AIRCRAFT ELECTRICS VARIABLES

The tables below indicate the properties for the Simulation Variables that can be used to get and set variables related to the electrical system of the aircraft. For information on the units listed for each variable, please see here: Simulation Variable Units

> ***NOTE**: When Microsoft Flight Simulator is running in multiplayer mode, only a small number of variables are communicated between aircraft. Those variables that are available will say so in the description as being either for "All Aircraft" or for "Shared Cockpit".*

You can find a complete index of all available SimVars here: SimVar Index

The SimVars below are all related to the aircraft electrical system (including lights). Large parts of this system are setup using the `[ELECTRICAL]` section of the `system.cfg` file, and many may also require the use of the different to retrieve and edit their values.

General / Buses

Simulation Variable	Description	Units	Settable
`BUS LOOKUP INDEX`	This is a settable simvar meaning that it can both be read and set. Some of the simvars in this list are using this to lookup a value using two arguments (one argument in addition to the component index). For example to check the state of the connection between a "circuit.45" and the "bus.2" it would be written as follows:	-	

	`2 (>A:BUS LOOKUP INDEX, Number) (A:CIRCUIT CONNECTION ON:45, Bool)` It should be notes that when `BUS_LOOKUP_INDEX` is not set (ie: it is 0) then TRUE will be returned if ***any*** of your bus connections are on.		
`BUS BREAKER PULLED`	This will be `true` if the bus breaker is pulled. Requires a `BUS_LOOKUP_INDEX` and a bus index.	Bool	
`BUS CONNECTION ON`	This will be `true` if the bus is connected. Requires a `BUS_LOOKUP_INDEX` and a bus index.	Bool	
`ELECTRICAL GENALT LOAD`	This returns the percentage of the load output that is being consumed. This requires an alternator index when referencing.	Percent	
`ELECTRICAL GENALT BUS AMPS`	The load handled by the alternator. This requires an alternator index when referencing.	Amperes	
`ELECTRICAL GENALT BUS VOLTAGE`	General alternator voltage. This requires an alternator index when referencing.	Volts	
`ELECTRICAL MAIN BUS VOLTAGE`	The main bus voltage. Use a bus index when referencing.	Volts	
`ELECTRICAL AVIONICS BUS AMPS`	Avionics bus current	Amperes	
`ELECTRICAL AVIONICS BUS VOLTAGE`	Avionics bus voltage	Volts	

`ELECTRICAL MAIN BUS AMPS`	Main bus current	Amperes	
`ELECTRICAL OLD CHARGING AMPS` ***Deprecated***	**Deprecated, do not use!** Use ELECTRICAL BATTERY LOAD.	Amps	
`ELECTRICAL TOTAL LOAD AMPS`	Total load amps	Amperes	
`NEW ELECTRICAL SYSTEM`	Is the aircraft using the new Electrical System or the legacy FSX one.	Bool	

Alternators

Simulation Variable	Description	Units	Settable
`ALTERNATOR BREAKER PULLED`	This will be `true` if the alternator breaker is pulled. Requires a `BUS_LOOKUP_INDEX` and an alternator index.	Bool	
`ALTERNATOR CONNECTION ON`	This will be `true` if the alternator is connected. Requires a `BUS_LOOKUP_INDEX` and an alternator index.	Bool	
`GENERAL ENG MASTER ALTERNATOR:index`	The alternator (generator) switch position, `true` if the switch is ON. Requires an engine index, and the use of an alternator index when referencing.	Bool	

APU

Simulation Variable	Description	Units	Settable
APU BLEED PRESSURE RECEIVED BY ENGINE	Bleed air pressure received by the engine from the *APU*.	Pounds per square inch (*psi*)	
APU GENERATOR ACTIVE:index	Set or get whether an *APU* is active (true) or not (false). Takes an index to be able to have multiple generators on a single *APU*.	Bool	
APU GENERATOR SWITCH:index	Enables or disables the *APU* for an engine. Takes an index to be able to have multiple generators on a single *APU*	Bool	
APU ON FIRE DETECTED	Will return true if the *APU* is on fire, or false otherwise.	Bool	
APU PCT RPM	Auxiliary power unit *RPM*, as a percentage	*Percent Over 100*	
APU PCT STARTER	Auxiliary power unit starter, as a percentage	*Percent Over 100*	
APU SWITCH	Boolean, whether or not the *APU* is switched on.	Bool	
APU VOLTS:index	The volts from the *APU* to the selected engine. Takes an index to be able to have multiple generators on a single *APU*.	Volts	
BLEED AIR APU	Boolean, returns whether or not the *APU* attempts to provide Bleed Air.	Bool	

