

# CA2020

## Operating instructions



### Electrochemical sensor

#### Operation:

1. Insert the mouthpiece in the opening on the left side.
2. Press the Start button. 
3. A countdown takes place from 150.
4. Once "blo" is displayed, evenly blow into the mouthpiece until you hear a signal tone.  
*If you do not blow within 20 seconds, the unit automatically switches off.*
5. After the measurement, the result of the breath test is shown for approx. 20 sec. on the display.  
After approx. 15 seconds, the display becomes dark. By pressing the Start button again,  the unit prepares for a new test (s. point 3). Another breath test can be performed.  
*If the test result is over 0.50‰, the LCD display illuminated red and "WARN" is displayed. A warning tone is emitted.*
6. The CA 2020 automatically switches off after approx. 20 seconds. "OFF" appears in the display and a signal tone can be heard.
7. Please start at point 1 for more tests.

**We recommend waiting at least 2 minutes between each test. The device is not designed for a series consisting of more than ten consecutive measurements.**

The device is ready for use when **READY** appears in the display.

**BATT** Signal indicates low battery voltage.



Display in ‰

The warning display appears with results over 0.50‰.

#### The measuring principle

Blood and breath alcohol have a close correlation with each other. In the depths of the lungs, in the alveolar, blood and breathing air are separated by a thin, gas-permeable membrane. This is where the gas exchange takes place. Oxygen is absorbed by the blood and carbon dioxide and alcohol, if present, is emitted into the breathing air. To obtain this air from the depth of the lungs (alveolar air) for the analysis, a specific minimum quantity of breathing air must be provided.  
(10 litres per minute of air volume = 5 seconds of strong blowing).  
A correct measurement is only possible if the person blows really strongly and sufficient breathing air is exhaled.

#### Technical data

Sensor	Electrochemical sensor
Accuracy	±0.05 ‰ BAC at 1.00 ‰ BAC
Detection range	0.00 ~ 4.00‰ BAC
Warm-up time	15 ~ 35 seconds
Response time	3 ~ 22 seconds
Dimensions	125 mm x 56 mm x 24 mm
Weight	87 g (131 g with battery)
Power supply	9V alkaline battery
Temperature range	5°C ~ 40°C
(Operating temperature)	
Storage temperature	0°C ~ 40°C
Calibration	Every 6 months or after approx. 500 tests
Warranty	12 months for device 6 months for sensor

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**Important information:**

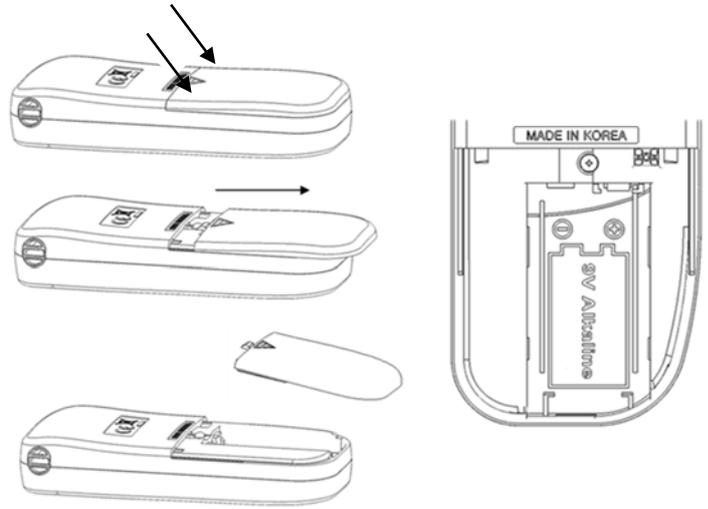
The limit values for determining whether drivers are unfit for driving strongly vary in different countries. Irrespective of this, based on the individual tolerance for alcohol, a lower blood alcohol concentration of 0.2 - 0.4‰, for example, can render a driver unfit for driving and thus be punishable by law. In Germany, drivers with a result from 0.30‰ can expect legal prosecution and possibly a fine.

**Compared to police tests, the test with the alcohol tester cannot be used as evidence, but it is an important indication for you to behave responsibly.**

The ALCOHOL TESTER was calibrated before delivery. To ensure a correct measurement result, it should be calibrated every 6 months. Please send us the device for calibration. The calibration is usually performed within one day.

**Replacing the battery**

Applying slight pressure, slide the cover down and replace the battery.



**Precautionary measures**

1. After drinking, smoking and eating, we recommend waiting approx. 20 minutes before you start the measurement.
2. In normal use, the CA2020 must be calibrated every 6 months or after 500 tests to ensure accurate measurement results.

**Errors and warnings**

	The measurement result over 0.5‰, a warning tone sounds
	The measurement result is over 4.00‰ BAC or 2.00 mg/l BAC and can no longer be displayed.
	The device must recalibrated after 500 measurements or after 6 months.
	Battery voltage is too low. Please change the battery.
	Person did not exhale long enough or evenly enough. Press the On/Off switch and repeat the test.
	Ambient temperature is outside the operating temperature between 5°C and 40°C.

**Alcohol tester with electrochemical sensor**

The CA 2020 is a small, practical and easy to operate breath alcohol tester. The accuracy depends on the correct use and careful handling of the testing device. The electrochemical sensor converts the alcohol content in the breath into electrical signals. This measuring technology is particularly accurate and used with all police equipment worldwide.

**Alcohol tester in operation**

Alcohol at the workplace – a factor not to be underestimated for the operational safety security and often a considerable risk for the responsible supervisors.

**Alcohol tester for tests in traffic, in companies and clinics**

Such measuring devices are not only available to the police but also companies, clinics and private individuals for necessary tests.

