

## Capnometry

### Facts & figures:

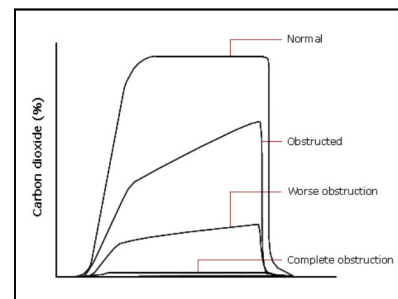
Over breathing (CO<sub>2</sub> deficiency) can trigger or exacerbate physical and psychological complaints such as: shortness of breath, breathlessness, chest tightness and pressure, chest pain, feelings of suffocation, sweaty palms, cold hands, tingling of the skin, numbness, heart palpitations, irregular heart beat, anxiety, apprehension, emotional outbursts, stress, tension, fatigue, weakness, exhaustion, dry mouth, nausea, light headedness, dizziness, fainting, black out, blurred vision, confusion, disorientation, attention deficit, poor thinking, poor memory, poor concentration, impaired judgment, problem solving deficit, reduced pain threshold, headache, trembling, twitching, shivering, muscle tension, spasm, stiffness and abdominal cramps.

## Capnometry in general

When patients have a condition that is linked to breathing difficulties it helps to see the pulse frequency, which is possible by measuring the CO<sub>2</sub>. These measurements lead to right treatment at the right time and

this leads to shorter recovery time for the patients.

The most important improvement of using CO<sub>2</sub> measurement is the reduction of the number of lost patients.



## Why the need to measure CO<sub>2</sub>?

**Less staffing** is needed when monitoring the patient's breathing. By measuring the CO<sub>2</sub> it is easier to determine if the patient can breathe on their own or requires mechanical ventilation. This scenario leads to the reduction of staff, because you do not need to monitor the patient manually all the time.

**Shorter recovery time** is achieved when one uses a CO<sub>2</sub> measuring instrument for a better accuracy on what to add and how much for the patient to recover as soon as possible. This leads to a decreased loss of lives in the hospitals.

**Individual-based treatments** are possible since the accuracy of the CO<sub>2</sub> measurements can be made very precise from case to case. It leads to a better treatment for the patients.

The accuracy of medical care does not only lead to a faster recovery time, but it can also be crucial, since a wrong dosage to a very sick or vulnerable person can be fatal. So the **Individual-based treatments** are a big improvement since the measuring started.

When patients become healthier faster, this leads to shorter hospital time, which in turn leads to lower costs for both hospitals and patient. If the recovery period decreases, then the number of healthy people increases and also the amount of people that returns to work, which is a benefit to everyone.

### How does it work?

Respiratory diseases are after circulatory diseases and cancer, the third most common cause of death in the EU-27, with an average of 41.2 deaths per 100 000 inhabitants in 2010. Within this group of diseases, chronic lower respiratory diseases were the most common cause of mortality followed by pneumonia. Respiratory diseases are age-related with the vast majority of deaths from these diseases recorded among those aged 65 or more. The highest death rates from respiratory diseases among the EU Member States were recorded in the United Kingdom (67.7), Denmark (66.5, 2009), Ireland (60.3) and Belgium (60.2, 2006).

### Discussed in this edition:

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## What solution can Rotronic offer?

Rotronic offers a wide range of fix-mounted CO<sub>2</sub> only and CO<sub>2</sub> temperature transmitters. All of them are based on the principle of NDIR technology. They are pre-calibrated and have a life-

time of over 15 years under normal conditions. Multiple analogue outputs like current loop, voltage and relay contact allow for the easy adaptation to every application. A major advantage of the cur-

rent sensor is the stability of the measurement over the entire temperature range, whereas some sensors are temperature dependant, Rotronic remains stable.

## Rotronic products:

### Transmitter:

- **CF3 series**  
0...2000ppm or 0...5000ppm,  
±30ppm, ±3% of reading  
Optional display,  
IP54
- **CF8 series**  
0...2000ppm or 0...4000ppm,  
±30ppm, ±3% of reading or  
±300ppm, ±3% of reading  
Optional display,  
IP54,  
Optional visual alarm,  
Optional relay,  
Optional CO measurement,  
Optional temperature measurement,

### Hand held device:

- **CP11**  
Measurement of CO<sub>2</sub>, temperature and relative humidity,  
-20...60°C,  
±0.3K,  
0.1...99.9%rh,  
±2.5%rh,  
0...5000ppm,  
±30ppm, ±5% of measured value,  
Data logging function (18000 values) with time stamp.

### Data logger:

- **CL11**  
Measurement of CO<sub>2</sub>, temperature and relative humidity,  
-20...60°C,  
±0.3K,  
0.1...99.9%rh,  
±2.5%rh,  
0...5000ppm,  
±30ppm, ±5% of measured value,  
Data logging function (18000 values) with time stamp.



