Gyrocompass

AlphaMidiCourse Mk2

ALPHATRON Marine

- BAM compliant
- Automatic speed error correction
- Short initial settling time (within 3 hours)
- High reliability

Category
>500GT

Deepsea

Workboats

Fishing

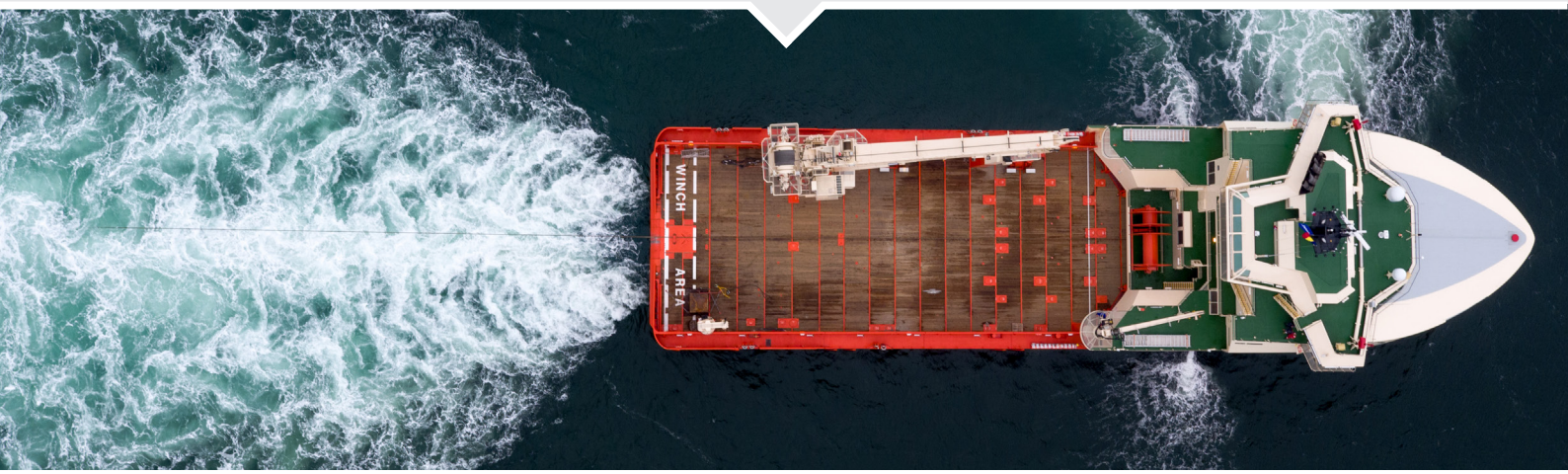
Yachting

alphatronmarine.com

Features

The AlphaMidiCourse Mk2 is a reliable, type-approved gyrocompass for merchant vessels. There is a standard and a HSC version available. This gyrocompass is easy to install and requires little maintenance since there's no fluid inside. Alphatron Marine can also supply all peripheral equipment such as repeaters and converters to ensure compatibility with existing installations.

- Small size and versatility
- Automatic speed error correction
- Pendulum function for ferries
- Short initial settling time (within 3 hours)
- High reliability
- High static and dynamic accuracy
- Easy installation and adjustment
- No compass fluid or extra cooling required
- No periodic compensation of azimuth drift
- IMO compliant



The AlphaMidiCourse Mk2 provides heading data against the geographical meridian (latitude up to 70°) at vessel speeds up to 50 knots in standard version and 70 knots in HSC version. Roll and pitch angles up to maximum ± 45°.

