

# GMC 7XX

## Installation Manual



(GMC 710 Shown)

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### **RECORD OF REVISIONS**

Revision	Revision Date	Description
A	5/5/05	Add TSO-C9c & ETSO C52b
B	8/4/06	Added ETSO, mounting hardware, and made consistent with install manual standard
C	5/11/07	Added the GMC 715 and -10 GMC 710
D	3/11/08	Added the GMC 705
E	8/26/08	Added GMC 705 ETSO info and removed G1000 references
F	9/30/08	Corrected GMC 710 TSO deviations

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### **CURRENT REVISION DESCRIPTION**

<b>Revision</b>	<b>Page Number(s)</b>	<b>Section Number</b>	<b>Description of Change</b>
F	1-6	1.5.2.2	Changed DO-160E to DO-160D
	1-7	1.6	Removed reference to G1000 Line Maintenance and Configuration Manual
	3-2	3.5	
	3-3	3.6	
	A-9	A	Updated GMC 710 Outline Drawing

### **DOCUMENT PAGINATION**

<b>Section</b>	<b>Page Range</b>
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This manual reflects the operation of software version 3.00 for the GMC 710 and 715, software version 2.00 for the GMC 705. Some differences in operation may be observed when comparing the information in this manual to earlier or later software versions.

### **INFORMATION SUBJECT TO EXPORT CONTROL LAWS**

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#### **NOTE**

Throughout this document references made to the GMC 7XX shall equally apply to the GMC 705, GMC 710, and GMC 715 except where specifically noted.

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The following tables identify hardware modification (Mod) Levels for the GMC 7XX. Mod Levels are listed with the associated service bulletin number, service bulletin date, and the purpose of the modification. The table is current at the time of publication of this manual (see date on front cover) and is subject to change without notice. Authorized Garmin Sales and Service Centers are encouraged to access the most up-to-date bulletin and advisory information on the Garmin Dealer Resource web site at [www.garmin.com](http://www.garmin.com) using their Garmin-provided user name and password.

**GMC 705 HARDWARE MOD LEVEL HISTORY**

<b>MOD LEVEL</b>	<b>SERVICE BULLETIN NUMBER</b>	<b>SERVICE BULLETIN DATE</b>	<b>PURPOSE OF MODIFICATION</b>

**GMC 710 HARDWARE MOD LEVEL HISTORY**

<b>MOD LEVEL</b>	<b>SERVICE BULLETIN NUMBER</b>	<b>SERVICE BULLETIN DATE</b>	<b>PURPOSE OF MODIFICATION</b>

**GMC 715 HARDWARE MOD LEVEL HISTORY**

<b>MOD LEVEL</b>	<b>SERVICE BULLETIN NUMBER</b>	<b>SERVICE BULLETIN DATE</b>	<b>PURPOSE OF MODIFICATION</b>

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# **1 GENERAL DESCRIPTION**

## **1.1 Introduction**

This manual presents mechanical and electrical installation requirements for installing the GMC 7XX as part of a Garmin Integrated Flight Deck. The GMC 7XX can be integrated into a variety of airframes under an appropriate TC or STC. Each airframe installation may vary. Use only approved (type or supplemental type) data for specific installation instructions in a particular aircraft.

## **1.2 Equipment Description**

The GMC 7XX refers to the Garmin Automatic Flight Control System (AFCS) Mode Controller used in a Garmin Integrated Flight Deck. The GMC 7XX Line Replaceable Unit (LRU) provides user interface to the GFC 700 AFCS. The GMC 7XX mounts flush to the aircraft instrument panel using four ¼ turn fasteners.

## **1.3 Interface Summary**

The GMC 7XX interfaces with the GFC 700 system through PFD(s) via RS-232 digital interface.

## 1.4 Technical Specifications

### 1.4.1 Environmental Qualification Form

It is the responsibility of the installing agency to obtain the latest revision of the GMC 7XX Environmental Qualification Form. This form is available under the following part number:

GMC 705 Environmental Qualification Form, Garmin part number 005-00466-03

GMC 710 Environmental Qualification Form, Garmin part number 005-00213-01

GMC 715 Environmental Qualification Form, Garmin part number 005-00384-10

To obtain a copy of this form, see the dealer/OEM portion of the Garmin web site ([www.garmin.com](http://www.garmin.com)).

### 1.4.2 Physical Characteristics

GMC 705	
Characteristics	Specifications
Width	6.25 inches (15.88 cm)
Height	1.85 inches (4.70 cm)
Depth w/Connector Kit*	3.81 inches (9.68 cm)
Unit Weight w/out Connector Kit	0.5 lbs. (0.23 kg)
Unit Weight with Connector Kit	0.6 lbs. (0.27 kg)
Mounting Hardware	0.03 lbs. (0.01 kg)

\*Depth is measured from front of the wheel to back of connector kit.

GMC 710	
Characteristics	Specifications
Width	9.50 inches (24.13 cm)
Height	1.65 inches (4.19 cm)
Depth w/Connector Kit*	4.11 inches (10.44 cm)
Unit Weight w/out Connector Kit	0.8 lbs. (0.35 kg)
Unit Weight with Connector Kit	0.9 lbs. (0.40 kg)
Mounting Hardware	0.03 lbs. (0.01 kg)

\*Depth is measured from front of the knob to back of connector kit.

GMC 715	
Characteristics	Specifications
Width	9.03 inches (22.94 cm)
Height	2.30 inches (5.84 cm)
Depth w/Connector Kit*	4.11 inches (10.44 cm)
Unit Weight w/out Connector Kit	1.0 lbs. (0.45 kg)
Unit Weight with Connector Kit	1.1 lbs. (0.50 kg)
Mounting Hardware	0.03 lbs. (0.01 kg)

\*Depth is measured from front of the knob to back of connector kit.

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### 1.4.3 General Specifications

For detailed specifications, see the Environmental Qualification Form.

Characteristics	Specifications
Operating Temperature Range	-45°C to +70°C. For more details see Environmental Qualification Form.
Humidity	95% non-condensing
Altitude Range	-1,500 ft to 55,000 ft

### 1.4.4 Power Specifications

Characteristics	Specifications
Power Requirements	14/28 Vdc. See the Environmental Qualification Form for details on surge ratings and minimum/maximum operating voltages.
Power Consumption (GMC 705)	50 mA @ 14V 28 mA @ 28V
Power Consumption (GMC 710 & GMC 715)	310 mA @ 14V 160 mA @ 28V

## 1.5 Certification

The conditions and tests required for TSO approval of this article are minimum performance standards. It is the responsibility of those installing this article either on or within a specific type or class of aircraft to determine that the aircraft installation conditions are within the TSO standards. TSO articles must have separate approval for installation in an aircraft. The article may be installed only if performed under 14 CFR part 43 or the applicable airworthiness requirements. At the time of publication, installations of this TSO approved article are only approved when installed in an aircraft as part of a Garmin Integrated Flight Deck.

The following tables provide a list of applicable TSO/ETSOs for the GMC 7XX.

