



YOUR SUBSEA SOLUTIONS SPECIALIST



POS MV SURFMASTER WAVEMASTER OCEANMASTER POS MV is a user-friendly, high performing, turnkey inertial navigation 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.

Key Features

ALL MODELS

- IN-Fusion 2.0 ensures optimal GNSS aiding for any given condition
- True-Heave[™] removes the need to tune your filter settings for specific heave conditions, so no run-in time required
- High accuracy inertial measurement units feature SmartCal self-calibration technology
- Data time tagged to microsecond accuracy

SURFMASTER

- Up to 0.03° roll and pitch performance
- Robust positioning up to 30 seconds with GPS dropouts
- Best for low dynamic operations (lakes, streams, and other inland protected waters)

WAVEMASTER

- Up to 0.02° roll and pitch performance
- Robust positioning up to 1 minute with GPS dropouts
- Best for most hydrographic survey applications (dredging, nearshore surveying, etc.)

OCEANMASTER

- Up to 0.01° roll and pitch performance
- Robust positioning over 1 minute with GPS dropouts
- Best for all size vessels and high dynamic operations (ASV ops, offshore surveying, etc.)

Configurations



with Deck Mount IMU (RM)



Rackmount Topside with Submersible IMU (RM IP68)



Small Form Factor Topside with Deck Mount IMU (SFF)



Small Form Factor Topside with Submersible IMU (SFF IP68)







POS MV SURFMASTER

POS MV WAVEMASTER

POS MV OCEANMASTER

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	Position	Roll & Pitch•	Heading*	Heave TrueHeave**	Position	Roll & Pitch•	Heading*	Heave TrueHeave**	Position	Roll & Pitch•	Heading*	Heave TrueHeave**
DGPS	0.5 - 2 m²	0.04			0.5 - 2 m²	0.03			0.5 - 2 m²	0.02		
Fugro Marinestar®	Horizontal: 10 cm 95% Vertical: 15 cm 95%	0.03			Horizontal: 10 cm 95% Vertical: 15 cm 95%	0.02		Horizontal: 10 cm 95% Vertical: 15 cm 95%	0.01			
IARTK	Horizontal: +/- (8 mm + 1 ppm × baseline length) ³ Vertical: +/- (15 mm + 1 ppm × baseline length) ³	0.03	0.06: with 4 m baseline 0.08: with 2 m baseline 5 cm or 5½* 2 cm or 2½*	5 om or 5½5	Horizontal: +/-(8 mm + 1 ppm × baseline length) ³ Vertical: +/-(15 mm + 1ppm × baseline length) ³	0.02	0.015' with 4 m baseline 0.03' with 2 m baseline		Horizontal: +/- (8 mm + 1 ppm × baseline length) ³ Vertical: +/- (15 mm + 1ppm × baseline length) ³	0.01	0.01 with 4 m baseline 0.02" with 2 m baseline	
POSPac MMS PPP	Horizontal: < 0.1m Vertical: < 0.2m	< 0.03			Horizontal: < 0.1m Vertical: < 0.2m	< 0.02	5 cm or 5½ ⁵ 2 cm or 2½ ⁶	Horizontal: < 0.1m Vertical: < 0.2m	< 0.01		5 cm or 5½ ⁵ 2 cm or 2½ ⁶	
POSPac MMS IAPPK	Horizontal: +/- (8 mm + 1 ppm × baseline length) ³ Vertical: +/- (15 mm + 1 ppm × baseline length) ³	0.025		Horizontal: +/-(8 mm +1 ppm × baseline length) ³ Vertical: +/-(15 mm +1 ppm × baseline length) ³	0.015			Horizontal: +/- (8 mm + 1 ppm × baseline length) ³ Vertical: +/- (15 mm + 1 ppm × baseline length) ³	0.008			
During GNSS Outage	*6 m for 30 soutages (RTK) *3 m for 60 soutages (IAPPK)	0.05	>2' per hour degradation with 0.3 deg (RTK) or 0.2 deg (IAPPK) for 60's outage		*9 m for 60 s outages (RTK) *3 m for 30 s outages (RTK) *2 m for 60 s outages (IAPPK)	0.04	< 2' per hour degradation (negligible for outages < 60 s)		*3 m for 60 s outages (RTK) *1 m for 60 s outages (IAPPK)	0.03	1' per hour degradation (negligible for outages <60 s)	

PCS OPTIONS

Tes of field						
COMPONENT	Rack Mount PCS	Small Form Factor PCS				
DIMENSIONS	L = 442 mm, W = 356 mm, H = 46 mm	L = 167 mm, W = 185 mm, H = 68 mm				
WEIGHT	3.9 kg	2.5 kg				
TEMPERATURE	-20°C to +70°C	-20°C to +60°C				
HUMIDITY	10 - 80% RH	0-100% RH				
POWER	AC 120/230 V, 50/60 Hz, Auto-Switching, 40 W	DC 10-34 V, 35 W (peak)				

INERTIAL MEASUREMENT UNIT (IMU)

ENCLOSURE	Between Decks	Submersible	Between Decks	Submersible
DIMENSIONS	L = 158 mm, W = 158 mm, H = 124 mm	Ø100 mm (base plate Ø132 mm) × 61 mm²	L = 158 mm, W = 158 mm, H = 124 mm	Ø100 mm (base plate Ø132 mm) × 104 mm ⁷
WEIGHT	1.66 kg	2.4 kg	2.5 kg	2.7kg
TEMPERATURE	-40 °C to +60 °C	-40 °C to +60 °C	-40 °C to +60 °C	-40 °C to +60 °C
IP RATING	IP65	IP68	IP65	IP68

GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS)

COMPONENT	GNSS Antenna (540AP)	GNSS Antenna (GA830)
DIMENSIONS	Ø178 mm, W = 73 mm	Ø149 mm, W = 99 mm
WEIGHT	0.45 kg	0.82kg
TEMPERATURE	-50°C to +70°C	-40 °C to +70 °C
HUMIDITY	0-100½ RH	0-100% RH

..... (10/100 base-T)

ETHERNET INPUT/OUTPUT

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

SERIAL RS232 INPUT OUTPUT

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
(\$ING	ST) 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 comport

	comparable on caon assigned com por
HIGH RATE ATTITUDE OUTPUT	
ParameterUs	
	heading, speed
Rate	Up to 200 Hz (user selectable)
Configuration	Output selections and rate individually
	configurable on each assigned comport

AUXILIARY GNSS INPUTS

Parameter	NMEA Standard ASCII messages: \$GPGGA,
	\$GPGST, \$GPGSA, \$GPGSV
	Uses Aux input with best quality
Rate	

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

DIGITAL I/O

- USER SUPPLIED EQUIPMENT

 PC for POSView Software (Required for configuration): Pentium 90 processor (minimum), 256 MB RAM, 2 GB free disk space, Ethernet adapter (10/100 Base-T
 - Ethernet; IEEE 802.3 sntandard), Windows 7 SP1, Windows 7 Embedded, Windows 8, and Windows 10

 PC for POSPac MMS Post-processing Software: Intel Pentium series 1Ghz or 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



Visit our website for

more info:



¹Sigma unless otherwise stated

Sigma unless otherwise stated

Depending on quality of differential corrections

Assumes 1 m IMU-GNSS antenna offset

No range limit

Whichever is greater, for periods of 20 seconds or less

Whichever is greater, for periods of 35 seconds or less

Height excludes connector