

Insight

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INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

For

Insight Graphic Engine Monitor (GEM) 610C

COMPLIANCE WITH CHAPTER 4.0, "AIRWORTHINESS LIMITATIONS", OF THIS INSTRUCTIONS FOR CONTINUED AIRWORTHINESS IS MANDATORY

This document must be attached to the aircraft Approved Maintenance Manual when the above instruments are installed in the subject aircraft.

The information contained herein supplements the Maintenance Manual only in those areas listed herein. For limitations and maintenance procedures not contained in this supplement, consult the Maintenance Manual.

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CHAPTER 1 - INTRODUCTION

A. General

The Insight Avionics GEM 610C is primary engine instrument for display of the EGT, CHT and TIT parameters. It may also be used as additional, non-required indicator for those parameters,

Make	Model/Unit	P/N	Description
Insight Avionics Inc.	GEM 610C	610C-001	Single-engine primary EGT, CHT, TIT instrument

The GEM 610C instrument is installed in the aircraft instrument panel. The installation is permitted only on eligible aircraft models equipped with compatible engine types.

The associated probes and transducers are installed as per Doc. 070906 – Installation Manual for Insight GEM 610C-001, and the respective aircraft installation manuals.

The temperature values are displayed numerically and as bargraphs. The displays dim automatically with the intensity of ambient light.

The instrument senses temperatures through thermocouple type probes.

The GEM 610C is powered typically from the avionics bus and protected by a dedicated, trip-free, re-settable 1A circuit breaker. The instrument automatically adapts to either 14 or 28 V electrical systems.

The GEM 610C weight is 0.22 kg.

The GEM 610C instrument does not have adjustments or field-serviceable components. There is no scheduled maintenance prescribed by the manufacturer. For service the instruments must be returned to an authorized repair facility.

The following documents supplement information in this manual concerning the installation, use and removal of the components:

Document	Document No.	Title
Installation Manual	070906	Installation Manual for Insight GEM 610C-001
Operation Instructions	070907	Operation Instructions for Insight GEM 610C-001

B. ICA Distribution

This document and any revisions hereto, shall be distributed to the authorized users of the STC data or repair stations required to perform work on this aircraft. They will be distributed by courier, in electronic or paper format. The revisions will be distributed to responsible Transport Canada and FAA offices.

The STC holder is responsible for making these instructions available to any person required to comply with the terms of the instructions.

C. Aircraft/ Engine Applicability

These instruments may be used as EGT/CHT/ITIT indicators instead of original factory installed systems, and those original systems may be removed.
The standard model instruments are intended for use with engines that have 450 – 475°F CHT red lines. This covers nearly all common Continental and Lycoming engines.

d. Supplement Identities: Chapter, Page, Paragraph Numbers

The supplement format follows the general requirements of specification ATA-100 with respect to Chapter and Title. However, since the extent of the supplement information is relatively small in scope, the page numbering for each chapter is consecutive. Reference can be made to the following Chapter/Subject Listing:

Subject	Page Number
Title page, Log of Amendments, List of Effective Pages and Table of Contents and Content pages)	1, 2, 3, 4, etc
Paragraph or component titles are listed via	A., B., C., D. etc.

Sub-paragraphs are listed according to:

Subject	Sub-Para. Number
Description	1.0
Fault Isolation	101
(Reserved)	201
Servicing	301
Removal/Installation	401
Adjustment/Test	501
Inspection/Check	601
Cleaning/Painting	701
Approved Repairs	801
Storage	901

E. Abbreviations:

AMM	Aircraft Maintenance Manual
CB	Circuit Breaker
CHT	Cylinder Head Temperature
EGT	Exhaust Gas Temperature
TIT	Turbine Inlet Temperature
P/N	Part Number
STC	Supplemental Type Certificate
TCCA	Transport Canada Civil Aviation
TSO	Technical Standard Order
FAA:	Federal Aviation Authority

CHAPTER 4 — AIRWORTHINESS LIMITATIONS

General

The specified instrument is installed in the aircraft instrument panel. The installation is permitted only on eligible aircraft models equipped with compatible engine types.

