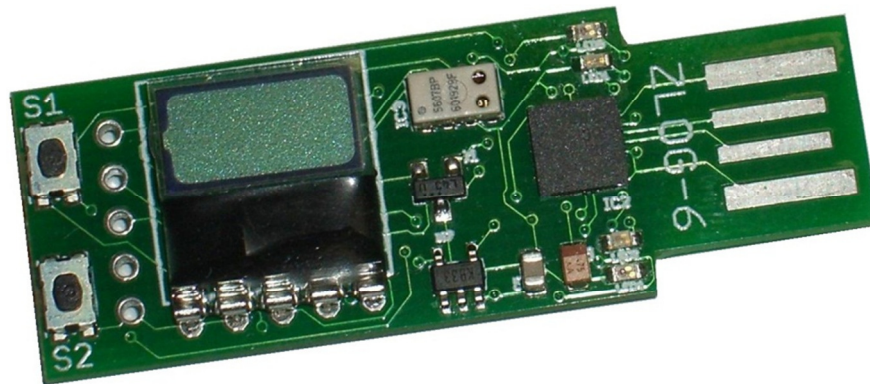


Hexpert Systems Z6 Recording Altimeter



The Hexpert Systems ZLog-6 recording altimeter (Z6R) provides a lightweight, compact device for highly accurate measurement of altitude (pressure altitude) in your application. It was designed specifically for use onboard a radio controlled (R/C) aircraft, but should be useful in other applications.

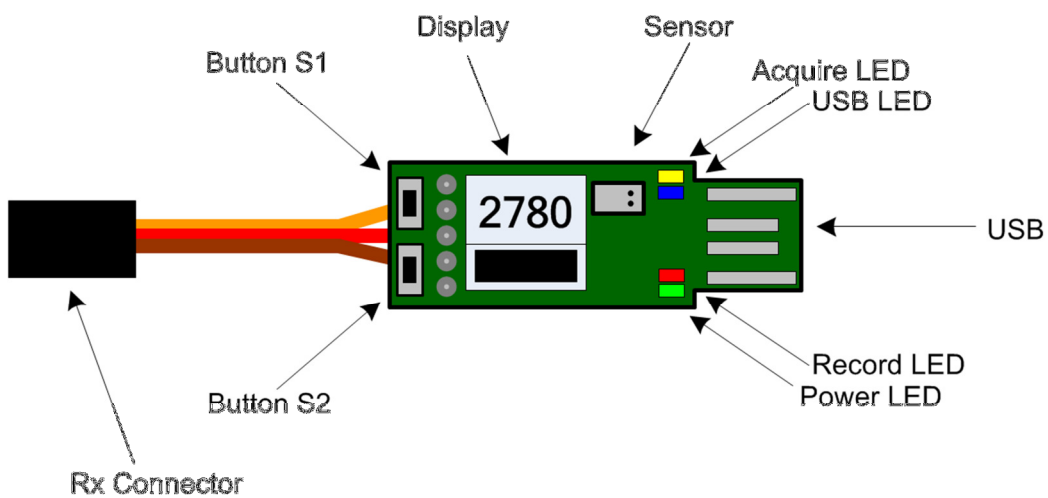
The Z6R includes a connector designed to plug directly into a Radio-Control (RC) receiver to provide power for the altimeter. An onboard display allows you to see live altitude updates as well as the maximum altitude of your flight. With the recording feature, the entire flight can be recorded. Just plug the Z6R into an available USB slot to download and view the altitude profile on your PC.

The sensor uses an internal 24-bit analog-to-digital converter (ADC) to measure the temperature and pressure. The onboard microcontroller performs temperature compensation for atmospheric pressure, and then converts the pressure to a pressure altitude value based on the U.S. Standard Atmospheric Model.

ZLog is sensitive enough to detect altitude changes of less than one foot. Since it is so sensitive, it is also sensitive to changes in weather and local pressure variations. The designed use of this device is for measuring short-term altitude changes in R/C aircraft. Long-term altitude readings will vary considerably due the varying atmospheric conditions. It is best used to measure relative changes in altitude.