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## 1.5.1 TSO/ETSO Compliance

### 1.5.1.1 GMC 705

Function	TSO/ETSO/ SAE/ RTCA/ EUROCAE	GMC 705 (011-01737-00) Applicable LRU SW Part Numbers	GMC 705 (011-01737-20) Applicable LRU SW Part Numbers
Automatic Pilots	TSO-C9c ETSO-C9c SAE AS402B	006-D1125-0( )	006-D1125-0( )
		All 006-B0742-0( ) except 006-B0742-00 through 006-B0742-04	All 006-B0742-0( ) except 006-B0742-00 through 006-B0742-04
Flight Director Equipment	TSO-C52b ETSO-C52b SAE AS8008	006-D1125-0( )	006-D1125-0( )
		All 006-B0742-0( ) except 006-B0742-00 through 006-B0742-04	All 006-B0742-0( ) except 006-B0742-00 through 006-B0742-04

### 1.5.1.2 GMC 710

Function	TSO/ETSO/ SAE/ RTCA/ EUROCAE	GMC 710 (011-01020-00) Applicable LRU SW Part Numbers	GMC 710 (011-01020-10) Applicable LRU SW Part Numbers
Automatic Pilots	TSO-C9c ETSO-C9c SAE AS402B	All 006-B0387-( <u>  </u> ) except 006-B0387-00 through 006-B0387-02 and 006-B0387-07 through 006-B0387-19	All 006-B0387-( <u>  </u> ) except 006-B0387-00 through 006-B0387-19
Flight Director Equipment	TSO-C52b ETSO-C52b SAE AS8008	All 006-B0387-( <u>  </u> ) except 006-B0387-00 through 006-B0387-02 and 006-B0387-07 through 006-B0387-19	All 006-B0387-( <u>  </u> ) except 006-B0387-00 through 006-B0387-19

### 1.5.1.3 GMC 715

Function	TSO/ETSO/ SAE/ RTCA/ EUROCAE	GMC 715 (011-01430-00) Applicable LRU SW Part Numbers
Automatic Pilots	TSO-C9c SAE AS402B	All 006-B0576-( <u>  </u> ) except 006-B0576-00
Flight Director Equipment	TSO-C52b SAE AS8008	All 006-B0576-( <u>  </u> ) except 006-B0576-00

## 1.5.2 TSO/ETSO Deviations

### 1.5.2.1 GMC 705

TSO/ETSO	Deviation
TSO-C9c	1. Garmin was granted a deviation from TSO-C9c to use SAE AS-402B instead of AS-402A.
	2. Garmin was granted a deviation from TSO-C9c to use DO-160E instead of specified environmental tests.
	3. Garmin was granted a deviation from TSO-C9c subpart A (c), which requires marking the weight of the unit on the unit. Garmin will provide this information in the installation manual in lieu of marking on the serial tag. Garmin does not currently list the weight on other avionics units.
ETSO-C9c	1. Garmin was granted a deviation from ETSO-C9c to use SAE AS-402B instead of SAE AS-402A as the Minimum Performance Standard.
	2. Garmin was granted a deviation from ETSO-C9c to use DO-160E instead of the environmental tests specified in SAE AS-402B.
TSO-C52b	1. Garmin was granted a deviation from TSO-C52b to use RTCA DO-160E instead of RTCA DO-160C as the standard for Environmental Conditions and Test Procedures for Airborne Equipment.
ETSO-C52b	1. Garmin was granted a deviation from ETSO-C52b to use DO-160E instead of DO-160D as the standard for Environmental conditions and Test Procedure for Airborne Equipment.

### 1.5.2.2 GMC 710

TSO/ETSO	Deviation
TSO-C9c	1. Garmin was granted a deviation from TSO-C9c to use SAE AS-402B instead of AS-402A.
	2. Garmin was granted a deviation from TSO-C9c to use DO-160D instead of specified environmental tests.
	3. Garmin was granted a deviation from TSO-C9c subpart A (c), which requires marking the weight of the unit on the unit. Garmin will provide this information in the installation manual in lieu of marking on the serial tag. Garmin does not currently list the weight on other avionics units.
ETSO-C9c	1. Garmin was granted a deviation from ETSO-C9c 3.1.1 to use SAE AS-402B instead of AS-402A.
	2. Garmin was granted a deviation from ETSO-C9c 3.1.2 to use DO-160D instead of specified environmental tests specified in SAE AS-402A.
TSO-C52b	1. Garmin was granted a deviation from TSO-C52b to use RTCA DO-160D instead of RTCA DO-160C as the standard for Environmental Conditions and Test Procedures for Airborne Equipment.

### 1.5.2.3 GMC 715

TSO/ETSO	Deviation
TSO-C9c	1. Garmin was granted a deviation from TSO-C9c to use SAE AS-402B instead of AS-402A.
	2. Garmin was granted a deviation from TSO-C9c to use DO-160E instead of specified environmental tests.
	3. Garmin was granted a deviation from TSO-C9c subpart A (c), which requires marking the weight of the unit on the unit. Garmin will provide this information in the installation manual in lieu of marking on the serial tag. Garmin does not currently list the weight on other avionics units.
TSO-C52b	1. Garmin was granted a deviation from TSO-C52b to use RTCA DO-160E instead of RTCA DO-160C as the standard for Environmental Conditions and Test Procedures for Airborne Equipment.

## 1.6 Reference Documents

The following publications are sources of additional information for installing the GMC 7XX. Before installing the GMC 7XX, the technician should read all referenced materials along with this manual.

Part Number	Document
190-00303-00	G1000 System Installation Manual
190-00313-11	Jackscrew Backshell Installation Instructions

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## 1.7 Limited Warranty

This Garmin product is warranted to be free from defects in materials or workmanship for two years from the date of purchase. Within this period, Garmin will at its sole option, repair or replace any components that fail in normal use. Such repairs or replacement will be made at no charge to the customer for parts or labor, provided that the customer shall be responsible for any transportation cost. This warranty does not cover failures due to abuse, misuse, accident or unauthorized alteration or repairs.

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## 2 INSTALLATION OVERVIEW

### 2.1 Introduction

This section provides hardware equipment information for installing the GMC 7XX and related hardware. Installation of the GMC 7XX should follow the aircraft TC or STC requirements. Cabling is fabricated by the installing agency to fit each particular aircraft. The guidance of FAA advisory circulars AC 43.13-1B and AC 43.13-2A, where applicable, may be found useful for making retro-fit installations that comply with FAA regulations. Refer to the G1000 System Installation Manual, Garmin part number 190-00303-00 for further details on the mechanical aspects.

### 2.2 Installation Materials

The GMC 7XX is available as a single unit under the following part number:

Item	Catalog P/N
GMC 705 Unit Only, (011-01737-00)	010-00663-00
GMC 705 w/YD Unit Only (011-01737-20)	010-00663-20
GMC 710 Unit Only, (011-01020-00)	010-00347-00
GMC 710 Unit Only, (011-01020-10)*	010-00347-10*
GMC 715 Unit Only, (011-01430-00)	010-00554-00

\* Garmin recommends this GMC 710 for new TC/STC approvals. Garmin does not recommend the use of 011-01020-00 for new TC/STC approvals. Unit maintains the same form, fit, and function as the original GMC 710.

#### 2.2.1 Equipment Available

Each of the following accessories are provided separately from the GMC 7XX LRU. A single connector kit and mounting hardware is required to install the unit.

Item	Garmin P/N
GDU Mounting Hardware, panel thickness 0.080" $\pm$ 0.005	011-00821-00
GDU Mounting Hardware, panel thickness 0.125" $\pm$ 0.005	011-00821-01
GDU Mounting Hardware, panel thickness 0.090" $\pm$ 0.005	011-00821-02
GDU Mounting Hardware, panel thickness 0.100" $\pm$ 0.005	011-00821-03
GMC 71X Connector Kit (GMC 710 and 715)	011-01040-01
Connector Kit (GMC 705)	011-01824-00

### 2.3 Installation Considerations

The GMC 7XX interfaces with the GFC 700 AFCS (which consists of the GDU 1XXX, GIA 63(W), GSA 80/81, and the GSM 85 LRUs) and with various avionics equipment. Fabrication of a wiring harness is required. Sound mechanical and electrical methods and practices are required for installation of the GMC 7XX.

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## 2.4 Cabling & Wiring

Use AWG #24 or larger wire for all connections unless otherwise specified by the aircraft manufacturer or Garmin. The standard pin contacts supplied in the connector kit are compatible with up to AWG #22 wire. In cases where some installations have more than one unit sharing a common circuit breaker, sizing and wire gauge is based on aircraft circuit breaker layout, length of wiring, current draw of units, and internal unit protection characteristics. Do not attempt to combine more than one unit on the same circuit breaker unless it is specified on aircraft manufacturer approved drawings.

