Model: GP-170
**Highly stable and reliable going ships, large yachts,**

- Full compliance with IMO Performance Standards and IEC Testing Standards
  - High performances for Radar, AIS, ECDIS, Autopilot, Eco Sounder, other Sensors for Navigation and Communication Equipment

### Interconnection Diagram

For new building

*Refer to the Antenna List.**

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

<table>
<thead>
<tr>
<th>Function</th>
<th>IMO Perf. Standard</th>
<th>IEC Test Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPS</td>
<td>MSC.113 (73)</td>
<td>ECD1108-1</td>
</tr>
<tr>
<td>GLONASS</td>
<td>MSC.113 (73)</td>
<td>ECD1108-2</td>
</tr>
<tr>
<td>DGNSS</td>
<td>MSC.114 (73)</td>
<td>ECD1108-3</td>
</tr>
<tr>
<td>MULTI (*)</td>
<td>MSC.115 (73)</td>
<td>---</td>
</tr>
<tr>
<td>Alert Management</td>
<td>MSC.302 (87)</td>
<td>ECD2923-1/2</td>
</tr>
</tbody>
</table>

- 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 high level of tolerance towards multi-path mitigation. Also, the tolerance towards multi-path mitigation is enhanced when the antenna unit is used.

- Augmentation to enhance precision by utilizing SBAS (Satellite-Based Augmentation System), DGNSS (Differential Global Navigation Satellite System) and SLAS (Sub-meter Level Augmentation Service)
- 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 settings 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 one unit can be shared with the other units 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 for efficient network integration into a bridge system
  - The GP-170 is fully Light Weight Ethernet (IEC 61162-450) compatible

### Variety of display modes available:

- Plotter, Course, Highway, Data and Integrity
  - Positioning Display, Icon Display Area.
  - Main Display Area. Please refer to each of the display modes for details.
  - Action Guidance and Alert Display Area (under alert situation, the information about the most imminent alert is displayed).

- 5.7" color LCD (with 640 x 480 pixels) for data visualization

- 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 (GPX format)
  - Sharing the active route information with ECDIS to supplement the ECDIS route monitoring capability

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**Function**

- **GPS**
- **GLONASS**
- **DGNSS**
- **MULTI (*)**
- **Alert Management**

**IMO Perf. Standard**

- MSC.112 (73)
- MSC.113 (73)
- MSC.114 (73)
- MSC.115 (73)
- MSC.302 (87)

**IEC Test Standard**

- ECD1108-1
- ECD1108-2
- ECD1108-3
- ---
- ECD2923-1/2
For retrofitting

* Refer to the Antenna List. 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 beacon receiver is incorporated into the Display Unit GP-170.
### SPECIFICATIONS

<table>
<thead>
<tr>
<th>Product Name</th>
<th>GNSS NAVIGATOR</th>
</tr>
</thead>
</table>

#### Receiver
- **Number of channels**
  - GPS: 12 ch
  - SBAS: 2 ch
  - QZSS: 4 ch

- **RX frequency**
  - SBAS/QZSS: 1575.42 MHz ±1.023 MHz
  - QZSS: 1602.5625 MHz

#### Display Unit
- **Screen size**
  - 0.55”
- **Brightness**
  - 700 cd/m²
- **Display modes**
  - Plotter, Highway, Course, Data, Integrity
- **Plotter mode**
  - Projection: Mercator

#### Antenna Unit
- **Antenna type**
  - GPA-017S (for GPS)
  - GPA-020S (for GPS)
  - GPA-021S (for DGPS)
  - GPA-023S (for DGLONASS)

#### Interface
- **Ports**
  - Serial ports: 2 ports (In/Out), 1 port (Out) (IEC 61162-1, port (In/Out))
  - Ethernet: 1 port IEC 61162-4; USB: 1 port (front panel)

#### Output
- **Serial**
  - AAM, ALC, ALF, ALR, APA, APB, ARC, BOD, BWI, BWW, DTM, GBS, GGA*, GLL, GNS, GRS, GSA, GST, GSV, HBT, MSK**, MSS***, POS, QSM, RMB, RMC, RIN, RVT, VDR, VTG, WCV
- **When internal beacon receiver is used**
  - **When internal beacon receiver is used**

#### Equipment List

<table>
<thead>
<tr>
<th>Item</th>
<th>Model</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display Unit</td>
<td>GP-170</td>
<td>1 unit</td>
</tr>
<tr>
<td>Antenna Unit</td>
<td>GPA-017S (for GPS)</td>
<td>0.12 kg 0.26 lb</td>
</tr>
<tr>
<td></td>
<td>GPA-020S (for GPS)</td>
<td>0.32 kg 0.71 lb</td>
</tr>
<tr>
<td></td>
<td>GPA-021S (for DGPS)</td>
<td>0.52 kg 1.15 lb</td>
</tr>
<tr>
<td></td>
<td>GPA-022S (for GLONASS)</td>
<td>0.67 kg 1.43 lb</td>
</tr>
<tr>
<td></td>
<td>GPA-022S (for GLONASS)</td>
<td>0.47 kg 1.04 lb</td>
</tr>
</tbody>
</table>

#### Environmental
- **Temperature**
  - Display Unit: -15°C to +55°C
  - Antenna Unit: -25°C to +70°C
- **Relative humidity**
  - 95% or less at 40°C
- **Degree of protection**
  - Display Unit: IP56
  - Antenna Unit: IP56

#### Power Supply
- 12-24 VDC

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* Dependent on ionospheric activity and multipath.

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