Operating instructions

Favorite and Champion

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Congratulations!

With the Aircotec CHAMPION or FAVORITE you have acquired a Swiss quality product. Besides state-of-the-art-technology with the most modern electronics it also features a thought-out operating concept and a sturdy construction.

We do hope that CHAMPION or FAVORITE will accompany you on many memorable flights.

New Aircotec GmbH, Horw.

AIRCOTEC *Champion / Favorite*

Before using the instrument, please read the safety instructions.

Description of performance
Unit of measurement

Metric / Imperial

The instrument can be used internationally. The units shown for altitude and in the vario display can easily be switched from metres to feet and back and for speed between k.p.h. and m.p.h. The QNH display can show readings in either hPa or „inches x 100". The temperature can be shown in Centigrade or Fahrenheit. The temperature-graduation will be shown on the display only in Centigrade.

Altimeter

There is a possibility to switch over during the flight between the altitudes **A1**, **A2** and **QNE** (altitude means 1013 hPa). **A1** shows the absolute altitude. That you don't have to set the altitude again for prefer starting-places, you have five memories for starting places. The altitude could be set by the QNH, if you know the barometric pressure in QNH or „inches x 100". For example **A2** is for the altitude over the landing-place or another point. For that you have to set the altitude of landing-place oder other point. **A2** shwos 0 m on the altitude you have set. For this calculation is **A1** the reference, that means, **A2** could only be correct, if **A1** is correct and the barometric pressure is not changing.

Gain or loss of altitude will be fixed also by temporary altitude. For that you can set the altitude during the flight to „0" like you wish.

Barometer

If using the barometer, under A1 will be fixed the exactly altitude of the place you are and reading the barometely pressure in hPa or „inches x 100". Regular controls shows you the beginning of changing of air-pressures.

Variometer

For a better readability climb and sink rates are displayed with a numberical value or analog.The range covers 6 m/s for analog and 19.9 m/s for numberical value.

The numerial display is secondly. The measurement shows also the climb- and

sinkrate middle-value in 2, 5, 10, 15, 20 or 30 seconds.

The scale of the analog representation has a value of 0.25 m/s-steps to 3 m/s.
Values between 3 and 6 m/s will be shown with a missing beam.

Analog representation

0 - 3 m/s
(+ 1.5 m/s)   (+ 3 m/s)

3 - 6 m/s
(+ 3.5 m/s)   (+ 6 m/s)
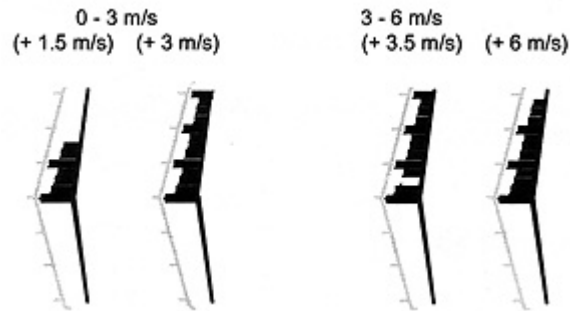
Vario audio

Climbing is indicated by an audio interval signal with a changing frequency or by a continuous tone in which the frequency changes in steps. The continuous tone indicates changes of 0.1m/s and is extremely useful in fine thermals.

The select climb sound start could be set between -1.0 m/s bis +0,5 m/s in steps of 0.1 m/s.

It is factory set for a rate-of-climb of +0,1m/s.
Interval sound

Two types of interval can be set:

-        intervals with a fixed length of tone and variable gaps: —   —   —   —   —
— — —

-        intervals with the tone and the gaps of equal length and both changing at the same rate:

—   —   — – – – - - - - - -

The audio on the FAVORITE or CHAMPION is as lively as you wish. You have the choise between a faster (mainly preferred by hang gliders pilots) or a slower (mainly preferred by paraglider pilots.

At the factory we set the Interval at a slower with an equal length of tone and

gaps between the tones.

(Adjustments look at <<instruction on survey/main-instructions>>.)

<u>Sinking sound</u>

The sinking sound can be activated when requested. The sinking sound indicates changes as well as the actual extent of the sinking. Thus the beginning of thermals and down wash zones can be recognised in their early stage:

Increasing sink rates will be audible through a HI-LO double tone. The LO-component of this double tone will become longer with increasing sink rate.

If decrease the sinking, you will hear a LO-HI double tone. The HI-component of this double tone will become shorter with a continued decrease in sink rate. You go over the 0-point, the skinking tone change to climbing tone.

<u>Sink sound offset</u>

The moment when the sinking sound switches to the respective other sound mode is the sink sound offset. It is recommended to adjust the SO on the nominal sink rate of the aircraft. Up currents will then be perceptible by the shortening LO-HI double tone, down washes by the prolonging HI-LO double tone.

