## User manual AltiMon F3K

AltiMon F3K is an accurate altimeter with display unit. It is designed specifically for model aircraft, where small size, low weight and easy handling is important. Microprocessor controlled and equipped with a modern miniature pressure, AltiMon F3K senses smallest elevations and stores the values in its memory.

After landing the maximum reached altitude of the last flight can be read from the 7-segment display. An undervoltage detection warns the pilot before the battery gets empty.

Addionally, during power-off the AltiMon F3K stores the highest flown altitude of all flights in its memory. After power-on this altitude is displayed first. AltiMon F3K could display up to five stored altitudes after power-on. Altitudes less than 11 meters (35 feet) will neither the displayed nor be saved.

1. Operation of AltiMon F3K

After power-on AltiMon F3K displays values/settings in 3 phases:

Display sequence after power-on	
Phase 1	Display of stored altitudes (see chapter 1.1). Up to 5 stored altitudes can be shown. Additionally a **battery-not-full** warning could be displayed (fast flashing dot)
Phase 2	Display of settings (see chapter 1.2). Additionally a **battery-not-full** warning could be displayed (fast flashing dot)
Phase 3	Display of reached altitude of the last flight. Additionally a **battery-empty** warning could be displayed (fast flashing dot)

1.1 Display of stored altitudes (phase 1)

After switching on the power supply AltiMon F3K always displays the last stored altitude. Three examples:
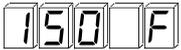
1 2 3 M	: 123 meters
1 5 0 F	: 150 feet
2 5 M	: 25 meters

If AltiMon F3K displays two or more altitudes, then between the height values are short breaks and the unit is displayed after the last height value:

1 2 3   4 5 6   7 8 9   M
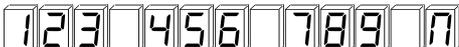
Meaning of the example above: Altitude of last flight was 123 m, the stored altitude before was 456 m and the third last altitude was 789 m.

1.2 Display of settings (phase 2)

After displaying the stored height the current unit is displayed (see table 1):

Table 1: Unit of altitudes	
F	The unit of all displayed altitudes is **F**eet
M	The unit of all displayed altitudes is **M**eter

Thereafter, a number between 1 and 5 indicates how many stored altitudes should be displayed directly after power-on (see table 2):

Tabel 2: Number of stored altitudes shown after power-on	
1	After power-on the last stored altitude will be displayed only
2	After power-on the last **2** stored altitudes will be displayed
3	After power-on the last **3** stored altitudes will be displayed
4	After power-on the last **4** stored altitudes will be displayed
5	After power-on the last **5** stored altitudes will be displayed

Afterward the AltiMon F3K indicates the current setting of the battery mode by displaying a **"L", "4" or "5"** (table 3). This setting determines the voltage levels for the warnings „battery-not-full" and „battery-empty":

Table 3: Battery mode	
L	**L**ipo-Mode: A lithium polymer battery is used as power supply. The number of cells (1 or 2) is automatically detected.
4	**4** Cells NiMh: 4 NiMh cells are used as power supply.
5	**5** Cells NiMh: 5 NiMh cells are used as power supply.

1.3 Display of achieved altitude (phase 3)

After each landing AltiMon F3K displays about every 8 seconds the maximum altitude reached of the last flight. As long as no altitude higher than 11 meters (35 feet) has been reached, the altitude of the last flight is displayed.

AltiMon F3K calibrates to 0 meter / 0 feet once after power-up.

At altitudes greater than 20 meters (65 feet), the display is turned off to save power.

1.4 Display of battery status

The dot on the display indicates the battery status. A fast blinking dot (2 times per second) means

• battery-non-full during phase 1 and 2 (= during start-up)

• battery-empty during phase 3 (= normal operation)

If the dot on the 7-segment display flashes once every 2.5 seconds the voltage level of the battery is above the thresholds.

The correct indication of the battery condition presupposes the right setting the battery mode.

For indicating the correct battery condition AltiMon F3K needs to be connected directly to the battery. It cannot indicate the battery

condition, if AltiMon F3K is connected to a BEC or voltage regulator.

The input voltage range goes from 3.4 V to 8.5 V.

Table 4 shows the voltage values for the supported battery types:

Table 4: Battery warning thresholds		
	Battery-not-full warning thresholds	Battery-empty warning thresholds
1 cell LiPo	< 4,00 V	< 3,70 V
2 cells LiPo	< 8,00 V	< 7,40 V
4 cells NiMh	< 5,40 V	< 4,40 V
5 cells NiMh	< 6,75 V	< 5,50 V

1.5 Storing altitudes

When you turn off the AltiMon-F3K the highest altitude reached is stored. E.g. you perform four flights with 55 m, 33 m, 88 m and 22 m, then after each flight (without power-off) the corresponding altitude is displayed. If you power-off the AltiMon F3K after the last flight, the highest altitude of all flights (88 m) is stored. On the next power-on the AltiMon F3K displays the stored altitude "88 m".

2. Changing Settings

The **unit of altitudes**, the **number of stored altitudes to be displayed** and the **battery mode** can easily be changed by interrupting the power supply during the display of the item to be changed:

1. Power-on AltiMon F3K. Once the setting to be changed is displayed (e.g. the units), power-off AltiMon F3K.

2. Power-on again and interrupt the power supply for a second time to the same place as before (during display of the units)

3. On the next power-on AltiMon F3K displays the available range of settings (see table 1, 2 or 3). The new setting is stored with the next power-off cycle. The last value shown on the display will be stored as the new setting.

The new setting is active with the next power cycle.

> **Note: When changing the settings we recommend to directly connect a battery as power supply to the AltiMon F3K. Supplying the AltiMon F3K via a R/C receiver or other unit could cause delays when turning off the power supply and thus complicates the programming of a new setting.**

3. Mounting

Since the altitude is determined by measuring the ambient air pressure, the installation location should be as free as possible from drafts. Fast moving air over surfaces can generate differences in pressure, which lead to distorted measurement results.

The best place to mount your AltiMon F3K is inside your model´s fuselage. When this is not possible, then a place with little draft over surfaces should be selected, such as on the side of the fuselage behind the wings or below the canopy of the helicopter. Be aware that air flowing over a surface creates a localized area of low pressure. To reduce errors choose a place where surface airflow is minimized.

Make sure that the display is still legible. Also a place below an easily removable canopy, a battery, maintenance shaft or a transparent cabin is suitable. In most cases AltiMon F3K's 7-segment display is also visible through thin Aramid noses typically used for F3K planes.

For fixing use double-sided servo tape or tape on the back of AltiMon F3K.

4. Power Supply

Plug the black servo-style connector into any unused servo channel of your R/C receiver. Only servo channels shall be used. Do not use a slot labeled "DATA", "BIND", "SBUS", "X-BUS", "DCS". If all your servo channels are in use, you can use a Y-harness to share a channel with an existing servo.

You can also connect the AltiMon F3K to any power source from 3.4 V to 8.5 V: brown/black = negative (-), red = positive (+), orange/white = not used. Take care: Reversing positive and negative polarity will damage the unit!