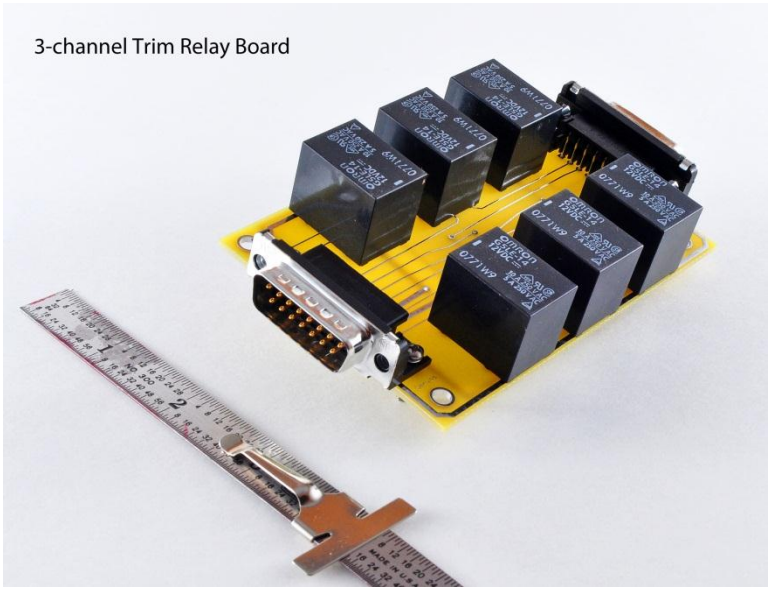
Installation & Operating Instructions

3-channel Trim Relay Board
Part No. TRB-02F

The Trim Relay Board (TRB) should be mounted in the aircraft in a convenient location using 4-40 hardware and nylon standoffs or washers to allow for clearance under the printed circuit board (PCB) contacts and for ventilation purposes. CAUTION: Be careful to prevent any of the traces on the top or bottom of the PCB from coming into contact with any part of the aircraft structure or mounting hardware as this could short out the circuits. Terminate your wire bundle from the grip with a male 15-pin connector as shown in the schematic. Terminate your wire bundle from the servos, etc., with a female 15-pin D-sub connector.



The D-sub connectors' pins are rated at 5 amps continuous. The Omron relays are rated at 10 amps continuous. The flap relay traces have been designed to conduct 5 amps continuously in keeping with the draw of the Usher Enterprises (Van's Aircraft) flap motors. CAUTION: It is important to use the designated pin-outs for the flaps, pins 6 and 7, in the 15-pin connectors as shown in the attached schematic, as this circuit is designated to handle the flap motor amperage. It is also recommended that you use at least AWG 22 wire (AWG 20 is even better) for the flaps. The D-sub machined pins can accept up to a number 20 AWG wire and thus pins 6 and 7 on the servo side could be pinned with AWG 20 wire if the flap motor is any appreciable distance from the TRB. You may also elect to use AWG 20 wire for the supply and ground pins if there is any appreciable distance involved. AWG 22 wire can handle the 5 amps, especially on an intermittent basis, so going with AWG 20 is just an additional margin for safety and totally at the discretion of the builder.

Be sure to use a fuse or circuit breaker on the flaps circuit for protection. When selecting circuit protection for the supply voltage (pin #1), keep in mind that you are protecting the load for both the flaps and the trim servos, as they could operate simultaneously. Current draw for the Ray Allen servo is approximately 150 milliamps unloaded. Current draw for the Usher flap actuator is estimated to be about 1 or 2 amps unloaded.

Where there have been issues in the past with circuit breakers popping in the flap circuit, it almost always is because of flaps binding somewhere in the linkage. Be sure that your flaps operate freely to avoid any overload issues.

Disclaimer & Warranty:

This part was manufactured by PH Aviation Services, Inc. and should NOT be installed in Certified Aircraft. It is intended for use only in Experimental Aircraft and installed by the builder. There are no warranties expressed or implied and purchaser assumes all risk for the operation of this part. However, the purchaser may return this part for repair, replacement, or full refund if it fails to operate as intended at any time during the first 12 months after the date of purchase.