

## EASE OF INSTALLATION AND CONFIGURATION

The installation of Standard 22 NX into a heading management system is realised via a redundant CAN bus. CAN bus has the advantage that it operates in real time, can be up to 400m in length and only needs 6 wires. The configuration of Standard 22 NX is completed via a webserver. No dedicated tools are required except for a notebook and a browser. Configurations can be up- and downloaded – so the required time for configuration can go down to minutes.

## ACCURACY AND RELIABILITY

Standard 22 NX uses the unique sensor technology from Raytheon Anschutz. The design ensures that environmental influences, such as vibrations and shocks, are kept away from the sensor and do not influence heading accuracy.

Wear and tear is eliminated by use of electronic data transmission technology that completely replaces the use of slip rings.

## TECHNOLOGY FOR THE NEXT DECADE

Standard 22 NX provides all interfaces that you need today and in future. It provides heading and rate-of-turn as serial data. Rate-of-turn indicators can be connected directly to Standard 22 NX.

All data is also available on two Ethernet interfaces. The compliance to the Ethernet standard IEC61162-450 ensures that the next generation Radar, ECDIS, etc. can be connected. Standard 22 NX is also compliant to Bridge Alert Management (BAM). A Central Alert Management (CAM) display can be connected via Ethernet or serial data.

## MODULAR PRODUCT RANGE

### The components



Standard 22 NX

The Standard 22 NX gyro compass was designed as a modular system to meet customer requirements. The system consists of up to three gyro compasses and can include an operator unit and a distribution unit. Another gyro, a magnetic compass, a satellite compass, and/or an external rate-of-turn gyro can be integrated as additional sensors. A wide range of accessories is available.



Integration of further compasses



Distribution Unit



Operator Unit



Accessories



## INTELLIGENT SYSTEM FEATURES FOR ADDITIONAL VALUE

Standard 22 NX provides heading information. However, in a heading management system, the Standard 22 NX can offer further features that provide additional value and make the day-to-day work easier.

### Compliance to Bridge Alert Management (BAM) standards

The integrated heading monitor compares the heading information from up to four different compasses. An alert is transmitted if a user-defined threshold is exceeded. In case of a gyro compass system alert, the system switches automatically to another compass as required for compliance to several class notations and defined by the user.

Standard 22 NX is compliant to Bridge Alert Management standards. Alerts are prioritized and presented in a consistent manner on the operator unit. Standard 22 NX allows also to transfer the alerts to a Central Alert Management (CAM) display for a central alert presentation on the bridge. Alerts can be acknowledged bidirectional, from the operator unit and the CAM display.

### Independent transmitting magnetic compass (TMC) path

The independent TMC path ensures that a failure in the gyro compass system does not affect the processing of the magnetic heading. With this function, various flag state authorities no longer require an optical bypass for the magnetic compass on board of the vessel, resulting in cost savings for the ship yard and the ship owner.

### Speed / latitude error correction

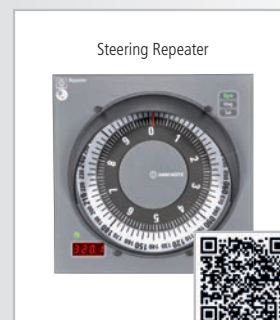
For the standard automatic speed / latitude error correction, speed and latitude data are provided by sensors or entered manually via the operator unit. The individual speed error correction function ensures that a failure in a log or GPS receiver only affects the heading of one gyro compass. Benefit: Subsequent systems such as dynamic positioning systems are able to detect a heading error caused by an incorrect latitude or speed information at an early stage.

### Integration of compasses

The Standard 22 NX system allows integration of other compasses such as an existing gyro compass. Herewith, a cost efficient integration of existing gyro compass or an upgrade from a gyro compass to a heading management system is possible.