CF3-W-E-Disp transmitter



CF3-W-Disp-Fli transmitter

## Customer benefits:

### Accuracy and long term stability

Choosing Rotronic gives you the best accuracy on the market.

The Rotronic CO<sub>2</sub> sensors can easily be calibrated, to guarantee highest possible precision of the measured concentration.

### Calibration

The ABC function automatically avoids baseline drift. A calibration and adjustment is carried within a user defined time where the lowest value is automatically calibrated at 400ppm. Optionally

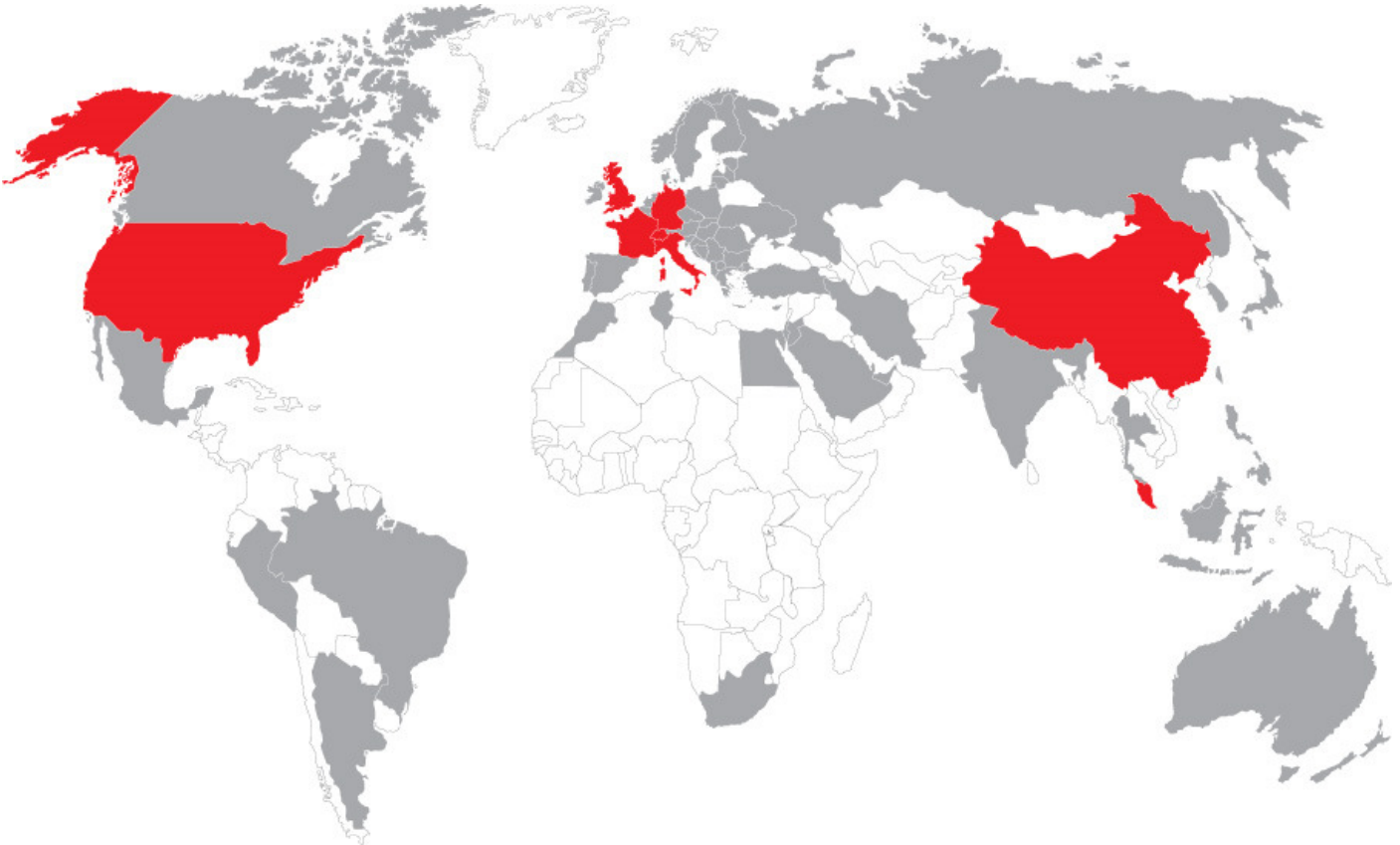
a 0ppm calibration unit is available from Rotronic.



CP11 handheld device and CL11 data logger with the 0-calibration unit

## Contact us:

Rotronic is represented in more than 40 countries around the world. An up to date list of all our partners is available at [www.rotronic.com](http://www.rotronic.com)



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