MGC[®] R5 COMPASS





The MGC R5 COMPASS system is IMO type approved as a gyro compass for navigation purposes for use together with a heading and bearing repeater. Very high reliability is achieved by using Ring Laser Gyros with no rotational or mechanical wear-out parts.

Typical applications

The system can be operated as an inertial navigation system as well as a gyro compass with output of position and heading. Linear position and velocity measurements can then be output in up to four different points on the vessel.

Function

The MGC is a strap-down based gyro compass including three Ring Laser Gyros (RLG) and three linear accelerometers. The system can operate in Attitude and Heading Reference System (AHRS) mode and Inertial Navigation mode. In the AHRS mode input of speed and latitude data (VBW/VTG and GGA/GLL) is required. External time input is also required (ZDA). In this mode the system will output heading, roll, pitch and heave. In the Inertial Navigation mode input of latitude, longitude, height and time (GGA and ZDA) and PPS from a GNSS receiver is required. In this mode the product will output heading, roll, pitch, heave and position. In free inertial mode (GNSS denied environment) the position drift is less than 20 meters DRMS for a period of 15 minutes (proven performance).

The system is delivered with configuration software. In this software the user selects output formats on the different communication lines in addition to other configuration purposes.

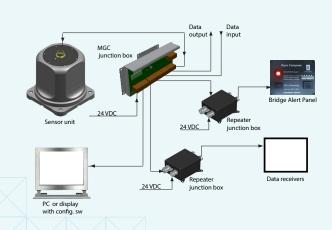
Digital I/O protocols

MGC data is available through both Ethernet interface and serial lines enabling easy distribution of data to multiple users on board the vessel. Output protocols for commonly used equipment are available on five individually configurable serial lines and five Ethernet/UDP ports.

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This is to certify:			
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vith type designation(s) HGC COMPASS R-series			
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FEATURES

- 0.008° roll and pitch accuracy
- 0.008° heading accuracy GNSS aided
- No rotational or mechanical wear-out parts
- Outputs on RS-422 and Ethernet
- High output data rate (200 Hz).
- Small size, light weight and low power consumption
- IMO type approved
- Each MGC delivered with Calibration Certificate
- Selectable communication protocols in the configuration software



TECHNICAL SPECIFICATIONS

MGC R5 COMPASS

HEADING OUTPUT

Accuracy heading (speed aided) Accuracy heading (GNSS aided) Heading settling time to data available Heading settling time to full accuracy (typical) Resolution

ROLL AND PITCH OUTPUT

Output range Resolution Angular rate noise Accuracy (unaided)

HEAVE OUTPUT

Output range Periods (real-time) Periods (delayed) Heave accuracy (real-time)

Heave accuracy (delayed)

POSITION OUTPUT

Free inertial (GNSS aided) Free inertial drift (GNSS aided)

ELECTRICAL

Voltage input

Power consumption

COM1 through COM8

Baud rate Ethernet UDP/IP (5 ports) Output data rate (max) Timing accuary

0.02° RMS sec.lat 0.008° RMS sec.lat

<5 min from start-up

8 min from start-up 0.001°

±90° 0.001° 0.0003°/s RMS 0.008° RMS

±50 m, adjustable 0 to 25 s 0 to 50 s 5 cm or 5% whichever is highest 2 cm or 2% whichever is highest

0.25 nm/hr DRMS <20 m/15 minutes DRMS

24 V DC (nominal (18 to 32 V DC) Max. 13 W (typical 11 W) Serial port, bidirectional RS-422/IEC 61162-1 and IEC 61162-2 Max. 115200 Baud 10/100 Mbps 200 Hz 1 ms

INPUT FORMATS NMEA sentences

OUTPUT FORMATS NMEA sentences

OTHER DATA

MTBF (service history based) MTBF (computed)

WEIGHTS AND DIMENSIONS

Sensor unit MGC junction box Repeater junction box

ENVIRONMENTAL SPECIFICATIONS

Operating temperature range Sensor unit MGC junction box -15 to +55°C Repeater junction box

Storage temperature range

-25 to +70°C Sensor unit -25 to +70°C MGC junction box Repeater junction box

Enclosure protection

Sensor unit Repeater junction box GGA, GLL, VBW, VTG, ZDA

GGA, GLL, VTG, HCR, HDT, ROT. THS

100 000 h 50 000 h

188.9 x 189.5 x 189.5 mm, 8 kg 67 x 308 x 155 mm, 1.5 kg 57.1 x 115 x 104 mm, 0.5 kg

-15 to +55°C

-15 to +55°C

-25 to +70°C

TP66

IP54

Specifications subject to change without any further notice.

KONGSBERG SEATEX

Switchboard: +47 73 54 55 00 Global support 24/7: +47 33 03 24 07 E-mail sales: km.seatex.sales@km.kongsberg.com E-mail support: km.support.seatex@kongsberg.com

kongsberg.com/maritime

