Auxiliary Power Switch

AP-Switch quick guide



1. General

The AP-Switch allows you to connect a second power supply on a given (internal power supply) circuit. As soon as an external power input is noticed or is plugged in, the already existing connection (to an internal battery) is interrupted.

This makes the AP-Switch to an ideal helper when you require external power e.g. during start-up phase, especially with "kerosene start" of a jet engine, respectively a turbine) or when you implement the AP-Switch as part of an on-board redundancy power supply unit.

2. Features

- Polarity reversal protection of the switch and electronic control unit
- Adjustable overvoltage power-off on both power input
- Adjustable undervoltage power-off on the external input
- Integrated status-LED about the external power input
- Optional extra status-LED with 500mm cable
- Smoothing the applied ECU-voltage
- Extreme low voltage drop
- ESD-protection

3. Technical Specification

Max. voltage:	<u>+</u> 21,0V
Internal operation range:	5,0V – 17,1V
External operation range:	5,6V – 17,1V

Adjustable overvoltage protection (internal/external):8,3V - 17,1V(2-4S batteries)Adjustable undervoltage protection (external):5,6V - 15,2V(2-4S batteries)Adjustable undervoltage protection (internal):5,0V

Continuous current:

(without cooling, ambient temperature 20°C) When cooled (heat-sink) or short-term load

Connection cables

Cross section: Length ECU-cable Length power-cables (intern/extern)

Board size:

8 amps MOSFET-Temp. 45°C 16 amps MOSFET-Temp. 90°C 20 amps possible.

GIZMOt

~ 100mm ~ 200mm

46mm x 28mm

2 x 2,5mm²



4. Setting the over- and undervoltage shut-downs

The desired switch-off thresholds can be adjusted by using an adjustable AC adapter. In addition you need a voltmeter to check the is required voltage and a small screwdriver to rotate the potentiometers.

- 1. Turn the potentiometer for overvoltage clockwise to a stop Turn potentiometer for undervoltage counterclockwise to stop
- 2. Set the power supply unit to the cut-off voltage, then connect the AP-Switch
- 3. Then turn the potentiometer accordingly till the AP-Switch turns off
- 4. Now turn the potentiometer back again in the opposite direction, but only one tiny thing

5. Basic setting

Overvoltage protection

Internal voltage (Potentiometer OV I):

External voltage (Potentiometer OV E):

Undervoltage protection

External voltage (Potentiometer UV E):

6. Overview

External voltage Status-LED The LED lights up when switching to the external supply is active. When going above $OV I \rightarrow Internal overvoltage: 8.3V - 17.1V$

external supply is active. When going above or beyond the adjusted voltage the LED turns off and the AP-Switch switches to the internal supply Turning clockwise increases the shut-down OV I \rightarrow Internal overvoltage: 8,3V – 17,1V OV E \rightarrow External overvoltage: 8,3V – 17,1V UV E \rightarrow External undervoltage 5,6V – 15,2V

ECU The negative pole is marked with a blue dot.

External power supply

The negative pole is marked with a blue dot.

Internal power supply The negative pole is marked with

a blue dot.

Status-Pins

<u>To deactivate the LED</u> do not bridge the pins <u>To activate the LED</u> by a jumper or by an

external LED (optional)

If status LED on the board is not visible due to the installation location of the AP-Switch, an optional LED cable (500mm) can be connected. Make sure to plug in correctly and to engage the locking device. \rightarrow Correct polarity

Status-LED (optional)