



Naval Navigation

Polaris FOG series

F I B E R - O P T I C G Y R O C O M P A S S

Including proprietary “Tightly Coupled” navigation algorithm it is specially designed for any type of surface vessel requesting high precision in attitude and position calculation.

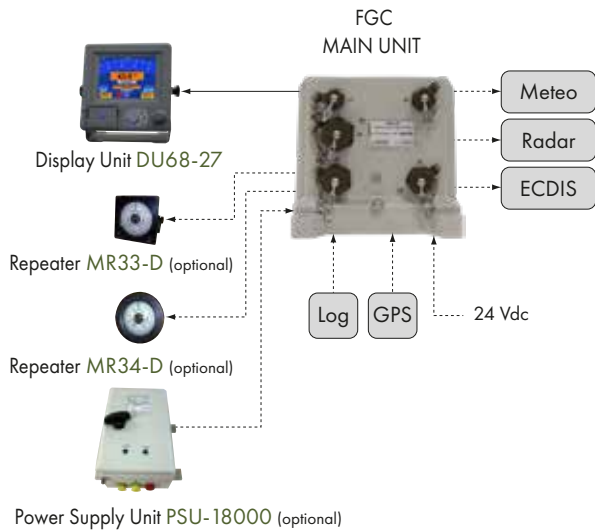
ITAR
FREE

INS / M

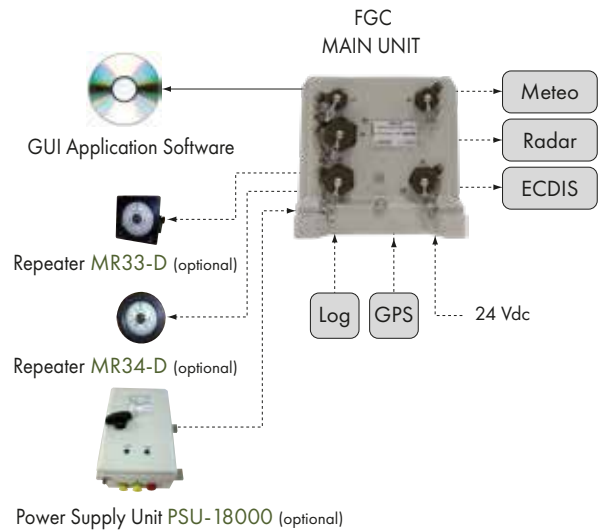
Inertial Navigation System / Maritime



Configuration A



Configuration B



FOG-50/INS/M

Ideal for:

Precise navigation for manned and unmanned surface and underwater vessels



SUPPLY COMPOSITION

- FGC-50 Main Unit
- DU68-27 Display Unit
- Connection cable (10 m)
- User and Installation manual
- Certificate of conformance

SUPPLY COMPOSITION

- FGC-50 Main Unit
- GUI Application Software
- User and Installation manual
- Certificate of conformance

FOG-100/INS/M

Ideal for:

High precision AHRS and INS applications



SUPPLY COMPOSITION

- FGC-100 Main Unit
- DU68-27 Display Unit
- Connection cable (10 m)
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SUPPLY COMPOSITION

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OPTIONS for FOG-.../INS/M series

- Self-aligning repeaters MR33-D or MR34-D
- Power Supply Unit PSU-18000
- 115/220 Vac, 50 Hz, 1 phase mains available through external unit
- Digital --> syncro available through external unit



Performances

Heading accuracy	$\leq 0.4^\circ$ Sec (Lat) RMS *	$\leq 0.2^\circ$ Sec (Lat) RMS *
Roll / Pitch accuracy	$\leq 0.1^\circ$ RMS	$\leq 0.05^\circ$ RMS
Heave	5 cm or 5% whichever is greater	
Roll / Pitch range	$\pm 60^\circ$	
Settling time	≤ 10 min (static) ≤ 30 min (full accuracy, all conditions)	
Position accuracy INS	≤ 3 m CEP (GPS signal available) ≤ 3 NM/12h CEP (with LOG aiding) ≤ 5 NM/12h CEP (full inertial)	≤ 3 m CEP (GPS signal available) ≤ 1.8 NM/12h CEP (with LOG aiding) ≤ 3.5 NM/12h CEP (full inertial)
Velocity accuracy INS	< 0.1 m/s (GPS) < 0.7 m/s (with SpeedLog)	< 0.1 m/s (GPS) < 0.5 m/s (with SpeedLog)

Certified according to IMO A.424 (XI), A.821 (19), A.526 (13), A.694 (17), ISO 8728 (1997), ISO 16328 (2001), ISO 20672 (2001), IEC 60945 (2008), IEC 62288 (2008), IEC 61162 series.

