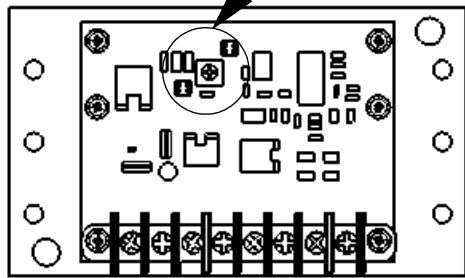


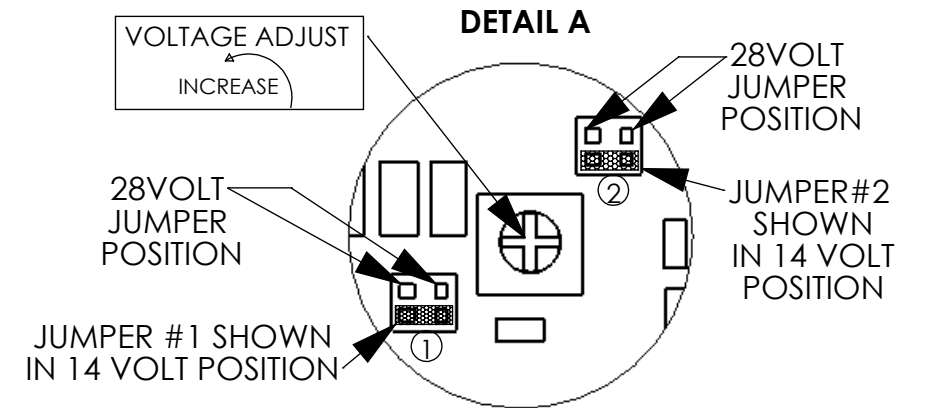
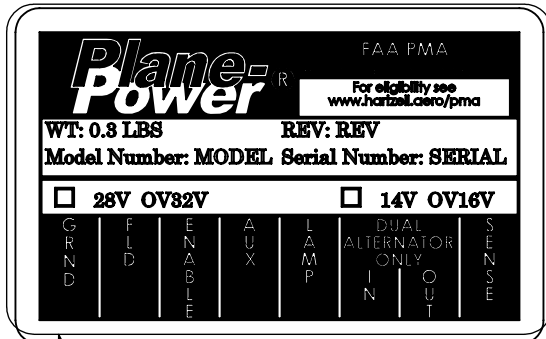
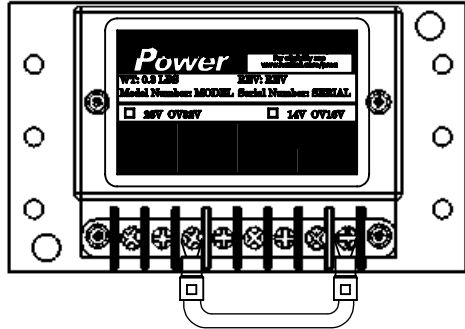
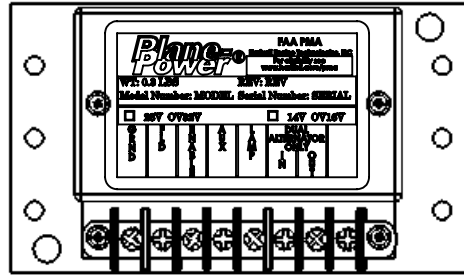
USER IS RESPONSIBLE FOR VERIFICATION OF CURRENT REVISION BEFORE USING THIS DOCUMENT. DOCUMENT CONSIDERED "REFERENCE ONLY" IF NOT THE CURRENT REVISION.

REVISIONS				
ECO	REV.	DESCRIPTION	BY	DATE
EN-1409029	G	FIRST RELEASE INTO HET DESIGN DATA	BJ	9/8/14
EN-1409030	H	1) TITLE BLOCK WAS PLANE-POWER, LTD. 2) "HARTZELL ENGINE TECHNOLOGIES, LLC" WAS "PLANE-POWER, LTD" 3) REMOVED DATA TAG MATERIAL NOTE. 4) ADDED 12-1022 CALLOUT TO DATA TAG 5) REMOVED "PLANE POWER, LTD." FROM PAGE 3	BJ	9/8/14
EN-1411036	J	1) ON SHEET 3, CHANGED "INSTRUCTIONS FOR CONTINUED AIRWORTHINESS" TO "MAINTENANCE INSTRUCTIONS"	OKQ	11/18/14
122534	K	1) SHT 2, ADDED REFERENCE TO WEBSITE	OKQ	02/01/17

R1224 & R1224B  
REV. C  
DETAIL A



SUPERCEDED  
VERSION SEE STEP 7



NOTE: JUMPERS 1 & 2 MUST BE IN THE SAME VOLTAGE POSITION FOR OPERATION AT SELECTED VOLTAGE. AS SHOWN BY DETAIL A

12-1022

SPECIFICATION CLASSIFICATION		
CLASSIFICATION	DIMENSION CONVENTION	NOTE NO. CONVENTION
CRITICAL	<XX.XX>	<#>
MAJOR	[XX.XX]	[#]
MINOR	XX.XX	#
REFERENCE	(XX.XX)	(#)

UNLESS OTHERWISE SPECIFIED  
DIMENSIONS ARE IN INCHES AND APPLY AFTER HEAT TREAT AND PLATING  
.X = ±.015  
.XX = ±.010 ANGLES ±1°  
.XXX = ±.005  
BREAK ALL EDGES AND MACHINE ALL INSIDE CORNER FILLETS .015 MAX. SURFACE FINISH

