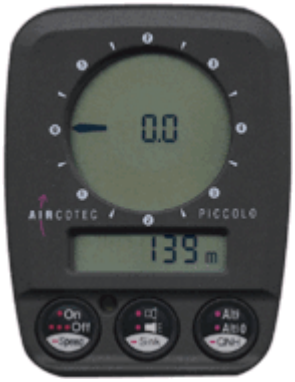
Piccolo



Piccolo

Operation manual

Aircotec Piccolo-Standard and Piccolo-Plus

Description of performances

Units of measurement

The instrument can be used in the metric and the BSI-system. The units of measurement for Alti-, Vario- and Speed indications can be easily switched over between Metres and Feet.

Altimeter

The altimeter is adjusted at the standard altitude above sea level. Measurement goes up to 8000rn (approx 25000 FT). Gain or loss of altitude can be displayed with the temporary altitude facility. No need to mental arithmetic to know the difference in altitude, simply adjust the display to zero.

Variometer

For a better readability climb and sink rates are displayed with a pointer and with a numerical value. The range covers +-20 m/s, also in the analogue display (pointer up to 40 x 100 FPM, digits up to 30 x 100 FPM).

The full range is covered in such a manner that up to +- 4 m/s the display shows a single pointer, and values between 5 and 20 m/s by means of a spread out sector.

Climbing sound

With increased climbing the sound interval and frequency change. The threshold of the climbing sound (CS: Climb sound start) is factory adjusted to + 0.1 m/s (+0.2 x 100 FPM). Two interval-modes can selected for the climbing sound:

- Interval with fixed duration of sound and variable duration of Interval (preset).
- Interval in which sound and interval have the same duration.

The Piccolo-acoustics are as lively as you wish. You have the choice between a faster (mainly preferred by hang glider pilots) and a slower interval-speed (mainly preferred by paraglider pilots).

Sinking sound

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 discernible through a HI-LO double tone. The LO-component of this double tone will become longer with increasing sink rate.
- Decreasing sink rates will be signalised through a LO-HI double tone. The HI-component of this double tone will become shorter with a continued decrease in sink rate. When the zero mark is exceeded this sinking sound variant will be replaced by the climbing sound. From this moment onwards the aircraft is gaining altitude.

Sink sound offset

The point on with the sinking sound switches to the respective other sound mode (LO-HI or HI-LO), is the sink sound-offset (SO). 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 (-2.4 x 100 FPM).

Sound offset (silence window)

To avoid that small fluctuations around the nominal sink rate (SO) produce a "falls 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-valve. If this silence window should overlap the climbing sound, then the climbing sound will have the priority.

The limits of the window are factory adjusted to +- 50 cm/s (100FPM).

Thus, the sound offset is operational between -0.7 m/s and -1.7 m/s (-1.4 x 100 FPM and 3.4 x 100 FPM).

Sink alarm

The sink alarm (SA) increases your air safety. When the sink rate exceeds a certain pre-set valve, the sink alarm will sound. The sink alarm is factory adjusted to -5m/s (-10 x 100 FPM).

Battery

Piccolo functions on a 9V-battery. At each switching-on the battery voltage will be displayed. This serves your own security. When the voltage drops under 8V, the battery should be replaced before the next flight. The battery symbol on the left hand side of the altitude display even reminds you of this during the flight.

Caution!

Don`t use Duracell batteries. Due to reduced overall length they don`t guarantee a sufficient pressure on the contacts. We recommend Philips, Varta or Japanese batteries.

Speedometer (option)

During the flight the speedometer can also be switched on. The measurement goes up to 100 km/h (approx. 62 MPH). Very precise measurement can be performed with a special speed probe with stabilizer, which can be lowered with a 2 m long cable. For normal measurements use the speed probe with golf-ball fixation, attached at knee-height.

Only for Piccolo-Plus

Fixed altitudes

The Piccolo Plus can store five fixed altitudes, so that you don`t have to enter the altitudes of your favourite sites each time you fly there

Altitude adjustment via QNH

When the barometric pressure is known, the setting of the altitude can also be executed via the QNH-display. The pressure range is situated between 950 hPa and 1`070 hPa. The QNH-display blinks when the adjusted valve is situated outside the pressure range.

