

# AeroElectric Connection

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Stephen J Klodd  
General Manager  
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Good morning sir,

By way of introduction, I'm currently an electrical engineer for Raytheon Aircraft (Hawker-Beech) in Wichita, KS. I've been professionally associated with aircraft electrics and electronics off and on for about 44 years.

I have a hobby business that supports the owner built and maintained aircraft business based from my website at <http://aeroelectric.com> I publish a book and conduct educational seminars for OBAM aircraft community. I also participate in an electrical/avionics list-server (forum) on [matronics.com](http://matronics.com) called the AeroElectric List.

Subscribers to the AeroElectric-List have on several occasions have asked me about certain operating characteristics of your products. I've searched your website for the needed information but without success. Out of a desire to provide accurate responses to such questions, I'm writing to see if you'll share the information I seek.

In the photograph on your website at:

[http://www.plane-power.com/images/AL12\\_EI70%20Wiring.pdf](http://www.plane-power.com/images/AL12_EI70%20Wiring.pdf)

. . . you illustrate two control wires into the back of the alternator. One of these (alternator failure) I understand. The other is protected at 5A and is labeled "alternator field". Would you enlighten me as to the following points?

- (1) Does the 5A breaker carry actual field current? In other words, if I open the ALT FIELD switch, does this effect an orderly shutdown of the alternator's functionality?
- (2) There is a module attached to the rear of the alternator for the purpose of adding OV protection. Can you explain its functionality? I've heard it referred to as a 'crowbar' OV protection module. My understanding of this phraseology suggest that when an OV condition is sensed, some form of protective device for over current is forced to operate by deliberately faulting that source to ground.

I've used this technique for over 30 years in a variety of venues. In all of my designs, I open the field supply circuit breaker. Does your system operate similarly? In other words, should an OV event occur, is the 5A breaker forced open? If so, perhaps this answers question #1 as well.

I've watched your operations with interest for several years. It's my belief that the future of small aircraft in GA rests firmly in the laps of the owner built and maintained aircraft industry. The traditional suppliers of small aircraft will never regain the stature they held in those heady days of the 60s, 70s and early 80s.

If this industry is to thrive, it needs robust and forward thinking suppliers of components and services designed to move the art and science of building aircraft forward. I welcome you to this exciting arena and wish you well.

I possess considerable tribal knowledge of the aircraft industry's processes and techniques for things electric. If you believe I might have some information to share that helps you move your goals forward, I'd be pleased to offer any assistance that is not proprietary to one of my suppliers or customers. Don't hesitate to call.



Robert L. Nuckolls, III

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Steven's reply via e-mail:

To: "Robert L. Nuckolls, III" <nuckollsr@cox.net>  
Subject: RE: Attn: Steven Klodd

Hello Robert,

Thank you for your letter of introduction, comments and questions, it is my pleasure to meet you.

In answer to your questions the 5-amp circuit does carry the field current and also enables the regulator. Turning off the ALT FIELD/ENABLE switch will shut down the alternator's functionality. As for the OVP module it will as you said trip the 5-amp circuit breaker if it were to sense an over voltage condition.

I look forward to meeting you at one of the events this year. Please stop by our booth and thank you for your help as we all do our part in nurturing the aviation community through a positive approach!

Best Regards,  
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