

iOLFOG-S-D

High Resolution Fiber Optical Angular Rate Sensor with Digital Output

The series iOLFOG angular rate sensor is realized as an open-loop fiber optical gyroscope measuring rotation rate with high precision.

- robust fiber optic gyro with high bandwidth
- interfaces: CAN, RS232, analog
- synchronisation input and output available
- wide range of power supply
- used for automatic vehicle guidance (forklifters, AGVs), ship motion control etc.

Compared to other gyroscopes the optical gyroscope has the advantage

of very low noise, short reaction time, high resolution, acceleration insensitivity and unsurpassed robustness. iOLFOG-S-D provides both a compensated digital output (CAN or RS232/422) and an compensated analog output as an option.



The iOLFOG-S-D comes in an ruggedized aluminum housing and contains the fiber optical sensing unit with extra long fiber coil followed by high sophisticated analog and digital signal processing. The output delivers an analog output signal proportional to angular velocity. The integrated micro-processor reduces the nonlinearity less than 0.2% f.s and compensates the bias on the digital and analog output over temperature. As an option an input for an additional incremental encoder is available for applications in vehicle guidance.

In summary the iOLFOG-S-D is created as a "plug & measure" angular rate sensor of the medium precision class for easy handling.

Technical data of the fiber optical gyro iOLFOG-S-D-xx (1 sigma values):

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| Measuring range: | ± 200 deg/s (optional 300 deg/s or up to 4000 deg/s) |
| Analog output signal (option only): | 0...5 V or -5...+5 V (calibrated angular rate, 16 bit resolution of DAC) |
| Digital output signal (compensated): | CAN, RS232 or RS422 |
| Data Rate: | 0 to 300 Hz (can be filtered internally) |
| Bias: | < 0.005 %/s (over temperature) |
| Bias stability: | < 0.002 %/s (constant temperature) |
| Resolution: | < 0.001 %/s |
| Bandwidth: | 100 Hz (option: 50/100/200/300 Hz) |
| Noise density: | < 0.10 deg/√h (white noise, in-band noise 0,02 %/s rms) |
| Cross sensitivity to acceleration: | none |
| Linearity error, scale factor stability: | < 0.2 % (typical < 0.1 %) |
| Build-in-test and temperature sensor: | integrated |
| Temperature range: | -40...+60 °C (operating, case temp.), -55...+85 °C storage |
| Shock, Protection: | 90 g, 11 ms; IP54 (SubD) or IP67 (MIL-C-38999 III) |
| Vibration: | 6 g, 20...2000 Hz (rms) |
| MTBF: | > 10.000 hrs |
| Mechanical dimensions: | approx. 100 x 100 x 80 mm (without mounting plate) |
| Signal and power connector: | 15-pin SUB-D (option: MIL-C-38999 III) |
| Power supply: | xx = 12: 7...20 V or xx = 24: 10...34 V, P < 3 W |

Please feel free to contact us for further information on inertial navigation, measuring, automation and control systems.

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