Barometer

You can use the Piccolo as a barometer by first adjusting the altitude. The next step is to switch over to the QNH-display and read the barometric pressure in hPa. Regular observations will give first signs of changing weather.

Stopwatch

Using a conventional instrument, the stop watch has to be started manually if you forget this, the peak valves will not be recorded. Not so with the Piccolo Plus!

The stopwatch starts automatically, as soon as the instrument enters the operation mode. During the flight the display is not activated. If several minutes elapse before take off, simply switch off and then switch on again. The elapsed time before the last switch-on won`t be recorded. The flight time-recording will be stopped when the instrument is switched off at landing, or when the peak-value memory is activated. Only flights where differences in altitude of at least 50m are measured will be recorded in the peak-value memory. The flight time of the individual flights is displayed in hours and minutes, the total flight time in hours.

Peak-value memory

This is about flight data, maximum climb rate and sink, maximum altitude flight time and maximum speed. A circular memory will store all these value for every valid flight. Five flights can be stored, then the most recent flight will replace the oldest, But don`t worry! Because before it comes so far, the most interesting flights can be copied in one of the fifteen ready available fixed memories, which can be erased individually on their turn. The contents of the circular memory and the fixed memory, the peak values of all flights, the total flight time and the flight counter can be displayed on the LCD-display, using the same key functions. View the results in peace.

Operation

The inscriptions on the keys and on the housing simplify the operation of the instrument. For all basic functions the individual keys are pressed once: Switching on and off the Piccolo, switching on and off the vario acoustics, toggle between absolute altitude and temporary altitude is easily done, also during the flight. When you own the Piccolo-Speed, press and hold Key Nr. 1 to activate / deactivate the speedometer (option). Press and hold Key Nr. 2 to activate / deactivate the sinking sound. Press and hold Key Nr. 3 to switch from altitude display to QNH. On release the display will automatically return to altitude (only for Piccolo Plus). The symbols on the housing explain the adjustments of altitude.

Basic funktions

 Key 1	Switching On Press once. Switching Off Press three times (Piccolo will automatically switch off after 15 minutes without vertical movement). Speedometer activation, deactivation Press and hold (instead of digital vario display the speed display appears). (only Piccolo Speed)
 Key 2	Climbing sound On/Off Press once (pulsing tone for On, short beep for Off). Sinking sound On/Off Press and hold (double tone for On, short beep for Off).
 Key 3	Switch to temporary altitude T Press once (the display will be reset to "zero". Return to absolute altitude Press once (the actual altitude will be displayed). QNH On Press and hold (automatically return to altitude display after 30 seconds, direct return to altitude by pressing Key 1 (only Piccolo Plus)

Adjustment of altitude

	1. **Key 1 and 3** press simultaneously (prepares Piccolo for the adjustment of altitude) for fixed altitudes, switch to one of the fixed Altitudes A1, A2, A3, A4 or A5 (only Piccolo Plus).
	2. For fine adjustment press several times. For rough adjustment press and hold.
	3. **Key 1** press once for Enter.

Only Piccolo Plus

	**Key 3** press and hold (Display in the altitude window will change to QNH in hPa) continue with 2 and 3, for adjustment.
 	**Select fixed altitudes** Key 1 and 3, Key 1 press and hold key 2 press repeatedly. (The Piccolo will display the pre-set altitudes in sequence A, A1, - A5, A...etc. Release both keys when reaching the appropriate altitude). Adjustments of fixed altitudes, see adjustment of altitude. Confirm fixed altitude, Key 1 press once for Enter.

Peak memories

Select peak value memory and peak data

Press simultaneously key 2 and 3 to select the lowest of the five positions in the circular memory. The most recent light is now displayed. Press again keys 2 and 3 and you will find the highest occupied place in the fixed memory, if for example the display shows the figure 10F, you will know that from the 15 available places in the fixed memory 10 of them are occupied. Repeat pressing keys 2 and 3 and you`ll find absolute peak values over all flights.

The final pressing of 2 and 3 will bring you the flight log. In the circular memory as well as in the fixed memory the individual flights can be selected with key 2.

The selection of flight data with a memory, like maximum altitude, maximum climb or sink rate, also flight counter and total flight time can be selected in sequence with key 3.

