

# KILAVUZ-11

TACTICAL GRADE INERTIAL  
MEASUREMENT UNIT

FIBER-OPTIC GYROSCOPES  
MEMS ACCELEROMETERS





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## TACTICAL GRADE INERTIAL MEASUREMENT UNIT

Kilavuz-11 is a tactical grade inertial measurement unit, which is designed and developed by ASELSAN, to be used in systems like tactical inertial navigation system, guided munition kit, EO/FLIR stabilization and in many other applications.

### Applications

- Navigation, Guidance and Control
- EO/FLIR/Camera/Radar Stabilization

### Gyro Performance Specifications

- Measurement Range :  $\pm 1000$  °/s
- Angular Random Walk (const temp) :  $\leq 0.05$  °/ $\sqrt{h}$
- Scale Factor (over temp) :  $\leq 100$  ppm ( $1\sigma$ )
- Misalignment (over temp) :  $\leq 0.5$  mrad ( $1\sigma$ )
- Bias (over temp) :  $\leq 1$  °/h ( $1\sigma$ )
- Bias Instability (const temp) :  $\leq 0.5$  °/h

### Accelerometer Performance Specifications

- Measurement Range :  $\pm 15$  g
- Velocity Random Walk (const temp) :  $\leq 50$   $\mu\text{g}/\sqrt{\text{Hz}}$
- Scale Factor (over temp) :  $\leq 200$  ppm ( $1\sigma$ )
- Misalignment (over temp) :  $\leq 0.5$  mrad ( $1\sigma$ )
- Bias Repeatability (run to run) :  $\leq 1.5$  mg ( $1\sigma$ )
- Bias Stability (over temp, in run) :  $\leq 150$   $\mu\text{g}$  ( $1\sigma$ )
- Bias Instability (const temp) :  $\leq 50$   $\mu\text{g}$

### Physical/ Electrical Specifications

- Data Rate (UART) : Configurable up to 2Kz
- Data Rate (SDLC) : 400 Hz
- Dimensions :  $\varnothing$  94 mm x 96.1 mm (with connector)
- Weight :  $< 0.92$  kg
- Input Voltage : +5 VDC,  $\pm 15$  VDC
- Power Consumption : 16W (at temp extreme)
- Serial Interface : RS 422, SDLC or UART

### Environmental Specifications

- Operating Temperature :  $-40$  to  $+71$ °C
- Storage Temperature :  $-55$  to  $+85$ °C
- Vibration (Functional) : 6 grms, 20 Hz... 2000 Hz
- Shock (Functional) : 20g 11 ms halfsine



Kilavuz-11 uses fiber optic gyroscopes and MEMS accelerometers for measurement of angular rate and acceleration of the platform. It has a small size, high reliability, low weight and low power consumption by using the advantages of the MEMS and fiber optic technology.

Specifications are subject to change without any notice. | All tolerances are within  $\pm 10\%$ .