

# KILAVUZ-20 TG-IMU

TACTICAL GRADE INERTIAL  
MEASUREMENT UNIT

FIBER-OPTIC GYROSCOPES  
QUARTZ ACCELEROMETERS





# KILAVUZ-20 TG-IMU

## TACTICAL GRADE INERTIAL MEASUREMENT UNIT

Kilavuz-20 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.

Kilavuz-20 uses fiber optic gyroscopes and quartz 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 fiber optic technology.

### Applications

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

### Gyro Performance Specifications

- Measurement Range :  $\pm 450$  °/s (configurable up to 1000 °/s)
- Angular Random Walk (const temp) :  $\leq 0.05$  °/ $\sqrt{h}$
- Scale Factor (over temp) :  $\leq 500$  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 :  $\pm 30$  g
- Velocity Random Walk (const temp) :  $\leq 10$   $\mu$ g/ $\sqrt{Hz}$
- Scale Factor (over temp) :  $\leq 200$  ppm (1 $\sigma$ )
- Misalignment (over temp) :  $\leq 0.5$  mrad (1 $\sigma$ )
- Bias (over temp) : 0.2 mg (1 $\sigma$ )
- Bias Instability (const temp) :  $\leq 10$   $\mu$ g

### Physical/ Electrical Specifications

- Output Data Rate : 100 Hz (inertial) / 500 Hz (flight contr)
- Dimensions : 156 mm x 134 mm x 70 mm
- Weight : 1.9 kg (with isolators)
- Input Voltage : +5 VDC,  $\pm 15$  VDC
- Power Consumption : 16W (at temp extreme)
- Serial Interface : RS 422, SDLC

### 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

