



## HG5700 Inertial Measurement Unit

High Performance Gyrocompassing Grade IMU  
Possibilities of Navigation. *Made Easy*

# HG5700 Inertial Measurement Unit

## Proven – Dependable – Accurate

The HG5700 is a high performance gyrocompassing Inertial Measurement Unit (IMU) designed to meet the needs of a broad range of guidance and control applications. The HG5700 IMU is an enhanced performance version of the HG1700 IMU in a similar form factor. It also serves as a drop-in replacement for its precursor, the HG1700, which has been successfully deployed on a wide range of weaponry, UAVs, stabilized platform, surface mapping, ground survey, and oceanographic survey, and have shown unsurpassed performance and reliability.

## Description

The HG5700 IMU contains three Ring Laser Gyroscopes (RLG) and three quartz Resonating Beam Accelerometers (RBA) with excellent stability characteristics environmentally sealed in a rugged aluminum housing. The HG5700 IMU offers gyrocompassing performance grade at a low price, size, and weight, while employing an external environmental ring isolator to filter unwanted sensor inputs commonly encountered in real world applications.

The HG5700 consumes less power than competing fiber optic gyro-based systems. External heat sinks and cooling are not required by the HG5700, facilitating greater flexibility in systems design and integration.

## Configurations

Three different performance grades of the HG5700 are available off-the-shelf. The HG5700 offers many configurable features, such as data rate output and flight control filtering to simplify system integration.

## HG5700 IMU Key Characteristics

|                               |                                                                     |
|-------------------------------|---------------------------------------------------------------------|
| Volume                        | 45 in <sup>3</sup> (737 cm <sup>3</sup> )                           |
| Height                        | 4 in (10.16 cm)                                                     |
| Weight                        | <3 lbs (1.36 kg)                                                    |
| Power Consumption             | <10 watts                                                           |
| Operating Temperature Range   | -54°C to +85°C                                                      |
| Data Rate                     | 100 Hz (Guidance) and 600 Hz (Control) – Other data rates available |
| Built-In-Test Coverage        | >90%                                                                |
| Gyro Operating Range          | ± 1074 deg/sec                                                      |
| Accelerometer Operating Range | ± 37 g                                                              |
| Supply Voltages               | +15V, +5V                                                           |

## HG5700 IMU Typical Performance Over Full Operating Temperature Range

| PART NUMBER <sup>1</sup> | GYRO BIAS REPEATABILITY (°/HR 1σ) | GYRO BIAS STABILITY <sup>2</sup> (°/HR 1σ) | GYRO ARW (°/√HR MAX) | ACCEL BIAS REPEATABILITY (μG 1σ) | ACCEL BIAS STABILITY <sup>2</sup> (μG 1σ) | ACCEL VRW (FPS/√HR MAX) |
|--------------------------|-----------------------------------|--------------------------------------------|----------------------|----------------------------------|-------------------------------------------|-------------------------|
| HG5700CA01 <sup>3</sup>  | 0.035                             | 0.01                                       | 0.006                | 200                              | 30                                        | 0.065                   |
| HG5700BA01               | 0.070                             | 0.02                                       | 0.012                | 300                              | 50                                        | 0.065                   |
| HG5700AA01               | 0.140                             | 0.04                                       | 0.025                | 300                              | 50                                        | 0.065                   |

Notes:

1. When ordering direct from Honeywell, use part numbers 68905700-AA01, 68905700-BA01, 68905700-CA01
2. For a period of 10 minutes
3. Future offering

## BENEFITS

- All inertial sensors utilized in our tactical IMUs are designed, developed and manufactured by Honeywell
- RLG design is based on the highly successful navigation grade GG1320 technology
- Industry standard RS-422 serial interface
- Units feature a wide range of factory configurable interface protocols including Synchronous Data Link Control (SDLC), Asynchronous serial, UART, and Gated clock
- Ethernet interface option to be included in future offering
- Drop-in replacement for the HG1700 IMU for enhanced performance
- Export Control Classification Number (ECCN) is 7A003.d.1

## Find Out More

Visit us at: [aerospace.honeywell.com/imu](http://aerospace.honeywell.com/imu)  
or contact us at the following email address:  
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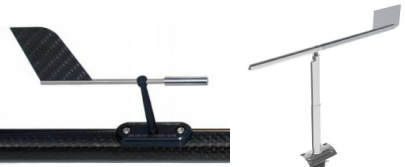
空速管|迎角传感器|侧滑角传感器|惯性测量单元大气数据测试仪