Master Compass

The AlphaMidiCourse Mk2 is a self-contained precision navigation instrument capable of supplying heading reference information to a wide range of equipment located on board the vessel. To support this wide range of equipment, the AlphaMidiCourse can supply heading information through multiple channels using common transmission formats. On a typical vessel heading information is used by

- Autopilot
- Radars
- Electronic chart systems
- Satellite communication systems
- Satellite television
- AIS

Control unit |

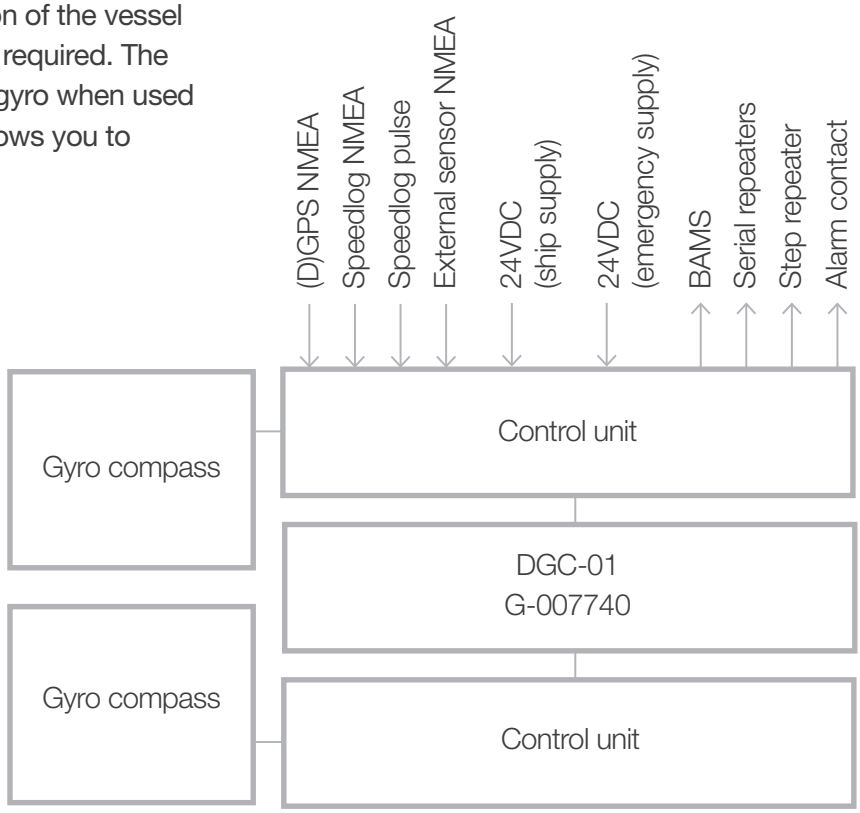
The control unit, supplied with the AlphaMidiCourse MK2, provides all the functions and indicators necessary to power up, control and operate the AlphaMidiCourse MK2. The control unit displays all information on an integrated display which can show the following information:

- Heading in degrees from 0.0 to 359.9
- Heading source
- Latitude from 60S to 60N
- Latitude from 70S to 70N HSC version
- Speed in knots from 0 to 50
- Speed in knots from 0 to 70 HSC version
- Speed source
- Steering source
- Rate of Turn
- Alarms and status information
- Presence of power and readiness of gyro compass for operation.

The control unit is used for connecting it's master compass but also to connect ships' cabling, like power and data cable to aggregate all relevant data for input and output.