In these cases, a larger gauge wire such as AWG #16, #18, or #20 may be needed for power connections. Special thin-wall heat shrink tubing is also provided to insulate the extended barrels inside the backshell. If using AWG #16 or #18 barrel contacts, ensure that no two contacts are mounted directly adjacent to each other. This minimizes the risk of contacts touching and shorting to adjacent pins and to ground.

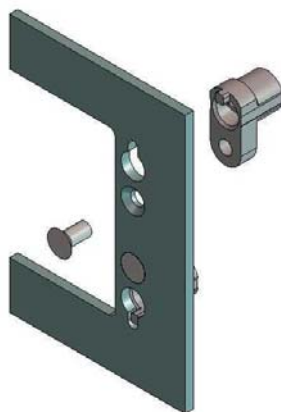
Ensure that routing of the wiring does not come in contact with sources of heat, RF or EMI interference. Check that there is ample space for the cabling and mating connectors. Avoid sharp bends in cabling and routing near aircraft control cables.

## 2.5 Cooling Air

Cooling is not required for the GMC 7XX. Refer to the G1000 System Installation manual, Garmin part number 190-00303-00, for information on cooling requirements.

## 2.6 Mounting Requirements

The GDU 1040 mounting hardware is used in the installation of the GMC 7XX. The locking socket (see Figure 2-1) can be attached by using a rivet or screw. If using rivets, the rivet should be 1/8" flat head 100° countersunk solid rivet. If using screws, the screw should be #4-40 flat head 100° countersunk screws with standard hex nuts on the back. If screws are used, thread locking compound (Loctite or equivalent) or a self locking nut with a nylon locking feature should be used. The specified screws and rivets are designed to provide a flush front surface. See Figure A-1 for the GMC Panel Cutout.



**Figure 2-1. GMC 7XX Locking Socket**

## 3 INSTALLATION PROCEDURE

### 3.1 Unpacking Unit

Carefully unpack the equipment and make a visual inspection of the unit for evidence of damage incurred during shipment. If the unit is damaged, notify the carrier and file a claim. To justify a claim, save the original shipping container and all packing materials. Do not return the unit to Garmin until the carrier has authorized the claim.

Retain the original shipping containers for storage. If the original containers are not available, a separate cardboard container should be prepared that is large enough to accommodate sufficient packing material to prevent movement.

### 3.2 Wiring Harness Installation

Allow adequate space for installation of cables and connectors. The installer shall supply and fabricate all of the cables. All electrical connections are made through a 15-pin D subminiature connector. Section 4 defines the electrical characteristics of all input and output signals. Required connectors and associated hardware are supplied with the connector kit.

See Appendix B for examples of interconnect wiring diagrams. Construct the actual harnesses in accordance with aircraft manufacturer authorized interconnect standards.

**Table 3-1. Pin Contact Part Numbers**

Manufacturer	15 pin D-Subminiature connector (P7101)		
	16 AWG (Power Only)	18-20 AWG (Power Only)	22-28 AWG
Garmin P/N	336-00044-01	336-00044-00	336-00021-00
Military P/N	N/A	N/A	M39029/58-360
AMP	N/A	N/A	204370-2
Positronic	N/A	N/A	MC8522D
ITT Cannon	N/A	N/A	030-2042-000

**Table 3-2. Recommended Crimp Tools**

Manufacturer	Hand Crimping Tool	18-20 AWG		22-28 AWG	
		Positioner	Insertion/ Extraction Tool (note 2)	Positioner	Insertion/ Extraction Tool
Military P/N	M22520/2-01	N/A	M81969/1-04	M22520/2-09	M81969/1-04
Positronic	9507	9502-11	M81969/1-04	9502-3	M81969/1-04
ITT Cannon	995-0001-584	N/A	N/A	995-0001-739	N/A
AMP	601966-1	N/A	91067-1	601966-6	91067-1
Daniels	AFM8	K774	M81969/1-04	K42	M81969/1-04
Astro	615717	N/A	M81969/1-04	615725	M81969/1-04

## NOTES

1. Non-Garmin part numbers shown are not maintained by Garmin and consequently are subject to change without notice.
2. Extracting the #16, #18 and #20 contact requires that the expanded wire barrel be cut off from the contact. It may also be necessary to push the pin out from the face of the connector when using an extractor due to the absence of the wire. A new contact must be used when reassembling the connector.
3. For applications using 16 AWG wire, contact Garmin for information regarding connector crimp positioner tooling.

### 3.3 Backshell Assembly

The GMC 7XX connector kit includes one Garmin backshell assembly. Garmin's backshell gives the installer the ability to easily terminate shield grounds at the backshell housing using the Shield Block grounding kit. To assemble the GMC 710 and 715 backshell, refer to instructions provided in the G1000 System Installation Manual, Garmin part number 190-00303-00. To assemble the GMC 705 backshell, refer to instructions provided in the Jackscrew Backshell Installation Instructions, Garmin part number 190-00313-11.

### 3.4 Unit Installation

The GMC 7XX is installed by holding the unit flush with the instrument panel. The locking studs should be orientated with the alignment marks in the vertical position for installation. A 3/32" hex drive tool is then used to turn each of the four locking sockets ¼ turn clockwise. When locked, the alignment marks are in the horizontal position.

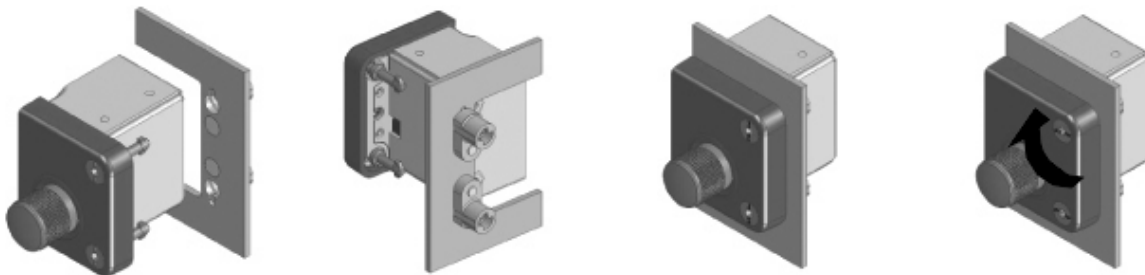


Figure 3-1. GMC 7XX ¼ Turn Fastener

### 3.5 Post Installation Configuration & Checkout

#### NOTE

The GMC 7XX does not provide valid outputs until the aircraft post installation configuration procedures are completed.

The GMC 7XX must be installed with a Garmin Integrated Flight Deck and have FAA approved configuration data. The GMC 7XX serves as the user interface for the installer configuring the GFC 700 AFCS. For actual aircraft installation/checkout, use only aircraft manufacturer approved checkout procedures.

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### **3.6 Continued Airworthiness**

Maintenance of the GMC 7XX is “on condition” only. For regulatory periodic functional checks, refer to approved aircraft maintenance manuals or manual supplements for actual aircraft maintenance requirements.

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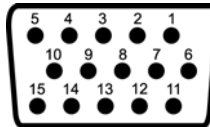
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## 4 SYSTEM INTERCONNECTS

### 4.1 Pin Function List

#### 4.1.1 P7101

View of J7101 connector from back of unit



Pin	Pin Name	I/O
1	RS-232 OUT 1	Out
2	RS-232 IN 1	In
3	RS-232 OUT 2	Out
4	RS-232 IN 2	In
5	POWER GROUND	--
6	SIGNAL GROUND	--
7	AIRCRAFT POWER 1	In
8	SIGNAL GROUND	--
9	AIRCRAFT POWER 2	In
10	CONTROL UNIT REMOTE POWER OFF	In
11	LIGHTING BUS HI	In
12	LIGHTING BUS LO	In
13	RESERVED	--
14	RESERVED	--
15	POWER GROUND	--

### 4.2 Power

#### 4.2.1 Power Functions

This section covers the power input requirements.

