# Marine Transducer(Low Power)

**A-TD25**

Frequency/Power:
50KHz&200KHz/600W
Cable length/Pin:
10M/3P
Mount：Thru-hull
Material：Bronze

G1/2"-14 thread
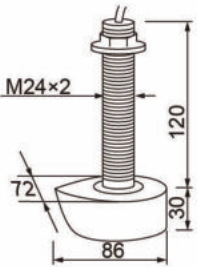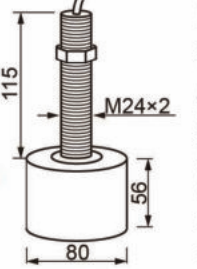95
30
68

**A-TD26**

Frequency/Power:
50KHz&200KHz/600W
Cable length/Pin:
10M/3P
Mount：Thru-hull
Material：Bronze

M24×2
120
72
30
86

**A-PD204D**

Frequency/Power:
50KHz&200KHz/600W
50KHz/1000W
200KHz/1000W
Cable length/Pin:
10M/3P
Material：Bronze
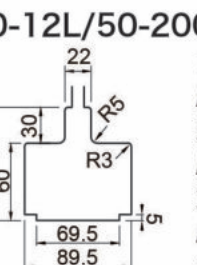
M24×2
115
56
80

**A-P319**

Frequency/Power:
50KHz&200KHz/600W
Cable length/Pin:
10M/3P
Mount：Thru-hull
Material: Plastic

75
2"-12 thread
100
89
51
5
75

**A-TD28**

Frequency/Power:
50KHz&200KHz/600W
Cable length/Pin:
10M/3P
Mount：Thru-hull
Material: Plastic

M22×1.5
120
31
68
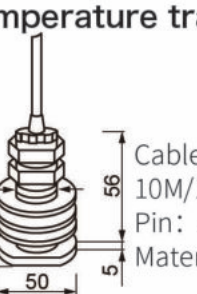
**TD28B/28P**

Frequency/Power:
50KHz&200KHz/600W
Cable length/Pin:
10M/Z108-8A
Mount：Thru-hull
Material:Bronze/Plastic

M24×2
120
33
74
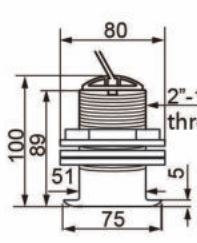
**A-TGM60-50-12L/50-200-12L/60-40-10L**

Frequency/Power:
**A-TGM60-50-12L**
50KHz/1000W
**A-TGM50-200-12L**
200KHz/1000W
**A-TGM60-40-10L**
40KHz/1000W
Cable length: 12M
Material：Rubber

22
R5
30
R3
95
60
5
69.5
89.5
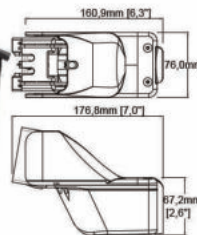
## Water temperature transducer

M28×1.5
56
44.5
50
5

Cable length:
10M/15M
Pin：8P
Material：Bronze
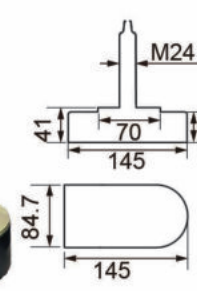
# Marine Transducer(NEW)

**A-B117**
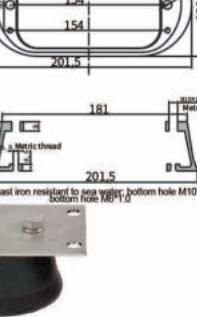
80
100
89
51
5
75

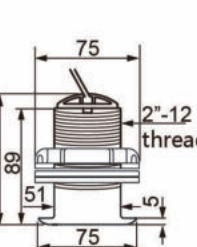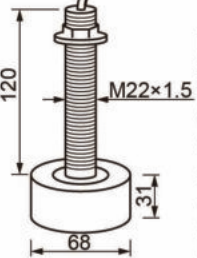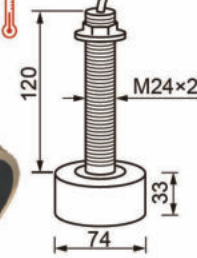Frequency/Power:
50KHz&200KHz/600W
Cable length/Pin:
10M/3P
Mount：Thru-hull
Material：Bronze

2"-12 thread

**A-TD66P**

160.9mm [6.3"]
76.0mm [3.0"]
176.8mm [7.0"]
87.2mm [2.6"]
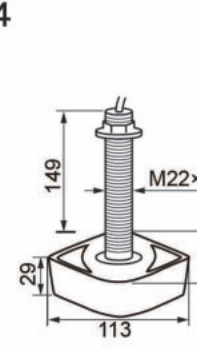
Frequency/Power:
50KHz&200KHz/600W
Cable length/Pin:
10M/3P
Mount：Transom
Material：Plastic

