



Submersible Ozone Probe System

In situ measurements and profiling in shallow water



Accurate - Reliable - Small Dimensions - Easy Handling



The determination of **total dissolved ozone** is one of the most interesting parameters for the analysis of **industrial waters** and in the **tap water industry** after the treatment of the water with ozone, but also for swimming pools, if the oxidation of pollutants is realized by means of ozone.

But due to a lot of the ozone's inconvenient chemical properties, like high chemical reactivity, very fast reaction with nearly all kind of compounds which may be oxidized and the fast concentration exchange between the liquid sample and the gaseous phase above (mostly air), the determination is difficult. Even though the sampling and the determination have been done very carefully, the results are uncertain and mostly disappointing.

These disadvantages could be avoided, if the new **Ozone Probe** is used for the accurate, reliable *in situ* determination in depths of up to 100 m.

Compared with all the other commercially available ozone sensors the amperometric ozone micro-sensor does **not require streaming** of the sensor membrane or stirring of the analyte in case stationary measurements. The second advantage compared to other ozone sensors is the **very fast response time** of the AMT ozone micro-sensor with $t_{90\%}$ below 4,5 seconds compared with a minimum of approximately 80 to 120 seconds in the case of the conventional sensors. The third advantage is the **improved signal stability** of the ozone micro-sensor. Furthermore, the **high local signal resolution** allows some new applications, as for instance the profiling in μm -steps.

Special Features:

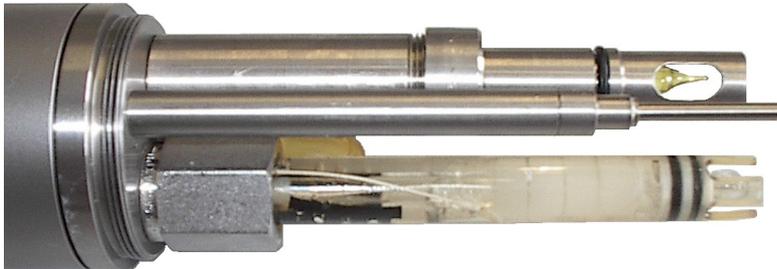
- sensors for ozone (amperometric micro-sensor), temperature, pH and depth
- very easy sensor exchange
- windows based software for display of chemical/physical units, diagrams
- free selection of displayed parameters
- titanium made housing and protection cage
- Subconn titanium connector
- very small dimensions (48 mm diameter, 440 mm total length)
- low weight of 1 kg
- low running costs for chemical sensor replacement

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The **Submersible Ozone Probe** is equipped with a precision microprocessor-controlled 4-channel 16 bit analogue to digital converter. The data are available as RS-232 signal (multi-conductor polyurethane covered cable) and optional as FSK signal modulated on constant current (single-conductor cable).

The probe can be powered by battery or DC power supply (9 to 30 V DC) when using the RS-232 output or by constant current with FSK telemetry output (coaxial connection) for longer distances. An interface for constant current supply is available.



Probe with removed protection cage. Sensors for ozone, pH, temperature and depth.

Standard Sensor Equipment

Sensors	Principle	Range	Accuracy	Resolution	Response time
Pressure	piezo-resistive full bridge	10 bar	± 0,1 % FS	0,002 % FS.	150 ms
Temperature	Pt 100	- 2 ... + 36 °C	± 0,05 °C	0,0006 °C	1 s
pH	single rod electrode	0 ... 14 pH	± 0,02 pH	0,0002 pH	1 s
Ozone	Amperometric micro-sensor	20 µg/l...10 mg/l	2% of reading	> 2 µg/l	< 4,5 s (t _{90%})

Further technical data of the probe system

- 4-channel probe
- RS-232 Interface for probe configuration, telemetry output, data readout
- Standard **Data Acquisition Software** “SST-SDA” for Windows 95, 98, 2000, ME, NT, XP
- Dimensions of the probe
 - Probe diameter 48 mm
 - Protection cage length 140 mm
 - Total length 440 mm
 - weight in air 1 kg
- Electrical features:
 - Input power and RS 232 Interface are galvanic isolated from measuring circuitry
 - Power supply voltage: 9...30 V DC
 - Connector: Subconn MCBH4M

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