MidContinent™
INSTRUMENTS+AVIONICS

Wichita, Kansas USA

Service Information Letter

SIL 4300-XXX-03

Electric Attitude Indicator with standby battery

4300-XXX Series WITH STANDBY BATTERY
CONTINUED AIRWORTHINESS

The following information from the 4300-XXX Series with standby battery installation manual should be used to maintain the safe and reliable operation of the standby battery assembly.

2.6 Continued Airworthiness

2.6.1 BATTERY

A. The standby battery is designed to be a user replaceable item if desired. Recommended replacement interval for the standby battery (P/N 9015607) is 3 years because of diminished capacity.

NOTE: The standby battery contains lead. Do not dispose of in local land-fills or other environmentally sensitive areas.

NOTE: Recycle the battery in accordance with state and local regulations. For recycle locations visit www.rbrc.com or call 1-800-8-BATTERY (1-800-822-8837)

B. In normal use, the Electric Attitude Indicator supplies the proper float charge voltage to maintain its battery at peak capacity; however, the battery will slowly self-discharge if the Electric Attitude Indicator is left unused for long periods (over 3 months). In addition, self-discharge rates are directly related to the storage temperature. The higher the storage temperature the faster the self-discharge rate. Therefore, the battery should be periodically charged or removed from the installation and maintained on a charger.

C. If the 4300-XXX Electric Attitude Indicator has not been operated for an extended period (more than 3 months) to keep the standby battery charged, the standby battery should be charged by one of the following methods.

1. Keep the standby battery plugged into the 4300 Electric Attitude Indicator. Run the unit overnight (approx. 15 hours) at the rated voltage.

2. Float Charging: Disconnect the standby battery from the indicator. Connect the standby battery to a constant voltage source (battery plug pin 1, red wire = positive) of 20.4 to 20.6 VDC continuously. Float charging may take 24 hours or longer to charge a standby battery pack.

3. Routine Charging: Disconnect the standby battery from the indicator. Connect the standby battery to a constant voltage source (battery plug pin 1, red wire = positive) of 21.6 to 22.1 VDC with a current limit of 0.1 ampere maximum. When the charging current drops to approximately 5mA, the standby battery is fully charged and should be disconnected. Leaving 21.6 to 22.1 VDC charge voltage on the standby battery for an extended time will degrade its life. If continuous maintenance of the charge is desired, refer to step 2, Float Charging.

******WARNING******

Battery out gassing and a rotten egg odor may occur due to prolonged high rate overcharging and may result in standby battery damage. MCI recommends that the standby battery assembly be replaced if out gassing has occurred.

4. MCI Battery Charger/Tester P/N 36029 may be used. This Battery Charger/Tester will apply an initial charge, per step 3 above, and then automatically switch to maintain a float charge, per step 2 above, indefinitely after initial charging is complete.

D. On at least on an annual basis, as well as any time there may be a question about standby battery performance (life) a Full Capacity Test should be performed. To perform a Full Battery Capacity Test use one of the following methods.

1. Manual.
   a. Disconnect standby battery pack from the 4300 Attitude Indicator.
   b. Ensure the standby battery is completely charged and at or near normal room temperatures (20-25°C). (Ref. Sect. 2.6.1C)
   c. Connect the standby battery to a load of 90 ohms (rated for 10 watts) for 60 minutes while monitoring the standby battery voltage level.
      1) If the standby battery voltage is above 15.0 volts at the end of the 60-minute battery capacity test, the standby battery should be capable of continued use after recharging is complete.
      2) If the standby battery voltage drops below 15.0 volts before the end of the 60-minute test period while under load, the standby battery pack is nearing the end of its service life and should be replaced.
   d. Recharge the standby battery pack immediately.

2. Automatic.
   Use MCI Battery Charger/Tester P/N 36029. When in the capacity test mode, this Charger/Tester will charge the standby battery and measure the time required for discharge (60 minutes minimum). The unit will then automatically switch to the charge/float mode to maintain the standby battery at full charge.

******WARNING******

The standby battery may be permanently damaged if it is left in a discharged state. Recharge a discharged standby battery as soon as possible and maintain with a float charge for maximum battery life.

2.6.2 ATTITUDE INDICATOR

No periodic scheduled maintenance or calibration is necessary for continued airworthiness of the 4300 series Electric Attitude Indicator. If the unit fails to perform to specifications, it must be removed and serviced by a qualified service facility.