**A-TD24B**

M24×2
41
70
39
145
84.7
145
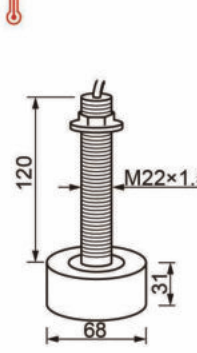
Frequency/Power:
200KHz/1KW
Cable length/Pin:
10M/3P
Mount：Thru-hull
Material：Rubber

**A-TD33B**

154
154
201.5
181
201.5
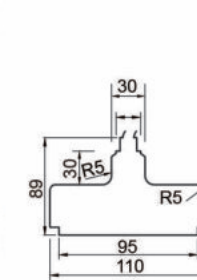
Frequency/Power:
200KHz/1.5KW
Cable length/Pin:
10M/3P
Mount：Thru-hull
Material：Rubber

Fairing: cast iron resistant to sea water; bottom hole M10*1.5;

**A-TD500T-4**

M22×1.5
149
29
69
113

Frequency/Power:
50KHz&200KHz/600W
Cable length/Pin:
10M/Z108-8A
Mount：Thru-hull
Material：Bronze

**A-TD502SS**

120
M22×1.5
31
68

Frequency/Power:
50KHz&200KHz/600W
Cable length/Pin:
10M/Z108-8A
Mount：Thru-hull
Material:Stainless steel

**A-200B-8B**

30
30
R5
89
R5
5
35
95
110

Frequency/Power:
200KHz/2KW
Cable length:20M
Mount：Tank/Keel
Material：Rubber

**Doppler speed log transducer A-DS80SS**

The following models are available with fairing:

A-TD25    A-TD28    A-PD204    A-TGM-100-200-20L    A-TGM-50-200-10L
A-TD47T    A-TD67T    A-TD86

# Navigational Echo Sounder

## ES9000/EP SERIES

This series products adopt high-tech DSP digital signal processing technology, in line with IMO related performance standards, can achieve submarine depth and digital depth display.

## 6" Navigational Echo Sounder

ES9000-P611S  (Single channel)
ES9000-P622S  (Dual channel)

### Optional Transducer

A-TD25          A-TD26          A-TD28

| Model | ES9000-P611S | ES9000-P622S |
|---|---|---|
| Display | 6" | 6" |
| Resolution | 480*640px | 480*640px |
| Frequency | 200KHz (Single channel) | 200KHz (Dual channel) |
| Processing | Digital Singal Processing(DSP) | |
| Output Power | 600W-1000W | |
| Operating Voltage | DC 24V(11~35V) | |
| Sensitivity | -95dBm | |
| Accuracy | ±1% | |
| Lowest Blind | 0.2m | |
| Range | 0.3~1000m | |
| Depth alarm | Depth，Voltage | |
| Expansion Mode | Dual frequency, Single frequency (high or low freq.), Zoom | |
| Expansion Rate | Auto Expansion, Manual Zoom, Bottom Lock | |
| background color | black, blue | |
| Sweep Speed | 7steps(stop，1/8，1/4，1/2，1/1，2/1，3/1) | |
| SD card | Storage and replay function, software update | |
| NMEA input | IEC61162-1 (NMEA0183) RMC | |
| NMEA output | IEC61162-1(NMEA0183) DPT、DBT、GLL | |
| Language | Simplified Chinese, English, Traditional | |
| Serial port to print | Suitable for printer DPU-414 | |
| Temperature | -10℃~+40℃ | |
| Relative Humidity | 10~90% | |
| IDENTIFICATION | ES9000 and EP series Certificated by CCS | |

## 8" Navigational Echo Sounder

ES9000-P811S  (Single channel, Single transducer)
ES9000-P822S  (Dual channel, Double transducer)
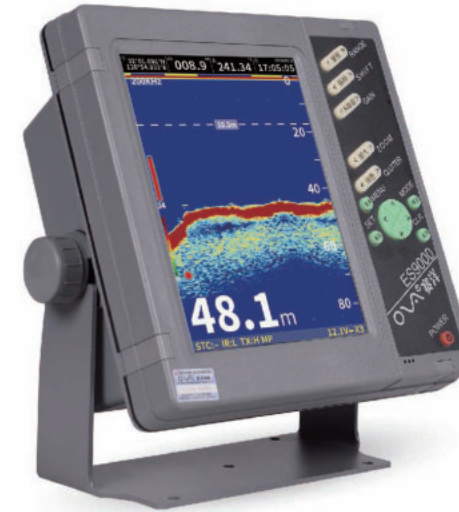
▸ High contrast and brightness adjusting effect, suitable for use in bright light and at night;
▸ Advanced DSP high image supersonic digital processing technology, realizing the low blind spot and the high resolution echo;
▸ Full quick sampling, let every fish be shown;
▸ Dual frequency display, and multiple modes of background with human design;
▸ Stable performance, comparable with foreign brand products;
▸ Professional design, beautiful and fashional, delicate and durable, containing multi-language menu display function.

