

# Model 300-14E(L) Selection and Installation Guide

## MODEL FEATURES AND OPTIONS

Always refer to supplied outline drawing for specific part number of this model type to determine the exact features. Outline drawings for any Castleberry Instrument unit may be obtained via contact information on our web site: <http://www.ciamfg.com>

## APPLICABILITY

Before installing the Model 300-14EL gyro, determine that it is appropriate for the application. This gyro comes either as a 14Volt, 28Volt, and 10-32Volt models. Select the part number that is right for the voltage of the aircraft (10-32Volt models may be used in 14Volt or 28Volt aircraft systems). The 300-14EL is designed for use in fixed wing or light helicopter aircraft with shock mounted panels. It is not intended for use in acrobatic flying. 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. We do recommend that installers become familiar with FAA advisory circular AC91-75 and special airworthiness information bulletins CE-05-15 and CE-05-41 since these documents relates to purpose for recent applications of installing this product.

## CONTINUED AIRWORTHINESS

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 the gyro be operated for 30 minutes minimum to redistribute lubricants if the gyro has been unused for three months or longer.

## 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 fourteen 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 selected when any tilt other than zero degrees is desired. Voltage type 14 or 28 or 10-32 Volt provides other p/n variance.

## LIGHTING

The 300-14E is an unlighted model. The 300-14EL is integrally lighted with externally selectable light tray. 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 types available. For some models the wiring to lights is via flying leads that can be easily connected by installer's choice of connectors to the lighting buss and other models with internally wired lights through the rear connector. Lamps are of incandescent type and may be operated by either AC or DC Voltages. The polarity does not matter. Check the outline drawing for specific part number to see available lighting options.

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## ELECTRICAL

This model uses approximately 28 Watts starting and 17 Watts running. Therefore current rating for the 14 Volt model is 2 Amps maximum and the 28 Volt model 1 Amp maximum. The 10-32 Volt unit uses 12 Watts nominal running. 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 or cable 8824-1024-090(x) (either a -0901 for a 14V unit or -0902 for a 28V unit). The industrial part number for the mating connector is MS3116F8-4S or PT06E8-4S(SR). Recommended wire size is 22 to 20 AWG and should be of aircraft approved type. Circuit breaker or protection devices must be large enough to support the maximum current for voltage type but small enough to protect aircraft wiring. We recommend a 1 AMP for 28 Volt systems and a 2 AMP for 14 Volt systems. 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. Due to lighting variations, be sure to check outline drawing for specific part number to determine pin out for 10-32 Volt versions.

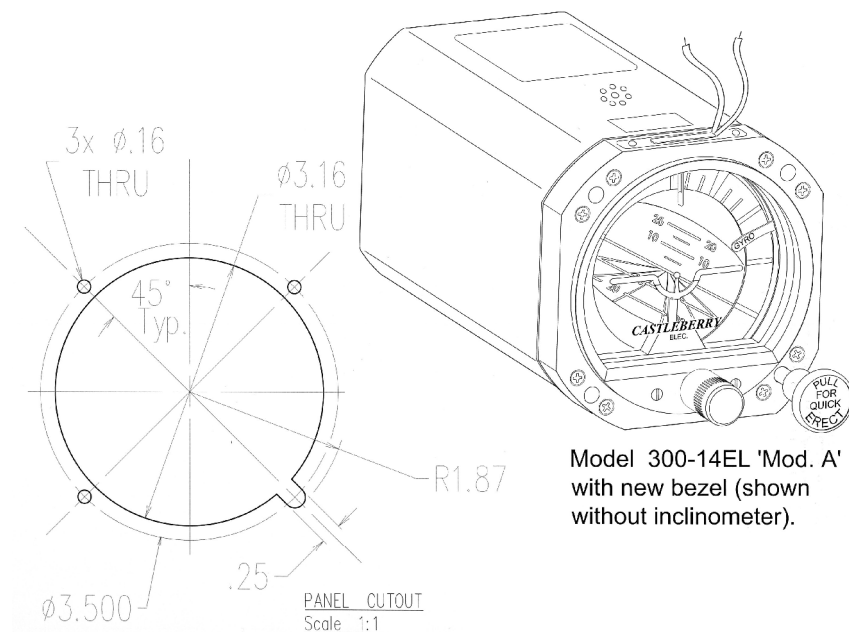
**WARNING:** Applying power to gyro reverse polarity or allowing a voltage spike exceeding 39 VDC will blow an internal fuse to protect the gyro circuitry. If fuse becomes blown, unit must be repaired and tested before returning to service.

**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 is shown in figure 1 and also supplied on outline drawing. This gyro is designed to be installed rear mounted on a shock mounted panel. Be sure that installation screw length penetrates into gyro bezel approximately 1 inch after considering panel thickness including any shim or wedge application. Read all notes on following outline drawings to be aware of any limitations or specifications that may apply to your installation requirements.

Figure 1



## WARRANTY

The standard Castleberry Instruments & Avionics warranty for gyro products applies to these products and a copy is supplied on the following page. Any agreements other than those indicated in the written warranty on the following page must be in writing supplied by personnel of Castleberry Instruments.

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### 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, L.L.C.**

817 West Howard Lane, Bldg. B

Austin, TX 78753

Ph. (512) 251-5322 Fax (512) 252-7322

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.

**Warning** – Warranty may be voided if unit is not returned in original packaging or equivalent.

See Service Advisory SA-1005 for gyro handling guidelines.