

# Altimeter Barometer

BKT 381 / B 381

## Instruction Manual

### 1.0 Introduction

Thanks for your purchase of the altimeter - barometer. With this unit you can measure the altitude of your position, height differences and with the barometer make a weather forecast.

This is helpful for your outdoor activities like skiing, hiking, climbing etc.

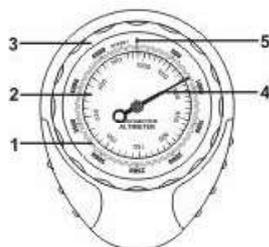
In order to utilize all features, please read the following instructions:

- Avoid exposing your altimeter-barometer to extreme conditions for a longer period.
- Avoid rough uses or severe impacts
- Please do not open the case. It contains sensible precision parts. Contact the original point of purchase in case of problems.
- Clean your altimeter-barometer with a soft cloth occasionally.
- Store it at a dry place if it is out of use.
- Your altimeter - barometer tolerates heights up to 15.000 m without being damaged by the atmospheric pressure.

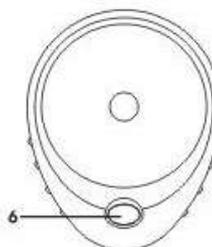
### 2.0 Parts description

The equipment of the model BKT 381 / B 381 are shown in picture 1 and 2.

1. height scale
2. barometer scale
3. adjusting ring
4. pointer
5. zero line
6. Button for strip release



(Picture 1)



(Picture 2) Press this button for release the carabiner.

For the B 381 find enclosed a strip fixing on the altimeter-barometer so that you can place the gadget close to your body.

For the BKT 381 you get an additional strip with compass and thermometer and carabiner which can be plugged into the altimeter. To release the strip press the button on the back of the altimeter-barometer.

### 3.0 Function description

#### Functional principle

The function of your altimeter - barometer is based on the following physical principles:

The atmospheric pressure corresponds to the weight of the surrounding air masses and depends on the weather situation and the local altitude. At high altitude the atmospheric pressure is always lower. But also the different weight of cold and warm airstreams influences the atmospheric pressure.

Due to high precision mechanics your altimeter - barometer is able to indicate very small pressure variations. The observation of these variations allows to measure site altitudes, height differences and atmospheric pressure for weather forecasting accurately.

#### I. Altimeter

##### a) Absolute altitude measurement

- When starting your tour it is important to calibrate the actual altitude level manually. Turn the adjusting ring until the pointer shows the exact value of your site. Refer the actual site altitude to maps, footpath signs, stations etc.
- Now the correct site altitude is indicated permanently.
- Atmospheric pressure variations due to weather changes may affect the altitude reading constantly. Please compare with known altitude readings occasionally and readjust while climbing or walking.

##### b) Relative altitude measurement

- Set the pointer to zero (0 meter) where you start your tour.
- Measure the height differences of your current site to your starting point during your move.

#### II. Barometer/ Weather Trends

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### a) Absolute atmospheric pressure

This barometer measures the actual barometric value automatically pointed on the dial. The international standard value for the reduced atmospheric pressure at sea level is 1013.25 hPa.

Atmospheric pressure below this value is referred to as low pressure, that above as high pressure.

### b) Weather reference

Atmospheric pressure	Weather Trends
<ul style="list-style-type: none"> <li>rises slowly and continually</li> <li>is steadily high (above standard value)                             <ul style="list-style-type: none"> <li>the higher the atmospheric pressure, the more constant the weather</li> </ul> </li> </ul>	<b>Indication for fine weather</b> in summertime: nice and warm in wintertime: clear freezing weather
<ul style="list-style-type: none"> <li>rises very fast</li> <li>varies permanently</li> </ul>	<b>Indication for intermediate high pressure</b>
<ul style="list-style-type: none"> <li>falls slowly and continually</li> <li>is steadily low (below standard value)</li> </ul>	<b>Indication for bad weather</b> in summertime: changeable and cold in wintertime: thaw
<ul style="list-style-type: none"> <li>rapid and strong decrease</li> </ul>	<b>Indication for storm</b>
<ul style="list-style-type: none"> <li>very rapid decrease in summertime with great heat</li> </ul>	<b>Indication for thunderstorm</b>

Southeast rains with high winds		Continued cool, warmer and cloudy tomorrow
Clear tonight, continued cool with variable winds		Fair and warmer, followed by wind and rain
Generally fair, probably cool with variable winds		Storm brewing in the direction of the wind
Fair with brisk winds which will diminish		Cloudy and warmer followed by unsettled
Fair with fresh winds tonight and tomorrow		Unsettled, increasing winds and warmer
High winds with cool wave preceded by squalls		Clearing, slight squalls fair and cooler tomorrow
Clearing with high winds and cool wave		Falling below 980hPa indicates a severe storm, in winter snow or cold wave in 24 hrs.
Clearing and colder		
		1050 hPa, (788 mmHg) 1040 hPa, (780 mmHg) 1030 hPa, (773 mmHg) 1020 hPa, (765 mmHg) 1010 hPa, (758 mmHg) 1000 hPa, (750 mmHg) 990 hPa, (743 mmHg) 980 hPa, (735 mmHg) Lower

### c) Reduced atmospheric pressure at sea level

To get a most reliable weather forecast based on atmospheric pressure and weather trends at different site altitudes, please refer to the reduced atmospheric pressure (standard value: 1013.25 hPa).

The reduced atmospheric pressure at sea level based on your site can be determined as follows:

- Set the correct geographic altitude of your site using the adjusting ring.
- Read off the corresponding reduced atmospheric pressure at sea level on the zero (0 meter) line of the barometer scale.
- The difference between the reduced and the standard pressure (1013.25 hPa) indicates a high or low pressure situation.
- Inversely you can measure your site altitude if you know the exact reduced atmospheric pressure at sea level (normally available at local weather services, www, opticians, calibrated instruments in public buildings, airport). Turn the zero (0 meter) line of the adjusting ring exactly to the current atmospheric pressure at sea level. Now you can read off your site altitude on the pointer position.

## III. Technical Data

Units of measurement: metres (m)/ hPa

Measuring range: 0-5000 m / 580-1040 hPa

Resolution: 20 m /5 hPa

Operating temperature: -20°C - +60°C

Storage conditions: -30°C - +65°C; < 90%RH

Weight: 90 g

Dimensions: 85 x 68 x 28 mm