GA203-1 Rev N/C 7/02/2013

28 to 14 VDC Power Converter Installation Instructions

GENERAL INFORMATION

These installation instructions are for the installation of the Geneva Aviation 28-14 VDC Power Converter. The Power Converter comes in two amperage ratings: The P168 (G12980) 20 Amp Power Converter and the P174 (G13053) 27 Amp Power Converter. Both the P168 and P174 are identical in form factor, weight and installation instructions.

The Power Converter is used to provide power to non-essential 12 VDC devices (accessories). This STC does not approve the installation of these other devices and it is the installer's responsibility to obtain the proper approval for their installation.

The Power Converter includes a trim pot that may be adjusted through an access hole in the side in order to adjust the output voltage from 12 – 15.5 VDC to suit the device that is being powered. The converter contains no user-serviceable parts. Please return to Geneva Aviation for any service required. Refer to the Instructions for Continued Airworthiness for further information on maintaining this installation.

There are no restrictions as to the quantity of power converters installed. However, it is the installer's responsibility to verify that the installation of this device does not interfere with other equipment installed and to perform an electrical analysis to verify that the aircraft accessory buss can support the installation of the power converter.

1. Installation

1.1. The Power Converter is designed to be mounted in a variety of locations within the airframe, provided it is protected from the environment. It may be mounted to a deck, bulkhead, tray, avionics shelf or other structure rated to carry a 1.50 lb load. The exact mounting location is left to the installer's discretion provided that the installation of the Power Converter does not interfere with other equipment installed.

1.2. Mount the Power Converter using (4) #8-32 screws, washers and locknuts or nutplates.

1.3. When mounting into composite structure, #8-32 potted inserts (not included in kit) should be used.

1.4. Unless otherwise specified, follow aircraft manufacturer's standard practices and maintenance manuals for installation of all hardware.

1.5. Maintain a minimum 2 e/d edge margin for all installed fasteners.

1.6. Refer to Figure 1 and Figure 2 for Power Converter reference dimensions that may be used when planning the installation.

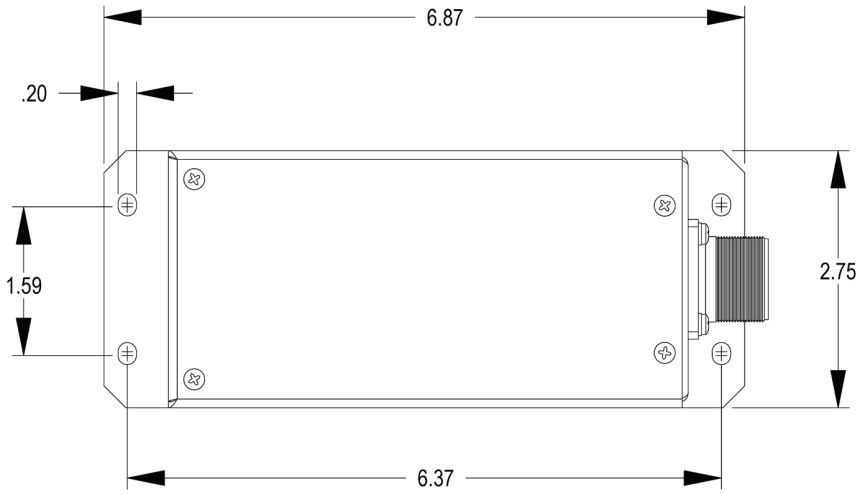

Figure 1 Chassis Footprint Dimensions

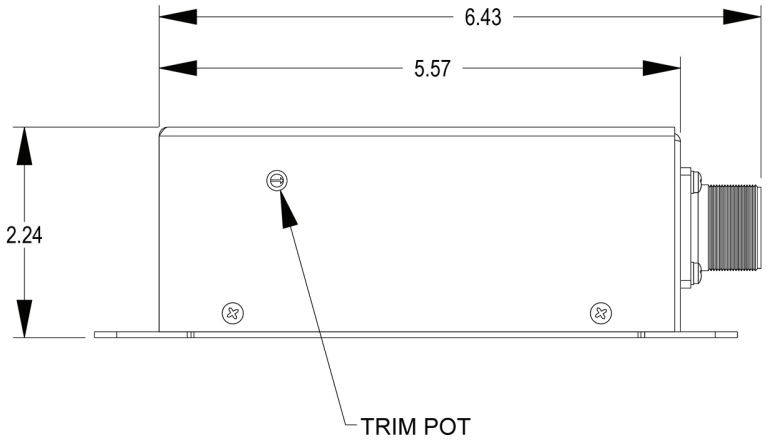

Figure 2 Chassis Profile Dimensions

2. System Wiring

2.1. Unless otherwise specified, follow the aircraft manufacturer's electrical wiring practices and maintenance manuals for installation of all system wiring.