### Optional Transducer

A-PD204D          A-TGM100-200-20L          A-TGM50-200-10L

| Model | ES9000-P811S | ES9000-P822S |
|---|---|---|
| Display | 8" | 8" |
| Resolution | 800*600px | 800*600px |
| Frequency | 200KHz (Single channel) | 200KHz (Dual channel) |
| Processing | Digital Singal Processing(DSP) | |
| Output Power | 600W-1000W | |
| Operating Voltage | DC 24V(11~35V) | |
| Sensitivity | -95dBm | |
| Accuracy | ±1% | |
| Lowest Blind | 0.2m | |
| Range | 0.3~1000m | |
| Depth alarm | Depth，Voltage | |
| Expansion Mode | Dual frequency, Single frequency (high or low freq.), Zoom | |
| Expansion Rate | Auto Expansion, Manual Zoom，Bottom Lock | |
| background color | black, blue | |
| Sweep Speed | 7steps(stop，1/8，1/4，1/2，1/1，2/1，3/1) | |
| SD card | Storage and replay function, software update | |
| NMEA input | IEC61162-1 (NMEA0183) RMC | |
| NMEA output | IEC61162-1(NMEA0183) DPT、DBT、GLL | |
| Language | Simplified Chinese, English, Traditional | |
| Serial port to print | suitable for printer DPU-414 | |
| Temperature | -10℃~+40℃ | |
| Relative Humidity | 10~90% | |
| IDENTIFICATION | ES9000 and EP series Certificated by CCS | |

# 10" Navigational Echo Sounder

EP1011X (Single channel, Single transducer)
EP1010X (Single channel, Industrial interface)
EP1022X (Dual channel, Double transducer)
EP1020X (Dual channel, Industrial interface)

ES9000-P1011S (Single channel, Single transducer)
ES9000-P1022S (Dual channel, Double transducer)

- High contrast and brightness adjusting effect, suitable for use in bright light and at night;
- Advanced DSP high image supersonic digital processing technology, realizing the low blind spot and the high resolution echo;
- Full quick sampling, let every fish be shown;
- Dual frequency display, and multiple modes of background with human design;
- Stable performance, comparable with foreign brand products;
- Professional design, beautiful and fashional, delicate and durable,containing multi-language menu display function.

## Optional Transducer

A-TGM100-200-20L    A-TGM50-200-10L    A-PD204D    A-200B-8B

| Model | EP1011X/EP1010X (X series) | EP1022X/EP1020X(X series) | ES9000-P1011S/ES9000-P1022S(S series) |
|---|---|---|---|
| Display | 10" | 10" | 10" |
| Frequency | 200KHz(Single channel) | 200KHz(Dual channel) | 200KHz(Single channel/Dual channel) |
| Resolution | 800*600px | | |
| Processing | Digital Singal Processing(DSP) | | |
| Output Power | 1000W-3000W | | |
| Operating Voltage | DC 24V(11~35V) | | |
| Sensitivity | -95dBm | | |
| Accuracy | ±1% | | |
| Lowest Blind | 0.2m | | |
| Range | 0.3~1000m | | |
| Depth alarm | Depth、Voltage | | |
| Expansion Mode | Dual frequency, Single frequency (high or low freq.), Zoom | | |
| Expansion Rate | Auto Expansion, Manual Zoom，Bottom Lock | | |
| background color | black, blue | | |
| Sweep Speed | 7steps(stop, 1/8, 1/4, 1/2, 1/1, 2/1, 3/1) | | |
| SD card | Storage and replay function, software update | | |
| NMEA input | IEC61162-1（NMEA0183）RMC | | |
| NMEA output | IEC61162-1(NMEA0183) DPT、DBT、GLL | | |
| Language | Simplified Chinese, English, Traditional | | |
| Serial port to print | suitable for printer DPU-414 | | |
| Temperature | -10℃~+40℃ | | |
| Relative Humidity | 10~90% | | |
| IDENTIFICATION | ES9000 and EP series Certificated by CCS | | |

# 12" Navigational Echo Sounder

EP1211X (Single channel, Single transducer)
EP1210X (Single channel, Industrial interface)
EP1222X (Dual channel, Double transducer)
EP1220X (Dual channel, Industrial interface)

ES9000-P1211S Single channel, Single transducer)
ES9000-P1222S (Dual channel, Double transducer)

- High contrast and brightness adjusting effect, suitable for use in bright light and at night;
- Advanced DSP high image supersonic digital processing technology, realizing the low blind spot and the high resolution echo;
- Full quick sampling, let every fish be shown;
- Dual frequency display, and multiple modes of background with human design;
- Stable performance, comparable with foreign brand products;
- Professional design, beautiful and fashional, delicate and durable,containing multi-language menu display function.