DGC change over unit |

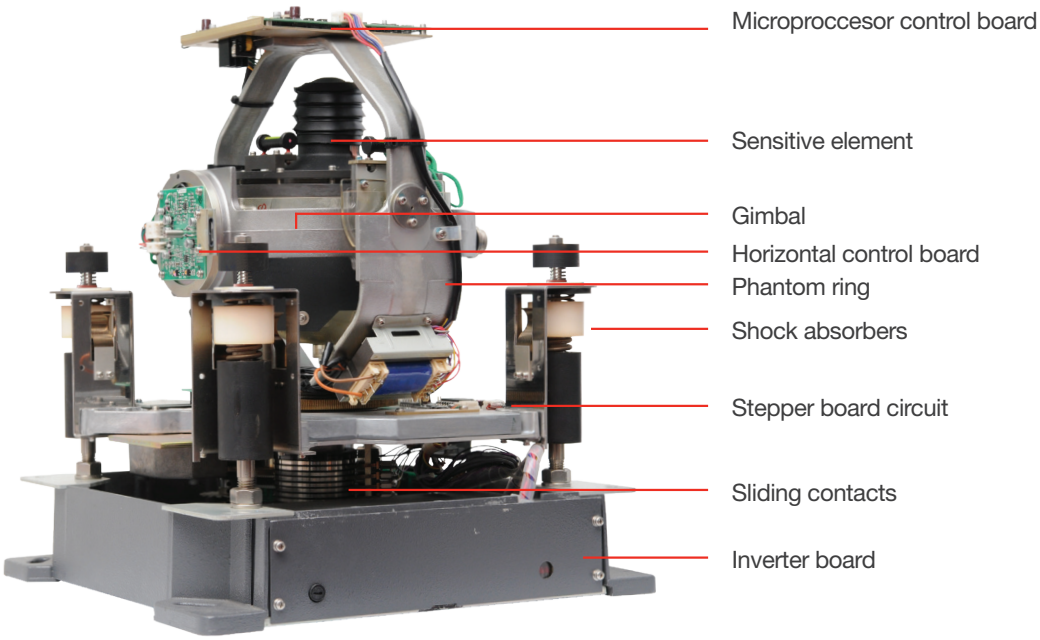
Depending on the class and the notation of the vessel more than one gyro compass might be required. The AlphaMidiCourse can be used as dual gyro when used with a manual switch. The DGC unit allows you to connect multiple control units.



Advanced gyro element

The high precision dynamically tuned gyroscope and gimbal suspension is derived from aerospace technology and is now available to the marine industry.

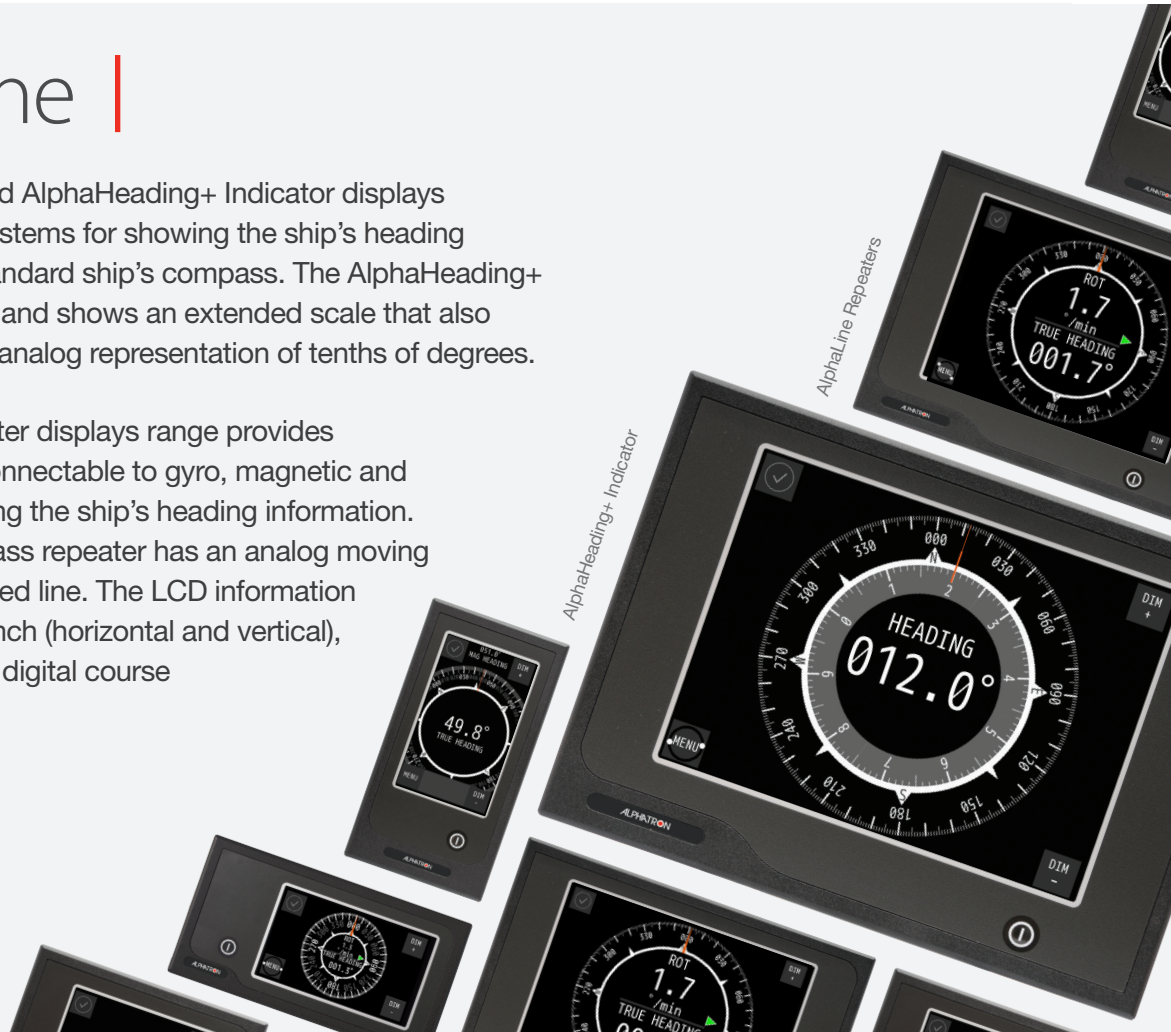
- Unique technology without annual servicing of gyrosphere
- Very low RPM reduces wear, increasing life time
- No oil change
- Quick installation