2.2. Refer to Figure 3 for cable harness fabrication instructions to connect to the Power Converter.

2.3. Unless otherwise noted, all shielded wire is M27500-(ga)TG(n)T14 and all unshielded wire is M22759/16-(ga)-9, where (ga) is the wire gauge and (n) is the number of wires inside the shield.

2.4. Unless otherwise noted, all wire is 22 GA.

2.5. Route all system cabling through existing cable runs.

2.6. Secure all cabling using nylon cable ties and/or cable clamps using standard practices.

2.7. Cable lengths are dependent on Power Converter installation location.

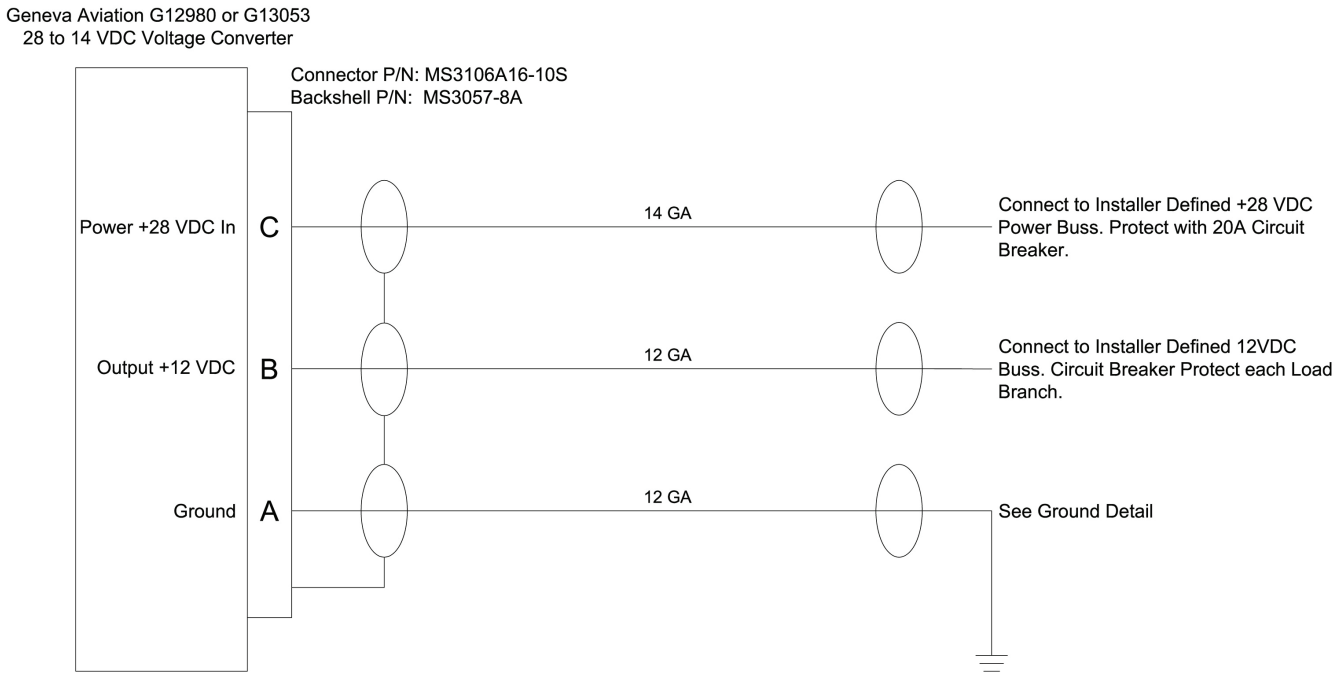

Figure 3 Cable Wiring

2.8. Refer to Figure 4 for Ground wire installation. All Bonding and Grounding will be in accordance with AC 43.13-1B, Chapter 11, Section 15.

2.9. Locate the nearest Factory Ground Block at a location that is clear of all riveted webbing by a minimum of 3" and mark this location.

2.10. Drill a hole ø.201 through the frame. Maintain minimum 2 e/d edge margin.

2.11. Burnish both sides of frame at hole.

2.12. Etch Alodine both burnished surfaces to prevent corrosion.

2.13. After assembly of ground point and connection of terminal, apply a coating of Vernilac or other suitable lacquer to ensure corrosion protection.