## 攻角传感器|侧滑角传感器|空速管|结冰探测器|动静压测试仪|惯性测量单元

| 序号 | 名称及型号                                 | 描述                                                                     | 场合         | 图片                                                                                    |
|----|---------------------------------------|------------------------------------------------------------------------|------------|---------------------------------------------------------------------------------------|
| 1  | <a href="#">五孔空速管</a><br>ADP-55       | 五孔空速管、攻角侧滑系统<br>含 Pt,Ps,CAS,TAS,AOA/AOS 及 OAT<br>重量: 540g<br>可在结冰条件下飞行 | 试飞和飞行器批量生产 |    |
| 2  | <a href="#">标准空速管</a><br>FTB-1        | 空速管、攻角侧滑系统<br>含 Pt,Ps,CAS,TAS,AOA/AOS 及 OAT<br>重量: 200g                | 试飞         |    |
|    | <a href="#">大气数据计算机</a><br>PSS-8X ADC | 大气数据计算机<br>对高度和空速值气动补偿<br>输出大气总温及静温等<br>重量: 0.17kg                     |            |    |
| 3  | <a href="#">直柄型空速管</a><br>PSS-8       | 直柄型空速管<br>包含 Pt、Ps 压力口(不加热)<br>重量: 0.05kg<br>非结冰条件下飞行                  | 飞行器批量生产    |    |
| 4  | <a href="#">L 型空速管</a><br>PSS-8L      | L 型空速管<br>包含 Pt、Ps 压力口(不加热)<br>重量: 0.05kg<br>非结冰条件下飞行                  | 飞行器批量生产    |   |
| 5  | <a href="#">加热型空速管</a><br>HPS-1       | 加热型空速管<br>包含 Pt、Ps 压力口(加热)<br>重量: 0.10kg                               | 飞行器批量生产    |  |
| 6  | <a href="#">加热型空速管</a><br>HPS-1 DET   | 空速管, 温控器分离<br>包含 Pt、Ps 压力口(加热)<br>重量: 0.09kg<br>可在结冰条件下飞行              | 飞行器批量生产    |  |

飞行器大气数据传感器系统及惯性 GNSS 组合导航解决方案

|    |                                                                                 |                                                                       |            |                                                                                       |
|----|---------------------------------------------------------------------------------|-----------------------------------------------------------------------|------------|---------------------------------------------------------------------------------------|
| 7  | <a href="#">大气数据计算机</a><br>PSS-8 ADC                                            | 大气数据计算机，<br>与空速管配套使用,含高度和空速传感器及其解算单元，输出大气总温及静温等<br>重量：0.18kg          | 飞行器批量生产    |    |
| 8  | <a href="#">OEM 大气数据计算机</a><br>PSS-8M ADC                                       | OEM 型大气数据计算机，与空速管配套使用,含高度和空速传感器及其解算单元，<br>重量：0.05kg                   | 飞行器批量生产    |    |
| 9  | <a href="#">攻角传感器 侧滑角传感器</a><br>SMV-1<br>SMV-2                                  | 测试 AOA 和 AOS<br>霍尔效应原理，内部无摩擦，寿命长<br>RS485 或 RS232 数字量输出<br>量程：±180°   | 飞行器批量生产    |    |
| 10 | <a href="#">迎角传感器 侧滑角传感器</a><br>SIM-C89-259<br>100486<br>100386                 | 测试 AOA 和 AOS<br>微型电位计原理<br>量程：±140°                                   | 试飞和飞行器批量生产 |    |
| 11 | <a href="#">大气数据测试仪 动静压测试仪</a><br>ADTS542F/ADTS552F<br>ADTS405F/ADTS505/ADTS403 | 大气数据测试仪 动静压测试仪 全静压试验器<br>模拟和发生高度和空速值，校准大气数据计算机<br>测试飞行器全静压系统的气密性      | 试飞和飞机组装线   |   |
| 12 | <a href="#">惯性测量单元</a><br>HG1120/HG4930/<br>HGUIDE I300                         | HG4930 惯性测量单元 IMU 内部包含 MEMS 陀螺仪，加速度传感器和磁场计。开始取代部分光纤陀螺仪（FOG）和其它类型陀螺仪产品 | 试飞和飞行器批量生产 |  |



|    |                                                                                                          |                                                                              |            |                                                                                      |
|----|----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|------------|--------------------------------------------------------------------------------------|
| 13 | <a href="#">惯性及 GNSS 导航组合</a><br>HGUIDE N580                                                             | HGuide n580 导航模块，提供精确导航，同时尺寸、支持精确的惯性测量单元技术和全球导航卫星系统。                         | 试飞和飞行器批量生产 |   |
| 14 | <a href="#">激光陀螺惯性测量单元</a><br>HG5700                                                                     | HG5700 由 3 只高稳定性环形激光陀螺仪 (RLG)、3 只高性能振动光束石英振梁加速度计 (VBA)，陀螺仪零偏稳定性:0.01 °/h(1σ) | 试飞和飞行器批量生产 |   |
| 15 | <a href="#">结冰传感器/结冰探测器</a><br>Model 9732-STEEL<br>Model 9732-PLASTIC                                    | 探测飞行器是否结冰                                                                    | 试飞和飞机组装线   |   |
| 16 | <a href="#">高度传感器 气压高度计</a><br>HPA200W2DA-BF<br>PPT0015AWN2VB-BF<br>PPT0020AWN2VB-BF<br>PPT0020AWN2VA-BF | 高精度压力传感器，测量静压值，用户换算成高度值，用于风洞试验和飞行试验                                          | 试飞和飞行器批量生产 |   |
| 17 | <a href="#">空速传感器</a><br>PPT0001DWW2VB-BF<br>PPT0002DWW2VB-BF<br>PPT0005DWW2VA-BF                        | 高精度压力传感器（差压），测量动压值，用户换算成空速值，用于风洞试验和飞行试验                                      | 试飞和飞行器批量生产 |  |

## 动静压测试仪|大气数据测试仪|大气数据测试系统|全静压试验器



**ADTS542F 动静压测试仪|ADTS552F 大气数据测试仪|ADTS553F**



**ADTS405F|ADTS MkII 大气数据测试系统|ADTS505 大气数据校验仪**



**ADTS405 大气数据测试系统|ADTS403 大气数据测试系统|PV103**

## ADTS542F 动静压测试仪和 ADTS552F 大气数据测试仪应用

