



Model:
GP-170

GPS

Global Positioning System

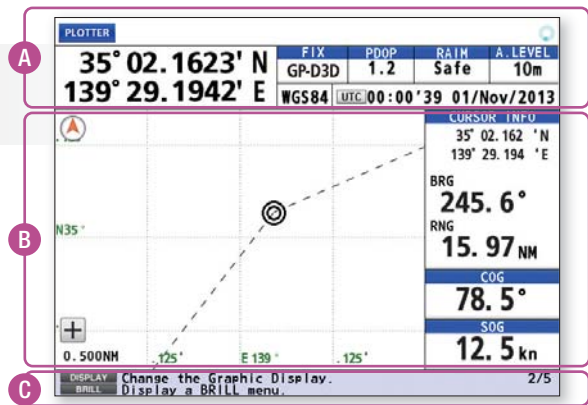
Highly stable and reliable going ships, large yachts,

- ▶ Ideal position sensor for Radar, AIS, ECDIS, autopilot, echo sounder and other navigation and communications equipment
- ▶ Full compliance with IMO MSC. 112 (73) and IEC 61108-1: performance and testing standards for GPS receiver
- ▶ Newly designed GPS chip and antenna unit deliver enhanced stability and precision in position fixing
Enhanced noise rejection capabilities are incorporated in the GPS receiver chip, delivering anti-jamming function as well as high level of tolerance towards multi-path mitigation. Also, the tolerance towards multi-path mitigation is enhanced when GPA-020S or GPA-021S antenna unit is used.
- ▶ Augmentation to enhance precision by utilizing SBAS (Satellite-Based Augmentation System) and DGPS (an optional DGPS radio beacon receiver as well as GPA-021S antenna unit required)
- ▶ Fully complies with IMO MSC. 114 (73) and IEC 61108-4: performance and testing standards for DGPS radio beacon receiver
- ▶ 10 Hz position update rate (position updated every 0.1 second) making steady own ship position tracking possible
- ▶ USB port available on the front panel
Routing data, menu setting, user setting can be exported/imported through USB jump drives

- ▶ Dual configuration for back-up purpose to ensure system availability
Information about waypoints, route and other data set by the operators on the one unit can be shared with the other unit for functional back-up
- ▶ BAM (Bridge Alert Management) ready
Meets the specific requirements for alerts and interconnection with Bridge Alert Management in IMO MSC.302 (87)
- ▶ LAN interface available for efficient network integration into a bridge system
The GP-170 is fully Light Weight Ethernet (IEC 61162-450) compatible
- ▶ 5.7" color LCD (with 640 x 480 pixels) for data presentation
- ▶ Simplified menu operation
The operator can navigate through the menu tree either by pressing the cursor pad or pressing the corresponding numbers on the numeric keypad to the menu items
- ▶ Enhanced route planning/management function available
 - Comprehensive range of voyage information to be incorporated in routes
 - Streamlined route creation through combination with an external PC
 - Sharing the active route information with ECDIS to supplement the ECDIS route monitoring capability

▶ Variety of display modes available: Plotter, Course, Highway, Data and Integrity

