

# SSC300 *Solid State Compass*

Maretron's SSC300, implementing the second generation of Maretron's award-winning solid state compass technology, is a solid state, rate gyro electronic compass that provides better than 0.7° heading accuracy through  $\pm 45^\circ$  of roll and pitch angle, and better than 1° roll and pitch accuracy in static conditions. Each SSC300 is factory calibrated for maximum accuracy. It delivers precise, reliable heading and rate of turn information ten times per second, and vessel attitude including pitch and roll readings once per second. A micromachined 3-axis rate gyro is used in conjunction with the 3-axis accelerometer by advanced stabilization algorithms to provide accurate, stable readings during dynamically changing conditions such as hard turns or rough seas, making it an ideal heading sensor for autopilot or radar overlay applications.

Maretron's SSC300 is certified to the NMEA 2000® network standard and compatible with the NMEA 0183 digital interface standard. It connects directly with any NMEA 2000® network, and, with the optional NMEA 0183 cable accessory, with NMEA 0183 listeners to share information with navigational software, chart plotters, autopilots, and dedicated instrument displays – including Maretron's graphical displays and N2KView® software.

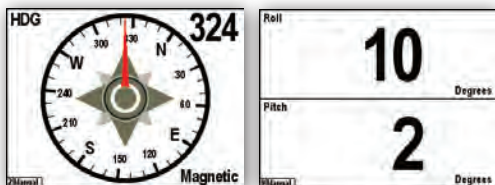
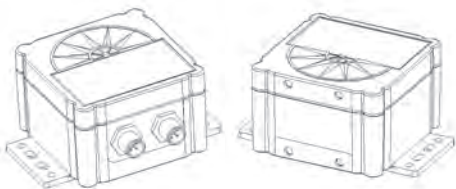
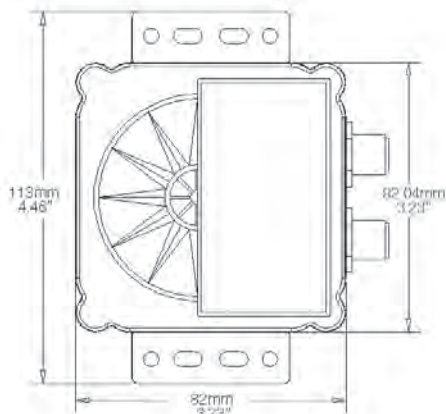


## Products

| PART NUMBER | DESCRIPTION  |
|-------------|--|
| SSC300-01   | Solid-State Rate/Gyro Compass (No NMEA 0183 Cable) |
| MARE-006    | SSC300 Compass NMEA 0183 10 meter Connection Cable |

- Better than 0.7° heading accuracy in status conditions
- Better than 1.5° heading accuracy in dynamic conditions
- Better than 1°/second rate of turn accuracy
- Better than 1° pitch/roll accuracy
- Three-axis magnetometer, Three-axis rate gyro, and Three-axis accelerometer
- Outputs NMEA 0183 and NMEA 2000 data simultaneously (optional NMEA 0183 cable accessory required for NMEA 0183 output)
- IP67 waterproof enclosure





DSM150 & DSM250 Screen Shots

**Specifications**

| Parameter                         | Value            | Comment                                    |
|-----------------------------------|------------------|--|
| Static Heading Accuracy           | <0.7° RMS        | ±45° Pitch and Roll - 15°C to 35°C         |
| Heading Display Resolution        | 0.1°             | With Maretron Display                      |
| Setting Time                      | 1 Second         | To Static Accuracy after 35°/Second Turn   |
| Heading Update Rate               | 10 per Second    |  |
| Heading Deviation                 | Yes              | Automatic                                  |
| Alignment Calibration             | Yes              | In Boat Calibration with Maretron Displays |
| Pitch and Roll Range              | ±80°             | With Maretron Display                      |
| Pitch and Roll Accuracy           | <1°              | ±45° Pitch and Roll - 15°C to 35°C         |
| Pitch and Roll Display Resolution | 0.1°             | With Maretron Display                      |
| Pitch and Roll Update Rate        | 1 per Second     |  |
| Pitch and Roll to Boat Alignment  | Yes              | In Boat Calibration with Maretron Displays |
| Rate of Turn Range                | 0° - 90°/ Second | At 0° Pitch and Roll                       |
| Rate of Turn Accuracy             | ±1° per Second   | 0° Pitch and Roll - 15°C to 35°C           |
| Rate of Turn Update Rate          | 10 per Second    |  |
| NMEA 0183 Standard                | Compatible       | Up to 38,400 Baud (40 Hz Update Rate)      |

