

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.

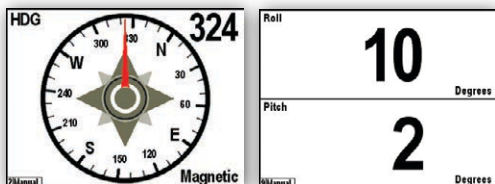
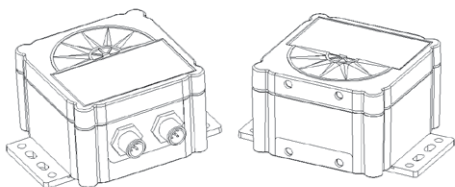
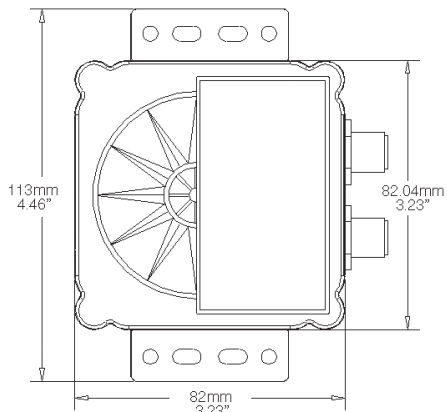
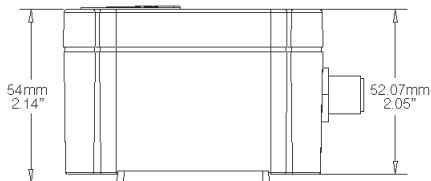
Maretron's SSC300 is certified to the NMEA 2000® network standard and compatible with the NMEA 0183 digital interface standard. It connects directly with any NMEA 2000® network, and, with the optional NMEA 0183 cable accessory, with NMEA 0183 listeners to share information with navigational software, 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	<1° 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
Received Sentences	TXT	Text Transmission	N/A
	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