##### 4.2.1.1 Aircraft Power

Pin Name	Connector	Pin	I/O
AIRCRAFT POWER 1	P7101	7	In
AIRCRAFT POWER 2	P7101	9	In
POWER GROUND	P7101	5	--
POWER GROUND	P7101	15	--

AIRCRAFT POWER 1 and AIRCRAFT POWER 2 are “diode ORed” to provide power redundancy.

##### 4.2.1.2 Remote Power Off

Pin Name	Connector	Pin	I/O
CONTROL UNIT REMOTE POWER OFF	P7101	10	In

This input is used to power down the GMC 7XX, by a remote source. An input voltage between 6.5 Vdc and 33 Vdc will power-off the GMC 7XX. An input voltage of 3.5 Vdc or less will turn the GMC 7XX on.

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## 4.3 Serial Data

### 4.3.1 Serial Data Electrical Connections

#### 4.3.1.1 RS-232

Pin Name	Connector	Pin	I/O
RS-232 OUT 1	P7101	1	Out
RS-232 IN 1	P7101	2	In
RS-232 OUT 2	P7101	3	Out
RS-232 IN 2	P7101	4	In
SIGNAL GROUND	P7101	6	--
SIGNAL GROUND	P7101	8	--

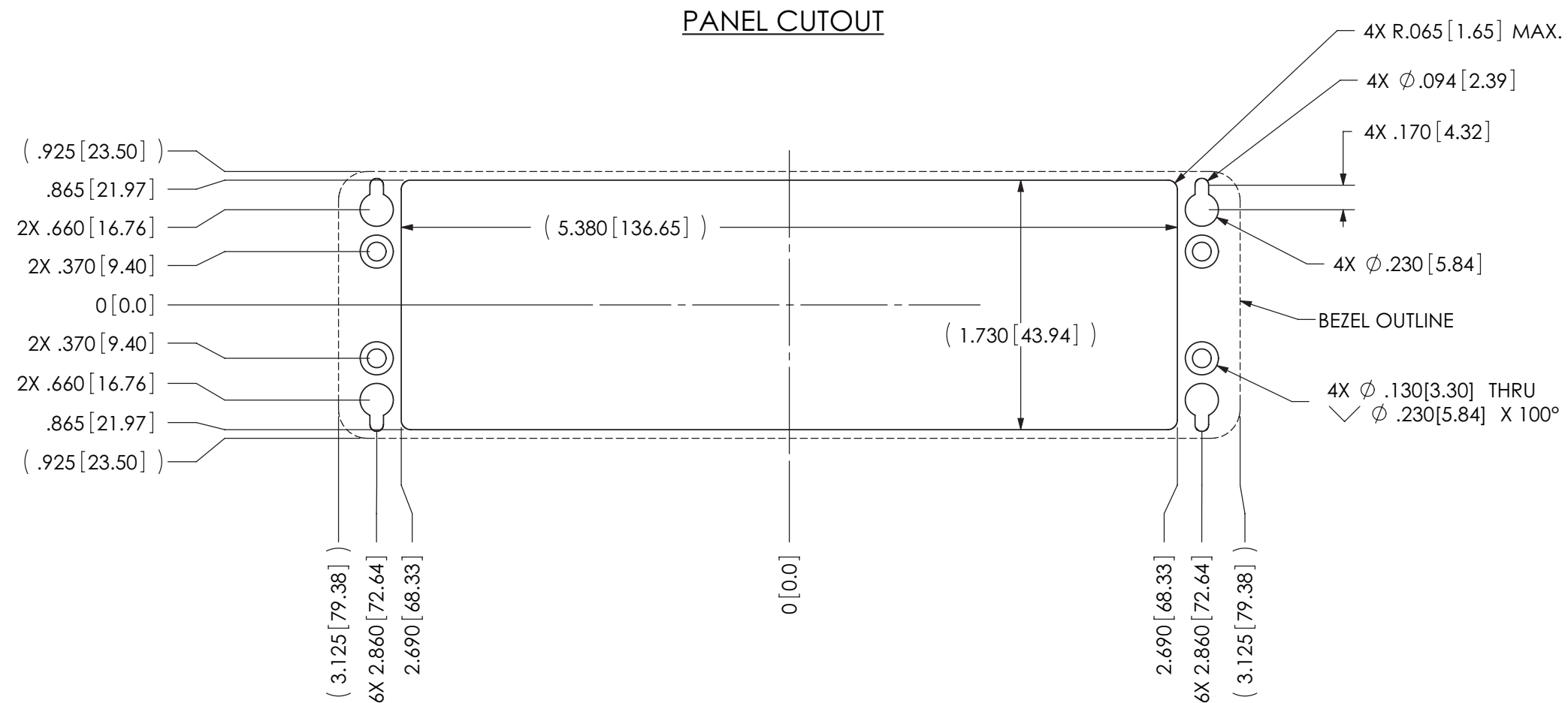
The RS-232 outputs conform to EIA Standard RS-232C with an output voltage swing of at least  $\pm 5V$  when driving a standard RS-232 load.

## 4.4 Lighting

Pin Name	Connector	Pin	I/O
LIGHTING BUS HI	P7101	11	In
LIGHTING BUS LO	P7101	12	In

The GMC 7XX can be configured to track a 28 Vdc, 14 Vdc, 5 Vdc, or 5 Vac lighting bus using these inputs. The GMC 7XX can also automatically adjust for ambient lighting conditions based on photocell input. GMC 710 and GMC 715 units with software version 3.00 and later can be configured to adjust the lighting based on a 10 Hz periodic lighting message from the GDU's. GMC 705 units with software version 2.00 and later can be configured to adjust the lighting based on a 10 Hz periodic lighting message from the GDU's.





NOTES:  
1. DIMENSIONS: INCHES [mm]  
2. TOLERANCES: INCH mm  
.XX  $\pm .02$  .X  $\pm 0.5$   
.XXX  $\pm .010$  .XX  $\pm 0.25$

Figure A-1. GMC 705 Cutout Drawing (Not To Scale)

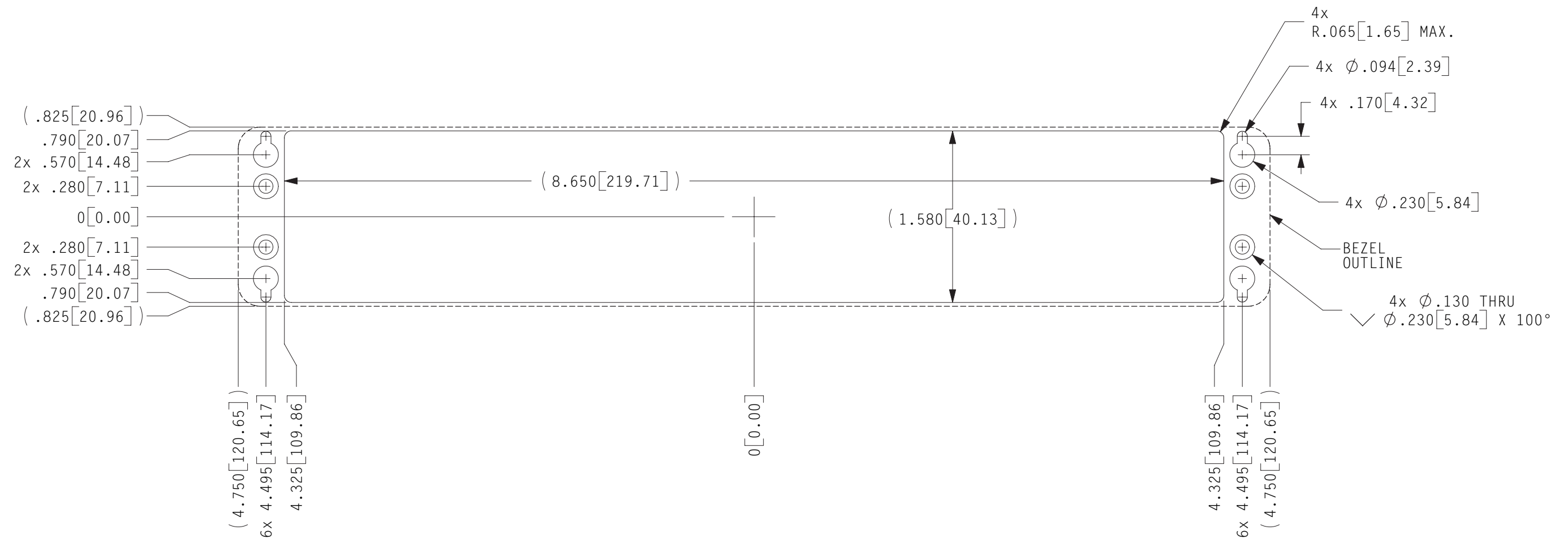
PANEL CUTOUT

NOTES:

