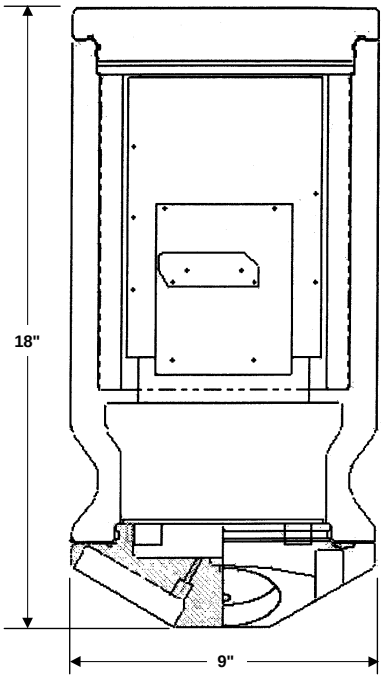
Kearfott Corporation
A Subsidiary of Astronautics Corporation of America
Guidance & Navigation Division

SEABORNE INERTIAL NAVIGATION SYSTEM

DOPPLER VELOCITY LOG

KN-6050 FAMILY



SEA *DeViL* features include:

- **Multiple I/O (RS-422, RS-232)**
- **At sea align capable with P(Y) or C/A code GPS and/or DVL aiding**
- **Interfaces with embedded C/A code GPS for aided navigation**
- **Interfaces with embedded DVL for aided navigation**

The Seaborne Navigation System/Doppler Velocity Log (SEA *DeViL*) is the latest addition to Kearfott's family of inertial quality pointing, stabilization, survey, and navigation devices for maritime applications. The SEA *DeViL* modular architecture provides maximum flexibility, offering selectable performance and future upgradability. A sophisticated Kalman filter allows for aiding from the embedded GPS and Sonar/Doppler. Typical applications include patrol boats, surface and subsurface vessels, remotely operated vehicles, and research/survey vehicles. The SEA *DeViL* incorporates Kearfott's' SEAborne NAVigation (SEANAV) System, RD Instruments Doppler Velocity Log (DVL) 300 kHz and an embedded C/A code GPS receiver. Flexibility offers selection of either of two inertial rate sensors (16 or 24 cm MRLG), either of three DVL's (300, 600 or 1,200 kHz), either of three pressure housings (1,000, 3,000 or 6,000 m) and selection of an external GPS receiver in place of the embedded receiver. Provision for input of Differential GPS (DGPS) corrections to the embedded GPS receiver is provided.

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SEA *DeViL* PERFORMANCE*			
Surface Ship	**KN-6051**	**KN-6052**	**KN-6053**
Position Accuracy • GPS/DVL** • DVL (Water-Track Mode)****	 10 m, CEP 10 nm/8hrs, TRMS	 10 m, CEP 2 nm/8hrs, TRMS	 10 m, CEP 1 nm/8hrs, TRMS
Heading Accuracy • GPS/DVL** • DVL	 5.0 mils, rms 5 mils* secant λ, rms	 <1.5 mils, rms 1.0 mils* secant λ, rms	 <1.0 mils, rms 0.5 mils * secant λ, rms
Velocity Accuracy • GPS/DVL** • DVL (Water-Track Mode)	 0.05 m/sec 0.5 m/sec, rms	 0.05 m/sec 0.35 m/sec, rms	 0.05 m/sec 0.3 m/sec, rms
Roll/Pitch Accuracy	0.5 mils, rms	0.5 mils, rms	0.5 mils, rms
Underwater Vehicle* **	**KN-6051**	**KN-6052**	**KN-6053**
Position Accuracy ****	0.5% DT, CEPR	0.2% DT, CEPR	0.05% DT, CEPR
Heading Accuracy	5 mils*, rms	1.5 mils*, rms	1.0 mils *, rms
Roll/Pitch Accuracy	0.5 mils, rms	0.5 mils, rms	0.5 mils, rms

OPERATING RANGES*	
Acceleration	>5 *g*'s all axes
Attitude (all axes)	Unlimited (DVL data available between ±30°roll and pitch)
Outputs, Digital	RS-422, RS-232
Cooling	Conduction to water
Environmental Requirements	Per MIL-STD-167-1 and IEC 1010
Temperature Operating	-5°C to +45°C (-40°C to +55°C INS, -5°C to +45°C DVL)
Temperature Storage	-30°C to +60°C

PHYSICAL CHARACTERISTICS	
Dimensions	18 x 9 inch cylinder
Weight: (KN-6051) 3,000 m housing	77 lbs (57 lbs in water)
(KN-6052, KN-6053) 1,000 m housing	50 lbs (30 lbs in water)
(KN-6052, KN-6053) 3,000 m housing	80 lbs (60 lbs in water)
(KN-6052, KN-6053) 6,000 m housing	95 lbs (70 lbs in water)
Power (20 to 40 V dc)	50 Watts average (@ 32 V dc)
Maintenance	Replace desiccant bag prior to deployment No special equipment required
Calibration Interval	None

Notes:

*Performance operating ranges and characteristics are tailorable for specific applications.

**Assumes GPS aiding. (Selective Availability off for C/A code GPS receivers)

***Underwater vehicle performance assumes GPS or Sonar/Doppler bottom-track aiding while aligning at surface and Sonar/Doppler bottom-track aiding while under water.

****Circular Error Probable Rate (CEPR), Distance Traveled (DT)

For further product information or additional applications, please contact Kearfott Marketing at (973) 785-6555 or Fax (973) 785-5905 or Visit our Website @ www.kearfott.com