

## “FlexReg” PLR5W-I Quickstart Guide

Thank you for purchasing the Tech-Aero FlexReg PLR5W-I. The PLR5W-I provides up/down programmable output of 32 voltage settings within each of two jumper selectable voltage ranges, supporting standard, High Voltage (HV) or Wide Voltage (WV) servo voltage requirements. The factory setting is 6.20V +/- .01V, which can be changed with a simple procedure using a voltmeter and a small screwdriver or similar electrically conductive, small hand tool.

To start with, select a suitable battery that has adequate capacity for your application. The PLR5W-I can operate in “standard” servo voltage ranges with a 2S LiPO, a 2S LiFe or a 5S NiCad or NiMh battery pack. For operation with HV or WV servos, a 2S LiPo is recommended. Simply plug the Rx Power connector into the battery power connection or spare servo connection such as an auxiliary channel on your receiver and plug the battery into the Battery Connector to the flight pack battery. Power to the receiver is controlled by the PLR5W-I ON/OFF switch.

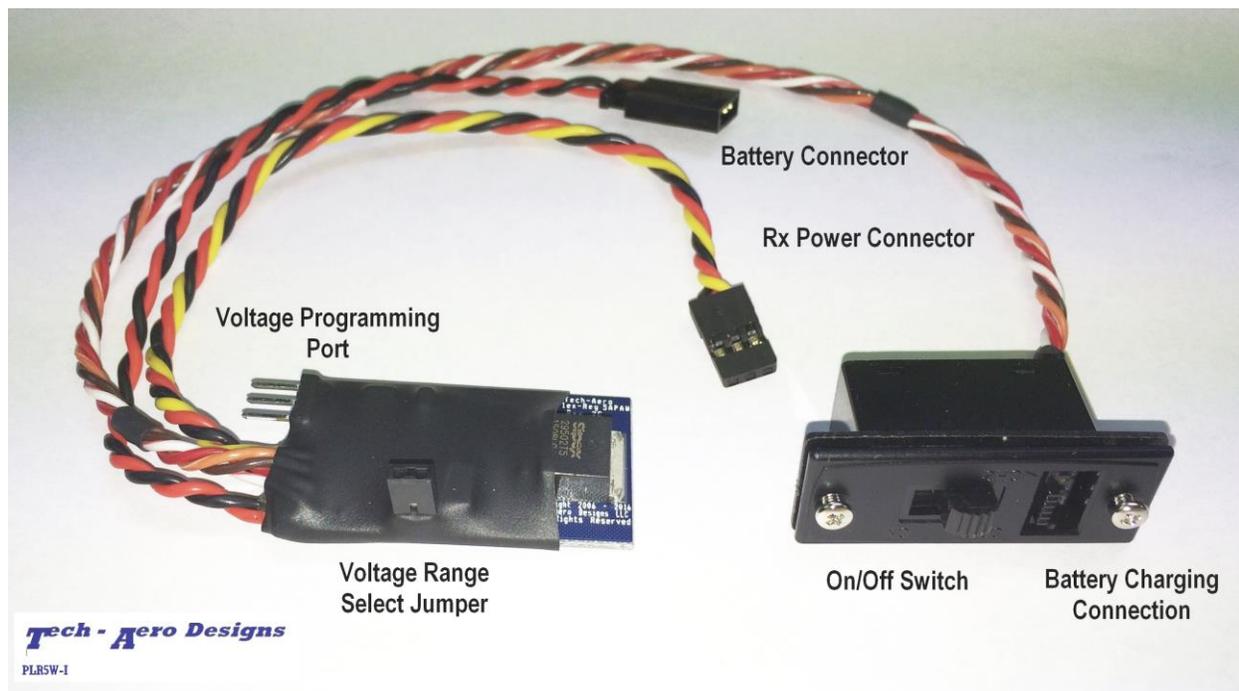


Figure 1

Referring to Figure 1, the Voltage Select Jumper lets you pick the voltage range for “standard” servos, i.e. those that would typically be used for so-called HV (High Voltage) servos. WV (Wide Voltage) servos can operate throughout both ranges, but would typically be set to take advantage of the higher voltage range that is available. Remove the jumper for standard voltage servos, providing a 32 programmable selections from 5.75V to 6.65V. Install the jumper for 32 programmable selections from 6.68V to 7.75V.

The procedure to program the PLR5W-I for any of the 32 separate points is to first connect the Rx Power connector to a DC voltmeter. For accurate results, there should be minimal to no load on the regulator while performing the programming task. Referring to Figure 1, note the location of the 3 pin Voltage Programming Port. With a small screwdriver or similar small metallic instrument, briefly making contact with the center pin and the pin closest to the corner of the circuit board will increase the output voltage level. Just a momentary “tap” to make contact is needed for voltage changes that occur just one step at a time. To decrease the output voltage, make contact instead with the center pin and the pin that is closest to the wires that exit the edge of the circuit board. The voltage level that is displayed will be automatically stored when

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the PLR5W-I is powered down. For “fast forwarding” the programming, you can hold the screwdriver to the two pins instead of just tapping them. Note that the programmable changes will apply to either jumper selectable voltage range, i.e., if you increase or decrease one of the 32 available voltages within one of the two voltage ranges, you will see that the voltage output within the other selectable voltage range is similarly affected. An easy way to visualize this is that the jumper only shifts the voltage range between standard and high voltage, but programming “fine tunes” within the voltage range that you want to use.

The Battery Charger connection is integrated into the ON/OFF switch housing and may be used to perform pre-flight checks of the battery condition. You may use a typical hobby type expanded scale voltmeter (ESV) for doing pre-flight checks. For convenience, the charger connection may also be used to connect a battery charger that is matched to the battery technology, battery voltage and capacity. Be sure to switch the PLR5W-I off for battery charging. Please follow all of the safety precautions and battery charging instructions for the battery and the battery charger that you are using. When using two PLR5W-I and two batteries into one receiver, note that some chargers will not function properly when charging both batteries simultaneously, due to the common ground connection of the two regulators via the receiver’s power bus. In this case, either charge each battery separately or detach them from the PLR5W-I to permit simultaneous charging of both battery packs.

Mount the PLR5W-I with the topside exposed to air in the model cabin (regulator chip visible). To mount the regulator board to a platform that permits a small Velcro strap to wrap around, use a piece of ¼” or thicker foam padding placed on that platform, place the regulator bottom side on the foam and fasten with a thin Velcro strip around the mid-section. Do not over tighten the Velcro strip! Make it just snug enough to press the unit lightly into the foam padding beneath and also be sure that the strap does not cover up the body of the regulator chip. Alternatively, you may secure the PLR5W-I with double-sided Velcro affixed to the bottom side of the regulator circuit board.

A single FlexReg PLR5W-I is suitable for use in typical model airplanes up to about 84” wingspan, weighing less than 15 lbs and utilizing 6 or fewer high torque digital servos. For models of this size with unusually large control surfaces (3D capable) or for models up to about 105” and 25 lbs weight, a 2<sup>nd</sup> PLR5W-I should be used to handle the additional load. For more advanced user requirements, a full technical manual is available at the Tech-Aero website at <http://www.tech-aero.net>, which applies to the PLR5W-I as well as all previous Tech-Aero FlexReg voltage regulators.