AlphaLine

The AlphaHeading and AlphaHeading+ Indicator displays are Type Approved systems for showing the ship's heading information from a standard ship's compass. The AlphaHeading+ is a steering indicator and shows an extended scale that also provides an accurate analog representation of tenths of degrees.

The AlphaLine Repeater displays range provides a heading repeater connectable to gyro, magnetic and GPS compass showing the ship's heading information. This advanced compass repeater has an analog moving compass card and fixed line. The LCD information screen displays in 5-inch (horizontal and vertical), 6.5-inch and 8.4-inch digital course trend, alarm and rate of turn.



Installation

Unlike a magnetic compass, it can output without influence of the steel hull, the heading signal to repeaters around the vessel at critical positions. The gyrocompass is typically located below decks as close as possible to the center of roll, pitch and yaw of the ship, minimizing errors caused by the ship's motion. Repeaters are located at convenient places throughout the ship, such as at the helm for steering, in after steering for emergency steering, and other places. Bearing repeaters installed on the bridge wing used for taking bearings will likely be equipped with removable bearing and azimuth circles, and telescopic alidades, which allow one to sight a distant object and see its exact gyrocompass bearing.

BAMS

The AlphaMidiCourse Mk2 is fully compliance with IMO Resolution MSC.302(87) and its Performance Standards for Bridge Alert Management system (BAM). It harmonizes the priority, classification, handling, distribution and presentation of alerts, meaning that the bridge team can devote its full attention to the safe operation of the ship and immediately identify any alert situation requiring action to maintain the safe operation of the ship.

Pendulum function

The AlphaMidiCourse Mk2 includes a pendulum function that is essential aboard of double-ended ferries with interchangeable bow and stern. The pendulum function enables the heading to be changed by 180 degrees.

Accessoires

A range of accessoires are available for the AlphaMidiCourse Mk2.

G-002327

Repeater compass

The repeater compass receives and displays the ship's heading signal transmitted from the master compass.

The case is made of Glass fiber Reinforced Plastic (GRP), thus corrosion free and has a waterproof construction, suitable for open deck installation.

Mounting bracket

The mounting bracket for the repeater compass has a gimbal ring to support the repeater compass horizontally when the ship is rolling and pitching.

G-002328

Azimuth circle

Astronomical observations can be made with the mirror and the slit located on the azimuth circle, and measurements of objects with the lubber's line and the slit.

G-002330

Repeater stand

The repeater stand (height of 1330 mm) can be used when a repeater compass is installed on the deck.

G-002329

G-002572

Data distribution

The NMEA distribution module is used when IEC61162 signals from a sensor must be distributed to multiple listeners. The system provides galvanic isolation between talker and listeners and between listeners to avoid problems when a listener is influencing the signal. Multiple NMEA modules can be daisy chained with each other, which allows you to create as many outputs as you want.

