

ENABLING
SCIENTIFIC
RESEARCH



The N₂O Sensor Portfolio

Solutions for measuring dissolved N₂O in wastewater and bioprocesses

Unisense offer a full range of sensors for measuring dissolved N₂O in biological matrices, from microprofiling in mats and biofilm to full scale studies in bulk waters and wastewater plants.

N₂O Wastewater System:

The N₂O Wastewater System is designed to study dissolved N₂O dynamics in bulk waters for on-site, real-time monitoring and emission control. Until recently off-gas measurements were the only technology available but this method is expensive, highly complicated and vulnerable, so therefore its use has been very limited. The new N₂O Wastewater Sensor from Unisense is modified and optimized for wastewater studies. The new waterproof design comes in stainless steel casing with build-in temperature sensor for post-normalization of data.

The N₂O Wastewater Plant Controller powers the sensor and transmits data via 4-20 mA output signals to SCADA systems or other compatible units. Based on this real-time N₂O sensor output data new state-of-the-art bioprocess controls can be developed yielding a clear environmental advantage over standard control regimes.

Cost effective - up to 80% savings compared with off-gas equipment

Fortified - more than 4 months sensor lifetime in 24/7 conditions

Fast - responding in less than one minute

Integrated - into the SCADA system for continuous measurements

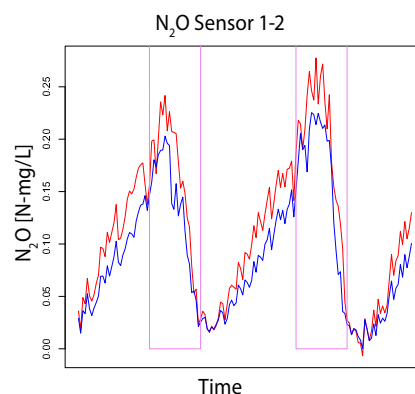
Independent - works during denitrification without air flow



N₂O Wastewater System



- Study N₂O in bulk water, e.g. full scale wastewater and pilot plants
- Power and polarize the sensor with the N₂O Wastewater Plant Controller box
- 4-20 mA output
- Optional digital output for logging with SensorTrace BASIC
- Cable length 5 meters



N₂O minisensors for lab-scale and pilot studies:

A portable N₂O Wastewater System with direct digital output to Unisense SensorTrace Basic logger software is available as an alternative to the permanent installation for spot and pilot measurements. For lab-scale studies the Microsensor Multimeter further allows you to study more analytes using the N₂O sensor together with our NO_x⁻, NO₂⁻ biosensors, the H₂S minisensor, pH, oxygen and more. Choose the N₂O-R sensor for standard bulk measurements or the N₂O-500 for fast dynamics. N₂O calibration kits and multiple calibration instructions are readily available directly from Unisense.

N₂O microsensors for fast responding, high spatial resolution studies:

Unisense offers a range of fast responding N₂O microsensors with tip sizes from 25 µm to 500 µm to measure in all kinds of biological matrices. Using the MicroProfiling System you can study changes in N₂O with a spatial resolution down to 25 µm ideal for e.g. studying waterlogged soils, mats and biofilms. This can be combined with all other Unisense microsensors for multianalyte studies, including O₂, H₂S, pH, NO and more.

	N ₂ O WASTEWATER PLANT CONTROLLER		N ₂ O-WASTEWATER SENSOR
Box size	220 x 120 x 85 mm, 2 kg	Size	Robust design in 40 mm stainless steel casing
Housing	Die-cast aluminium, surface-coated, IP66	Response time	< 45 sec
Mounting	Multiple holes for screw or U-bracket	Build-in temperature sensor	yes
Gaskets for cables	Neoprene round seal, siliconised	Detection limit	0.1 µM
Sensor inputs	N ₂ O and Temperature (build-in)	Working range	0 - 1.5 N-mg/L N ₂ O (0-50 µM, 0-300 µM optional)
Analogue output	2 x 4-20 mA source or sink	Calibration	2-point calibration, bimonthly
Sensor output	N-mg/L N ₂ O and temperature (Software sensor implementation)	Guaranteed lifetime	4 months
Designed to EMC and safety standards	EN 61000-6-3:2005 & 2007 EN60204-1:2006	Expected lifetime	>6 months
Power supply	100...230VAC; 50-60Hz 0.12A/115VAC; 0.08A/230VAC	Cable length	5 meter standard
Fuse	Internal 0.2A	Known relevant interferences	None



FOR MORE INFORMATION:

WWW.UNISENSE.COM

INFO@UNISENSE.COM