## A WIDE RANGE OF ACCESSORIES

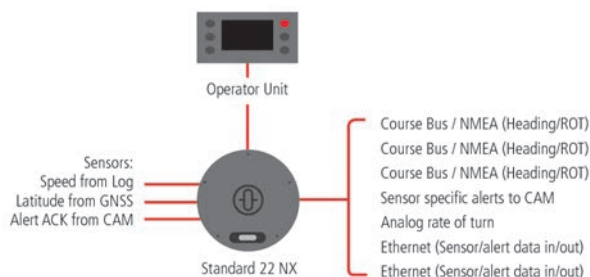
- Self aligning steering / digital / bearing repeaters
- Nav Data Repeater
- Different casings for IP 44 and IP 56
- Course and rudder angle printer



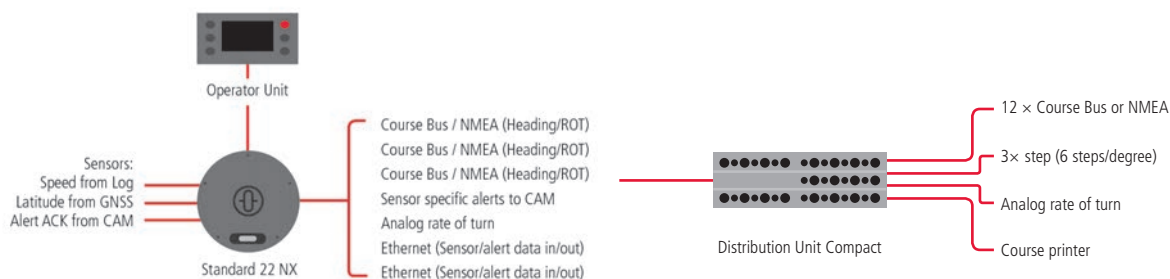


# MODULAR SYSTEM ARCHITECTURE

## Standard 22 NX



## Standard 22 NX and distribution unit compact

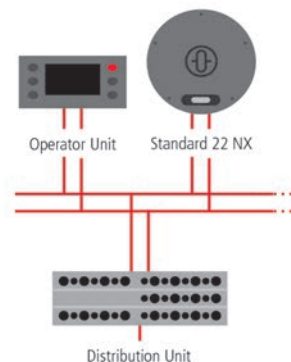


## Standard 22 NX heading management system

This system allows to connect up to three gyro compasses and integrates a magnetic compass or GNSS compass. 12 serial outputs are available in addition to the 4 outputs of Standard 22 NX for the connection of heading receivers, such as repeaters, autopilots, radars and others.

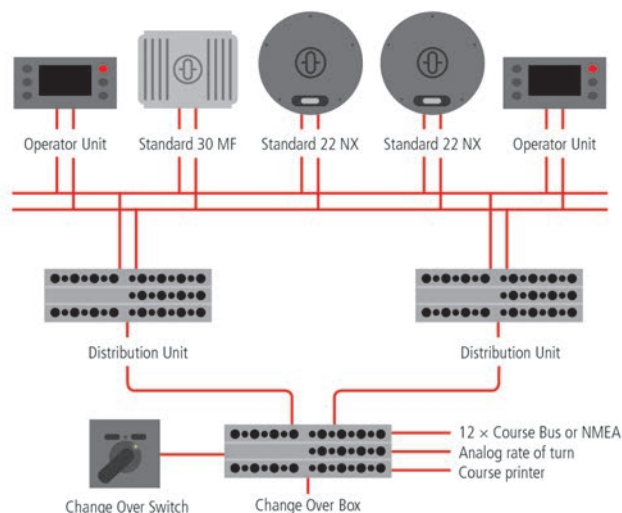
Sensor selection is done with the operator unit. The threshold for a heading difference between different compasses can be defined by the user and is continuously monitored.

Thanks to the CAN bus the wiring effort between the compass components is reduced to a minimum.



## Standard 22 NX heading management system with redundancy in distribution

This system provides a redundancy of the distribution system in addition to the redundancy of compasses. No single failure in this configuration causes a loss of heading information to the connected heading receivers. Such a system (with two gyros) is compliant to the demanding class notations such as DNVGL NAUT-OSV/OC/AW, LR IBS or ABS NIBS.



## COST-EFFICIENT RETROFIT SOLUTIONS

How can ship owners with older ships benefit from the various advantages the Standard 22 NX offers?