Tech Specs

Master Compass

G-007517 (standard) / G-009186 (HSC) Weight 23 kg (50.7 lbs)

0 to 50 knots / 70 knots HSC version
Follow up speed >75°/sec
Settling time within 3 hours
Settle point accuracy <±0,3°
Dynamic accuracy <±0,5°/sec
Settle point repeatability <±0,2°/sec
Service life 35.000 hours

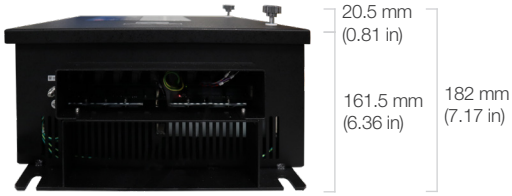
Control unit

Weight 7 kg (15.43 lbs)

1x step; 24V DC, 6 steps/°
4x serial data; RS422/485
Serial data transfer rate;
IEC61162-1/2 (4800/38400 bps)
24V backup supply
Failure/alarm; NO relay/NC relay
Power 24V DC, 70W

DGC-01 (Double Gyro Compass change over unit)

G-007740 Weight 14.58 kg (32.14 lbs)



Inputs

GPS, BAMS, Speed LOG (optional)
3 connections, 3x RS422
Serial data transfer rate:
IEC61162-1 (4800 bps) or IEC61162-2 (38400 bps)

Outputs

18 connections, RS422
Serial data transfer rate:
IEC61162-1 (4800 bps) or
IEC61162-2 (38400 bps)
6 connections; 24V DC – 6 step/°
Rate of Turn: 3x analogue 30,120, 300 °/min
Failure / Alarm; NO relay/NC relay/ IEC61162-1:2016 (4800 bps)
$--HEALC, $--HEHBT, $--HEALF

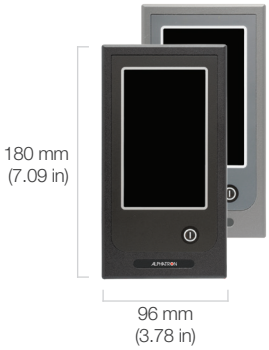
Power supply

24V DC, 250VA (Main) / 24V DC, 75VA (Battery)

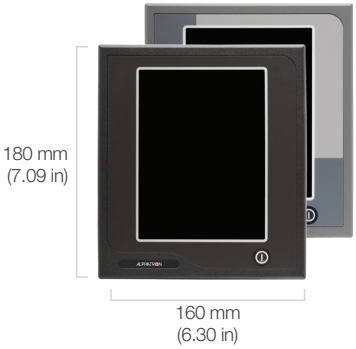
Tech Specs

AlphaLine displays (option)

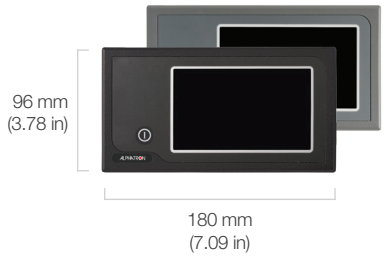
MFS-V
5-inch (Vertical)



MFM
6.5-inch



MFL
8.4-inch



MFS-H
5-inch (Horizontal)

4 display sizes available
Alarm signal loss (audible/visual)
Indication; heading, magnetic or true
Rate of Turn (ROT)
IEC61162-1 serial port interface
Input; DDC, ROT, HDT (default), HDG, HDM, THS

In the box

Model

- AlphaMidiCourse Mk2 gyro compass (Master compass and control box) 24VDC version G-007517
- AlphaMidiCourse HCS Mk2 gyro compass (Master compass and control box) 24VDC version G-009186

Accessoires

- AlphaMidiCourse MK2 Dual Gyro Changeover DGC-01 G-007740
- Bearing repeater compass, serial data G-002327
- BB repeater holder, bearing bracket, serial data G-002328
- BH repeater stand G-002329
- Azimuth circle G-002330
- NMEA distribution module Mk2 G-002572

