

Features:

- Accurate 6 DOF DC measurement
- Voltage output signal
- Proven and robust silicon MEMS
- High shock and vibration rejection
- Class-leading bias and noise over temperature
- Low noise – high resolution



Applications:

- Automotive in-car navigation
- Vehicle and personal navigation aiding
- Vehicle yaw, pitch and roll rate sensing
- Antenna stabilization
- Motion control
- Railway engineering

Dynalabs Inertial Measurement Units are based on triaxial accelerometers and triaxial gyroscopes that are integrated in a single housing. The inertial measurement unit (IMU) is based on proven microelectromechanical systems (MEMS) accelerometers and gyroscopes for detecting the smallest linear accelerations and angular rates. Dynalabs IMUs enable separate analog voltage outputs for all 6 degrees of freedom(DOF). IMUs enable power supply voltage from 6 to 35 VDC.

Dynalabs IMUs feature a lightweight, reliable aluminum housing with protection class IP68 and have cable with configurable length and connectors.

** Any combination of gyroscopes and accelerometers is possible.*

GYROSCOPES

Full-scale angular velocity	(°/s)	± 75	± 150	± 300	± 900
Frequency range	(Hz)	0-150	0-150	0-150	0-150
Non-linearity (full scale)	(%)	0.06	0.06	0.06	0.06
Noise (in band)	(°/s/√Hz)	0.0075	0.0075	0.0075	0.0075
Scale factor (nominal)	(V/°/s)	0.012	0.006	0.003	0.001
Scale factor var. over temp.	(%)	0.5	0.5	0.5	0.5
Bias variation with temp.	(°/s)	± 1	± 2	± 3	± 4

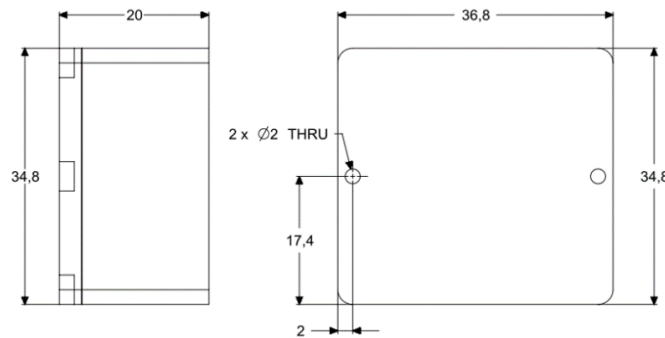
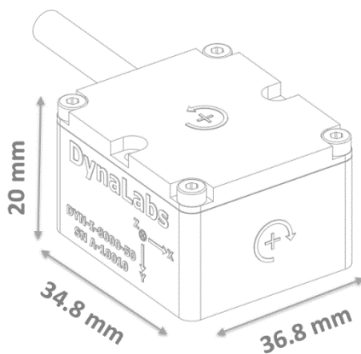
ACCELEROMETERS

Full-scale acceleration	(g)	± 2	± 5	± 10	± 30	± 50	± 100	± 200
Frequency range (±5%)	(Hz)	700	1,150	2,000	2,300	2,700	2,900	2,500
Non-linearity (full scale)	(%)	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Noise (in band)	(µg/√Hz)	9	21	40	100	180	340	680
Scale factor (nominal)	(mV/g)	1,350	540	270	90	54	27	13.5
Scale factor temp. coeff.	(ppm/°C)	120	120	120	120	120	120	120
Bias temperature coeff.	(mg/°C)	± 0.2	± 0.5	± 1	± 3	± 5	± 10	± 20

Power: 6V to 35V DC power

Technical Drawing:

Weight: 40 g (aluminum)
85 g (steel)



Options:

- Custom Cable Length (5m standard cable)
- Custom Housing Material
- Custom Connector

Standard length of the integrated cable is 5 meters. But, based on request customized cable lengths are possible.

Standard version has no connector at the cable end. However, it is possible to assemble connector during production.

Cable Code/Pin Configuration:

- | | |
|------------------------------|--|
| • Red: V+ | Supply voltage |
| • Black: Ground | Power GND |
| • X-Axis: Yellow : Signal(+) | Positive, analog output voltage signal for differential mode |
| Purple : Signal(-) | Negative, analog output voltage signal for differential mode |
| • Y-Axis: Blue : Signal(+) | Positive, analog output voltage signal for differential mode |
| Green : Signal(-) | Negative, analog output voltage signal for differential mode |
| • Z-Axis: White : Signal(+) | Positive, analog output voltage signal for differential mode |
| Orange: Signal(-) | Negative, analog output voltage signal for differential mode |

Cable Code/Pin Configuration:

- | | |
|----------------------------|--|
| • Red: V + | Supply voltage 6V to 35V |
| • Black: Ground | Power GND |
| • RX : Brown : Gyro Signal | X-Axis: Analog output voltage signal for single-ended mode |
| • RY : Grey : Gyro Signal | Y-Axis: Analog output voltage signal for single-ended mode |
| • RZ : Pink : Gyro Signal | Z-Axis: Analog output voltage signal for single-ended mode |
| • White-Brown : nc | Not connected |

Cable: 11x #28 AWG Conductors PFA Insulated, Braided Shield, TPE Jacket

Quality: All Dynalabs products are CE compliant