POS MV™

SURFMASTER ONE SPECIFICATIONS

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.

POS 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.

PERFORMANCE SUMMARY - POS MV SURFMASTER ACCURACY

	DGPS	Fugro Marinestar®	IARTK	POSPac MMS PPP	POSPac MMS IAPPK	Accuracy During GNSS Outage
Position	0.5 - 2 m[1]	Horizontal: 10 cm 95% Vertical: 15 cm 95%	Horizontal: +/- (8 mm + 1 ppm x baseline length)[2] Vertical: +/- (15 mm + 1 ppm x baseline length)[2]	Horizontal: < 0.1 m Vertical: < 0.2 m	Horizontal: +/- (8 mm + 1 ppm x baseline length) Vertical: +/- (15 mm + 1 ppm x baseline length)[2]	~ 6 m for 60 s total outages (RTK) ~ 3 m for 60 s total outages (IAPPK)
Roll & Pitch	0.04°	0.03°	0.03°	< 0.03°	0.025°	0.05°
Heading	0.06° with 4 m baseline 0.08° with 2 m baseline	-	-	-	-	0.2° (IAPPK, 60 second outage) 0.3° (RTK, 60 second outage)
Heave TrueHeave™	5 cm or 5%[3] 2 cm or 2%[4]	-	-	-	-	5 cm or 5%[3] 2 cm or 2%[4]

SYSTEM SPECIFICATIONS

COMPONENT	DIMENSIONS	WEIGHT	TEMPERATURE	HUMIDITY	POWER
PCS/IMU enclosure	L = 145 mm, W = 160 mm, H = 66 mm	1.3 kg	-20 °C to +55 °C	5 - 95% RH	10-32 VDC, 17 W
GNSS antenna	Ø178 mm, W = 73 mm	0.45 kg	-50 °C to +70 °C	0- 100% RH	n/a

[1] Depending on quality of differential corrections
[2] Assumes 1 m IMU-GNSS antenna offset
[3] Whichever is greater, for periods of 14 seconds or less
[4] Whichever is greater, for periods of 35 seconds or less

1. ETHERNET INPUT OUTPUT

Ethernet	(10/100 base-T)
Parameters	Time tag, status, position, attitude, heave, velocity, track and speed, dynamics, performance metrics, raw IMU data, raw GNSS data
Display Port	Low rate (1 Hz) UDP protocol output
Control Port	TCP/IP input for system commands
Primary Port	Real-time (up to 200 Hz) UDP protocol output
Secondary Port	Buffered TCP/IP protocol output for data logging to external device

2. 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)

3. NMEA ASCII OUTPUT

Parameters	NMEA Standard ASCII messages: Position ($INGGA), Heading ($INHDT), Track and Speed ($INVTG), Statistics ($INGST), Attitude ($PASHR, $PRDID), Time and Date ($INZDA, $UTC)
Rate	Up to 50 Hz (user selectable)
Configuration	Output selections and rate individually configurable on each assigned com port

4. HIGH RATE ATTITUDE OUTPUT

Parameters	User selectable binary messages: attitude, heading, speed
Rate	Up to 200 Hz (user selectable)
Configuration	Output selections and rate individually configurable on each assigned com port

5. AUXILIARY GNSS INPUTS

Parameters	NMEA Standard ASCII messages: $GPGGA, $GPGST, $GPGSA, $GPGSV Uses Aux input with best quality
Rate	1 Hz

6. BASE GNSS CORRECTION INPUTS

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

7. 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

8. USER SUPPLIED EQUIPMENT

- PC for POSView Software (Required for configuration): Pentium 90 processor (minimum), 16 MB RAM, 1 MB free disk space, Ethernet adapter (RJ45 100 base T), Windows 98/2000/NT/XP/Windows 7
- PC for POSPac MMS Post-processing Software: Pentium III 800Mhz or equivalent (minimum), 512 MB RAM, 400 MB free disk space, USB Port (For Security Key), Windows XP or Windows 7
- 10-34 VDC power supply, capable of supplying 60W (peak) power from the host vessel's electrical system

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