

Pulse-40v2 Performance specifications

Accelerometers specifications



Preliminary

These performance specifications are preliminary and will be confirmed after complete qualification.

| | Typical | Units | Notes |
|---|---------|-------------------|---|
| Measurement range | ±40 | g | |
| Scale Factor error | 500 | ppm | Over ±1g, one year accelerated aging |
| Non-linearity (ppm of FS) | 25 | ppm | Over ±1g, one year accelerated aging |
| Long-term bias repeatability | 1250 | µg | One year accelerated aging |
| In-run bias instability | 6 | µg | Allan Variance method, constant temperature |
| Velocity Random Walk | 0.02 | m/s/h | Allan Variance method, constant temperature |
| Noise spectral density | 40 | µg/Hz | Wide-band noise [0 to 100] Hz |
| Misalignment | 1 | mrad | Over temperature range |
| Orthogonality | 0.07 | mrad | Over temperature range |
| Vibration Rectification Coefficient (VRC) | 0.03 | mg/g ² | 10g RMS - random vibrations 20Hz to 2kHz |
| Bandwidth | 250 | Hz | -3dB point |
| Sampling rate | 4.0 | kHz | |

Gyroscopes specifications




Preliminary

These performance specifications are preliminary and will be confirmed after complete qualification.


| | Typical | Units | Notes |
|---|----------------|--------------------|---|
| Measurement range | ±499 ±4000* | °/s | 490 °/s is the default range. |
| Scale Factor error | 500 | ppm | One year accelerated aging |
| Non-linearity (ppm of FS) | 25 | ppm | One year accelerated aging |
| Long-term bias bias repeatability | 150 | °/h | One year accelerated aging |
| In-run bias instability | 0.6 | °/h | Allan Variance method, constant temperature |
| Angular Random Walk | 0.08 | °/h | Allan Variance method, constant temperature |
| Noise spectral density | 5.0 | °/h/Hz | Wide-band noise [0 to 100] Hz |
| Misalignment | 1 | mrad | Over temperature range |
| Orthogonality | 0.07 | mrad | Over temperature range |
| Vibration Rectification Coefficient (VRC) | 0.02 | °/h/g ² | 10g RMS - random vibrations 20Hz to 2kHz |
| Acceleration sensitivity | 10 | °/h/g | Tested over ±1g |

| | | | |
|----------------------|-----|-----|------------|
| Bandwidth | 250 | Hz | -3dB point |
| Sampling rate | 6.6 | kHz | |

 4000°/s version is export controlled.

Magnetometers specifications

A set of three Anisotropic Magneto-resistive magnetometers is embedded within the all the Pulse-40. This technology provides a very high sensitivity compared to coil based technologies.

 Magnetometer sampling design makes it impossible to reject signal frequencies above 75Hz. User should ensure that high frequency noise is not disturbing magnetometers at the sensor's location.

| | Specifications | Remarks |
|-----------------------------------|-----------------------|---------------------------------------|
| Full scale (Gauss) | 50 | |
| Scale factor stability (%) | 0.5 | |
| Noise (mGauss) | 3 | Over 1 to 25 Hz band |
| Bias stability (mGauss) | 1 | |
| Bandwidth (Hz) | 22 | -3dB attenuation |
| Resolution (mGauss) | 1.5 | |
| Sampling rate (Hz) | 100 | |
| Orthogonality (°) | 0.1 | Achievable after magnetic calibration |