POS MV

MAXIMIZE YOUR ROI WITH POS MV SURFMASTER ONE

POS MV SurfMaster One is a user-friendly, turnkey system designed and built to provide accurate attitude, heading, heave, position, and velocity data of your marine vessel and onboard sensors.

POS MV is proven in all conditions, and is the georeferencing and motion compensation solution of choice for the hydrographic professional.

MV blends GNSS data with angular rate and acceleration data from an IMU and heading from the GPS Azimuth Measurement System (GAMS) to produce a robust and accurate full six degrees-of-freedom position and orientation solution.

Key Features

- Up to 0.03° roll and pitch performance
- IN-Fusion 2.0 ensures optimal GNSS aiding for any given conditions
- TrueHeave - no requirement to tune filter for specific conditions, no settling time so no run in time
- High accuracy inertial measurement units featuring SmartCal
- Data time tagged to microsecond accuracy
**DATASHEET**

**PERFORMANCE SUMMARY**

### POS MV SURFMASTER ONE ACCURACY

<table>
<thead>
<tr>
<th>Parameter</th>
<th>DGPS</th>
<th>Fugro Marinestar®</th>
<th>IARTK</th>
<th>POSPac MMS PPP</th>
<th>POSPac MMS IAPPK</th>
<th>Accuracy Following GNSS Outage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>0.5 - 2 m²</td>
<td>0.04°</td>
<td>0.03°</td>
<td>&lt; 0.03°</td>
<td>0.050°</td>
<td>- 6 m for 30 s total outages (RTK)</td>
</tr>
<tr>
<td>Roll &amp; Pitch</td>
<td>0.04°</td>
<td>0.03°</td>
<td>0.03°</td>
<td>&lt; 0.03°</td>
<td>0.050°</td>
<td>- 3 m for 60 s total outages (IAPPK)</td>
</tr>
<tr>
<td>Heading</td>
<td>0.06° with 4 m baseline</td>
<td>0.06° with 2 m baseline</td>
<td>0.06°</td>
<td>-</td>
<td>-</td>
<td>0.2° (IAPPK, 60 second outage)</td>
</tr>
<tr>
<td>Heave</td>
<td>5 cm or 5%/2 cm or 2%/1 cm or 1%/3 cm or 3%</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**SYSTEM SPECIFICATIONS**

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>DIMENSIONS</th>
<th>WEIGHT</th>
<th>TEMPERATURE</th>
<th>HUMIDITY</th>
<th>POWER</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCS/MU enclosure</td>
<td>L = 145 mm, W = 160 mm, H = 66 mm</td>
<td>1.3 kg</td>
<td>20 ºC to +55 ºC</td>
<td>5 - 95% RH</td>
<td>10-32 VDC, 17 W</td>
</tr>
<tr>
<td>GNSS antenna (540AP)</td>
<td>Ø178 mm, W = 73 mm</td>
<td>0.45 kg</td>
<td>-50 ºC to +70 ºC</td>
<td>0-100% RH</td>
<td>n/a</td>
</tr>
<tr>
<td>GNSS Antenna (GA830)</td>
<td>Ø149 mm, W = 99 mm</td>
<td>0.62 kg</td>
<td>-40 ºC to +70 ºC</td>
<td>0-100% RH</td>
<td>n/a</td>
</tr>
</tbody>
</table>

**ETHERNET INPUT/OUTPUT**

- Ethernet: Parameters: Time tag, status, position, attitude, velocity, track and roll, GPS/IMU data, EtherCAT, CAN, CANopen, USB, IPX, and CANopen.
- Display Port: Low rate (1 Hz) UDP protocol output.
- Control Port: Real-time (up to 200 Hz) TCP/IP protocol output.
- Primary Port: Buffered TCP/IP protocol output.
- Secondary Port: Data logging to external device.

**SERIAL RS232 INPUT OUTPUT**

- 5 COM Ports: User assignable to: NMEA output (0-5), Binary output (0-5), Auxiliary GNSS input (0-2), Base GNSS correction input (0-2).
- NMEA ASCII OUTPUT: Parameters: NMEA Standard ASCII messages: Position ($INGGA), Heading ($INHDT), Track and Speed ($INVTG), Statistics ($INGST). Rate: Up to 50 Hz (user selectable).
- Configuration: Output selections and rate individually configurable on each assigned com port.

**HIGH RATE ATTITUDE OUTPUT**

- Parameters: User selectable binary messages: attitude, heading, speed.
- Configuration: Output selections and rate individually configurable on each assigned com port.

**AUXILIARY GNSS INPUTS**

- Parameters: NMEA Standard ASCII messages: $GPGGA, $GPGST, $GPGSA, $GPGSV.
- Uses Aux input with best quality.

**BASE GNSS CORRECTION INPUTS**

- RTCM V2.x, RTCM V3.x, CMR, CMR+, and CMRx input formats accepted. Combined with raw GNSS observables in navigation solution.
- Rate: max rate 1 Hz.

**DIGITAL I/O**

- 1PPS: 1 pulse-per-second Time Sync output, normally high, active low pulse.
- Event Input (2): Time mark of external events. TTL pulses > 1 msec width, rising or falling edge, max rate 200 Hz.

**USER SUPPLIED EQUIPMENT**

- PC for POSView Software (Required for configuration): Pentium 90 processor (minimum), 326 MB RAM, 2 GB free disk space, Ethernet adapter (10/100 Base-T Ethernet: IEEE 802.3 standard), Windows 7 SP1, Windows 8, and Windows 10.
- PC for POSPac MMS Post-processing Software: Intel Pentium series 1GHz or faster 64-bit processor (minimum), 2GB RAM, 2.6 GB free disk space, USB Port (For Security Key), Windows 7 SP1, Windows 8.1, Windows 10.

- Specifications subject to change without notice.

**APPLANIX**

**Headquarters**: 85 Leek Crescent, Richmond Hill, ON Canada L4B 3B3
**T**: 1-289-695-6000
**United Kingdom**: Forester’s House, Old Racecourse, Oswestry UK SY10 7PW
**T**: 44 1691 700500
**USA**: 15840 FM 529 Rd, Suite 316, Houston, Texas, 77095
**T**: 1-713-936-2990

marine@applanix.com
www.applanix.com

© 2019, Applanix A Trimble Company. All rights reserved. Applanix and the Applanix logo are trademarks of Applanix Corporation registered with the Canadian Patent and Trademark Office and other countries. POS MV and POSPac are registered trademarks of Applanix Corporation.