Selection of circular memory, fixed memory, absolute peak values over all flight counter and memory of total flight time.		**Select in sequence the circular memory (-0P to -4P) or the fixed memory (1F to 15F).**	
	Keys 2 a. 3 Press once	To begin select circular memory or fixed memory, then:	
Circular memory with 5 peak values.	- OP : : - 4 P		Key 2 Press once
15 fixed memories.	15F : : 1F	The most recent flight	- OP - 4P
absolute peak values over all flights.	all		
Counter and memory of total flight time.	add	Copied flights.	15F 1F

Select flight data

Select flight data in the memory

To begin select the memory, then:

Key 3 Press once

For circular memory	flight time
fixed memory and	max. altitude
peak value over all	max. climb rate
flights.	max. sink rate
Only Piccolo-Speed	max. speed
Flight log	tot. flight time
	flight counter

Return to operating mode

Key 1 for Enter

Key 1 Press once

Piccolo will automatically return to operating mode after some time.

To copy flight data

To copy flight data from the circular memory into the fixed memory, first check the fixed memories. If all 15 fixed memories are occupied, one of them should be erased before stating the copying process. Then select the relevant memory in the circular memory.

To erase flight data.

Select the corresponding memory, to grace the contents of one of the fixed memories, peak values over all lights of the flight log.

To copy flight data

Select circular memory (for example place -3P), then:

Keys 2 and 3 Press and hold until a beep gives the feedback of a successful coping.

Flight data of circular memory -3P are now copied in the next available place in the fixed memory.

Display = cP

-0P	15F
-1P	-
-2P	-
-3P	4F
-4P	3F
	2F
	1F

To erase flight data

Select fixed memory (for example 4F), peak values of all flights or flight counter and total flight time, then:

Keys 2 and 3 Press and hold until a beep gives the feedback of a successful erasing.

The selected memory is now erased. All occupied memories with a higher no, are pushed back by one no.

15F	15F
-	-
5F	-
4F	4F
3F	3F
2F	2F
1F	1F

Factory adjustments

If the factory set adjustments suit your requierments you can ignore the following chapter!

Factory set adjustment:

Units of measurement	meter
Climbing sound mode	(Slow, equal duration of sound and interval)
Climb sound start	+0,1 m/s (+0.2 x 100 FPM)
Sinking sound offset	-1.2 m/s (-2.4 x 100 FPM)
Silence window	+-0,5 m/s (+-100 FPM)
Sink alarm	-5.0m/s (-10 x 100 FPM)

Selection of climb sound start (CS), sink sound offset (SO), silence window (F) or sink alarm (SA).

Function			Result
Vario acoustics. Check settings or select in order to change present setting.	Press and hold.	Press repeatedly.	The instrument will display the acoustics settings in the sequence CS, SO, F, SA, CS.
Adjust vario acoustics see the following chapter.			
Return to operating mode.	Press for Enter.		Piccolo returns to operating mode with adjusted value.

Changing vario factory set adjustments

To begin select climb sound start (CS), sink sound offset (SO), silence window (F) or sink alarm (SA).

Function				Result
Change digits.			Press repeatedly.	Digit will change in ascending line.
Change digits		Press repeatedly.		Digit will change in descending line.
Confirm adjusted value.	Press once for Enter.			Piccolo returns to operating mode with adjusted value.

Vario acoustic

Selecting one of the four climbing sound modes

Function			Result
Selection of a climbing sound with fixed duration of sound and variable duration of interval (factory set) or a climbing sound with equal duration of sound and interval, each with slow (Paraglider) or fast interval speed (Hang Glider).		1. Press before switching on the instrument.	Prepares Piccolo for changing the factory setting.
			The actual climbing sound mode becomes audible. The symbol for

	2. Switch on the instrument.		the interval mode appears in the altitude window: Fixed duration of sound and variable duration of interval. Equal duration of sound and interval. The symbol for the interval speed appears in the vario display: P for Paraglider = slow H for Hang Glider = fast
Change climbing sound mode.		Press repeatedly.	Climbing sound and related symbols change.
Confirm adjustments.	Press once for Enter.		Instrument returns to operating mode with adjusted climbing sound.