Raytheon Anschutz offers a variety of converters that allow ship owners very cost-efficient retrofit solutions. Old gyro compasses transmit the heading information as analog synchro or step signals. Our new converters convert the serial/ digital heading information from new compasses into analog signals to allow the existing equipment to be kept aboard.

The demand of Standard 22 gyro compass has steadily increased over the past years. Nevertheless, thanks to an optimized manufacturing process Raytheon Anschutz can offer the best availability of gyro compasses ever, together with a world-wide faster delivery time. This makes also the successor of the Standard 22 perfectly suited even for time-critical retrofits that cannot afford any delay.

### BENEFITS

- Cost-efficient replacement of old gyro compasses
- Cost reduction: Existing repeaters, autopilots and other heading receivers (periphery) can remain on board
- Reduced installation efforts: Use of existing cabling and minimum installation time
- Perfect solution for service organizations – virtually all available compasses on the market can be retrofitted with only three different converters





## STEP AND SYNCHRO CONVERTERS

### Replacing a gyro with step output

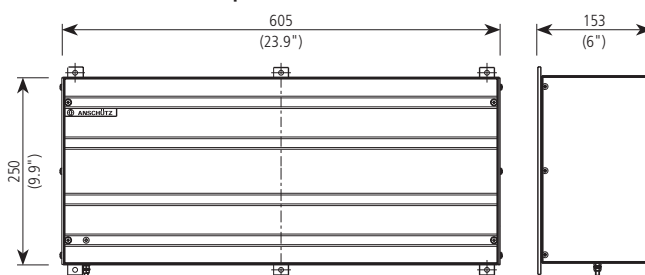
The serial / universal step converter converts serial heading information (NMEA or Course Bus) into step (6step / degree) signals. It is used when an old gyro compass (e.g. from Sperry, Tokimec, Yokogawa, Robertson) with step output is replaced with a new Standard 22 NX.



### Technical data

- Configurable output of step signals with 24, 35, 50 or 70 V DC
- One voltage configurable as common plus or common minus
- Max. step output power: 150 W
- 7 outputs (1 A fused), 1 output (6.3 A fused) for distribution
- Converter provides supply voltage for Standard 22 (max.150 W)
- Supply voltage: 115/230 V 50/60 Hz

Serial/Universal Step Converter



### Replacing a gyro with synchro output

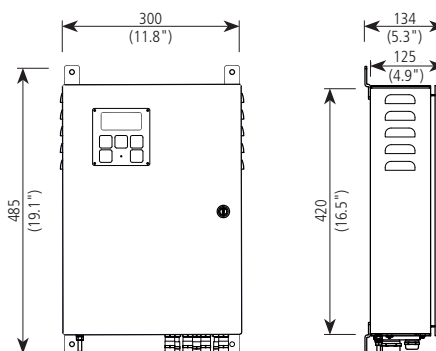
The serial / universal synchro converter converts serial heading information (NMEA or Course Bus) into various synchro signals. It is used when an old gyro compass (e.g from Anschütz, C. Plath, Tokimec, Yokogawa, Hokushin, Microtechnica, Amur, Kurs 4) with synchro output is replaced with a new Standard 22 NX.

### Technical data

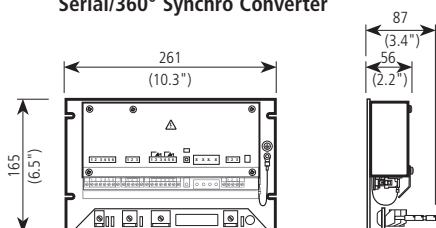
- Configurable output of synchro signals:  
Reference voltage: 1..110 V  
Signal voltage: 1..100 V
- Turn ratio: 1:360; 1:90; 1:36; 1:2; 1:1
- Converter provides one selectable output signal format
- For a load of max. 12 reference receivers
- Supply voltage: 24 V DC



