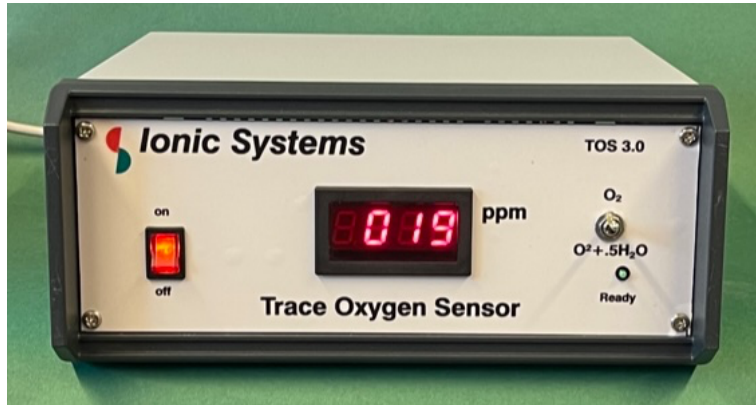


## Supplementary Feature of the Sensor TOS 3.0 for the Additional Measurement of Humidity



The Trace Oxygen Sensor TOS 3.0 does not respond to oxygen molecules other than  $O_2$ , especially water, in the standard configuration. The applied voltage is kept low enough to avoid electrochemical decomposition. The sensor is in this way selective to free oxygen.

In a special configuration, the sensor is equipped with a switch to provide a higher voltage to decompose water vapor. In this case, free oxygen is generated, which is measured and indicated in addition to the existing unbound oxygen.

The amount of water vapor results from the difference of the measured values for the switch positions  $O_2+.5H_2O$  and  $O_2$ . Since the displayed values indicate concentrations of  $O_2$ , the difference has to be multiplied by 2 to give the concentration of water vapor:

$$PH_2O = 2 ( [\text{displayed value in switch position } O_2+.5H_2O] - [\text{displayed value in switch position } O_2] )$$

After switching, the time for establishing the new steady state current is typically of the order of a few minutes. This time should be allowed for the measurement.