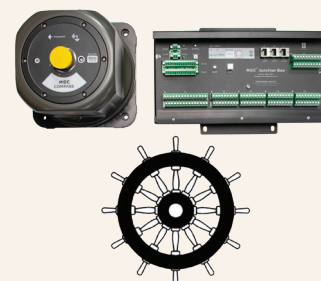


MGC[®] COMPASS R-series



KONGSBERG



0575

Type approved compass for ships and high-speed crafts

The MGC[®] 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.

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.

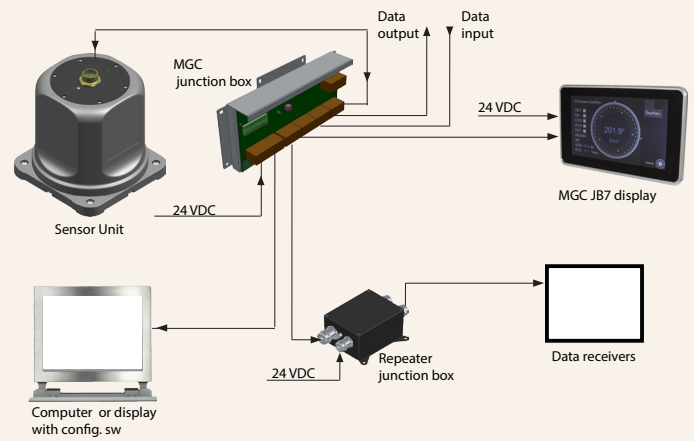
Digital I/O protocols

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 eight individually configurable serial lines and three Ethernet/UDP LANs.

Product range	Heading (speed aided) Sec. lat. RMS	Heading (GNSS aided) Sec. lat. RMS	Heading settling time to full accuracy	Roll/pitch Dynamic 1-sigma	Roll/pitch Static RMS	Heave RMS	Heave period Seconds	Position Free inertial (GNSS aided)
MGC COMPASS R1	0.25°	0.2°	30 minutes	0.008°	0.05°	10 cm or 10 %	18	N/A
MGC COMPASS R2	0.15°	0.1°	17 minutes	0.005°	0.02°	5 cm or 5 %	25	5 nm/h
MGC COMPASS R3	0.08°	0.04°	17 minutes	0.004°	0.01°	5 cm or 5 %	25	2 nm/h
MGC COMPASS R4	0.04°	0.02°	8 minutes	0.002°	0.008°	5 cm or 5 %	25	0.4 nm/h
MGC COMPASS R5	0.02°	0.008°	8 minutes	0.002°	0.008°	5 cm or 5 %	25	0.25 nm/h DRMS

FEATURES

- 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 is delivered with Calibration Certificate
- Selectable communication protocols in the configuration software



Technical specifications

MGC® COMPASS R-series

Electrical

Voltage input	24 VDC (nominal (18 - 32 VDC)
Power consumption	13 W max. (typical 11 W)
COM1 through COM8	Serial port, bidirectional
	RS-422/IEC 61162-1 and IEC 61162-2
Baud rate	115200 Baud, max.
Analog channels	# 3, ±10 V
Ethernet UDP/IP	3 × 10/100 Mbps
Output data rate	200 Hz max.
Timing accuracy	1 ms

Input formats

NMEA sentences	GGA, GLL, VBW, VTG, ZDA
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Output formats

NMEA sentences	GGA, GLL, VTG, HCR, HDT, ROT, THS
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Other data

MTBF (service history based)	100 000 h
MTBF (computed)	50 000 h

Weights and dimensions

Sensor Unit	8 kg, 188.9 × 189.5 × 189.5 mm
MGC Junction Box	1.5 kg, 67 × 308 × 155 mm
Repeater Junction Box	0.5 kg, 57.1 × 115 × 104 mm

Environmental specifications

Operating temperature range

Sensor Unit	-15 - +55 °C
MGC Junction Box	-15 - +55 °C
Repeater Junction Box	-15 - +55 °C

Storage temperature range

Sensor Unit	-25 - +70 °C
MGC Junction Box	-25 - +70 °C
Repeater Junction Box	-25 - +70 °C

Enclosure protection

Sensor Unit	IP66
Repeater Junction Box	IP54



Specifications subject to change without any further notice.