Hydrins

FOG-based high-grade inertial navigation system for hydrographic and multibeam surveys

Hydrins is a high-performance inertial navigation system optimized for hydrographic surveys using multibeam echosounders. Hydrins comprises a single compact unit and delivers highly accurate real-time position, heading, attitude and speed data. In addition to the real-time options, Hydrins raw data can be post-processed using Delph INS.

Multibeam survey

Hydrographic survey

Harbors and inland waterways

FEATURES

- All-in-one high-accuracy 3D positioning with heading, roll and pitch
- Smart HeaveTM
- Automatic GPS drop-out / multipath management
- Advanced post-processing software solutions (Delph INS)
- Compact, uses any kind of GPS (single antenna)
- Ethernet, web server (GUI)

BENEFITS

- Motion and heading not affected by GPS outages
- Accurate height compensation with GPS RTK
- A complete solution with easy-to-use yet powerful
- post-processing tools
- Fast and reliable installation on all vessels
- Network ready, intuitive user interface

PHYSICAL CHARACTERISTICS

Dimensions (L x W x H)	180 x 180 x 162 mm
Weight	4.5 kg
Waterproof	IP66

info@ixblue.com
www.ixblue.com

iXblue

TECHNICAL SPECIFICATIONS

Performance

Position accuracy real time	
With GPS	Three times better than GPS
No aiding for 1 min / 2 min	0.8 m / 3.2 m (CEP 50)
Position accuracy post-processed	
With GPS	Four times better than GPS
No aiding for 1 min / 2 min	0.2 m / 1m (CEP 50)
Heading accuracy	0.01 deg secant latitude RMS[1]
Roll and pitch dynamic accuracy (no aiding)	0.01 deg RMS
Heave accuracy (Smart Heave)[2]	2.5 cm or 2.5% RMS

Operating range / Environment

Operating / storage temperature	-20°C to 55°C / -40°C to 80°C
Rotation rate dynamic range	Up to 750 deg/s
Acceleration dynamic range	± 15 g
Heading / roll / pitch	0 to +360 deg / ±180 deg / ±90 deg
MTBF (observed)	80 000 hours

Interfaces

Serial	RS422 or RS232
Ethernet	100 MBit - UDP / TCP server / TCP client / WebGUI
Pulse	PPS, Trigger
Inputs / outputs	Configurable 7i / 5o - Pulse[3] 4i / 2o - Configuration port
Baud rates	Up to 460 kbaud
Data output rate	0.1 Hz to 200 Hz
Power supply / consumption	24 VDC (20 - 32 V) / < 20 W

Heading, roll / pitch, and position

Item	Name	With GNSS		Without GNSS [60s outage]	
-	**Mode**	**RTK**	**Post-Pro**	**RTK**	**Post-Pro**
1	Heading [°] RMS [4]	0.01	0.008	0.01	0.008
2	Roll / Pitch [°] RMS	0.01	0.005	0.01	0.005
3	Position [m] RMS	0.03	0.02	0.8	0.2

(1) Secant latitude = 1/c osine latitude
(2) Whichever is greater for periods up t o 30 seconds. Smart heave is delayed by 100 s fix ed value
Real-time heave accuracy is 5 cm or 5% whiche ver is greater
(3) Use GPS PPS pulse f or accurate time synchronization of HYDRINS
(4) Secant latitude=1/cos(Lat) / RMS=1 sigma

info@ixblue.com
www.ixblue.com

iXblue