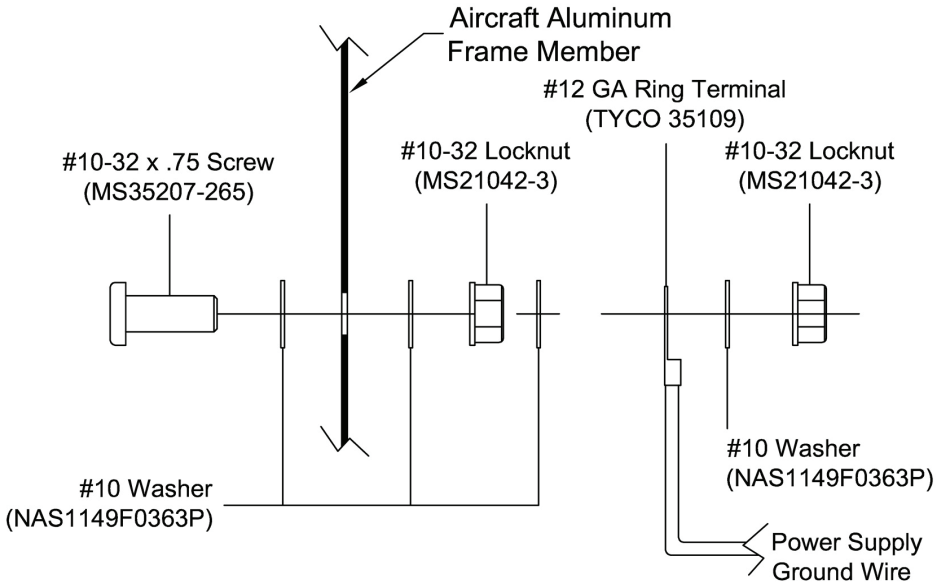

Figure 4 Ground Detail

2.14. Refer to Figure 5 for Power Converter pin designation.

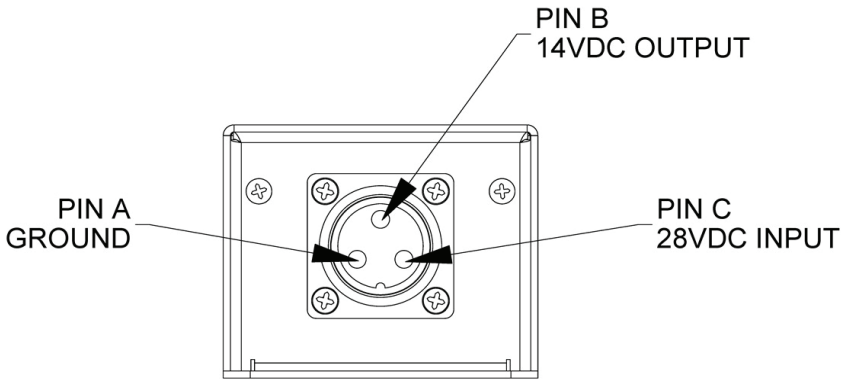

Figure 5 Pin Designation

3. System Testing

3.1. Before applying power, perform a continuity check of all power and ground leads to confirm they are connected properly.

3.2. Test power output of Power Converter by applying input power to Pin C and measuring voltage level output on Pin B using a voltage meter.

3.3. Adjust voltage level to desired value by turning trim pot on side of converter.

3.4. Connect to 12VDC device and test for proper operation. Re-adjust voltage if required under load.

3.5. Conduct EMI test in accordance with Geneva EMI Test Procedure GA1-2TP.

4. Kit Parts List

P168 20 Amp Power Converter Kit

QTY	PART NUMBER	DESCRIPTION
1	G12980	20 Amp Power Converter
8	CCR264SS-3-02	Pull Rivet
4	MS21042-08	Lock Nut, #8-32
4	MS21059L08	Nut Plate, #8-32, Floating
4	MS35206-245	Screw, #8-32 x 1/2", Phil Pan
8	NAS1149FN832P	Flat Washer, #8
1	35109	Terminal, #10 Ring, Yellow
2	MS21042-3	Lock Nut, #10-32
1	MS3057-8A	Backshell
1	MS3106A16-10S	Connector, Circular, 12ga x 3 soc, Solder Cup
1	MS3420-8	Bushing, Telescoping
1	MS35207-265	Screw, #10-32 x 3/4", Phil Pan
4	NAS1149F0363P	Flat Washer, #10

P174 27 Amp Power Converter Kit

QTY	PART NUMBER	DESCRIPTION
1	G13053	27 Amp Power Converter
8	CCR264SS-3-02	Pull Rivet
4	MS21042-08	Lock Nut, #8-32
4	MS21059L08	Nut Plate, #8-32, Floating
4	MS35206-245	Screw, #8-32 x 1/2", Phil Pan
8	NAS1149FN832P	Flat Washer, #8
1	35109	Terminal, #10 Ring, Yellow
2	MS21042-3	Lock Nut, #10-32
1	MS3057-8A	Backshell
1	MS3106A16-10S	Connector, Circular, 12ga x 3 soc, Solder Cup
1	MS3420-8	Bushing, Telescoping
1	MS35207-265	Screw, #10-32 x 3/4", Phil Pan
4	NAS1149F0363P	Flat Washer, #10

5. Weight And Balance

5.1. Weight of the power converter and mounting hardware = 1.50 lbs.

5.2. The arm will depend on the exact location that it is installed.

5.3. The installer will record the location for the power converter along with its installed weight on the aircraft's weight and balance record.

LOG OF REVISIONS

REVISION LEVEL	DATE OF REVISION	PAGE or SECTION	DESCRIPTION OF CHANGE	APPROVAL
N/C	7/02/2013	ALL	Initial Release	CLB