



## BAPPU-Vocoo-sx

In order to achieve an objective assessment of the well-being at the workplace, the measurement of the air quality is becoming more and more important.

Therefore, in addition to the existing measurements pertaining to VOC, CO<sub>2</sub> and CO, the assessment of the air quality has been enhanced. In order to be able to carry out these measurements in a more comprehensive manner, ELK is expanding its sensor technology by means of particulate matter measurement.

### Features

- Compatible with BAPPU-evo
- Comprehensive assessment of indoor air quality
- Visualization of the distribution of the particle concentration
- Measuring ranges: PM<sub>1</sub>, PM<sub>2.5</sub>, PM<sub>10</sub>, A-dust and number of particles

### What is particulate matter?

Dust is always present – however, only a small part of it is visible to the naked eye, the rest is particulate matter which is almost invisible. Particulate matter consists of a complex mixture of solid and liquid particles and is divided into different fractions depending on the size of the particles.

It is especially the very fine particles that are increasingly becoming the centre of attention: small particles penetrate deeper into the airways than larger ones and thereby reach into areas from where they cannot be expelled through exhalation.

We inhale about 20,000 times a day – and we not only inhale oxygen, but also particulate matter. There is increasing evidence to suggest that there is a significant risk to our health due to excessive exposure to particulate matter.

### Where does particulate matter occur?

Particulate matter is not only present in industrial production or in road traffic – the polluted outside air reaches interiors through open windows and windows that are not sufficiently sealed. Moreover, other potential indoor sources of emissions include: office equipment, e.g. paper shredders, printers, vacuum cleaners or open fireplaces – all these can significantly increase the concentration of particulate matter in offices and living spaces.

# BAPPU...

*it's as simple as that.*

## How can the level of particulate matter be assessed for work safety?

In general, workplaces in Germany are governed by the regulations stipulated by the German Workplace Ordinance (ArbStättV) and the German Technical Rules for Workplaces (ASR), which describe the practical implementation of the requirements. In terms of air quality, ASR 3.6 states to fine dust:

„In enclosed workplaces, healthy air must be available in sufficient quantities, as a rule, this should correspond to the quality of the outside air.“

It is therefore necessary to abide by the guidelines for outdoor air, which are essentially based on EU Directive 2008/501 EC. The threshold values for the different particle fractions are set here. However, for certain jobs, especially in industry and craftsman trades, another set of threshold values apply. These are the German Technical Rules for Hazardous Substances (TRGS), prepared by the Committee for Hazardous Substances, and originating from the German Dangerous Substances Ordinance (GefStoffV). In case a threshold limit value for a particular substance has not been explicitly stated, as defined in TRGS 900, the German general threshold limit value for dust (ALG) – which has been in force since February 2014 – shall apply.

## Conclusion

No matter how the discussion on particulate matter threshold values is assessed – less is better, in particular due to the fact that – without applying more complicated procedures – the quantity and size of the particles do not tell us anything about their toxicity.

With its new particulate matter sensor, BAPPU-evo is ideally suited to assess the quality of the room air and to improve it in the scope of the orientated measurement, especially in connection with the further climatic data that can be gathered with the BAPPU.

Further information is available at [www.bappu.de](http://www.bappu.de).

## BAPPU – The Systematic Multi-Measuring Device

With its optional system components, BAPPU can be extended in line with requirements. All components are supplied in the sturdy case with cables and accessories.



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