The offset point is factory adjusted to 1.2 m/s.

<u>Sound offest (silence Window)</u>

To avoid that small fluctuations around the nominal sink rate (SO) produce a „ralse alarm" and to make sure that only clear changes give an acoustic feedback, the pilot can put up a symmetric silence window (F) around the SO-value.

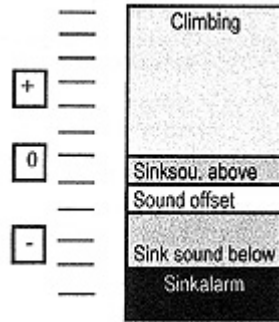**The limits of the window are factory adjusted to +-50 cm/s.**

Thus, the sound offset is operational between 0.7 m/s- and 1.7 m/s.

<u>Sink alarm</u>

The sink alarm (SA) increases your air safety. When the sink rate exceeds a certain pre-set value, the sink alarm will sound.

The sink alarm is factory adjusted to 5 m/s-sinking.

<u>Example for the whole acoustic:</u>

Thermometer (only in Champion)

The air temperature will be shown a few seconds after turning on the instrument.

You can change from temporary altitude and back. Durning the sinking flight, the thermometer measures the air temperature, and calculates the temperature gradient. This will be shown in degree/100m. During climbing flight, the CHAMPION makes a comparision of the temperature of actual thermal air and the thermal air earlier. The pilot will see then the additional temperature.

Speedometer

The speedometer measure the speed in the air to 120 km/h with a cable connecting with the instrument. For a high precise measurement is a speedometer with stabilizator with a 2 meter long cable useful.

Real time clock (only in Champion)

During the flight, the day-time will be shown. For reading the flighttime you push key no. 1, also going back to the day-time.

Stop watch

The stop time will be shown in hours and minutes, max. 20 hours. The stop watch will be started manual by pushing key no. 1 or automatically during the first 20 m altitude change. Stopping the stop watch by switch out the instrument or call off the peak values.

Log book

The ring-memory, for the last 5 flights, shows datas as follow: flight-time, altitude of starting-place, altitude of landing-place, more altitude of starting-place, biggest altitude, additional gain of altitude, biggest climbing, biggest sinking and biggest speed. Flight datas, you want spare, you could copy to another 9 fix-memory. Another memory has the best flight datas of all flights. Also the whole flying-time and piece of flights will be shown. All memories could be delete single, but not the ring-memory. The ring-memory delete the last flight of the 5 automatically, if a new flight is coming.

Battery

The instrument functions on a 9V-battery. At each switching-on the battery voltage will be desplayed.This serves your own security. When the voltage drops under 8V, the battery should be replaced bevore the next flight. This shows you also the blinking battery symbol.

Caution!

Be sure, that the battery is so long as the battery case. For example, don't us „Durazell"-batteries. Due to reduced overall length they don't guarantee a sufficient pressure on the contacts. We recommend Philps, Varta or Japanese batteries.
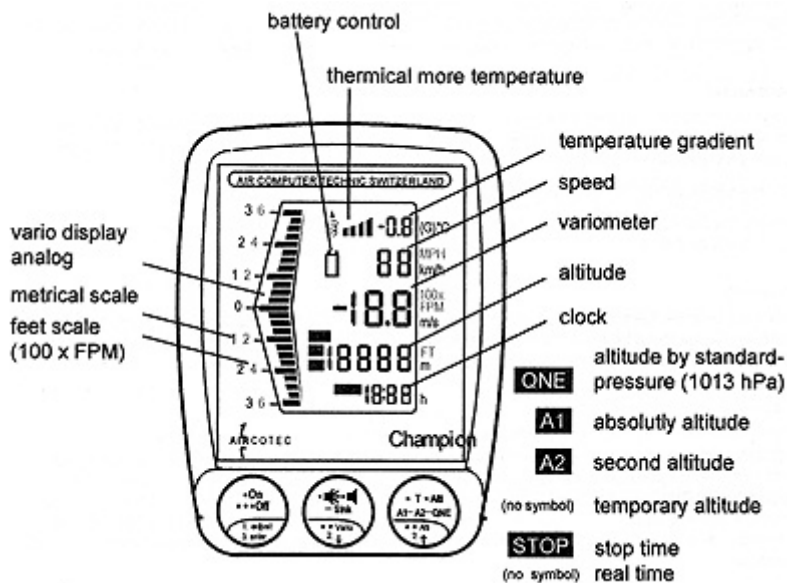
What can I do if water is inside?

Take out the battery immediately. Leave the battery-case open. Open the case. Drain the wather carefully out of the instrument. All parts, but not the battery, dry-up with a hear-foehn.

Attention! Never use a microwave. This destroy all electronic parts.