## Optional Transducer

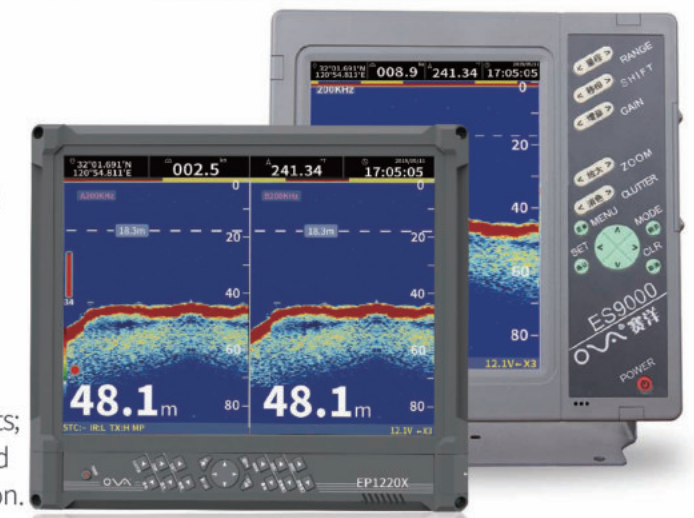A-TGM100-200-20L    A-TGM50-200-10L    A-PD204D    A-200B-8B

| Model | EP1211X/EP1210X (X series) | EP1222X/EP1220X(X series) | ES9000-P1211S/ES9000-P1222S(S series) |
|---|---|---|---|
| Display | 12" | 12" | 12" |
| Frequency | 200KHz(Single channel) | 200KHz(Dual channel) | 200KHz(Single channel/Dual channel) |
| Resolution | 800*600px | | |
| Processing | Digital Singal Processing(DSP) | | |
| Output Power | 1000W-3000W | | |
| Operating Voltage | DC 24V(11~35V) | | |
| Sensitivity | -95dBm | | |
| Accuracy | ±1% | | |
| Lowest Blind | 0.2m | | |
| Range | 0.3~1000m | | |
| Depth alarm | Depth、Voltage | | |
| Expansion Mode | Dual frequency, Single frequency (high or low freq.), Zoom | | |
| Expansion Rate | Auto Expansion, Manual Zoom，Bottom Lock | | |
| background color | black, blue | | |
| Sweep Speed | 7steps(stop, 1/8, 1/4, 1/2, 1/1, 2/1, 3/1) | | |
| SD card | Storage and replay function, software update | | |
| NMEA input | IEC61162-1（NMEA0183）RMC | | |
| NMEA output | IEC61162-1(NMEA0183) DPT、DBT、GLL | | |
| Language | Simplified Chinese, English, Traditional | | |
| Serial port to print | suitable for printer DPU-414 | | |
| Temperature | -10℃~+40℃ | | |
| Relative Humidity | 10~90% | | |
| IDENTIFICATION | ES9000 and EP series Certificated by CCS | | |

# 15″ Navigational Echo Sounder

**EP1511X** (Single channel, Single transducer)
**EP1510X** (Single channel, Industrial interface)
**EP1522X** (Dual channel, Double transducer)
**EP1520X** Dual channel, Industrial interface)

- ‣ High contrast and brightness adjusting effect, suitable for use in bright light and at night;
- ‣ Advanced DSP high image supersonic digital processing technology, realizing the low blind spot and the high resolution echo;
- ‣ Full quick sampling, let every fish be shown;
- ‣ Dual frequency display, and multiple modes of background with human design;
- ‣ Stable performance, comparable with foreign brand products;
- ‣ Professional design, beautiful and fashional, delicate and durable,containing multi-language menu display function.

## Optional Transducer

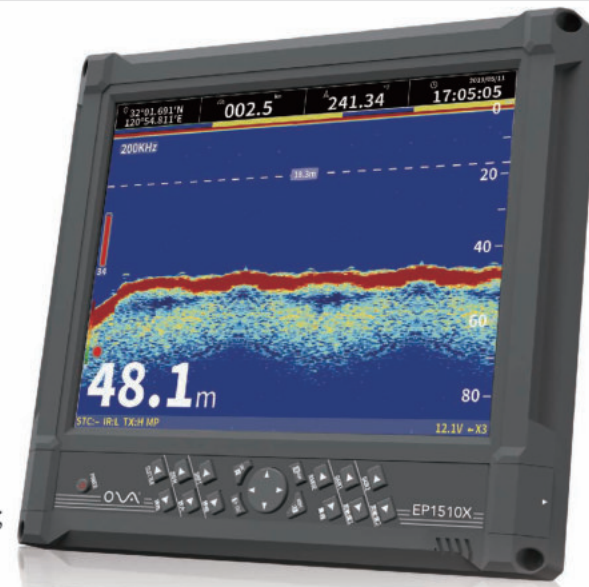| A-TGM100-200-20L | A-TGM50-200-10L | A-PD204D | A-200B-8B |
|---|---|---|---|

