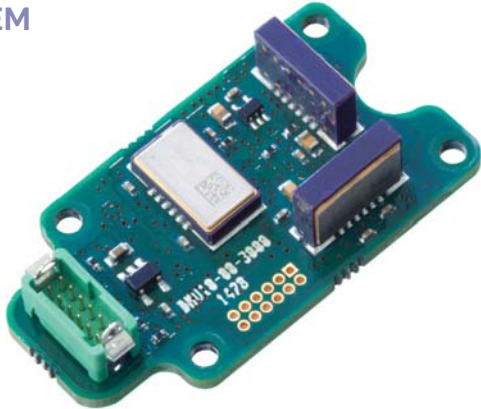


DMU10

6-DOF Precision MEMS
Inertial Measurement Unit

DMU10-01/-21
OEM



DMU10-02/-22
Module



Key features

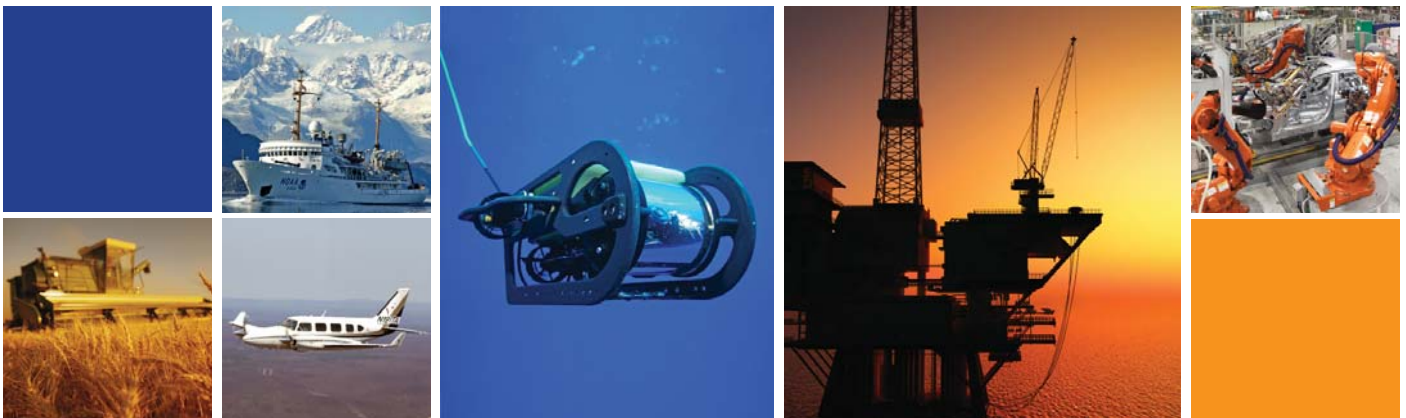
- High performance six degrees of freedom (6-DOF) MEMS IMU
- 7 sensor inputs
 - Angular rate (3x)
 - Linear acceleration (3x)
 - Temperature
- Dynamic Range $\pm 300^\circ/\text{s}$ and $\pm 10\text{g}$
- Bias instability $< 10^\circ/\text{hr}$ and 0.05mg
- Random Walk $< 0.4^\circ/\sqrt{\text{hr}}$ and 0.05m/s
- Small (45 x 26 x 16mm)
- User programmable bandwidth
- 3.2 to 5.25V Supply
- Wide operating temperature range -40°C to $+85^\circ\text{C}$
- RS422 digital output
- RoHS compliant

Typical applications

- Machine control
- Antenna and platform stabilisation
- Precision agriculture
- Autonomous vehicles and ROVs
- Attitude measurement systems
- Personal navigation
- GPS aiding

Options

- Uncalibrated and thermally calibrated
- OEM and Module
- Other interfaces: SPI®
- DMU10 evaluation kit comprising DMU10-21-0100, USB interface, software, cables, connectors and instruction manual. (Ordering P/N DMU10-21-0500)



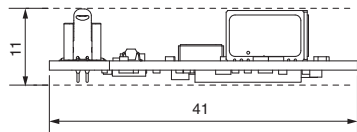
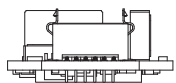
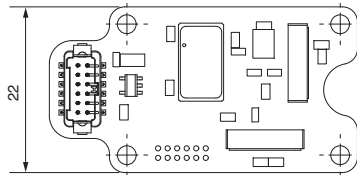
DMU10

6-DOF Precision MEMS Inertial Measurement Unit



DMU10-01/-21

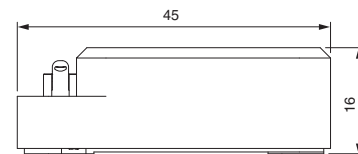
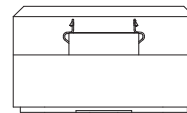
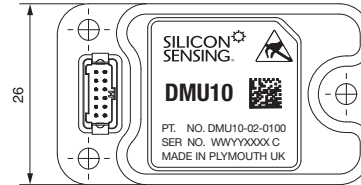
OEM



All dimensions in millimetres

DMU10-02/-22

Module



All dimensions in millimetres

Typical Data

Parameter	Uncalibrated	Thermal Calibration
Part Number	DMU10-01	DMU10-21
	DMU10-02	DMU10-22

Gyroscope Properties

Dynamic range	±300°/s	±300°/s
Scale factor over temp	±1.5%	±0.1%
SF non-linearity	±0.05%	±0.033%
Bias over temp	±1.65°/s	±0.25°/s
Noise (rms to 100Hz)	0.1°/s	0.1°/s
Bias instability	<15°/hr	<15°/hr
Angle Random Walk	<0.4°/√hr	<0.4°/√hr

Accelerometer Properties

Dynamic range	±10g	±10g
Scale factor over temp	±1.0%	±0.1%
SF non-linearity (±8g)	±0.5%	±0.5%
Bias over temp	±50mg	±2.5mg
Noise (rms to 100Hz)	1mg	1mg
Bias instability	<0.05mg	<0.05mg
Random Walk	<0.05m/s/√hr	<0.05m/s/√hr

Misalignment

Over temperature	3%	0.35%
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Temperature Sensor Properties

Range	-45 to +100°C
Accuracy at OT	±3.0°C

IMU Properties

Operating temperature	-40 to +85°C
Start-up time	< 0.5s
Current	85mA
Supply voltage	3.20 to 5.25V



DMU10 OEM EVK Evaluation Kit
(P/N DMU10-21-0500)

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