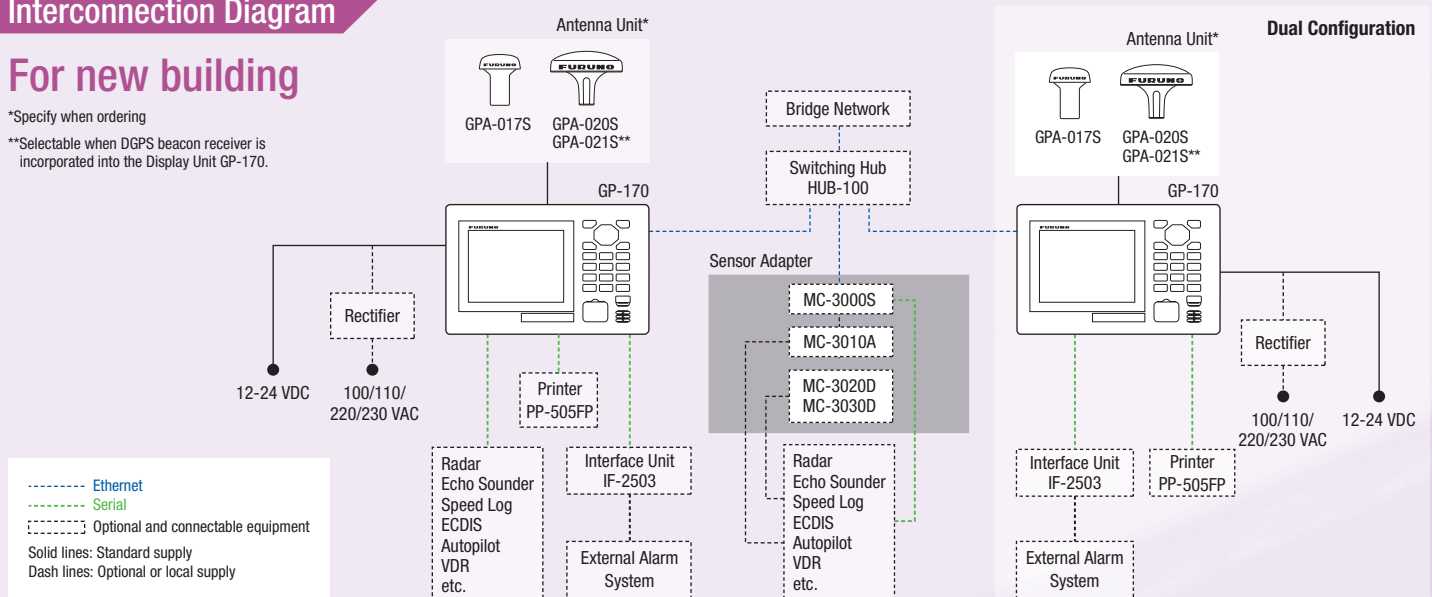
- A** Basic positioning data such as own ship position data, its data integrity, time, etc., are presented. Also, display mode as well as notice icons are displayed.
- B** The area shows the information specific to the display mode currently selected. Please refer to each of the display modes for details.
- C** Guide to currently available actions is displayed. Under alert situation, the information about the most imminent alert is displayed.



Interconnection Diagram

For new building

*Specify when ordering
**Selectable when DGPS beacon receiver is incorporated into the Display Unit GP-170.



position fixing system for ocean ferries and commercial vessels



Plotter



Information to be displayed:

- ▶ Simplified plotter display
- ▶ Cursor information
- ▶ Contextual menu
- ▶ SOG/COG data boxes

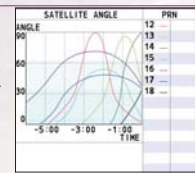
Integrity



Information to be displayed:

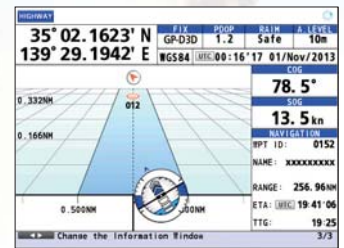
- ▶ Skyplot presentation of currently viewable satellites
- ▶ Status on GNSS/SBAS satellite signal reception; incl. signal strength/signal to noise ratio (in bar/line charts)
- ▶ Elevation angles of the available satellites
- ▶ Detailed information about the beacon stations

Line chart presentation



Line chart presentation shows the SNR and satellite angles for the past six hours.

