

Meridian Gyrocompasses

Marine Navigation Systems

Highly accurate performance with low cost of ownership

The Meridian gyrocompass product range is suitable for the ever-changing needs of a modern integrated bridge system. This includes highly accurate performance with low cost of ownership and system flexibility. Due to the Meridian's small size and fast settle time of less than 45 minutes, there are no limits to the type of vessel for which it is suitable.

The Meridian gyrocompass can be installed as a stand-alone unit or, together with any of the TSS range of repeaters and ancillaries, it becomes a single, dual or triple gyro system. The Meridian can also be used as a retrofit unit.

For simple installation the Meridian offers a large array of digital and analogue outputs plus easy set-up and self-test modes that are activated via the control unit. The versatility and flexibility of the Meridian can be clearly



demonstrated with the remote control unit option which gives freedom to install the main unit in the most convenient location whilst installing the remote control unit where it can be seen and regularly used.

Unlike other marine navigation gyrocompasses available, the Meridian has a maintenance-free dry element with a meantime between failure of more than 30,000 hours: and post-installation there are no scheduled annual maintenance and servicing costs.

PRODUCT FEATURES

- Type approved to Marine Equipment Directive
- Economic one-box solution
- Fast initial settle time
- Small, lightweight and versatile
- High dynamic heading accuracy
- Versatile range of repeaters and ancillaries available
- Subsea variants also available



Meridian Standard

The heart of the Meridian gyrocompass is the element, which is a dynamically tuned gyroscope (DTG). The DTG is a high precision technology which, due to its size, accuracy, reliability and shock resistance, is used in many different applications.

The guaranteed accuracy of the Meridian gyrocompass is obtained through specialised high quality engineering. This gives exceedingly stable heading and means that the gyro will follow a high turn rate of up to 200° per second.



Meridian Surveyor

The Meridian Surveyor boasts a wide range of interfaces to enable use on any marine vessel. The unit utilises a DTG gyro element which provides exceptional performance with an accuracy unmatched by even the latest fibre optic designs.



Remote Control Unit Option



For simple installation the Meridian offers a large array of digital and analogue outputs plus easy to use digital set-up and self-test modes that are activated via the control unit.

The versatility and flexibility of the Meridian gyrocompass can be clearly demonstrated with the remote control unit option, which is supplied with the gyrocompass system. This gives freedom to install the main unit in the most convenient location whilst installing the remote control unit where it can be seen and regularly used.

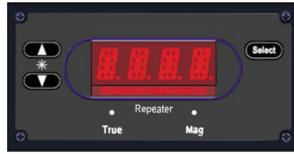
Meridian Gyrocompass Repeaters and Ancillaries

Bearing Repeater



Power Supply Unit 18 – 36Vdc (15W)
Signal Inputs 1 x IEC 61162 (NMEA 0183)
 1 x step (5-70Vdc)
Signal Outputs 1 x IEC 61162 (NMEA 0183)
Environmental and EMC Meets or exceeds IEC 60945 weather exposed equipment
Physical Dimensions: 287mm x 388mm x 388mm

Digital Repeater



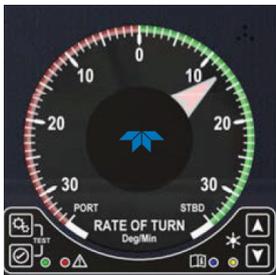
Power Supply Unit 18 – 36Vdc (10W)
Signal Inputs 1 x IEC 61162 (NMEA 0183) Heading
 1 x IEC 61162 (NMEA 0183) Magnetic correction
 1 x step (5-70Vdc)
Signal Outputs 1 x IEC 61162 (NMEA 0183)
Environmental and EMC Meets or exceeds IEC 60945
Physical Dimensions: 96mm x 192mm x 145mm

Data Repeater



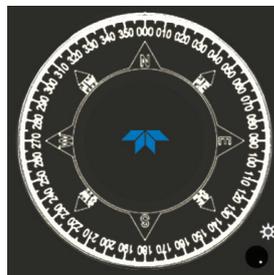
Power Supply Unit 18 – 36Vdc (8W)
Signal Inputs 1 x IEC 61162 (NMEA 0183)
 1 x step (5-70Vdc)
Signal Outputs 1 x IEC 61162 (NMEA 0183)
Environmental and EMC Meets or exceeds IEC 60945
Physical Dimensions: 96mm x 192mm x 145mm