Specifications:

Parameter	Value	Unit
Input Power	3.5 - 16	Volts
RXD, TXD pins	5 volt tolerant	Volts
Baud Rate	115,200	
Temperature Range	-40 to +85	°C
Altitude Range	-5000 to +100,000 -1526 to +30,510	Feet Meters
Altitude Range (Displayed) (relative or absolute)	-999 to +9999 -999 to +9999	Feet Meters
Altitude Resolution	1	Foot
Update Rate	5	Hz
Operating Temperature Range	-40 to +85	°C
Dimensions	1.85 x 0.65 x 0.24	Inch
Dimensions	47 x 16.5 x 6	mm
Weight	6	gram



Installation

Powering the module

To power the ZLog module, plug the 3-pin connector into a spare receiver channel on the R/C aircraft. If you do not have an open receiver channel, ZLog can share a Y-cable with another channel. Be sure to observe proper polarity when plugging the connector into the receiver. When connected to the PC via the USB connector, Z6R is powered by the USB port.

Mounting the module

The ZLog module can be mounted either inside or outside the fuselage of the aircraft. If possible, mount it where there is minimal prop wash.

Note: the sensor uses temperature compensation to account for the effect of temperature on pressure altitude measurements. Some airflow is desirable to maintain the altimeter at ambient temperature. Also, if the module is location next to a warmer battery or motor, it can affect the readings slightly.

The module can be mounted using double stick tape, cable ties, or Velcro. Velcro is recommended so that the module can be removed and interfaced with the PC for downloading altitude data.

It is best to position ZLog where the sun cannot directly strike the sensor (small white rectangle on the top). The sensor is light sensitive and the altitude readings can be affected by very strong light.

Be sure that the module is not touching any metal surfaces. Shorting any metal contacts on the module could short the power system, resulting in a radio system failure.

Also be sure to keep the module away from water, fuel, or other liquids.

Always range check the aircraft's radio system before flying with the ZLog module installed to verify that there is no system interference or glitching.

Using the Module

At powerup, the module will display its name and firmware version for several seconds. Then it will begin displaying the current altitude. To display the maximum altitude after a flight, press and release S1. The display will flash to indicate maximum altitude. Press and release S1 to return to live altitude display.

To zero the altitude to your current location, i.e. relative mode or AGL (above ground level), press both S1 and S2 together and release. To revert to absolute measurement, press and release both S1 and S2 together again. The display will change back to ASL (above sea level). Changing from relative to absolute mode or vice-versa will also reset the maximum altitude. Turning the unit off and back on will reset the maximum altitude.

Configuration

To enter the configuration mode, apply power to the ZLog, and then press and hold S1 while the version number is displayed. Continue holding S1 until “Cfg” is displayed. Release S1. ZLog will display each of the configurable options, cycling through each of the options with each press of S1. The option name will be displayed, following by its value. To change the value of an option when it is displayed, press and release S2. To save the changes, press and release S1 repeatedly until the “Save” option is displayed. Then press and release S2. To reset into normal operation, press and release S1 repeatedly until the “Rst” option is displayed, then press and release S2.

Options:

- Rate – selects the sampling rate
 - PC, .1s, .2s, .5s, 1s, 2s, 5s, 10s, 30s, 1m, 2m, 5m, 10m, 30m, 1h
- Clr – clears the data memory. Press and release S2 to erase all data.
- Trig – enables/disables trigger recording.
- Trev – reverse the trigger direction (for center RC switches/sticks).
- Strt – selects auto start recording options.
 - Off, Time, Alt, Trig.
- Stop – selects auto stop recording options.
 - Off, Time, Alt.
- Zero – selects the auto-zero option.
 - Off, Strt.
- Units – select displayed altitude units to Feet/Yards/Meters.
- Dflt – sets default configuration values (press S2).
- Save – save options in non-volatile memory by pressing S2.
- Rst – reset to normal mode – press S2.

Support

For additional instructions and the latest drivers and PC software, visit <http://www.hexpertsystems.com/zlog/z6downloads.html>

Email: support@hexpertsystems.com

Web: <http://www.hexpertsystems.com/zlog>

ZLog is designed and assembled in the USA from parts both foreign and domestic.