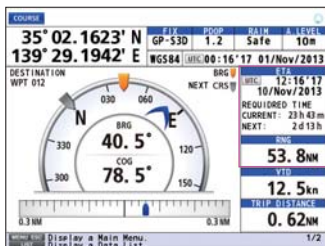
Highway



Information to be displayed:

- ▶ Course information
- ▶ SOG/COG data boxes
- ▶ User-preset cross track limit of deviation (XTE)
- ▶ Own ship gauge, showing the attitude of the ship, incl. pitch, roll and heave

Course



when autopilot is interfaced

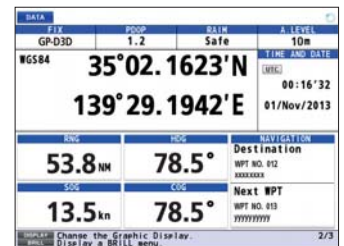


MODE	Auto
HOG-AP	123.4°
RUDER	P023.4°
COURSE	123.4°
COG	13.5 kn

Information to be displayed:

- ▶ Graphical presentation of course information, incl. current waypoint, bearing to the destination, COG, XTE
- ▶ Estimated Time of Arrival data box, incl. required time to reach the current/next waypoints and range to the waypoint*
*when autopilot is interfaced, the following information is shown in the data boxes: Autopilot status data box, incl. mode, ship's heading, rudder angle, and COG, and SOG data box.
- ▶ Velocity to destination
- ▶ Trip distance data

Data



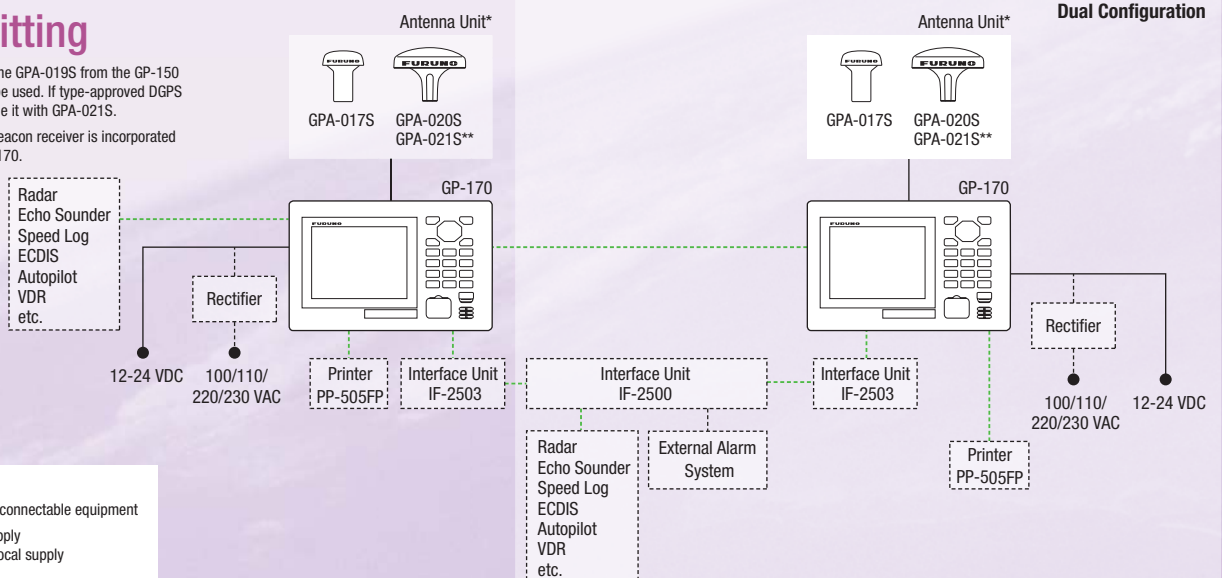
Information to be displayed:

- ▶ Navigation data boxes configurable according to the needs of the operators

For retrofitting

* Specify when ordering. The GPA-019S from the GP-150 previously installed can be used. If type-approved DGPS is required, please replace it with GPA-021S.

