GEA 71 ENGINE/AIRFRAME UNIT - TROUBLESHOOTING

1. General

A. This section gives the troubleshooting for the Garmin GEA 71 Engine/Airframe Unit. For GEA 71 maintenance procedures, refer to Garmin GEA 71 Engine/Airframe Unit - Maintenance Practices.

2. Garmin GEA 71 Engine/Airframe Unit Troubleshooting

A. Tools and Equipment

NOTE: For the supplier publication part number and manufacturer data, refer to the Introduction - Supplier Publication List.

(1) Tools and Equipment

- Multimeter.

(2) Special Consumables

- None.

(3) Reference Material

- Chapter 30, TKS Anti-Ice Fluid Tank Components - Maintenance Practices
- Chapter 30, TKS Anti-Ice System - Maintenance Practices
- Chapter 31, Signal Conditioner - Removal/Installation
- Chapter 34, Garmin G1000 Integrated Avionics System - Adjustment/Test
- Chapter 34,Garmin G1000 GIA 63W G1000 Integrated Avionics Unit - Removal/Installation
- Garmin GEA 71 Engine/Airframe Unit - Maintenance Practices
- Model 208 Wiring Diagram Manual.

B. Do the Garmin GEA 71 Engine/Airframe Unit Troubleshooting.

(1) Connect external electrical power to the airplane.

(2) Make sure that the circuit breaker given in Table 101 are engaged.

Table 101. Circuit Breakers

Component Location	Circuit Breaker Name	Circuit Breaker Location
GEA 71 Engine/Airframe Unit	ENG INTFC	Avionics Circuit Breaker Panel

(3) Make sure that all the Garmin system line replaceable unit (LRU) circuit breakers found on the Avionics circuit breaker panel, are all engaged.

(4) Refer to Chapter 34, Garmin G1000 Integrated Avionics System - Adjustment/Test G1000 Architecture Verification Check and make sure that:

(a) The correct software and configuration has been installed.

(b) All related systems are serviceable.

(c) The LRU serial number or a version number is not dashed.

(5) Make sure that the GEA1 has a check mark (green) next to its nomenclature on the list.

(a) This indicates the LRU is serviceable.

(6) If the GEA1 does not show a green check on the Avionics Status page, make sure that the electrical power and ground connections to the GIA is serviceable. Refer to the Model 208 Wiring Diagram Manual, Chapter 20, Wiring - Maintenance Practices.

(a) Do a check for 28Vdc at the GEA electrical connector (PI001) pin 35.

(b) Do a check for airplane ground at GEA electrical connector (PI001) pin 20.

(7) If the GEA1 serial number or a version number is dashed, carefully examine the electrical wiring and components. Refer to the Model 208 Wiring Diagram Manual, Chapter 20, Wiring - Maintenance Practices.

(8) If the fuel flow, Ng tachometer, and/or Np tachometer indication(s) are not correct do a continuity check of the wiring between the GEA electrical connector ((PI002) and the signal conditioner electrical connector (JI024).

(a) If the wiring is serviceable, replace the applicable signal sensor(s).

(b) If the sensor does not correct the indication problem, replace the signal conditioner. Refer to, Chapter 31 Signal

Conditioner - Removal/Installation.

(9) Do a general wiring check as follows:

(a) Do a visual check of the electrical connectors and airplane electrical connectors for bent pins and pushed back pins.

1 If necessary, repair the damage.

(b) Make sure that electrical power and ground signals are present.

(c) Make sure that data bus lines are correctly terminated and secure.

CAUTION: Do not touch bus wiring to each other or to shield grounds. Damage to equipment or circuits can result.

(d) Use a multimeter to do a continuity check of the bus wires.

1 Make sure that there is continuity only from each wires' related pin end to end and to no other wires, airplanes grounds, or shields.

(e) Do a visual check of the wiring components and make sure that all applicable strapping is correct and any necessary G1000 system strapping is correct.

(f) Do a visual check of the wiring bundles for damage.

1 If necessary, repair or replace the wiring bundles. Refer to the Model 208 Wiring Diagram Manual, Chapter 20, Wiring - Maintenance Practices.

(g) Do a check of the applicable system wiring for continuity, ground faults, or other unserviceable conditions.

1 If necessary, repair or replace the wiring bundles. Refer to the Model 208 Wiring Diagram Manual, Chapter 20, Wiring - Maintenance Practices.

C. GEA 71 CAS Message Troubleshooting

(1) Check the primary flight display crew alert system (CAS) window for messages to aid in troubleshooting the anomaly.

(2) For CAS messages related to other Garmin LRU's, refer to the applicable LRU section for CAS message troubleshooting.

(3) Push the right most softkey on the PFD and make sure that no Alert messages show in the Alerts window.

(a) For troubleshooting GEA 71 CAS Alert messages refer to Table 102

Table 102. GEA 71 CAS Alert Messages

GEA 71 CAS Alert Messages	Cause	Corrective Action
GEA 1 CONFIG – GEA configuration error. Configuration service necessary.	The system has detected an incorrect software version loaded in the GEA.	1. Load correct configuration in the GEA. Refer to Garmin G1000 Integrated Avionics System - Adjustment/Test. 2. Replace the master configuration module. Refer to, Garmin G1000 Integrated Avionics System - Adjustment/Test
MANIFEST – GEA software mismatch. Communication halted.	The system has detected an incorrect software version loaded in the GEA.	1. Load correct configuration in the GEA. Refer to Garmin G1000 Integrated Avionics System - Adjustment/Test.