Rate of Turn Indicator



Power Supply 18 – 32Vdc (6W)
Signal Inputs 1 x IEC 61162 (NMEA 0183)
Outputs External Alarm Loop (optional)
Environmental and EMC Meets or exceeds IEC 60945
Physical Dimensions: 200mm x 87mm x 166mm (Bulkhead mounted)

Dial Repeater



Power Supply 18 – 32Vdc (4 W)
Signal Inputs 1 x IEC 61162 (NMEA 0183)
Environmental and EMC Meets or exceeds IEC 60945
Physical Also available in Weatherproof version
 Dimensions: 144mm x 144mm x 100mm including connector
 Weight: 1.25 Kg
 Connector: 15-way subminiature plug (2.5m cable supplied)
 Dial marking: 1°, 5°, 10°, 45°

Dial Repeater (Twin Speed)



Power Supply 18 – 32Vdc (6W)
Signal Inputs 1 x IEC 61162 (NMEA 0183)
Environmental and EMC Meets or exceeds IEC 60945
Physical Dimensions: 235mm x 78mm x 220mm
 Mounting: Bulkhead or Panel mounted
 Connections: 1 x data cable to 15-pin D-dub plug

Step Retransmission Unit



Power Supply 18 – 36Vdc (100W)
Signal Inputs 1 x step (5Vdc) 6 steps per degree
Signal Outputs 4 x step (24V, 35V, 50V or 70V)
 1 x step (5Vdc)
 1 x alarm relay (voltage free contacts)
Environmental and EMC Meets or exceeds IEC 60945
Physical Dimensions: 400mm x 300mm x 120mm

Heading Repeater



Power Supply 18 – 36Vdc (15W)
Signal Inputs 2 x IEC 61162 (NMEA 0183)
 1 x Step (5-70Vdc)
 1 x Synchro (option)
Signal Outputs 1 x IEC 61162 (NMEA 0183)
Environmental and EMC Meets or exceeds IEC 60945
Physical Dimensions: 144mm x 228mm x 130mm

Data Distribution Unit



Power Supply 18 – 32Vdc (main / standby supplies)
Signal Inputs 2 x IEC 61162 (NMEA 0183)
Signal Outputs 9 x IEC 61162 (NMEA 0183)
Environmental and EMC Meets or exceeds IEC 60945
Physical Dimensions: 254mm x 254mm x 70mm
 Mounting: M6 Fixings on 220mm sq' centres
 Connectors: Multicore cable through M20 watertight gland to internal screw terminals

GPS

SMART GNSS ANTENNA

Power Supply Voltage	9 – 36Vd.c.
Power Consumption	< 3W
Dimensions	90mm (H) x 116mm (W) x 116mm (D)
Mounting	Masthead via supplied adaptor and brackets
Channel Configuration	14 channels, GPS L1, GLONASS L1, SBAS
Horizontal Position Accuracy	1.5m (single point L1), 0.6m (SBAS)
Time Accuracy	20ns RMS
Velocity Accuracy	0.50m/s RMS
Velocity Range	515m/s
Measurement Precision	5cm (L1 C/C code)

Data Rate	1Hz
Time to First Fix (typical)	<50s (cold start), <35s (hot start)
Default TSS configuration	NMEA VTG, GGA, ZDA, 4800 baud, 1Hz



Uninterruptible Power Supply



Input Voltage	85V to 264V A.C.
Input Frequency	47-63Hz
Output Voltage	24V DC
Output Power	250W (maximum)
Output Support Time	240 min. at 50W, 30min. At 250W
Alarm Signals	Voltage free relay contacts: Input fail, charge fail and low battery
Dimensions	400m (H) x 400m (W) x 200m (D)
Weight	32kg