| Model | EP1511X/EP1510X | EP1522X/EP1520X |
|---|---|---|
| Display | 15" | 15" |
| Resolution | 1024*768px | 1024*768px |
| Frequency | 200KHz(Single channel) | 200KHz(Dual channel) |
| Processing | Digital Singal Processing(DSP) | |
| Output Power | 1000W-3000W | |
| Operating Voltage | DC 24V(11~35V) | |
| Sensitivity | -95dBm | |
| Accuracy | ±1% | |
| Lowest Blind | 0.2m | |
| Range | 0.3~1000m | |
| Depth alarm | Depth，Voltage | |
| Expansion Mode | Dual frequency, Single frequency (high or low freq.), Zoom | |
| Expansion Rate | Auto Expansion, Manual Zoom，Bottom Lock | |
| background color | black, blue | |
| Sweep Speed | 7steps(stop, 1/8, 1/4, 1/2, 1/1, 2/1, 3/1) | |
| SD card | Storage and replay function, software update | |
| NMEA input | IEC61162-1（NMEA0183）RMC | |
| NMEA output | IEC61162-1(NMEA0183) DPT、DBT、GLL | |
| Language | Simplified Chinese, English, Traditional | |
| Serial port to print | suitable for printer DPU-414 | |
| Temperature | -10℃~+40℃ | |
| Relative Humidity | 10~90% | |
| IDENTIFICATION | ES9000 and EP series Certificated by CCS | |

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# Depth Instrument Display

# DI9000 Depth Instrument Display

After connecting the NMEA0183/NMEA2000 data from echo sounder or other equipment, the depth value will be displayed. With unit selection, shallow water alarm, data loss alarm and display brightness adjustment function.

- ‣ Easy installation
- ‣ RS422 data line connection
- ‣ Instant alarm function
- ‣ Timetable display function
- ‣ Connectible NMEA 2000 Network
- ‣ Brightness adjustable
- ‣ Waterproof grade IP67

| Model | DI9000 | | |
|---|---|---|---|
| Power Supply | DC 24V (10~35V) | | |
| Size(L×W×H) | 107*127.4*46mm | | |
| Weight | 300g±2% | | |
| Input format | NMEA2000：PGN128267 NMEA0183：DPT | | |
| Working temperature | -15~+55℃ | | |
| Installation mode | Embedded Installation | | |
| Protection level | IP67 | | |
| Interface | NMEA2000 RS-422 | | |
| Interface definition | 1 VCC | 2 GND | 3 CAN_H |
| | 4 CAN_L | 5 RX-(RS422) | |
| | 6 RX+(RS422) | 7 TX+(RS422) | |
| | 8 TX-(RS422) | | |

# Electronics Chart System

ECS9000 Series
IECS Series

Detailed satellite image map, electronic chart, AIS target information and AIS group management, strong alarm warning system, can be connected with radar, sonar, compass and other different kinds of sensors for multi-image display.
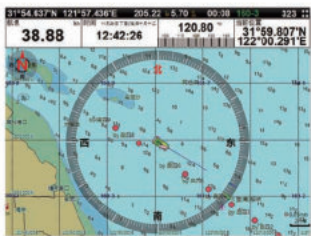
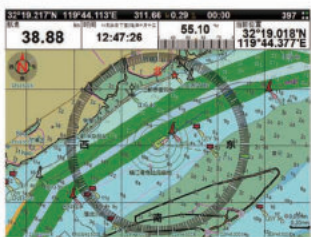# IECS Series — Electronics Chart System



SIZE: **12" /15" /17" /19 "**

▸ Touch screen operation, remote control plus mouse and keyboard optional;

▸ Global chart, international standard S57/63, support satellite image chart;

▸ Support VGA or HDMI display;

▸ Built-in AIS optional.



