CO_2

Accredited calibration service for CO_2 concentration

The calibration laboratory of E+E Elektronik GmbH is accredited according to DIN EN ISO/IEC 17025, with identification number 0608, by Akkreditierung Austria / Federal Ministry of Science, Research and Economy.

The E+E calibration laboratory offers accredited CO_2 calibrations for gas concentrations in the range (5…300,000) ppm, as well as for the equivalent volume fraction in ppmv.
Due to the wide calibration range it is possible to calibrate all common CO_2 measuring devices such as sensors, handhelds, data loggers and spectrometers.

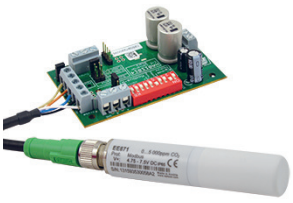
The CO_2 reference concentration is generated by a primary standard based on a gas mixing pump according to DIN 51898-1 and is freely selectable.



Calibration object

- Sensors and transmitters
- Data loggers and hand helds
- Gas warning devices
- Spectrometers







Accredited CO_2 calibration

Calibration condition	*Calibration range*[1)]	*Calibration uncertainty*
(23 ± 5) °C ambient pressure	5...1,150 ppm	(6 + 1.07 % of measured value) ppm
	500...300,000 ppm	(6 + 0.38 % of measured value) ppm

1) The specifications apply to the mole fraction x in µmol/mol as well as the volume fraction φ in µL/L.

E+E Scope of accreditation: www.eplusecal.com/accreditation-co2

Calibration standard

Accredited CO_2 calibration procedure at E+E

The calibration is performed as comparative measurement with a constant CO_2 reference concentration. The CO_2 reference concentration is generated by a special gas mixing pump according to DIN 51898-1 and is freely selectable. Due to the operating principle of the mixing pump, the gas volume flow and by this the CO_2 reference concentration can be traced back to length, which is a fundamental physical quantity of the International System of Units (SI). Therefore, the E+E CO_2 reference generator is a primary standard.

Accredited CO_2 calibration

According to the International Laboratory Accreditation Cooperation (ILAC) agreements, only calibration laboratories accredited according to DIN EN ISO/IEC 17025 can ensure the traceability of measurement results to SI and full international comparability. The accredited calibration certificate states the measurement uncertainty associated to the specific calibration process.

Accredited CO_2 calibration certificates are generally required for measuring devices used for safety or for the control of key manufacturing processes. Accredited CO_2 calibrations are of interest for instance in the Food and Drugs Administration (FDA) regulated industries such as food and pharmaceutical. Reliable CO_2 monitoring and control is paramount for biological incubators. In building automation, the accuracy of CO_2 measuring devices impacts directly on the efficiency of demand controlled ventilation systems.

Order code

Calibration standard		OEKD-U
Calibration object	CO_2 sensors, transmitters, dataloggers	**T**
	Spectrometers	**S**
Calibration points[1)]	Number of calibration points	**1...x**
	Calibration range (see below)	**A...C**
Mole fraction / Volume fraction	Mole fraction in ppm	**no code**
	Volume fraction in ppmv	**VF**
Text	Values for calibration points (e.g.: 500/1000/3000/5000 ppm)	

Calibration points

Calibration range	CO_2 concentration[2)]	CO_2 calibration uncertainty[2)]
A	10,000...300,000 ppm	(6 + 0.38 % of measured value) ppm
B	500...10,000 ppm	
C	5...500 ppm	(6 + 1.07 % of measured value) ppm

1) For calibration points over several, ranges indicate the number of points for each range
2) The specifications apply to the mole fraction x in µmol/mol as well as the volume fraction φ in µL/L.

Order example

OEKD-UT4B

Text: 500/1000/3000/5000 ppm

Declaration:
[U] - accredited CO_2 calibration
[T] - CO_2 devices
[4B] - 4 points in range B at 500, 1,000, 3,000 and 5,000 ppm

OEKD-US3A3B2C

Text: 5/400/2500/5000/7500/10000/20000/50000 ppm

Declaration:
[U] - accredited CO_2 calibration
[S] - Spectrometer
[3A] - 3 points in range A at 10,000, 20,000 and 50000 ppm
[3B] - 3 points in range B at 2,500, 5,000 and 7,500 ppm
[2C] - 2 points in range C at 5 and 400 ppm