THIS DRAWING CONTAINS INFORMATION THAT IS CONFIDENTIAL AND PROPRIETARY TO HARTZELL ENGINE TECHNOLOGIES. THIS DRAWING IS FURNISHED ON THE UNDERSTANDING THAT THE DRAWING AND THE INFORMATION IT CONTAINS WILL NOT BE COPIED OR DISCLOSED TO OTHERS EXCEPT WITH THE WRITTEN CONSENT OF HARTZELL ENGINE TECHNOLOGIES. WILL NOT BE USED TO THE DETRIMENT OF HARTZELL ENGINE TECHNOLOGIES, AND WILL BE RETURNED UPON REQUEST BY HARTZELL ENGINE TECHNOLOGIES.

GEOMETRIC SYMBOLS PER ANSI Y14.5
FLATNESS
STRAIGHTNESS
ROUNDNESS
CYLINDRICITY
PROFILE
PERPENDICULARITY
POSITION
CONCENTRICITY
SYMMETRY
ANGULARITY
PARALLELISM
CIRCULAR RUNOUT
TOTAL RUNOUT

SCALE 1:5

DRAWN	BJ	08/08/06
ENGINEER	C. BROUSSARD	
APPRVD.	122534	
FINISH	N/A	
WEIGHT	N/A	
MATERIAL SEE INDIVIDUAL COMPONENTS		
SIZE	SH 1 OF 4	CODE ID 65PY1

<p>2900 Selma Highway Montgomery, AL 36108</p>		<p>R1224 INSTALLATION INSTRUCTIONS</p>	
		12-1001	K

## REGULATOR INSTALLATION 12-1001

### Single Engine

### **READ AND UNDERSTAND ALL INSTRUCTIONS BEFORE APPLYING POWER TO UNIT**

Current applications and specific regulator conversion/installation guides are available online at [www.plane-power.com](http://www.plane-power.com) or [www.hartzell.aero](http://www.hartzell.aero)

1. Remove existing regulator and solid-state over-voltage module (if installed).
2. Install R1224/R1224B Regulator in same location as regulator being replaced. If mounting holes do not align, add mounting holes as required using acceptable methods, techniques, and practices.
3. Connect **GRND** terminal to aircraft ground. **It is critical that the regulator ground is connected to airframe ground. Without this ground, the regulator and its internal overvoltage protection cannot function.**
4. Connect the **FLD** terminal to the FIELD (brush) terminal of the alternator.
5. Connect the **ENABLE** terminal to the regulator/field power source (the wire from the cockpit ALTERNATOR FIELD switch which is fed from a **7.5 max amp breaker**). Note: In order for the over voltage protection circuit to operate, the enable terminal must be connected to an operational circuit breaker. (In the event of an over-voltage condition the over-voltage protection circuit will cause the circuit breaker to trip, removing all power from the regulating circuit.) **Do not install R1224/R1224B in any aircraft that has an automatic resetting circuit breaker in the enable line.**
6. If the regulator being replaced has a connection to the AUX terminal on the alternator, connect this wire to the **AUX** terminal. If not, install a jumper wire between **AUX** and **ENABLE**. Note: No connection to **AUX** terminal is necessary if an alternator out lamp is not installed.
7. If the installer wishes to sense voltage at a source other than **ENABLE** terminal: remove jumper between **ENABLE** terminal and **SENSE** terminal. Connect **SENSE** terminal to desired location. For superseded versions of the R1224/R1224B (Rev B & previous) indicated by silver label, step 7 does not apply and no sense terminal exists. Wiring of a "Sense" terminal on these regulators will result in damage to the regulator.
8. If an ALTERNATOR out lamp is installed in the aircraft and is to be actuated by the R1224/R1224B regulator, Connect the negative wire of the lamp to the **LAMP** terminal of the R1224/R1224B regulator.
9. **Remove the regulator cover and ensure that the internal jumper #1 and jumper #2 are set to the proper voltage for the aircraft system.** Refer to the picture on page 1.
10. With the engine running and the alternator switch turned on, using a small screwdriver, set the regulator's voltage adjustment so that the buss voltage, as measured at the **ENABLE** terminal, is the desired value. Refer to aircraft maintenance manual or battery manufacturer's data for proper voltage setting.
11. Reinstall the R1224/R1224B cover.

### **Multi-Engine**

1. For both regulators, perform steps 1-11 of the Single Engine procedure above.
2. Choose one regulator as the MASTER. It can be either. Connect the **OUT** terminal of the MASTER to the **IN** terminal of the other Regulator.

NOTE: Both regulators must be the same part number. Adjustments to the voltage setting of each regulator may be made by turning the other alternator switch off.

## **MAINTENANCE INSTRUCTIONS**

It is recommended that the operation of the Plane Power, Ltd. Voltage Regulator be checked every 100 hour inspection or every annual inspection whichever ever comes first. If the regulator is operating at the required voltage level, no adjustment is necessary. If the voltage level does not meet the Aircraft Manufacturer's requirement, adjust the voltage per instructions.

Each 100 hour inspection, the regulator and its' associated wiring should be checked for secure electrical connections and physical connection to the airframe.

To maintain the inherent protection from HIRF and lightning, as well as over voltage protection of the aircraft electrical system, ensure the ground connection between terminal 1 (GRND) and airframe ground is less than 0.1 OHM.

No special tools are required.