



VA-1A Overview

What is the VA-1A?

The VA-1A provides pilots with precision volts and amps. A "High Volts " alarm will alert you of a high voltage situation, and the "Discharge" will alert you when your battery is running low on power. A switch on the back of the instrument allows installers to easily choose between 12 and 24 volt systems.

VA-1A vs VA-1A-XX

In order to accurately monitor amps in an aircraft, a voltmeter must have a shunt through which aircraft current flows. This shunt is built into the VA-1A, meaning you do not have to purchase a shunt with the VA-1A. The VA-1A-XX (where "XX " is the value of the shunt), on the other hand, must be connected to an external shunt. Be sure to specify what your shunt value is when ordering. If you aren't certain, download "Determining Your Shunt Value" for steps on how to locate what shunt you have installed on your aircraft.

Certification

The VA-1A is a Primary Replacement, FAA STC'd instrument.

VA-1A Functions

Voltage Alerts

Not only do the VA-1A and VA-1A-XX provide pilots with precision voltage (to .1 volts) and Amps (to .1 Amps), but it keeps a watchful eye on the electrical system. Both systems have a "Discharge" light for low voltage situations, as well as a "High Voltage" warning light for over-voltage situations.

The systems also come complete with an external warning line that can be attached to a warning device, such as an Electronics International AL-1 Warning Light, AV-17 Voice Annunciator or ATG-1 Tone Generator, or myriad other warning devices.

Discharge Warning Light

For a 12 volt system, the light will be on when bus voltage falls below 12.8 volts (+/- .2 volts). For a 24 volt system, the light will be on when the bus voltage falls below 25.6 volts (+/- .4 volts). The voltage signal is picked up on the red power lead to the instrument.

High Volts Light

For a 12 volt system, the light will be on when the bus voltage exceeds 15.4 volts (+/- .3 volts). For a 24 volt system, the light will be on when the bus voltage exceeds 30.8 volts (+/- .6 volts). The voltage signal is picked up on the red power lead to the instrument.

External Warning Line

Both the VA-1A and VA-1A-XX have an external warning line that activates during a "High Volts" or "Discharge " scenario. The line is normally open, but when activated, it pulls to ground. You can hook the external warning line to any Electronics International warning device, such as an AI-1 warning light, AP-7 Annunciator Panel, ATG-1 Tone Generator or the AV-17 Voice Annunciator.

12/24 Volt Switch

A selector switch is located on the back of each VA instrument, which allows the instrument to be configured for either a 12 volt system or 24 volt system.

VA-1A Accessories

Shunts

The VA-1A and the VA-1A-XX both have shunts. By measuring the voltage drop across a shunt, the VA-1A and VA-1A-XX can determine how much amperage is being loaded on the aircraft's battery or alternator/generator.

The VA-1A has an internal shunt, and the VA-1A-XX requires an external shunt. For the VA-1A-XX, the "XX" equals the value of the shunt. To determine the value of your aircraft's shunt, visit the Downloads section of the VA-1A and download the sheet entitled "Shunt Value." The VA-1A-XX can be custom built to match your aircraft's existing shunt.

Most people who are replacing their existing Voltammeter will replace it with a similar type (internal or external). Internally shunted systems generally have large lugs at the back of the instrument (this is part of the internal shunt), while externally shunted instruments have small wires that leave the back of the instrument.

S-50 Shunt

Used with the VA-1A-50.

For amperage loads up to 100 Amps.

S-300 Shunt

Used with the VA-1A-300.

For amperage loads up to 300 Amps