



# **CASTLEBERRY Instruments & Avionics**

## **MODEL 900-23EH SELECTION AND INSTALLATION GUIDE**

### **APPLICABILITY**

Before installing the Model 900-23EH gyro, determine that it is appropriate for the application. This gyro comes either as a 14 Volt or a 28 Volt model. Select the part number that is right for the voltage of the aircraft. Also this gyro is designed for use in helicopter applications. This gyro can travel unrestricted 360 degrees through the roll axis but is limited to  $\pm 90$  degrees of pitch travel.

This product conforms to FAA technical specifications TSO C4c. It is responsibility of the installer and their authority to determine proper use, purpose, and documentation required to install this product.

There are no life limited parts or periodic scheduled maintenance requirements on this product to generate a need for continued airworthiness procedures. It is recommended that if the gyro is stored for more than 60 days that it be powered on and "exercised" for at least 30 minutes prior to use to re-distribute lubricants in the spin bearings and gymbal bearings.

### **OPTIONS**

Panel tilt is an important specification required to be known when ordering or installing a panel mounted attitude gyro in an aircraft. If panel tilt is not known, the manufacturer of the aircraft should be able to provide that information. This gyro can be calibrated for a panel tilt from zero to twenty degrees and should be specified when ordering. A label is attached to the gyro to indicate the tilt calibration of each unit. If a newly installed attitude gyro settles more than  $\pm 1\frac{1}{2}$  degrees pitch above or below where the expected horizon should be, then panel tilt or aircraft trimming issues should be suspected. Note that the gyro comes in a zero degree p/n or a custom tilt p/n that should be specified by the customer when any tilt other than zero degrees is desired. A moving roll dial with stationary indice or a stationary roll dial with moving indice are also display options. Voltage type (14 or 28 Volt) provides other p/n variance. Installation can be either rear mount or front mount mounting using bezel adapter. There is a deep bezel adapter which allows for installation where gyro depth behind the panel is up to 7.1 inches (not including connector extension) and a shallow bezel adapter that can allow for gyro installation depth of up to 6.55 inches behind the panel (not including connector extension). All these feature variants along with other cosmetic variants can lead to many part numbers so the outline drawing (0041-xxxx drawing number) should be referred to for exact variants for a particular part number.

### **LIGHTING**

The 900-23EH is integrally lighted. The unit comes with a light tray of the same operating voltage as the gyro, however it may be replaced with other voltage types. Castleberry Instruments has 5, 14 and 28 Volt incandescent types available with natural white, or red or blue boots available for coloring. There are also 28V versions with white LED or ANVIS LED. Both incandescent and LED types may be operated by either AC or DC Voltages. The polarity does not matter.

### **ELECTRICAL**

Current production models uses approximately 12 Watts starting and 10 Watts running. Therefore current rating for the 14 Volt model is 1 Amps maximum and the 28 Volt model  $\frac{1}{2}$  Amp maximum (Models made before November 2011 were rated 2 AMP for 14V and 1 AMP for 28V). Power to gyro is applied through a common 4 pin circular connector on rear of unit as shown on the drawings of following pages. Supplied with a new unit is mating connector Castleberry P/N 8821-1032-0001. Recommended wire size is 22 to 20 AWG and should be of aircraft approved type. Circuit breaker or protection devices must be high enough current to support the maximum current for voltage type but low current enough to protect aircraft wiring. Note that pin out is different for the two different voltage models to prevent accidentally applying wrong voltage. Ground or Negative is always to pin "A" and +14 Volts to pin "B" for the 14 Volt models and +28 Volts to pin "C" for the 28 Volt models.

**WARNING:** Applying power to gyro reverse polarity or allowing a voltage spike exceeding 39 VDC will blow an internal fuse to protect the gyro circuitry. If fuse becomes blown, unit must be repaired and tested before returning to service.

**CAUTION:** This device is an avionics item and should get power from a buss that is not powered during engine start up.

### **MECHANICAL**

Panel cut out and mounting hole information and electrical pin out with other leading particulars may be found on the outline drawing of the specific part number or model type. Read all notes on following outline drawings to be aware of any limitations or specifications that may apply to your installation requirements. Installation screw lengths will vary depending whether unit is rear or front mounted and will vary with type of front mount adapter.

**CASTLEBERRY Instruments & Avionics**  
Austin, Texas

**LIMITED WARRANTY CERTIFICATE**

**CASTLEBERRY Instruments & Avionics** (herein called **CIA**) warrants each item of new equipment manufactured or sold by it to be free from defects in material and workmanship under normal use for which intended for a period of **15** months from date of shipment by **CIA**. No claim for breach of warranty will be allowed unless **CIA** is notified thereof in writing within thirty (30) days after the material or workmanship defect is found.

**The obligation of CIA shall be limited to replacing or repairing at it's factory, the equipment found defective under the terms of this warranty certificate: providing that such equipment is returned in an approved shipping container, transportation charges prepaid, to:**

**CASTLEBERRY Instruments & Avionics**  
13405 Immanuel Road, Bldg 1, Ste A  
Pflugerville, TX. 78660  
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**or such other location as CIA may authorize. CIA reserves the right to have necessary repairs performed by an authorized agency.**

**This warranty shall not apply to any unit or part thereof which has not been installed or maintained in accordance with CIA instructions, or has been repaired or altered in any way so as to adversely affect its performance or reliability, or which has been subjected to misuse, negligence or accident.**

**This warranty is exclusive and is accepted by buyer in lieu of all other guaranties or warranties of merchantability and fitness for a particular purpose. Buyer agrees that in no event will CIA liability for all losses from any cause, whether based in contract, negligence, strict liability, other tort or otherwise, exceed buyer's net purchase price,, nor will CIA be liable for any special, incidental, consequential or exemplary damages.**

**CIA reserves the right to make changes in design or additions to or improvements in its equipment without the obligation to install such additions or improvements in equipment theretofore manufactured.**