# LITEF

## LFK-100

### AHRS WITH NAVIGATION CAPABILITIES FOR SURFACE VESSELS, AUVs, USVs, ROVs ...



### THE LFK-100 SYSTEM

The LFK-100 Marine Gyro Compass and Attitude Reference System provides all motion data requested for surface ship's steering as well as to control and navigate remotely operated underwater vehicles (ROV), such as survey and construction robots. The LFK-100 has the capability for fast gyro compassing and at sea alignment. It may be augmented by an external satellite receiver and/or ship's log or multi-axes velocity information to provide worldwide navigation capability.

LFK-100 is based on state-of-the-art Fiber Optic Gyros and Micro Mechanical Accelerometers in a strapdown configuration. Through the serial RS-422, the system provides data and status information to the user systems.

### KEY FEATURES

The LFK-100 provides the following advanced features:

- Automatic mode control
- Provision of heading, roll, and pitch data as well as angular rates, heave, acceleration, velocity, and geographical position
- High dynamic angular rate and body acceleration information with low noise enables highly sophisticated stabilization and positioning control laws
- Standard and/or user selectable data protocols and data transmission rates
- Compensation of output data for user selectable lever arms
- Easy mounting of the unit and storage of the ROV installation data
- High reliability
- Small size, low weight, and low power consumption
- Redundant power inputs, suitable for battery backup and enhanced mission reliability

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# TECHNICAL DATA LFK-100

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### PARAMETERS PHYSICAL / OPERATIONAL

| | |
|---|---|
| Dimensions | 278 x 102 x 128 mm |
| Weight | 3 kg |
| Volume | 3.6 l |
| Power | 28 V DC (nominal) 26 W |
| Compass Safety Dist. | 0.3 m |
| MTBF | > 40000 hours |

### INTERFACES

| | |
|---|---|
| RS-422 User Interface | |
| RS-422 GPS Interface | |
| Discretes | |

### PERFORMANCE (SPECIFICATION, RMS)

| | SPECIFICATION, RMS | TYPICAL VALUES |
|---|---|---|
| Pitch / Roll static dynamic | 0.1 deg 0.2 deg | 0.05 deg 0.1 deg |
| Heading | 0.4 deg x secant (lat) | 0.2 deg x secant (lat) |
| Velocity | Ref. velocity ± 0.1 m/s | |
| Angular Rates | 0.01 deg/s or 0.03% | |
| Accelerations | 0.02 m/s² or 0.1 % | |
| Heave | 0.05 m or 5 % | |

Notes:
[1] secant (lat) = 1 / cosine (latitude)
[2] whatever is greater
[3] The dc-component is damped to the depth input value or, if no depth information is received, to sea level. Dynamic Range: 2.5 m and 0.16 Hz $\leq$ f $\leq$ 3 Hz.