GIZMOtec GmbH

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:	±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:	8 amps MOSFET-Temp. 45°C
(without cooling, ambient temperature 20°C)	16 amps MOSFET-Temp. 90°C
When cooled (heat-sink) or short-term load	20 amps possible.
Connection cables	
Cross section:	2 x 2,5mm²
Length ECU-cable	~ 100mm
Length power-cables (intern/extern)	~ 200mm
Board size:	46mm x 28mm

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