AlphaLine

• Alphaline Repeater Display MFS-H	● G-002741	● G-002742
• Alphaline Repeater Display MFS-V	● G-002743	● G-002744
• Alphaline Repeater Display MFM	● G-002749	● G-002750
• Alphaline Repeater Display MFL	● G-002751	● G-002752
• AlphaHeading Indicator MFM	● G-004531	● G-004532
• AlphaHeading Indicator MFL	● G-004533	● G-004534
• AlphaHeading+ Indicator MFL	● G-004535	● G-004536
• AlphaLine MFM Repeater desktop bracket	G-002714	

Specifications

General	
Range of speed	0 - 50 knots / 0 - 70 knots HSC version
Follow-up speed	>75°/sec
Settling time	within 3 hours (if startup heading is within +/-5° of actual heading)
Estimated service life	35000h
Operating temperature range	-10°C to +50°C
Storage temperature	-25°C to +70°C
Display	Digital with 7 digits
Accuracy	
Settle point error	±0.3º sec ϕ
Settle point repeatability	±0,2° sec ϕ
Static accuracy	±0.3º sec ϕ
Dynamic accuracy	±0,5° sec ϕ
Outputs	
Step	1 connection; 24V DC – 6 step/°
Serial data	4 connections, 4x RS422/ RS485
Serial data transfer rate	IEC61162-1:2016 (4800 bps) or IEC61162-2:2016 (38400 bps)
Alarm output	NO relay/NC relay IEC61162-1:2016 (4800 bps)
Failure	NO relay/NC relay
BAM	IEC 62923-1/2 / IEC61162-1:2016
Inputs	
Latitude	NMEA 0183 via RS422 from GPS
External heading	NMEA 0183 via RS422 from heading sources
Speed	Pulse at 200/ 400 per nm from log (dry contact); NMEA0183 via RS422 from log
BAM	IEC62923-1/2 / 61162-1:2016
Electical	
Power supply	24V DC, 70W (mains and back-up power)
Power consumption: Start	within 140VA
Power consumption: Ordinary	within 70VA
Approval standards	
BAM	IEC 62923-1 / 62923-2

The Gyro compass AlphaMidiCourse Mk2 complies with requirements of (EU) 2018/773:

Item No. MED/4.3., SOLAS 74 as amended:

- Regulations V/18, Approval, surveys and performance standards of navigational systems and equipment and voyage data recorder;
- Regulations V/19, Carriage requirements for shipborne navigational systems and equipment;
- IMO Resolution A.424 (XI), Performance Standards for Gyro compasses;
- IMO Res. A.694(17), General requirements for shipborne radio equipment forming part of the GMDSS and for electronic navigational aids;
- IMO Resolution A.821 (19), Performance Standards for Gyro compasses for High-Speed Craft *
- IMO Res. A.1021(26); Code on alerts and indicators, 2009;
- IMO Res. MSC.191(79), Performance standards for the presentation of navigation-related information on shipborne navigational displays;
- IMO Res. MSC.302(87), Adoption of performance standards for bridge alert management;
- ISO Standard 8728 (2014): Ships and marine technology – Marine gyro-compasses;
- ISO Standard 16328:2014: Ships and marine technology – Gyro-compasses for high-speed craft*
- IEC Standard 62288 (2014): Maritime navigation and radiocommunication equipment and systems – Presentation of navigation-related information on shipborne navigational displays – General requirements, methods of testing and required test results;
- IEC Standard 60945 (2002) incl./Corr. 1 (2008): Maritime navigation and radio communication equipment and systems - General requirements - Methods of testing and required test results;
- IEC 61162 series:
- IEC 61162-1 (2016)
- IEC 61162-2 ed1.0 (1998-09)
- IEC-62923-1:2018: Maritime navigation and radiocommunication equipment and systems - Bridge alert management - Part 1: Operational and performance requirements, methods of testing and required test results
- IEC-62923-2:2018: Maritime navigation and radiocommunication equipment and systems - Bridge alert management - Part 2: Alert and cluster identifiers and other additional features
- Marine Equipment Directive 2014/90/EU or Wheelmark approved.

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