Bearing Repeater Ancillaries



Azimuth Circle (Prism and Vane Types) Pedestal Stand Bulkhead Bracket

Changeover System

SIGNAL INTERFACE UNIT

Power Supply Input	Primary Power Supply	18 – 36Vdc
	Standby Power Supply	18 – 36Vdc
Signal Inputs	Connected Heading Devices	4 x Gyrocompasses or THD
	Data Inputs From Each Heading Device	4 x IEC 61162-1 or IEC 61162-2 data channels (THS, HDT, HDG, HDH, ROT sentences) (Input 1 requires heading) 1 x Analogue rate of turn (±10Vdc) 1 x Alarm and acknowledge relay interface 1 x Status relay 1 x IEC 61162-1
Physical	Illumination	1 x IEC 61162-1
	Dimensions	400mm (H) x 540mm (W) x 120mm (D)
Power Outputs	Repeater Power	6 x 18 – 36Vdc
Signal Outputs	Serial Data (heading and rate of turn)	16 x IEC 61162-1 or IEC 61162-2 (depending on input)
	Rate of Turn	1 x Analogue (±10Vdc)
	Alarm and Status	1 x Alarm and acknowledge interface to central alarm panel (for active heading device), 2 x Alarm (for active heading device), 2 x Status (for active heading device), 4 x Alarm (1 x relay for each connected heading device), 4 x Status (1 x relay for each connected heading device), 2 x Auto changeover, 1 x Heading comparison alarm, 1 x Standby PSU alarm, 1 x General system alarm
	VDR	1 x IEC 61162-1
	Alarm	1 x IEC 61162-1 alarm and acknowledge interface to central alarm panel

CONTROL AND DISPLAY UNIT(S)

Power Supply Input	Redundant Power Supply	18 – 36Vdc (supplied from SIU)
Communications	Communication with SIU	1 x RS422
Display	Display Type	7" widescreen colour TFT touch panel
Physical	Dimensions	144mm (H) x 196 (W) x 100mm (D)
	Weight	1.6Kg



1 x Alarm and acknowledge interface to central alarm panel (for active heading device), 2 x Alarm (for active heading device), 2 x Status (for active heading device), 4 x Alarm (1 x relay for each connected heading device), 4 x Status (1 x relay for each connected heading device), 2 x Auto changeover, 1 x Heading comparison alarm, 1 x Standby PSU alarm, 1 x General system alarm

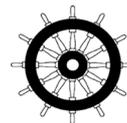
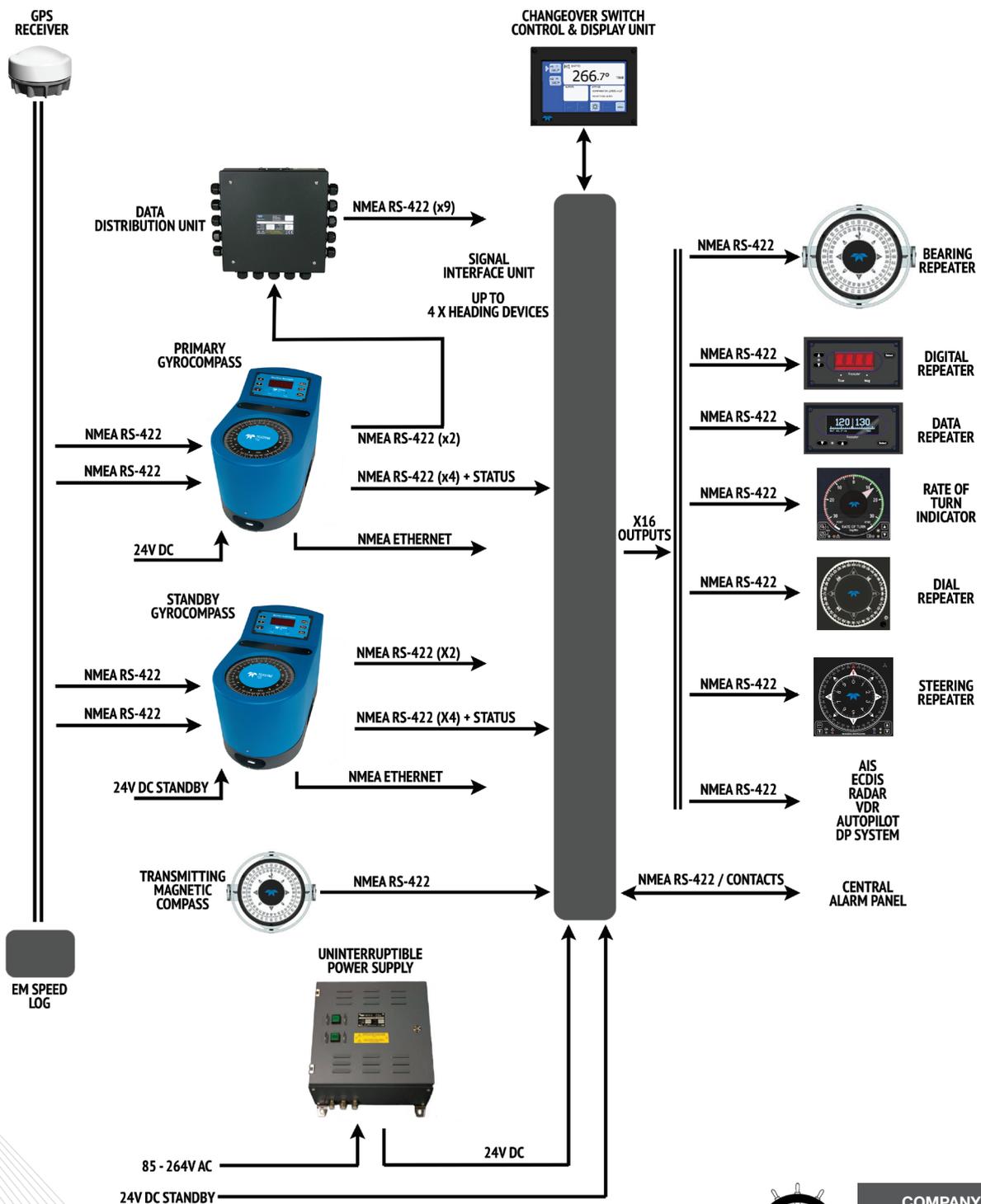
Meridian Gyrocompasses