** Selectable when DGPS beacon receiver is incorporated into the Display Unit GP-170.



----- Serial
 [] Optional and connectable equipment
 Solid lines: Standard supply
 Dash lines: Optional or local supply

SPECIFICATIONS

Product Name

GPS NAVIGATOR

Receiver

Number of channels	GPS	12 ch
	SBAS	2 ch
RX frequency	GPS	1575.42 MHz±1.023 MHz
Tracking code	GPS	C/A
	SBAS	C/A
Accuracy*	GPS	not exceeding 10 m (2 drms, HDOP<4)
	DGPS	not exceeding 5 m (2 drms, HDOP<4)
	WAAS	not exceeding 3 m (2 drms, HDOP<4)
	MSAS	not exceeding 7 m (2 drms, HDOP<4)
Tracking velocity		1,000 kn
Position fixing time		90 sec when cold start
Position update rate		every 1 sec (standard); every 0.1 sec (max.)
Beacon receiver (optional internal kit)	Frequency range	283.5 to 325.0 kHz
	MSK rate	25, 50, 100, 150, 200 bps

* Dependent on ionospheric activity and multipath

Display Unit

Screen size	5.7" color LCD (116.16 mm x 87.12 mm)	
Resolution	640 (H) x 480 (V) pixels (VGA)	
Brightness	700 cd/m ²	
Display modes	Plotter, Highway, Course, Data, Integrity	
Plotter mode	Projection	Mercator
	Memory capacity	1,000 points for ship's track with comments up to 20 characters; 2,000 points for waypoints; 100 routes (containing up to 1,000 waypoints per 1 route)
Integrity mode	GNSS, Graph, Beacon	
Alert	Differential positioning interruption, HDOP overshoot, own ship positioning fail, own ship position lost, BEACON signal lost, BEACON malfunction, antenna short-circuit	
Notice	Arrival and anchor watch, XTE, Speed, Trip	
Integrity indication	Safe, Unsafe, Caution	

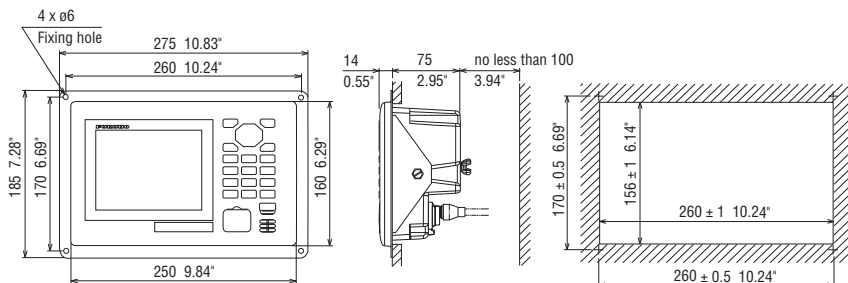
EQUIPMENT LIST

Standard	1. Display Unit	GP-170	1 unit
	2. Antenna Unit	GPA-017S	1 unit
		GPA-020S	1 unit
		GPA-021S*	1 unit
(specify when ordering)			
	* Selectable when a beacon receiver is incorporated into a display unit.		
	3. Antenna Cables	Selectable from 15 m/30 m/40 m/50 m	
	4. Installation Materials and Spare Parts		
Option	1. DGPS Receiver Kit	OP20-42	
	2. Antenna Cable	15 m/30 m/40 m/50 m	
	3. Network Cable	3 m with waterproof connector MOD-WPAS0001-030+	
	4. Flush Mount Kit	OP20-40/41	
	5. Antenna Base	NO. 13-QA330/NO. 13 QA310/NO. 13-RC5160	
	6. Interface Unit	IF-2503	
	7. Rectifier	PR-62, PR-240	

Display Unit

GP-170 (with an optional flush mount kit)

2.2 kg 4.9 lb (without DGPS beacon receiver)
2.4 kg 5.29 lb (with DGPS beacon receiver)

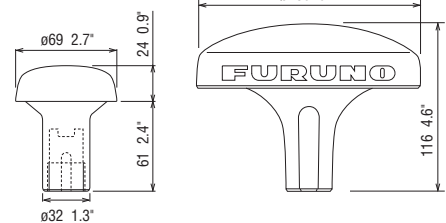


Antenna Unit

GPA-017S (for GPS)
0.12 kg 0.26 lb

GPA-020S (for GPS)
0.32 kg 0.71 lb

GPA-021S (for DGPS)
0.52 kg 0.15 lb



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SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

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