1. DIMENSIONS: INCHES[mm]

2. TOLERANCES: INCH mm

.XX	±0.02	.X	±0.5
.XXX	±0.010	.XX	±0.25



**Figure A-2. GMC 710 Cutout Drawing (Not To Scale)**

PANEL CUTOUT

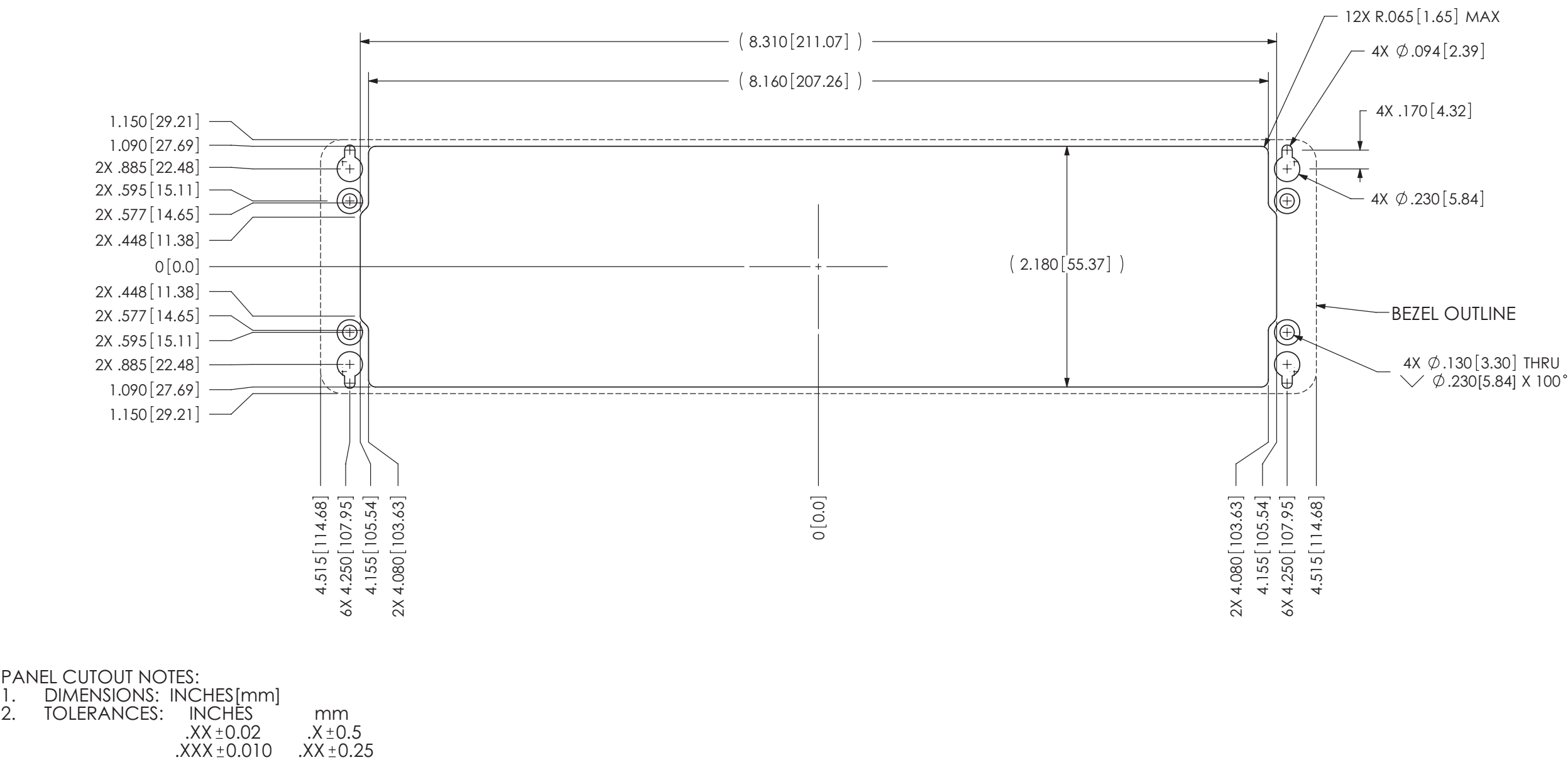
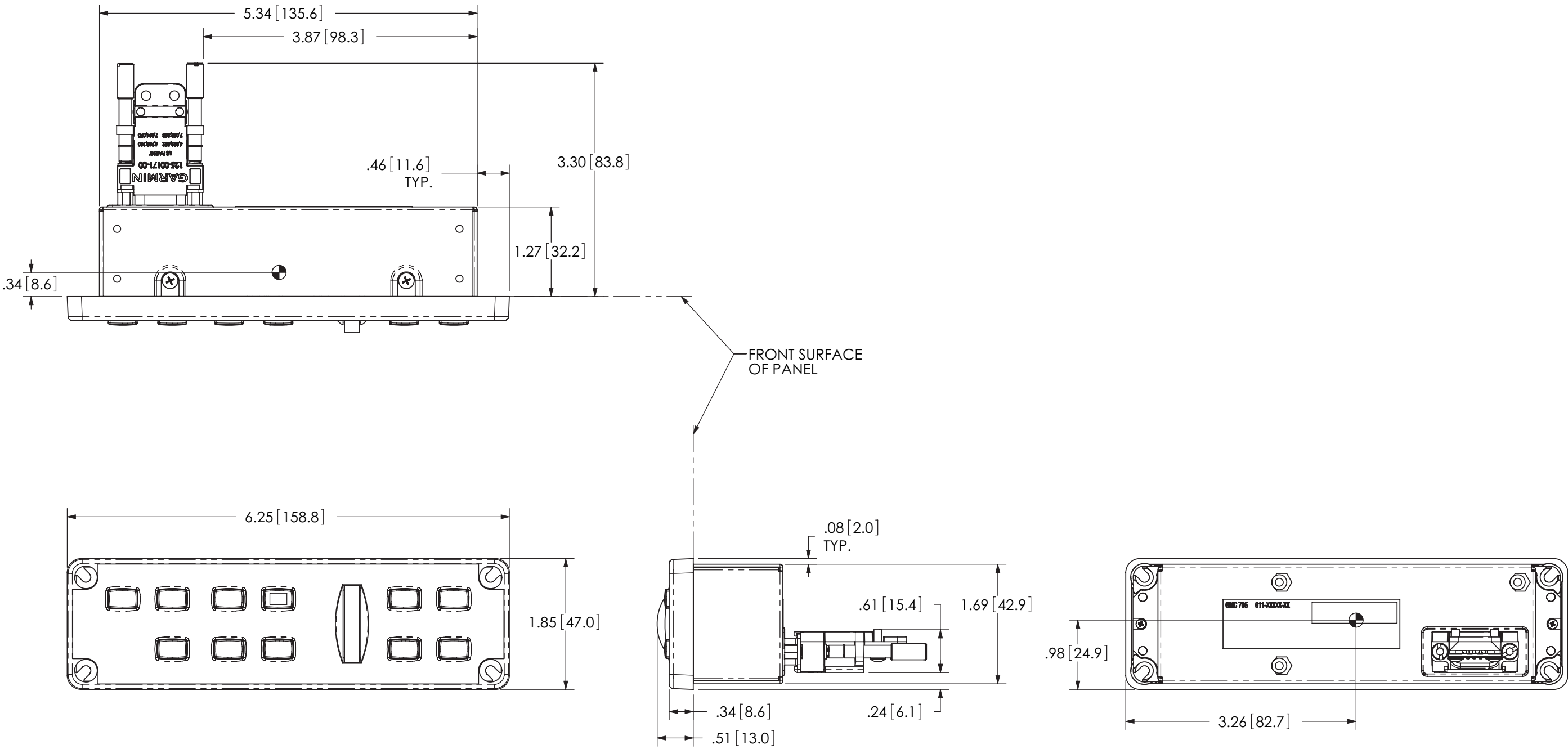