After that let open the instrument for a few hours. After closing the instrument, set a new battery and make a control of all functions. If **saltwather** is inside, all electronic parts must be cleaned at first with normal wather and after that with distil wather.

Description of display

battery control
thermical more temperature
temperature gradient
speed
variometer
altitude
clock

vario display analog
metrical scale
feet scale (100 x FPM)

ONE   altitude by standard-pressure (1013 hPa)
A1   absolutly altitude
A2   second altitude
(no symbol) temporary altitude
STOP stop time
(no symbol) real time

Instruction in survey

main adjustments

Start: -push shortly-
Control display follow:
>> all segments
>> serial-no.
>> voltage of battery
>> temperature (only in Champion)
Start stop watch manual: push shortly- Change from real-time to stop-time and back (only for Champion): - push shortly-
Switch off: -push shortly three times-

Tone switch on and off: -push shortly-

From Intervall- to duration-tone and back: -push shortly three times-

Switch on and off the sinking-sound: -hold the key-

Describtion of signs:
• push shortly
— hold on 'till the change has done

Set altitude to 0 and back: -push shortly- (On Champion the temperature is shown for a short time.)
Change from altitude 1, 2 and QNE: -hold on-

1
•On
•••Off
1. -edjust
3.enter

2
•◀€•◀
—Sink
•• vario
2. ↓

3
• T • Alti
A1 —A2—QNE
•• alti
2. ↑

Adjustment of altitude

Altitude of starting-place A1: -hold on key-no. 1, on same time choose with key-

no. 3 the memory of starting-place-altitude 1 to 5. Set new with key-no. 2 or 3 and enter with key-no. 1. **A0** stand for manual adjustment. The QNH will be read under the altitude-display. -Second altitude **A2** as difference to **A1** (look at page 2) set at same way and enter with key-no. 1.

Adjustment of variometer: -hold on key-no. 1, on same time change from >variosign-middlevalue<, >intervall<, >inset of climb-tone<, >sink-tone offset<, >silence window< and >sink alarm< - The adjustment and taking over like by altitude.

Choose between meter and feet (only at balloon-mode): -push key-no. 1 and hold on `till the unit of measurement has changed-

Instruction in survey

Log book

Log book: -start the instrument and wait for the control-display. After push key-no. 2 and 3 together- The last flight with fliying-time will be shown in the memory (**-0P**)

Call after more flight datas: -change with key-no. 3 from >flying time< to >altitude of starting-place (**Ato**)<, >altitude of landinge-place (**ALA**)<, >more altitude of starting-place (**Pto**)<, >biggest altitude (**PAb**)<, additional altitude gain (**AdA**)<,

Delete flights from the fix-memory, delete the maximal values of all flights or the number of flights with the whole flying-time: -choose what you want, after push key-no. 2 and 3 together and hold on as long as (Er) is showing and acoustic sign is coming-

Everytime going back to normal work: -with key-no. 1 (enter)

Instruction in survey

special adjustments

Start: -push key-no. 3 and hold and start the instrument on same time. The display shows a (d) or a (b) - (d= hangglider-paraglider-mode, b= ballon-mode)

Go on: -with key-no. 3, to C (F), hPa (inches), m (ft), altitude-QNH, calibrate variometer-0, calibrate speed and set time.

Choose the balloon-mode: -after the (d) is showing, push key-no. 2 and 3 together, after change with key-no. 3 to (b) and enter with key-no. 1.

Choose from climb- or sinkacoustic: -choose with key-no. 3 and enter with key-no. 1.

Changing of units of measurement: -choose the units of measurement, push key-no. 2 and 3 together, after choose the unit of measurement with key-no. 3 and enter with key-no. 1.

Calibration of altitude-QNH: -choose altitude-QNH, push key-no. 2 and 3 together, after fix the correctly altitude in relation to the standard pressure 1013hPa and enter with with key-no. 1.

Calibration of speed: -choose the speed, push key-no. 2 and 3 together, after set the correction you wish in % with key-no. 2 or 3 and enter with key-no. 1.

Set time (only for Champion): -choose the clock, push key-no. 2 and 3 together, after set the time key-no. 2 or 3 and enter with key-no. 1.

Everytime back to normal work: -with key-no. 1 (enter)-

Safety instructions

During the start, flight and landing, the instrument must be fixed so good, that the pilot neither the passenger could be hurt. Save it with the fixation you became from us, that you don't loose it during the flight. The pilot must look, that the instrument don't fall down and hurts people or destroy other things.

Check the fixation before each start and change with a new one, if the fixation is defect.

Before each flight, the pilot must be sure, that the instrument works correct and the battery is good.

Defective informations about altitude on geogarfical maps, a wrong adjustment of altitude from the pilot or a not lock out defect could give you a defective information.

The pilot must be able to flight without an instrument. This is for critical situations like a high voltage and sinking flights without good sight, also

bevore and during landing.