

Castle GA690 Electronic Barometer

The Castle GA690 electronic barometer can be used to accurately display the atmospheric pressure at your location.

The barometer measures the absolute pressure of the ambient atmosphere. The pressure measured is not necessarily the same pressure as would be published on weather forecasts etc as this figure is normally the pressure taken at sea level. The barometer can be set to display the figure at sea level by using the S.L [sea level correction] function if your altitude is known.

Powering the barometer on:

To turn the barometer on simply press and release the ON/OFF key once. The barometer should then turn on and perform a segment test on the display. To turn the barometer off simply press and release the ON/OFF key once more.

Configuration of the barometer:

1. **Auto power off (P.of)** - It is possible to set the barometer to automatically turn off after a preset time off between 1 and 120 minutes:
 - I. Press and hold the MODE key whilst powering on until 'P.of' is displayed
 - II. Press the MODE and ZERO keys to scroll up and down in minutes to select your desired power off time. It is also possible to have the barometer to stay permanently on by scroll down using the MODE key until 'off' is displayed. This disables the auto power off function.
 - III. Confirm your selection by pressing the ON/OFF key, 'uni' should then appear on the display.
2. **Display unit (uni)** – It is possible to change the units that the barometer displays in between hectoPascal (hPA) and mmHg (nHg). Please note that 1hPA = 1mbar.
 - I. Follow instructions for auto power off above.
 - II. Press the MODE and Zero keys to scroll between 'hPA' and 'nHg'.
 - III. Confirm your selection by pressing the ON/OFF key, 'S.L' should then appear on the display.
3. **Sea level correction (S.L)*** – It is possible to correct the measured pressure back to the pressure value at sea level [zero altitude].
 - I. Follow instructions for display units above.
 - II. Press the MODE and ZERO keys to turn the sea level correction function 'on' or 'off'.
 - III. Confirm your selection by pressing the ON/OFF key. 'Alt' should then appear on the display if 'on' was selected or the barometer will restart with if 'off' is selected.

**Please note that this feature should be turned off when used for the calibration of a sound level meter*

4. **Altitude reading (Alt)*** – If using the sea level correction function then you must set your altitude level in metres. It is possible to enter an altitude of between 1m and 1999m.
 - I. Follow instructions for sea level correction above.
 - II. Press the MODE and ZERO keys to scroll up and down in metres to select your current altitude.
 - III. Confirm your selection by pressing the ON/OFF key, The barometer should now restart.

Please note that if during the configuration no key is pressed within 20 seconds then the configuration will be aborted.

**Please note that this feature should be turned off when used for the calibration of a sound level meter*

Offset and Scale Adjustment:

The offset and scale adjustment function on the barometer is used for calibrating the barometer and therefore should only be altered under calibration conditions. The following outlines how to adjust the offset:

The display value is given by the following formula:

$$\text{DISPLAY} = (\text{measured value} - \text{offset}) * [1 + \text{scale adjustment (\%)}]$$

- I. Press and hold the ZERO key whilst powering on until 'OFS' is displayed.
- II. Press the MODE and ZERO keys to select the required offset [-20 to +20 mbar].
- III. Confirm your selection by pressing the ON/OFF key, 'SCL' should then appear on the display.
- IV. Press the MODE and ZERO keys to select the required scale adjustment [-1.99 to +1.99%]
- V. Confirm your selection by pressing the ON/OFF key. The barometer should now restart.

Please note that if during the adjustment no key is pressed within 20 seconds then the adjustment will be aborted.

Zero Function:

The zero function is used to take relative measurements.

- I. Turn on the barometer.
- II. Press and hold the ZERO key until 'nuL' is displayed. The display should then change to '0'. As the pressure changes this figure will either increase or decrease depending on whether the pressure is rising or falling.
- III. Press and hold the ZERO key again to return to absolute pressure.

MIN/MAX Value Memory:

The barometer keeps a record of the minimum and the maximum pressures measured whilst the barometer is turned on (values are not retained after the barometer has been turned off).

- I. Ensure barometer is already turned on.
- II. Press and release the MODE key once. The display will now flash between 'Lo' and the minimum level recorded.
- III. Press and release the MODE key a second time and the display will now flash between 'Hi' and the maximum level recorded.
- IV. Press and release the MODE key a third time to return to absolute pressure.

Please note that the MIN/MAX readings can be reset by pressing and holding the MODE key for more than 2 seconds.

Low Battery warning:

If the word 'BAT' appears on the screen at any time this indicates that the battery is low and needs replacing. The barometer uses a 9v alkaline battery type 6LR61 (PP3).

Specifications

Measuring Range:	Absolute pressure -	0 to 1300mbar 0 to 975mmHg
Resolution:	1mbar, 1mmHg	
Accuracy:	±0.50% FS	Temperature dependency 0 to 50°C
Battery:	9V Alkaline type 6LR61 (PP3)	
Battery life:	Greater than 2500 hours	
Dimensions:	106 x 67 x 30mm (LxWxH)	
Weight:	135g incl. battery	