Figure A-3. GMC 715 Cutout Drawing (Not To Scale)

APPENDIX A OUTLINE & INSTALLATION DRAWINGS



NOTES:  
1. DIMENSIONS: INCHES[mm]  
2. DIMENSIONS ARE SHOWN FOR REFERENCE ONLY.

Figure A-4. GMC 705 Outline Drawing

APPENDIX A OUTLINE & INSTALLATION DRAWINGS

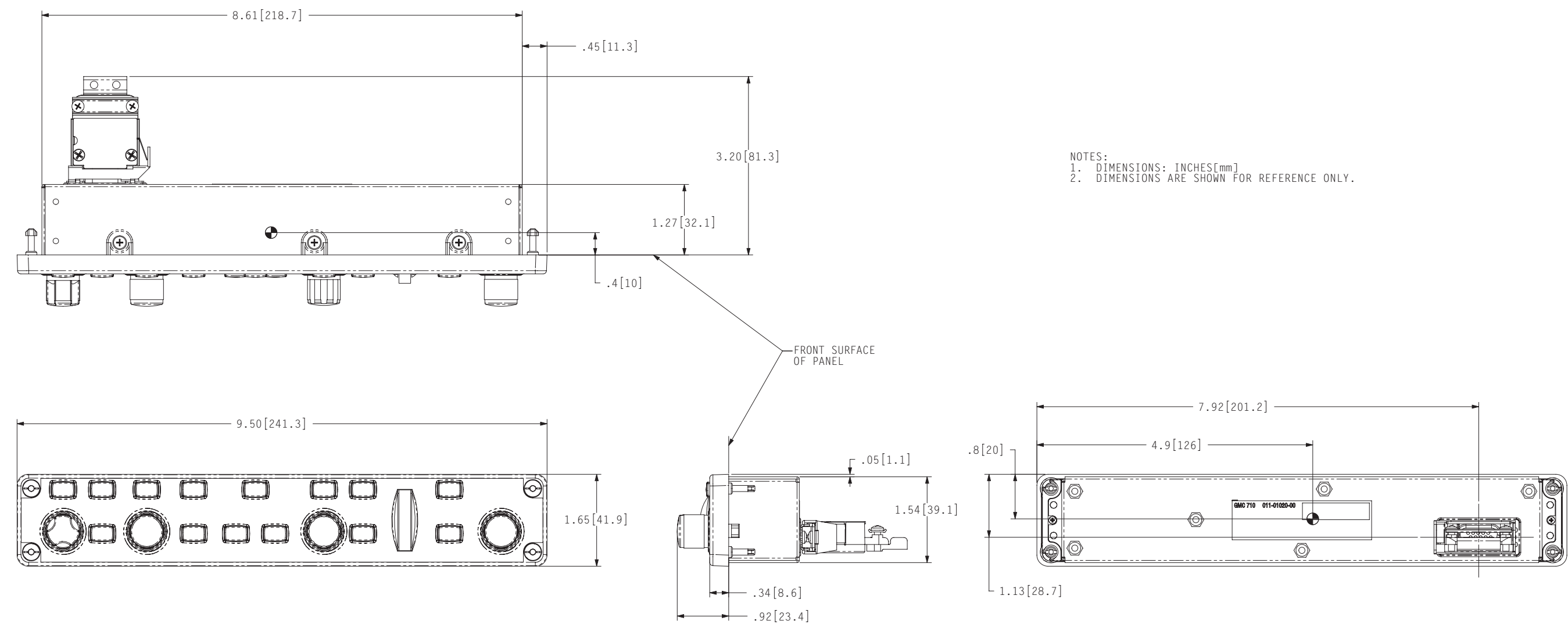
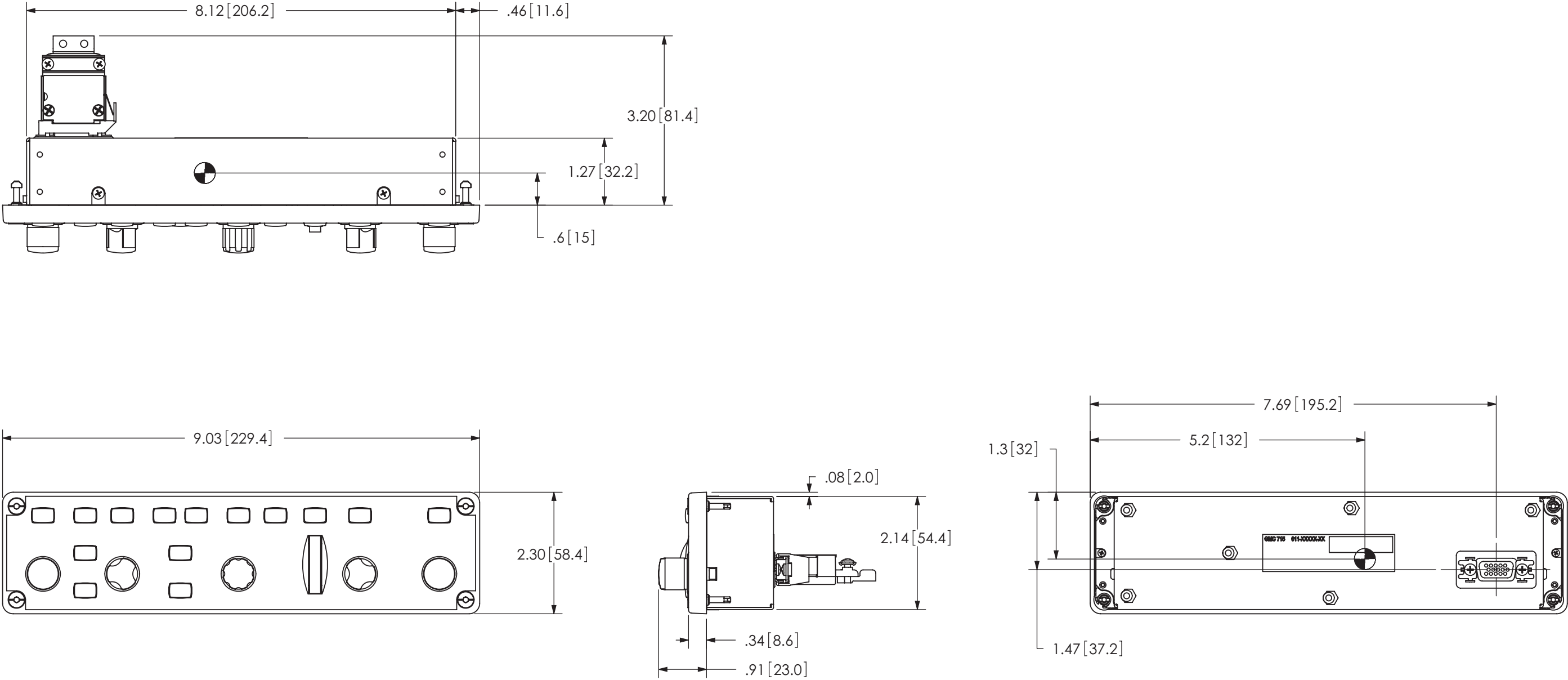


Figure A-5. GMC 710 Outline Drawing

APPENDIX A OUTLINE & INSTALLATION DRAWINGS



- NOTES: UNLESS OTHERWISE SPECIFIED
1. DIMENSIONS: INCHES[mm]
  2. DIMENSIONS ARE SHOWN FOR REFERENCE ONLY.