Batteries

Simulation Variable	Description	Units	Settable
`BATTERY BREAKER PULLED`	This will be `true` if the battery breaker is pulled. Requires a `BUS LOOKUP INDEX` and a battery index.	Bool	
`BATTERY CONNECTION ON`	This will be `true` if the battery is connected. Requires a `BUS_LOOKUP_INDEX` and a battery index.	Bool	
`ELECTRICAL BATTERY BUS AMPS`	Battery bus current	Amperes	
`ELECTRICAL BATTERY BUS VOLTAGE`	Battery bus voltage	Volts	
`ELECTRICAL BATTERY ESTIMATED CAPACITY PCT`	Battery capacity over max capacity, 100 is full.	Percent	
`ELECTRICAL BATTERY LOAD`	The load handled by the battery (negative values mean the battery is *receiving* current). Use a battery index when referencing.	Amperes	
`ELECTRICAL BATTERY VOLTAGE`	The battery voltage. Use a battery index when referencing.	Volts	
`ELECTRICAL HOT BATTERY BUS AMPS`	Current available when battery switch is turned off	Amperes	
`ELECTRICAL HOT BATTERY BUS VOLTAGE`	Voltage available when battery switch is turned off	Volts	
`ELECTRICAL MASTER BATTERY`	The battery switch position, `true` if the switch is ON. Use a battery index when referencing.	Bool	

Breakers

Simulation Variable	Description	Units	Settable
BREAKER ADF	All these SimVars can be used to get or set the breaker state for the electrical system (either true or false). If the breaker is popped (set to false), then the associated circuit will not receive electricity.	Bool	
BREAKER ALTFLD		Bool	
BREAKER AUTOPILOT		Bool	
BREAKER AVNBUS1		Bool	
BREAKER AVNBUS2		Bool	
BREAKER AVNFAN		Bool	
BREAKER FLAP		Bool	
BREAKER GPS		Bool	
BREAKER INST		Bool	
BREAKER INSTLTS		Bool	
BREAKER LTS PWR ***Deprecated***		Bool	
BREAKER NAVCOM1		Bool	
BREAKER NAVCOM2		Bool	
BREAKER NAVCOM3		Bool	
BREAKER TURNCOORD		Bool	
BREAKER WARN		Bool	
BREAKER XPNDR		Bool	

Circuits

Simulation Variable	Description	Units	Settable
`CIRCUIT AUTOPILOT ON`	Is electrical power available to this circuit	Bool	
`CIRCUIT AUTO BRAKES ON`	Is electrical power available to this circuit	Bool	
`CIRCUIT AUTO FEATHER ON`	Is electrical power available to this circuit. Please see the Note On Autofeathering for more information.	Bool	
`CIRCUIT AVIONICS ON`	Is electrical power available to this circuit	Bool	
`CIRCUIT BREAKER PULLED`	This will be `true` if the circuit breaker is pulled. Requires a `BUS_LOOKUP_INDEX` and a circuit index.	Bool	
`CIRCUIT CONNECTION ON`	This will be `true` if the circuit is connected. Requires a `BUS_LOOKUP_INDEX` and a circuit index.	Bool	
`CIRCUIT FLAP MOTOR ON`	Is electrical power available to the flap motor circuit	Bool	
`CIRCUIT GEAR MOTOR ON`	Is electrical power available to the gear motor circuit	Bool	
`CIRCUIT GEAR WARNING ON`	Is electrical power available to gear warning circuit	Bool	
`CIRCUIT GENERAL PANEL ON`	Is electrical power available to the general panel circuit	Bool	
`CIRCUIT HYDRAULIC PUMP ON`	Is electrical power available to the hydraulic pump circuit	Bool	

`CIRCUIT MARKER BEACON ON`	Is electrical power available to the marker beacon circuit	Bool	
`CIRCUIT NAVCOM1 ON`	Whether or not power is available to the NAVCOM1 circuit.	Bool	
`CIRCUIT NAVCOM2 ON`	Whether or not power is available to the NAVCOM2 circuit.	Bool	
`CIRCUIT NAVCOM3 ON`	Whether or not power is available to the NAVCOM3 circuit.	Bool	
`CIRCUIT ON`	This will be `true` if the given circuit is functioning. Use a circuit index when referencing.	Bool	
`CIRCUIT PITOT HEAT ON`	Is electrical power available to the pitot heat circuit	Bool	
`CIRCUIT POWER SETTING`	This returns the percentage of use that the circuit is getting. This requires a circuit index when referencing.	Percent	
`CIRCUIT PROP SYNC ON`	Is electrical power available to the propeller sync circuit	Bool	
`CIRCUIT STANDBY VACUUM ON`	Is electrical power available to the vacuum circuit	Bool	
`CIRCUIT SWITCH ON`	The circuit switch position, `true` if the switch is ON. Use a circuit index when referencing.	Bool	

External Power

Simulation Variable	Description	Units	Settable
`EXTERNAL POWER AVAILABLE`	This will be `true` if the given external power source is available.	Bool	

	Use an external power index when referencing.		
EXTERNAL POWER BREAKER PULLED	Boolean, The state of the breaker of an external power source	Bool	
	Boolean, The state of the connection		