

# Inertial Measurement Unit Line Guide



**Six degrees of freedom.** Provides three-dimensional motion sensing by detecting changes in rotation and how fast the equipment is moving. Precisely measures the equipment's dynamic motion and orientation, enhancing accuracy, and increasing safety, productivity, stability, and operational capability. A temperature sensor in each rotational rate sensor

provides a temperature value to the processing module where the samples are filtered and compensated. This allows the system to perform over a wide temperature range. Honeywell's IMU sensors offer customers in the commercial HDV segment enhanced agricultural and construction vehicle performance.

## FEATURES

### INERTIAL MEASUREMENT UNIT HG1171 Series

#### Features:

Three-dimensional rotation rate and acceleration outputs (roll, pitch, yaw)

- High speed CAN bus
- Broad dynamic range
- Low noise
- High resolution
- Customizable
- Enhanced temperature performance
- Tough metal housing

#### General Benefits:

Microcontroller, sensors, and communication interfaces are consolidated into one module allowing Honeywell to tailor software to the customer's needs, reducing development time and cost.

#### Agricultural Benefits:

Provides motion control feedback (attitude/accleration) for leveling cutting blades, planters, tillers when on slopes or hills • Improves automated steering capabilities by providing rotational rate change data to vehicle controls • Smooths GPS data (position, velocity) for use in high accuracy planting and tilling

#### Construction Benefits:

Offers active depth and angle control for graders/bulldozers • Provides real-time stability control in rugged, steep terrain • Delivers motion compensation in automated vehicles that depend on GPS for guidance • Maintains augmentation with absolute angle outputs to 0.1° (opt.)

- Improves operator awareness relative to equipment loading and extension envelopes on cranes, material/ telescopic handlers

#### Potential applications:

Vehicle stability control systems on tractors, harvesters, excavators, trucks, forestry equipment, loaders and graders to improve operator awareness. May also be used on cranes and material/telescopic handlers to provide real-time stability control. Delivers motion compensation in GPS-guided automated vehicles.

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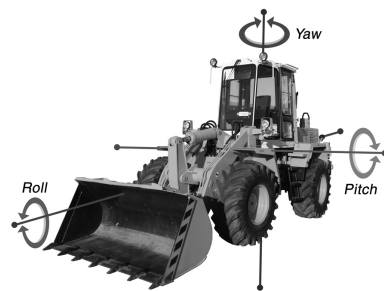
Enhanced accuracy of tracking and monitoring. Tough metal housing for demanding environments. Provides key data for automated steering and vehicle controls.

**High performance MEMS** (Micro Electromechanical Systems) rotation rate sensors (gyroscopes), are utilized to sense rotation rate and acceleration information.

**High speed CAN bus (2.0 A or B)** provides cost-effective, high-integrity serial data communications.

**KWP (Keyword Protocol)** monitors health and status of a unit on a CAN bus and supports high speed IMU flashing for reprogramming.

Customization allows the customer to specify changes in the IMU so it more readily fits into existing architecture on vehicle.



### Inertial Measurement Unit

### HG1171 Series

<b>Supply voltage (normal operation)</b>	7 V to 17 V
<b>Over voltage (output halted)</b>	26 V
<b>Reverse voltage</b>	-18 V
<b>Supply current</b>	75 mA
<b>Start up time</b>	700 ms
<b>Operating temperature range</b>	-40 °C to 85 °C [-40 °F to 185 °F]

**Warranty.** Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgement or consult your local sales office for specific warranty details. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, without charge those items it finds defective. **The foregoing is buyer's sole remedy and is in lieu of all warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall Honeywell be liable for consequential, special, or indirect damages.**

While we provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use.

For more information about Sensing and Control products, visit [www.honeywell.com/sensing](http://www.honeywell.com/sensing) or call +1-815-235-6847; Email inquiries to [info.sc@honeywell.com](mailto:info.sc@honeywell.com)

#### **⚠ WARNING** **PERSONAL INJURY**

- DO NOT USE these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury.

**Failure to comply with these instructions could result in death or serious injury.**

#### **⚠ WARNING** **MISUSE OF DOCUMENTATION**

- The information presented in this catalogue is for reference only. DO NOT USE this document as product installation information.
- Complete installation, operation and maintenance information is provided in the instructions supplied with each product.

**Failure to comply with these instructions could result in death or serious injury.**

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