Figure A-6. GMC 715 Outline Drawing

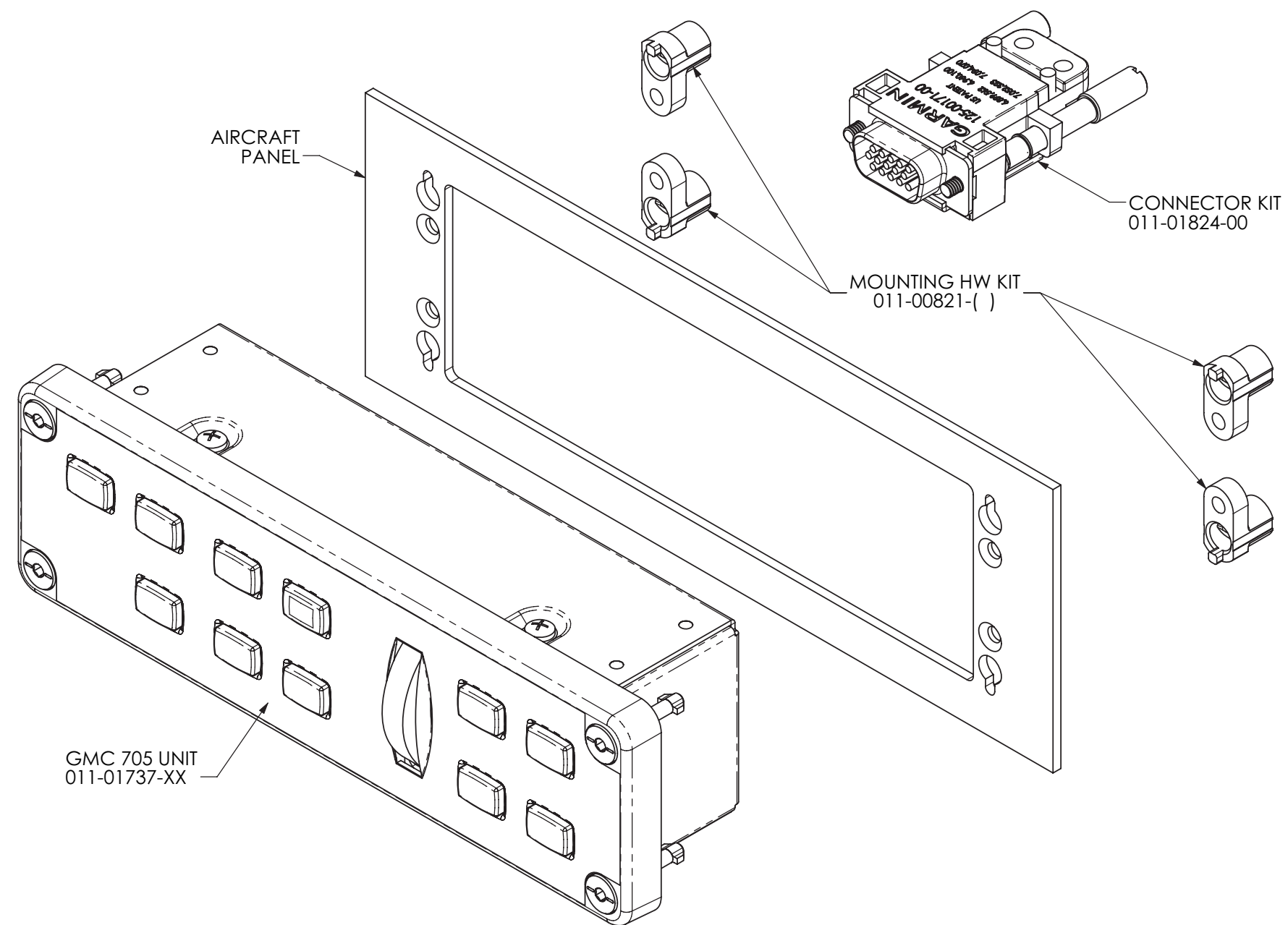


Figure A-7. GMC 705 Installation Drawing

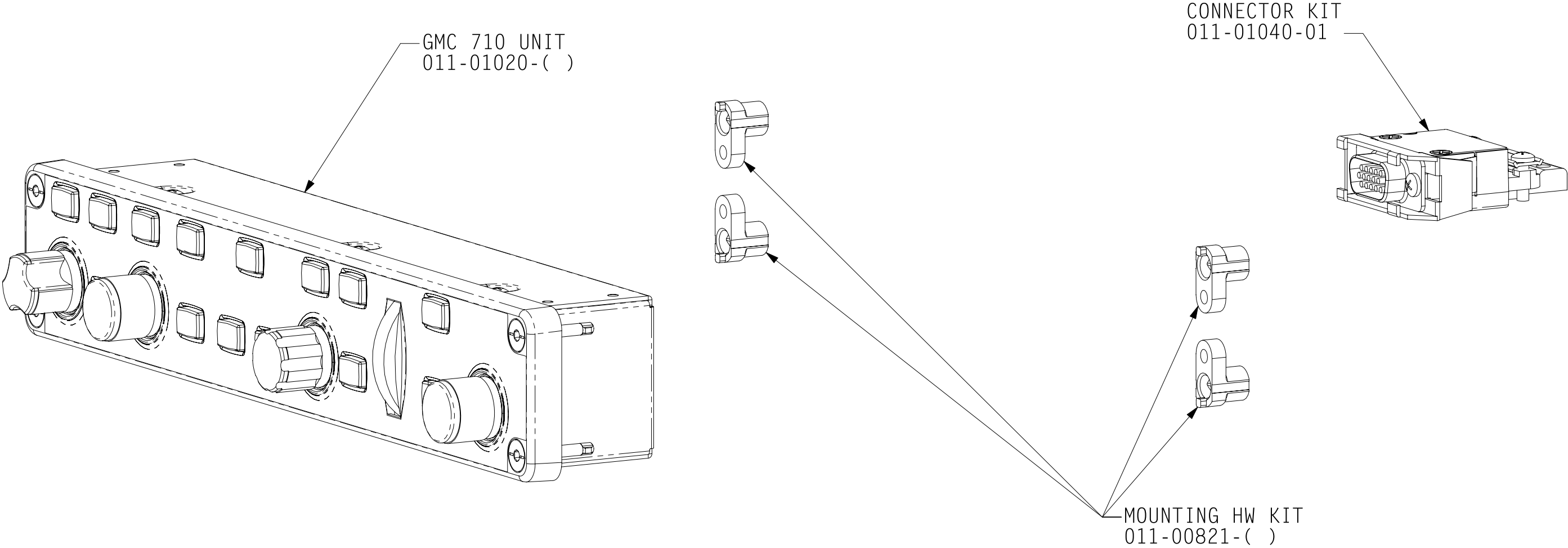


Figure A-8. GMC 710 Installation Drawing



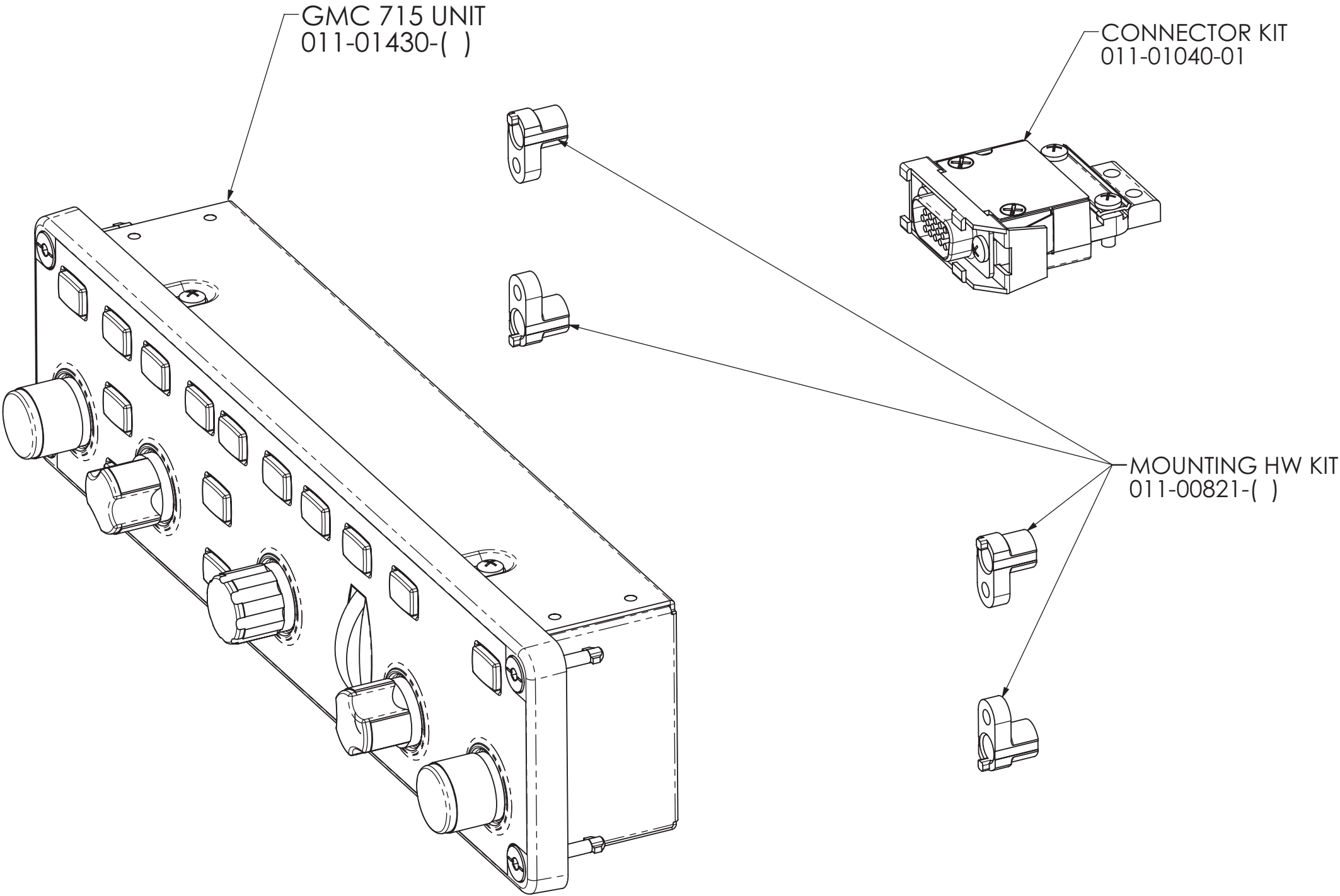
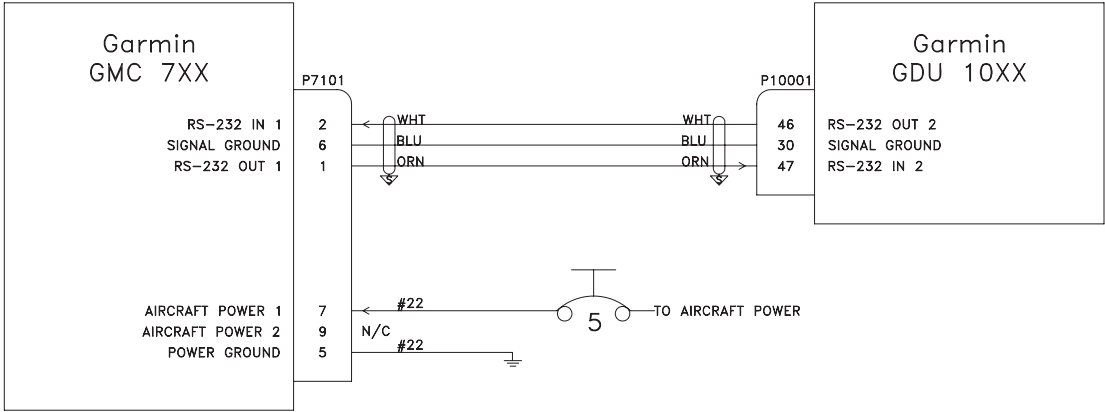


Figure A-9. GMC 715 Installation Drawing

APPENDIX B INTERCONNECT EXAMPLE



NOTES:

- 1. UNLESS OTHERWISE NOTED, ALL STRANDED WIRE MUST CONFORM TO MIL-W-22759/16 OR EQUIVALENT
- 2. UNLESS OTHERWISE NOTED, ALL SHIELDED WIRE MUST CONFORM TO MIL-C-27500 OR EQUIVALENT
- 3. UNLESS OTHERWISE NOTED, ALL WIRES ARE 24 GAUGE MINIMUM.
- 4. SYMBOL DESIGNATIONS
  - Symbol: Twisted shielded single conductor, shield terminated to ground. Description: TWISTED SHIELDED SINGLE CONDUCTOR SHIELD TERMINATED TO GROUND
  - Symbol: Twisted shielded single conductor, shield floats. Description: TWISTED SHIELDED SINGLE CONDUCTOR SHIELD FLOATS
  - Symbol: Twisted shielded pair, shield terminated to ground. Description: TWISTED SHIELDED PAIR SHIELD TERMINATED TO GROUND
  - Symbol: Twisted shielded pair, shield floats. Description: TWISTED SHIELDED PAIR SHIELD FLOATS
  - Symbol: Twisted shielded 3 conductor, shield terminated to ground. Description: TWISTED SHIELDED 3 CONDUCTOR SHIELD TERMINATED TO GROUND
