



# **HG4930 S-CLASS** **MEMS INERTIAL** **MEASUREMENT UNIT**

**Honeywell**

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# HG4930 S-CLASS MEMS INERTIAL MEASUREMENT UNIT

## KEY HONEYWELL ADVANTAGES

- S-Class models provide the high bandwidth and high data rates needed for precision stabilization applications.
- World-class inertial sensor development, calibration and compensation.
- Proven reliability, dependability and ruggedness, through unit life.
- RS-422 Asynchronous standard protocol.
- Highest performing MEMS IMU of its size and price.
- Smaller, lower power and cost effective replacement for a FOG.



Proven - Dependable - Accurate

The HG4930 S-Class stabilization variant is a micro-electro-mechanical system (MEMS) based inertial measurement unit (IMU) designed to meet the needs of platform stabilization applications. It optimizes latency and bandwidth without sacrificing accuracy. Typical applications include optical sensor (e.g., camera) and antenna stabilization. With an industry standard communication interface, it is easily integrated into the variety of architectures that these applications present. The extremely small size, light weight, and low power make it ideal for most applications.

The HG4930 S-Class includes MEMS gyroscopes and accelerometers. In addition, the HG4930 S-Class employs an internal environmental isolation system to attenuate unwanted inputs commonly encountered in real world applications. The internal isolation and other proprietary design features ensure the HG4930 S-Class is rugged enough to meet the needs of the most demanding users.

Three different performance grades of the HG4930 S-Class are available as off-the-shelf items. Honeywell screens and calibrates all of the MEMS inertial sensors utilized in the HG4930 IMU.

The HG4930 S-Class is not ITAR controlled. Its Export Control Classification Number (ECCN) is 7A994.

## S-CLASS MODEL - HG4930 IMU TYPICAL KEY CHARACTERISTICS

|                                  |   |
|----------------------------------|---|
| Volume/Size                      | 82 cm <sup>3</sup> (5in <sup>3</sup> ), 65 x 51 x 35.5 mm |
| Weight                           | 140 grams (0.3 lbs)                                       |
| Gyroscope Operating Range        | -400°/s to +400°/s <sup>3</sup>                           |
| Accelerometer Operating Range    | -20 g to +20g   |
| Supply Voltage                   | +5 VDC +/- 5%   |
| Power Consumption                | < 3 Watts   |
| Operating Temperature Range      | -54°C to +85°C  |
| Gyro Bandwidth, -90°/-3 dB (Hz)  | 175/470   |
| Accel Bandwidth, -90°/-3 dB (Hz) | 125/225   |
| Data Rate (Hz)                   | 3600  |
| Baud Rate                        | 4 MBit  |

## S-CLASS MODEL - HG4930 TYPICAL PERFORMANCE OVER FULL OPERATING TEMPERATURE RANGE

| Marketing Part Number <sup>1</sup> | Gyro Bias Repeatability (%/hr 1σ) | Gyro Bias In-run Stability <sup>2</sup> (%/hr 1σ) | ARW (°/√hr) | Accel Bias Repeatability (mg 1σ) | Accel Bias In-run Stability (mg 1σ) | VRW (m/s/√hr) |
|------------------------------------|-----------------------------------|---|-------------|----------------------------------|-------------------------------------|---------------|
| HG4930CS36                         | 7                                 | 0.25  | 0.04        | 1.7                              | 0.025                               | 0.03          |
| HG4930BS36                         | 10                                | 0.35  | 0.05        | 2.0                              | 0.050                               | 0.04          |
| HG4930AS36                         | 20                                | 0.45  | 0.06        | 3.0                              | 0.075                               | 0.06          |

<sup>1</sup> When ordering direct from Honeywell, use part numbers 68904930-AS36, 68904930-BS36, 68904930-CS36.

<sup>2</sup> Gyro bias stability is >0.5 °/hr when measured over a constant operating period of one month.

<sup>3</sup> Full performance to +/- 325°/s

## For More Information

### Honeywell Aerospace

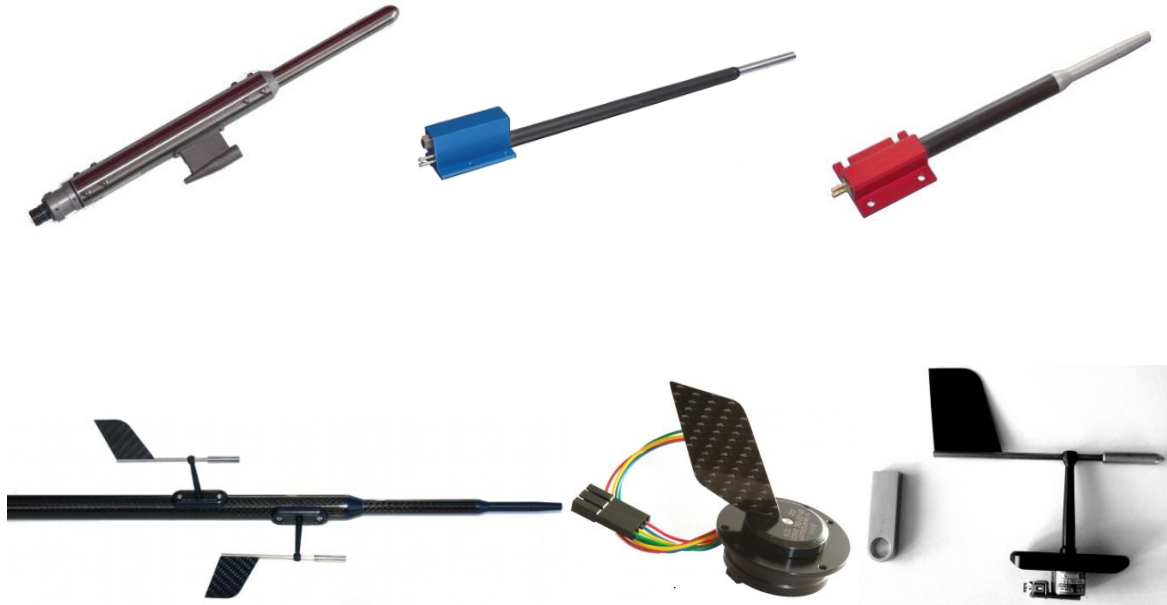
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N61-2067-000-012 | 10/19  
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THE  
FUTURE  
IS  
WHAT  
WE  
MAKE IT

**Honeywell**

## 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    |  |



|    |   |   |            |   |
|----|---|---|------------|---|
| 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