SATELLITE IMAGE OVERLAY



S57/S63 CHART FORMAT



CJ57/CJ63 CHART FORMAT

| Model | IECS-12 | IECS-15 | IECS-17 | IECS-19 |
|---|---|---|---|---|
| Display | 12" | 15" | 17" | 19" |
| Resolution | 800*600px | 1024*768px | 1280*1024px | 1280*1024px |
| Power Supply | DC 24V(11~35V) | | | |
| Power | High-performance, full isolated, PWM control of power supply | | | |
| Mount | Bracket Mount or Flush Mount | | | |
| Power Consumption | ≤20W | | | |
| Language | Simple Chinese, Traditional Chinese, English(Can be customized) | | | |
| Map Format | S57，S63（ENC），CJ57, CJ63 | | | |
| Map Display Mode | Heading Up, Course Up, Route Up, North Up, East Up, South Up, West Up | | | |
| Navigation Data | Bearing, Present Distance, Distance to the Destination, Yaw Distance, Yaw Angle, Navigation Arrow, Sailing Tim,ETA(Estimated Time of Arrival), Navigation Distance, Average Speed, Maximum Speed, Target Fishing Zone, etc. | | | |
| Others | Time, Depth, Wind Speed, Wind Direction, Simple Compass, etc. | | | |
| Data Display Mode | Top Display(Various Arrangement), Left Display, Right Display, Suspension Display | | | |
| User Data | ≥50000 waypoints, 200 routes, 10000 waypoints/route 20000 tracks, 500 tracks/AIS. Plot data(point, line, plane) | | | |
| Chart program upgrade | USB upgrade, network upgrade | | | |
| AIS Functions | AIS Display, AIS Message, AIS Log, AIS Fleet Management, AIS Fishing Net Management, AIS Special Vessel Management, etc. | | | |
| System Alarm | Loss Alarm, Time Alarm, Low Voltage Alarm, High Voltage Alarm, No Positioning Alarm, Positioning Accuracy Alarm | | | |
| Navigational Alarm | Yaw Alarm, Arrival Alarm, Anchor Drag Alarm, Bridge Alarm, Danger Alarm, Precautionary Area Alarm, etc. | | | |
| Other Functions | Measuring Distance, Compass Superposition, Eccentric Setting, Calendar, Harbour, Tide, Odometer, Navigational Log, Find the map according to longitude and latitude, ect. | | | |
| Receiving Type | Customized Positioning Source (GPS, Beidou, Glonass, Galileo) | | | |
| Receiving Channel | GPS: 1575.42MHz Beidou: 1561.098MHz | | | |
| Positioning Time | Cold Start: 45s Hot Start: 15s | | | |
| Positioning Accuracy | GPS: <15m （95%) Beidou: Horizontal 25m(95%) Vertical 30m （95%) | | | |
| Input(NMEA0183) | GPS, AIS, Compass, Depth, Water Temperature, etc. | | | |
| Output(NMEA0183) | GPS：GGA、GLL、GSA、GSV、RMC、VTG、ZDA | | | |
| Operate | keyboard; remote control; touch screen | | | |
| Frequency | AIS 1: 87B/161.975MHz AIS 2: 88B/162.025MHz | | | |
| Bandwidth | 25KHz | | | |
| Output Power | 2W | | | |
| Modulation Mode | GMSK | | | |

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# ECS9000 Series — Electronics Chart System

SIZE: **17" / 19" / 22"**

▸ The electronic chart is including global chart, supporting vector chart IHO, S57, S63 and RNC raster chart;

▸ Flexible expandability and many navigation sensor interfaces allow the ECS to be networked with AIS, GPS, Echo Sounder, Compass, Log, ARPA and others to consolidate the navigation system;

▸ The electronic chart can be overlaid with a variety of navigation data such as ship's position, heading, speed and others to facilitate safe and efficient navigation;

▸ Navigation data for the past 12 hours can be recorded and playback;

▸ CERTIFICATED by China Classification Society.





SPECIAL KEYBOARD AND MOUSE



S57/S63 CHART FORMAT
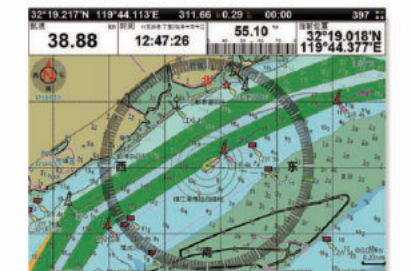


CJ57/CJ63 CHART FORMAT

| Model | ECS9000-17 | ECS9000-19 | ECS9000-22 |
|---|---|---|---|
| Display Unit | 17" | 19" | 22" |
| Resolution | 1280*1024px | 1280*1024px | 1680*1050px |
| Power Supply | DC 24V(11~35V) | | |
| Power | High-performance, full isolated, PWM control of power supply | | |
| Installation | Bracket or Flush Mount | | |
| Language | Simplified Chinese, English | | |
| **Characteristics** | | | |
| Chart Format | IHO S57，S63(ENC), RNC | | |
| Display Modes | North Up, South Up, Course Up, Heading Up | | |
| Display of Data | Own ship: Position, COG, SOG, Heading; Route: Planned route, Monitoring route; Others: Cursor Data, Target Information, Navigation Information, EBL, VRM | | |
| Route/Waypoint | Routes ≥ 100；Waypoints ≥ 5000 | | |
| Alarm | Off track, Communication, Positioning, Collision, Alert area, danger | | |
| Voyage Calculation | Range/Bearing to destination, Off track, TTG, ETA | | |
| Navigation Log | ≥12h | | |
| Track Display | ≥240min | | |
| Other Functions | Measurement(Distance, Bearing, CPA/TCPA), User chart function, Log book, Night/day display modes, ARPA target display, etc | | |
| **Interface** | | | |
| Input/Output | GPS(GGA, GLL, GSA, GSV, RMC, VTG) | | |
| Input | AIS(VDM, ABM, BBM), Gyrocompass(HDT), Speed(VBM), Echo sounder(DBT, DPT), Water temperature indicator(MTW), Wind speed(MWV), Current indicator(VDR) | | |

# Marine Anemometer

## Mi9000S/SR Series

Mi9000 series anemometers are marine anemometer equipment specially designed for ships.
It belongs to the type of wind-driven rotary shaft and meets the performance and functional requirements of ISO international standards.