The instrument is intended for use with engines that have 450 – 475°F CHT red lines. For the eligible aircraft/ engines refer to the FAA-approved model list.

The GEM 610C instrument may be used as follows:

- a) As additional, non-required EGT/CHT/TIT indicators, or
- b) As primary EGT/CHT/TIT indicators instead of original factory-installed instruments, installed in the original instruments' locations (or another acceptable/ approved locations).

FAA Approval

The Airworthiness Limitations section is FAA-approved and specifies maintenance required under 43.16 and 91.403 of the Federal Aviation Regulation, unless an alternative program has been FAA approved.

CHAPTER 5 - PERIODIC INSPECTIONS

SCHEDULED MAINTENANCE CHECKS

There are no scheduled maintenance checks of the GEM 610C instrument.

The instrument features a built-in test, which is started automatically on power-up. The built-in test will detect instrument's malfunctions. The malfunction of a probe or sensor is indicated by the digital numerical value being replaced by dashes: "--" and the corresponding bar graph is removed from display.

Maintenance of the installation including temperature probes/ transducers should be accomplished as per the AMM, in accordance with applicable airworthiness standards.

No additional maintenance requirements are defined. Maintenance shall be on a "Condition Monitoring" basis; refer to FAA Procedures 8310.4, par. 3033. Any required maintenance must be accomplished by Insight Instrument Corporation maintenance staff. All maintenance functions will be accomplished using Maintenance Instructions for GEM 610C document number MI-G3, latest revision.

CHAPTER 11 - PLACARDS AND MARKINGS

INTERIOR PLACARDS

No markings or placards are required.

CHAPTER 24 - ELECTRICAL POWER

DC ELECTRICAL LOAD DISTRIBUTION

A. General

The power supply in GEM 610C instrument offers normal operation from 8-33 VDC input so the instrument may be used interchangeably in either 14V or 28V airplanes.

(The GEM 610C Display automatically accommodates both 14 and 28 Volt electrical systems.) The power is supplied as follows:

Equipment	Load	Circuit Breaker Rating	Power
GEM 610C	2W	1A	14/ 28 VDC Bus

Removal

Refer to Insight document No. 070906 - GEM 610C Installation Manual.
Removal should be accomplished as per the AMM, in accordance with applicable airworthiness standards.

C. Installation

Refer to Insight document No. 070906 - GEM 610C Installation Manual.
Installation including temperature probes/ transducers should be accomplished as per the AMM, in accordance with applicable airworthiness standards.

D. Troubleshooting

Troubleshooting of the installation including temperature probes/ transducers should be done as per Insight document No. 070906 - GEM 610C Installation Manual.

CHAPTER 77 - ENGINE INDICATION

A. General

The GEM 610C instrument is installed in the aircraft instrument panel. The installation is permitted only on eligible aircraft models equipped with compatible engine types. The instrument should be installed in place of the original factory-installed instruments, or another acceptable front panel location.

The GEM 610C instrument may be used as follows:

- As additional, non-required EGT/CHT/TIT indicators, or
- As primary EGT/CHT/TIT indicators (replacing the original factory-installed instruments)

The instruments are intended for use with engines that have 450 – 475°F CHT red lines. For the eligible aircraft/ engines refer to the STC-approved model list.

The temperature values are displayed numerically and as bar-graphs. The display dims automatically with the intensity of ambient light.

The GEM 610C engine instrument does not have adjustments or field-serviceable components. There is no scheduled maintenance prescribed by the manufacturer. For service the instruments must be returned to Insight Instrument Corporation.

B. Removal

Refer to Insight document No. 070906 - GEM 610C Installation Manual.
Removal should be accomplished as per the AMM, in accordance with applicable airworthiness standards.

C. Installation

Refer to Insight document No. 070906 - GEM 610C Installation Manual.
Installation including temperature probes/ transducers should be accomplished as per the AMM, in accordance with applicable airworthiness standards.

D. Troubleshooting

Troubleshooting of the installation including temperature probes/ transducers should be done as per Insight document No. 070906 - GEM 610C Installation Manual.

Appendix A

Insight drawings —

Included in Insight document **No. 070906 - Installation Manual for Insight GEM 610C-001**