Serial/Universal Synchro Converter



Serial/360° Synchro Converter



## 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+horizontal acceleration) secLat.=1/cosLatitude

### Supply voltage & power consumption

- 24 V DC (18 – 36 V DC)
- 80 W to 140 W (start-up) sensor unit
- 36 W distribution unit / 6 W operator unit / 7 W per analogue repeater

### General data

Permissible ambient temperature

- Operation –10° C to +55° C
- Storage –25° C to +70° C without supporting liquid
- Settling time 1h (< 3°) with «Quick settling»
- Max. rate of follow-up 100 °/s
- Permissible periodic roll and pitch angle ±45°

### Signal inputs

3 serial inputs for

- Position: GLL/GGA/RMC/GNS
- Speed: VBW, VHW, VTG, 200 pulses(NM)
- Alert communication (BAM)

2 Ethernet interfaces (teaming mode)

### Signal outputs

4 serial outputs for

- Heading: THS, HDT, Course Bus
- Rate-of-turn: ROT
- Alert Communication (BAM)

1 analog output +/-10V DC for rate-of-turn for 30°/min, 100°/min or 300°/min

2 Ethernet interfaces (teaming mode)

With distribution unit additionally

- 12x RS 422 individually configurable as Course Bus or NMEA
- 1x RS 232C for course printer
- Rate-of-turn ±10 V DC for 30°/min, 100°/min or 300°/min

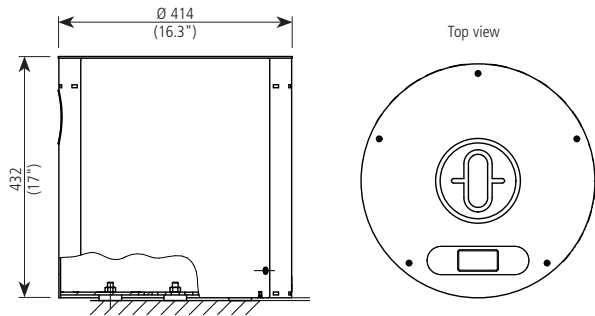
### Alerts

- System failure with potential-free relays contact
- ALR/ACK NMEA alert communication (acc. to IEC61162-1)
- INS alert communication (acc. to IEC61924-2)

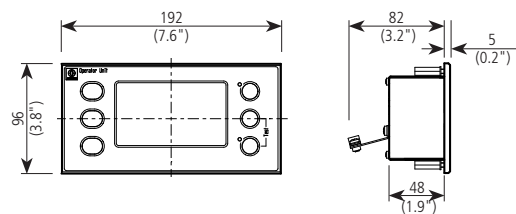
### Weight

- Master compass 17.5 kg
- Distribution unit 7.5 kg
- Operator unit 1.5 kg

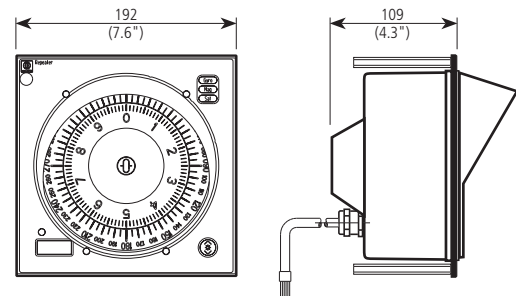
### Standard 22 NX



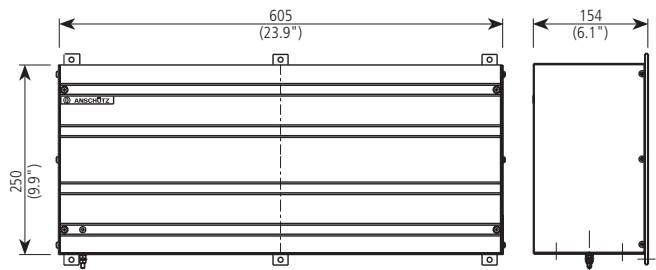
### Operator Unit



### Steering Repeater Compass



### Distribution Unit



### Type of enclosure acc. to IEC/EN 60529

- Gyro compass IP 22
- Operator unit IP 23/IP 56 front sided
- Distribution unit IP 22

Subject to change due to technical developments without notice.  
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