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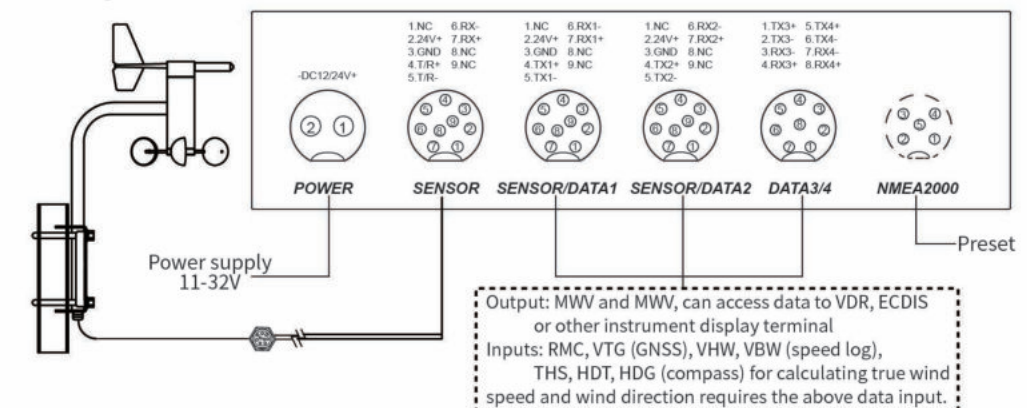# Mi9000S/SR Series     Marine Anemometer

- The sensor shell is made of stainless steel, which has corrosion resistance, high temperature resistance, high strength, long life cycle, suitable for all kinds of ships, especially for coastal and ocean-going ship working environment.
- Using absolute encoder sensor, the acquisition is more accurate.
  The display adopts a 7-inch full-touch high-definition LCD screen, which is beautiful in design and easy to operate.
- The interface design adopts the international professional ship design style, with three display modes of real wind speed and direction, relative wind speed and direction, and ground wind speed and direction, which can be selected flexibly.
- Sunny, cloudy, dusk, and night 4 color matching modes, which have comfortable visual effects in different brightness environments. The automatic switching mode can automatically switch the mode according to the sunrise and sunset time, and can also set the switching time according to the needs.
- Multi-channel NMEA0183 input and output, can be connected to speed log, satellite compass, GNSS antenna, etc., and provide standard wind direction and wind speed data for other navigation equipment.
- With automatic/manual heating function, it can still operate normally in harsh environments (optional function).

| Model | Mi9000 series |
|---|---|
| Power Supply | DC 24V |
| Wind direction range | 0~359° |
| Wind direction accuracy | ± 5° |
| Wind speed range | 2~60m/s |
| Wind speed accuracy | ±0.5m/s (wind speed <10m/s) |
| | ± V*5% (wind speed ≥10m/s) |
| Degree of protection | Sensor: IP56<br>Display unit: IP20 |

## Interconnection diagram

Output: MWV and MWV, can access data to VDR, ECDIS or other instrument display terminal
Inputs: RMC, VTG (GNSS), VHW, VBW (speed log), THS, HDT, HDG (compass) for calculating true wind speed and wind direction requires the above data input.

# Satellite Compass

## SC9000/SC90/SC120/ GC20

Accurate Heading, Position and Rate of Turn

- Pre-type carrier phase decoding technology, more precise orientation;
- Beidou/GPS dual-star system with faster directional speed;
- Advanced speed and course filtering technology to make the data more stable;
- Built-in gyro compensation system has better heading performance;
- It has the characteristics of fast start, signal recapture, heading update up to 50 times per second, and turning rate up to 90°/s;
- Multi-channel standard NMEA0183 output, providing high-stability, high-precision ship heading data and positioning data for Radar, ARPA, ECDIS, AIS, Chart Plotter, Autopilot, Sonar and other marine navigation equipment;
- Excellent industrial product design, stylish appearance, easy installation;
- The full-touch compass display is equipped with multiple display modes, the data is more intuitive, and the equipment is more convenient;
- Maintenance free and no recurring cost as there are no mechanical parts;
- CERTIFICATED of Marine Product by China Classification Society (CCS).

# GC20                    Satellite Compass

| General | |
|---|---|
| Baseline length | 20CM |
| Heading Accuracy | 1° RMS |
| Attitude accuracy | Pitch/ Roll: 0.4° RMS |
| Cold start | <2 min |
| Position Accuracy | 2.5 m |
| First Positioning time | Cold start: ≤32s Hot start: ≤1s Recapture: ≤1s |
| Speed measurement accuracy | GPS+BDS : 0.1m/s |

| Interface | |
|---|---|
| Number of ports | NMEA0183 Data interface×1 CAN×1 (Preset) |
| Data sentences | RMC，VTG，GGA，GSA，GSV，GLL，ZDA，HDT，ROT，THS |