Marine Navigation Systems

TECHNICAL SPECIFICATIONS

	Standard	Surveyor	
Display	360° compass card and digital display		
Performance	Settle point error	0.25° secant latitude	0.10° secant latitude
	Settle point repeatability	0.25° secant latitude	0.10° secant latitude
	Static accuracy	0.10° RMS secant latitude	0.05° RMS secant latitude
	Dynamic accuracy	0.30° secant latitude scorsby/ intercardinal motion	0.20° secant latitude scorsby/ intercardinal motion
	Follow-up speed	~200°/second	
	Settling time <45 minutes to within 0.70° (from initial 30°)		
Outputs	S' type	1 x Step by Step (5V TTL), 6 steps per degree	
	Synchro	1 x 26V 400Hz sector value 360° (1:1 ratio) 11.8V line to line	
	Serial data	11 x RS422, NMEA 0183 (IEC 61162-1/2)	5 x RS422, NMEA 0183 (IEC 61162-1/2)
		5 x RS232, NMEA 0183	
	1 x printer port, NMEA 0183	5 x 20mA current loop	
	1 x ROT (±10V)		
	Status/alarm	5V TTL power fail/gyro fail	
		5V TTL system ready	
		Potential free status and alarm relays	
Inputs	Latitude	Automatic - via RS232 or RS422, NMEA 0183 from GPS or manual	
	Speed	Automatic - via RS232 or RS422, NMEA 0183 from log or pulse/contact closure at 100, 200 or 400/NM from log or manual	
Compensation	Latitude	80°N to 80°S	
	Speed	0-90 knots	
Environmental	Ambient operating temperature	0°C - 45°C (-15°C - +55°C with reduced accuracy)	
	Storage temperature	-25°C - +80°C	
	Gimbal limits	±45° roll and pitch	
	Mean time between failures (MTBF)	>30,000 hours (calculated); >100,000 hours (in service data)	
	Shock (survival)	10g	
Operating Voltage	Input voltage	24Vdc (19-36Vdc)	
Power	Start-up	>3A at switch on / <1.5A in ready mode	
Dimensions	Size	344mm (h) x 267mm (w) x 440mm (d)	
	Weight	15.5 Kg	
Accessories	Included	Operator handbook, spare fuse	Operator manual, transit case, spare connector
	Optional	Remote control unit, various repeaters and accessories	
Standards	IMO A424(X1), IMO A821(19), IEC 60945, ISO 8728, ISO 16328, IEC 62288, Marine Equipment Directive 96/98/EC		
Warranty	24 months international warranty including parts and labour.		

The Full Meridian Gyrocompass System



COMPANY WITH
MANAGEMENT SYSTEMS
CERTIFIED BY DNV
= ISO 9001 =
= ISO 14001 =

CE Specifications subject to change without notice.
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