* Secant (Latitude) = $1/\cosine$ (Latitude)

Environmental conditions

Operating temperature	0 °C to + 55 °C
Storage temperature	-40°C ÷ 80°C
Damp heat	up to 95% at 40° C
Vibrations	Fully compliant with IEC-60945 (sweep 2 Hz - 13.2 Hz at ± 1 mm, 13.2 Hz - 100 Hz at 7 m/s ² and for 2 h on each resonance, otherwise 2 h at 30 Hz in all three axes)
Waterproof	in accordance with IP66 standard
Electromagnetic interference	Fully compliant with IEC-60945
MTBF	>150.000 hours

Signal Outputs

Number of outputs	7 serial lines
Data output AHRS	HDG, HDT, XDR, ROT, HEAVE
Data output INS	VTG, VNE, VHD, GGA, GLL, RMC, HDG, HDT, XDR, ROT, HEAVE
Output protocols (user defined)	IEC-61162, Binary
Baud rate (user defined)	from 4800 bps, up to 460800 bps
Output rate (user defined)	from 0.25 Hz up to 10 Hz

Signal Inputs

Number of inputs	3 serial lines
Input protocols	NMEA 0183, IEC-61162
Baud rate (user defined)	up to 460800 bps
Input rate (user defined)	up to 10 Hz
NMEA sentences	Compatible LOG: VBW, VHW

Power Supply Fiber-Optic Gyrocompass

Supply	24 Vdc -10% +30%
Power consumption	Typical 12 W (24 V, 0.5 A)
Protection	Against over-voltage, low voltage and inversion of polarity

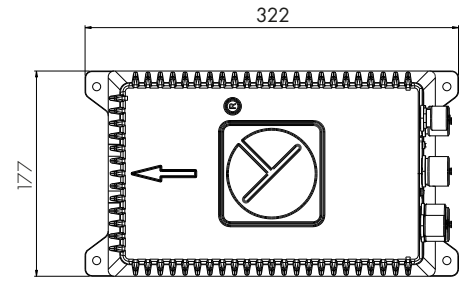
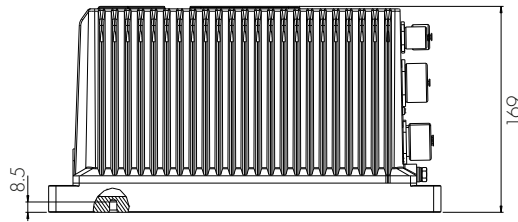
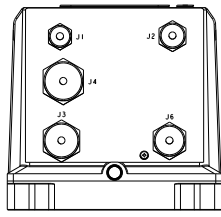
Weight and dimensions

Weight	6.8 Kg
Dimensions (W x D x H)	322 x 177 x 167.5 mm

OUTLINE DRAWING

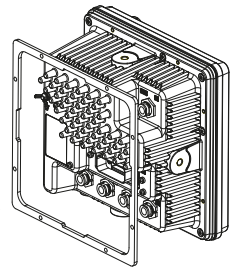
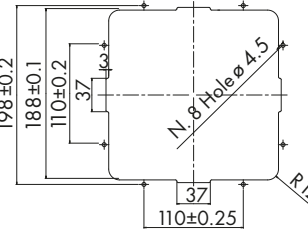
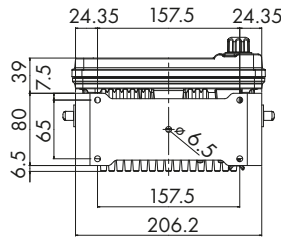
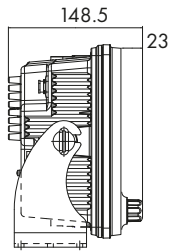
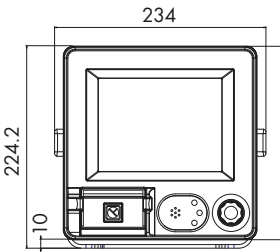
dimensions in mm.

FOG-100/INS/M



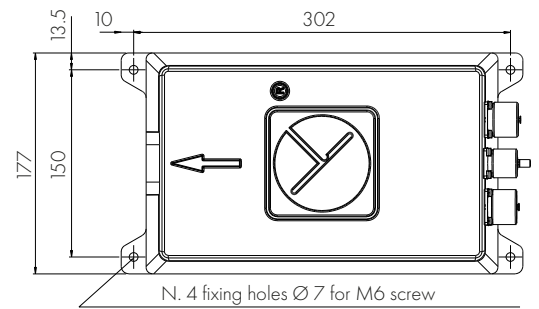
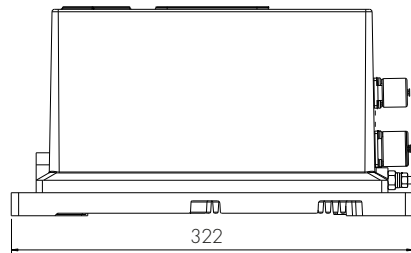
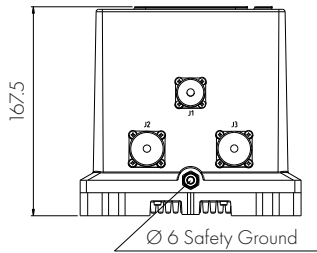
Weight: 6.8 Kg.

7" DISPLAY UNIT



Weight: 1.2 Kg

FOG-50/INS/M



Weight: 6.8 Kg.

ACCESSORY EQUIPMENT



PSU-100
Power Supply Unit



MR33-D
Self-aligning steering repeater for console mounting with 360° and 10° compass cards.



MR34-D
Self-aligning, watertight bearing repeater with 360° and 10° compass cards



MR45
Bulkhead repeater stand with gimbals for MR34-D.



MR43
Azimuth circle for MR34-D bearing repeater



NT920DHR
Digital repeater



MR-21
Repeater stand with gimbals for MR34-D.

This brochure should not be considered a contractual offer to sell. The specifications given herein may be changed by the manufacturer, GEM elettronica, without notice.