**Certifications**

| Standard  | Comment                       |
|---|-------------------------------|
| NMEA 2000® Standard   | Level A                       |
| Maritime Navigation and Radio Communication Equipment & Systems | IEC 61162-3                   |
| Maritime Navigation and Radio Communication Equipment & Systems | IEC 60945                     |
| FCC and CE mark   | Electromagnetic Compatibility |

**NMEA 2000® Parameter Group Numbers (PGNs)**

| Description                | PGN #  | PGN Name                                      | Default Rate    |
|----------------------------|--------|---|-----------------|
| Periodic Data PGNs         | 127250 | Vessel Heading                                | 10 Times/Second |
|                            | 127257 | Attitude                                      | 1 Time/Second   |
|                            | 127251 | Rate of Turn                                  | 10 Times/Second |
| Response to Requested PGNs | 126464 | PGN List (Transmit and Receive)               | N/A             |
|                            | 126996 | Product Information                           | N/A             |
|                            | 126998 | Configuration Information                     | N/A             |
| Protocol PGNs              | 059392 | ISO Acknowledge                               | N/A             |
|                            | 059904 | ISO Request                                   | N/A             |
|                            | 060416 | ISO Transport Protocol, Connection Management | N/A             |
|                            | 060160 | ISO Transport Protocol, Data Transfer         | N/A             |
|                            | 060928 | ISO Address Claim                             | N/A             |
|                            | 065240 | ISO Address Command                           | N/A             |
|                            | 126208 | NMEA Request/Command/Acknowledge              | N/A             |
| Maretron Proprietary PGNs  | 126720 | Configuration                                 | N/A             |

**NMEA 0183 Sentences**

| Sentence              | Acronym | Sentence Name                                  | Description     |
|-----------------------|---------|--|-----------------|
| Transmitted Sentences | HDG     | Heading, Deviation, and Variation              | 10 Times/Second |
|                       | HDM     | Heading, Magnetic                              | N/A             |
|                       | HDT     | Heading, True                                  | N/A             |
|                       | ROT     | Rate of Turn                                   | 5 Times/Second  |
|                       | PMAROUT | Maretron Proprietary Attitude (Pitch and Roll) | 1 Time/Second   |
|                       | TXT     | Text Transmission                              | N/A             |
| Received Sentences    | RMC     | Recommended Minimum Specific GNSS Data         | N/A             |
|                       | VTG     | Course Over Ground and Ground Speed            | N/A             |

**Environmental Mechanical Electrical**

| Parameter                     | Value         | Comment                         |
|-------------------------------|---------------|---------------------------------|
| Operating Voltage             | 9 to 16 Volts | DC Voltage                      |
| Power Consumption             | < 150mA       | Average Current Drain           |
| Load Equivalence Number (LEN) | 3             | NMEA 2000® Spec. (1 LEN = 50mA) |
| Reverse Battery Protection    | Yes           | Indefinitely                    |
| Load Dump Protection          | Yes           | Energy Rated Per SAE J1113      |

| Parameter | Value                                      | Comment                    |
|-----------|--|----------------------------|
| Size      | 4.46" x 3.23 x 2.14" (113mm x 82mm x 54mm) | Including Mounting Flanges |
| Weight    | 7 Oz. (198 g)                              | Including Mounting Bracket |
| Mounting  | Deck or Bulkhead                           |                            |

| Parameter                | Value  |
|--------------------------|--|
| IEC 60945 Classification | Exposed  |
| Degree of Protection     | IP67   |
| Operating Temperature    | -25°C to 55°C  |
| Storage Temperature      | -40°C to 70°C  |
| Relative Humidity        | 93%RH @40° per IEC60945-8.2  |
| Vibration                | 2-13.2Hz @ ±1mm, 13.2-100Hz @ 7m/s² per IEC 60945-8.7                  |
| Rain and Spray           | 12.5mm Nozzle @ 100liters/min from 3m for 30min per IEC 60945-8.8      |
| Solar Radiation          | Ultraviolet B, A, Visible, and Infrared per IEC 60945-8.10             |
| Corrosion (Salt Mist)    | 4 times 7days @ 40°C, 95%RH after 2 hour Salt Spray Per IEC 60945-8.12 |
| Electromagnetic Immunity | Conducted, Radiated, Supply, and ESD per IEC 60945-10                  |
| Safety Precautions       | Dangerous Voltage, Electromagnetic Radio Frequency per IEC 60945-12    |