| Power Supply | |
|---|---|
| | 11～32V |

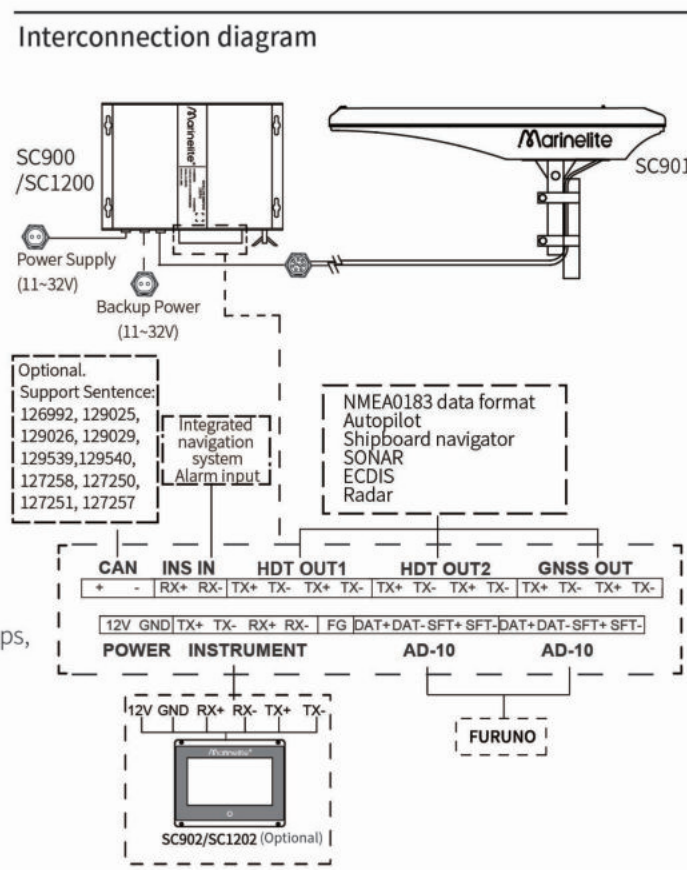| Environmental condition | |
|---|---|
| Temperature | -30℃～+70℃ |
| Degree of protection | Antenna unit IP56; Junction box IP20 |
| Vibration | IEC60945 |

• Specifications may be subject to change without notice.

## General

| | |
|---|---|
| Frequency | B1, L1, G1 |
| Baseline length | 60CM |
| Heading Accuracy | 0.4° RMS |
| Attitude accuracy | Pitch/ Roll: 0.4° RMS |
| Cold start | <2 min |
| Position Accuracy | 2.5 m |
| First Positioning time | Cold start: ≤32s |
| | Hot start: ≤1s |
| | Recapture: ≤1s |
| Speed measurement accuracy | GPS+BDS : 0.1m/s |

## Interface

| | |
|---|---|
| Number of ports | NMEA0183 data interface ×6 |
| | GNSS output ×2, fixed at 9600bps |
| | HDT output ×2, default 38400, adjustable |
| | HDT and GNSS output ×2, default 4800bps, adjustable |
| | AD-10 ×2 |
| | Display instrument ×1 |
| | CAN ×1 (Optional) |
| | Alarm input×1 |
| Data sentences | RMC, VTG, GGA, GSA, GSV, GLL, ZDA, HDT, ROT, THS |

## Display unit (Optional)

| | |
|---|---|
| Screen | 5"/7" |
| Resolution | 800*480 |
| Display mode | Compass + data, heading mode, positioning data mode, ROT mode |

## Power Supply

| | |
|---|---|
| | 11～32V |

## Environmental condition

| | |
|---|---|
| Temperature | -30℃～+70℃ |
| Degree of protection | Antenna unit IP56; Junction box IP20 |
| Vibration | IEC60945 |

### Interconnection diagram



● Specifications may be subject to change without notice.

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## General

| | |
|---|---|
| Frequency | B1, L1, G1 |
| Baseline length | 110CM |
| Heading Accuracy | 0.2° RMS |
| Attitude accuracy | Pitch/ Roll: 0.3° RMS |
| Cold start | <2 min |
| Position Accuracy | 2.5 m |
| First Positioning time | Cold start: ≤32s |
| | Hot start: ≤1s |
| | Recapture: ≤1s |
| Speed measurement accuracy | GPS+BDS : 0.1m/s |

## Interface

| | |
|---|---|
| Number of ports | NMEA0183 data interface ×6 |
| | GNSS output ×2, fixed at 9600bps |
| | HDT output ×2, default 38400, adjustable |
| | HDT and GNSS output ×2, default 4800bps, adjustable |
| | AD-10 ×2 |
| | Display instrument ×1 |
| | CAN ×1 (Optional) |
| | Alarm input×1 |
| Data sentences | RMC, VTG, GGA, GSA, GSV, GLL, ZDA, HDT, ROT, THS |

## Display unit (Optional)

| | |
|---|---|
| Screen | 5"/7" |
| Resolution | 800*480 |
| Display mode | Compass + data, heading mode, positioning data mode, ROT mode |

## Power Supply

| | |
|---|---|
| | 11～32V |

## Environmental condition

| | |
|---|---|
| Temperature | -30℃～+70℃ |
| Degree of protection | Antenna unit IP56; Junction box IP20 |
| Vibration | IEC60945 |

### Interconnection diagram



● Specifications may be subject to change without notice.