  - Symbol: Twisted shielded 3 conductor, shield floats. Description: TWISTED SHIELDED 3 CONDUCTOR SHIELD FLOATS
  - Symbol: Twisted shielded 4 conductor, shield terminated to ground. Description: TWISTED SHIELDED 4 CONDUCTOR SHIELD TERMINATED TO GROUND
  - Symbol: Twisted shielded 4 conductor, shield floats. Description: TWISTED SHIELDED 4 CONDUCTOR SHIELD FLOATS
  - Symbol: Aircraft ground symbol. Description: AIRCRAFT GROUND
  - Symbol: Garmin (shield block) ground symbol. Description: GARMIN (SHIELD BLOCK) GROUND PLEASE REFER TO 190-00313-09
  - Symbol: Wire splice connection symbol. Description: WIRE SPLICE CONNECTION
  - Symbol: Coaxial cable symbol. Description: COAXIAL CABLE
  - Symbol: N/C = NO CONNECTION
- 5. UNLESS OTHERWISE NOTED, ALL SHIELD GROUNDS MUST BE MADE TO THE RESPECTIVE UNIT BACKSHELLS. ALL OTHER GROUNDS SHOULD BE TERMINATED TO AIRCRAFT GROUND AS CLOSE TO THE RESPECTIVE UNIT AS POSSIBLE.
- 6. USE AIRCRAFT GRADE CATEGORY 5 ETHERNET CABLE. THESE INCLUDE ELECTRONIC CABLE SPECIALIST P/N 392404.

MANUFACTURER	P/N
PIC WIRE AND CABLE	E10422 (22 GAUGE)
PIC WIRE AND CABLE	E10424 (24 GAUGE)
ELECTRONIC CABLE SPECIALIST	392404 (24 GAUGE)

Figure B-1. GMC 7XX Example Interconnect