



SURF-100

F I B E R - O P T I C G Y R O C O M P A S S

Attitude and Heading Reference System (AHRS)
and Inertial Navigation System (INS)



Performance

- high accuracy
- low settling time
- high reliability
- compact
- calibration free

High level applications at sea for:

Military Vessels and Ships

Submarines

Based on closed-loop, strap-down Fiber Optic Gyroscope technology to offer a cost effective, highly reliable solution.

SURF-100

Technical data

AHRS General features

| | |
|--|--------------------------------|
| Settling time: | < 5 min. (in port) |
| Full accuracy settling time: | < 20 min. (all sea conditions) |
| Ship speed range: | - 20 kn < V < 70 kn |
| Follow-up speed (Roll, Pitch, Heading): | < 40°/s |

AHRS Accuracies

| | |
|-----------------------|--|
| Heading | < 0.05° sec (lat) rms no GPS aiding < 0.01° sec (lat) rms with GPS aiding |
| Roll / Pitch | < 0.01° rms |
| Heading resolution | 0.01° |
| Roll/Pitch resolution | 0.005° |

AHRS Range

| | |
|------------|-----------|
| Heading | 0° + 360° |
| Roll/Pitch | ± 45° |

INS accuracy - pure inertial

| | |
|----------|---------------------------------------|
| Position | 1Nm/12h CEP |
| Heave | 0.05 m or 5% (whatever is bigger) rms |
| Velocity | < 0.3 kt rms |

INTERFACES

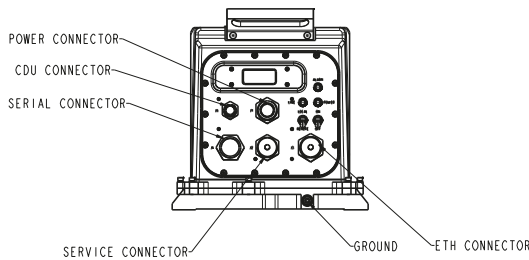
| | |
|---|---|
| Output serial: | 6 serial lines up to 100 Hz (200 Hz optional) |
| Input serial: | 2 serial lines up to 100 Hz (200 Hz optional) |
| I/O serial Display: | 1 |
| Output protocol: | NMEA 0183, binary |
| I/O type: | Serial RS232 and RS422 |
| USB | 2 USB 2.0 Host |
| Wireless (optional) | USB dongle for Wi-Fi, Bluetooth, modem HSDPA |
| Ethernet LAN: | N. 1 available |
| Input pps or pulse log | N. 2 available |
| RF Input for internal GPS/Galileo receiver: | N. 2 available |
| Synchro output (optional) | Attitude output: 115V AC, 400 Hz Heading: 1x and 36x Roll and Pitch: 2x and 36x or 4x and 36x |
| Synchro input (optional) | Log speed input: 115V AC, 400Hz |

ENVIRONMENTAL FEATURES

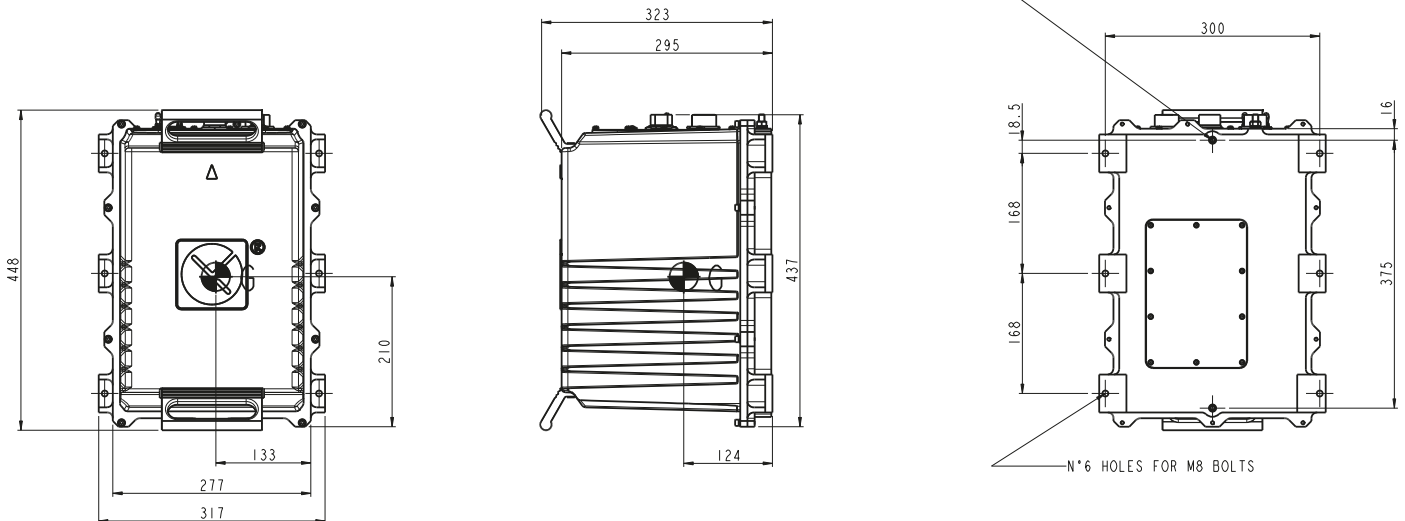
| | |
|------------------------------|--|
| Operating temperature | 0° C + 55° C |
| Storage temperature | -40° C + 80° C |
| Damp heat | up to 95% at 40° C |
| Vibrations | MIL-STD -167-1A (type 1) |
| Shock | MIL-STD-901D (grade A, type A, class II) |
| Waterproof | in accordance with IP66 standard |
| Electromagnetic interference | MIL-STD-461 |
| MTBF | ≥ 50000 hours |

POWER SUPPLY

| | |
|-------------------|---|
| Voltage: | 24 Vdc 115V 400 Hz Vac (optional for Synchro I/O) |
| Power absorption: | < 40 W |
| Protection: | against over-voltage, low voltage and inversion of polarity |



dimensions in mm



Weight: 27 kg.

Surveillance & Security

Guidance, Navigation & Positioning

Military & Defence

Marine Electronics

This brochure should not be considered a contractual offer to sell. The specifications given herein may be changed by the manufacturer, GEM elettronica S.r.l., without notice.

