# Wastewater Gas Analyser WGA 020

## MEASUREMENT SYSTEM TO MONITOR RELEVANT GREENHOUSE GAS EMISSIONS OF $N_2O$, $CH_4$, $CO_2$ AT WASTEWATER TREATMENT PLANTS

NO GAS BOTTLES NEEDED

LOW MAINTENANCE

LOW POWER CONSUMPTION


*The sampling hood (left) with aluminium cage for flexible mounting and the analyser unit (right).*

The Airyx WGA 020 provides long-term stable, real-time measurements of relevant greenhouse gas emissions from wastewater treatment plants along with minimal maintenance and calibration effort.

## KEY FEATURES

- **Continuous Concentration Measurements**
  Real-time monitoring of target gases with high temporal resolution for accurate process and emission control.
- **Calculation of Emission rates based on precise flow measurements**
  Maintenance-free total flow sensor inside analyser unit.
- **No Need for Gas Bottles**
  Simplified deployment. Lower operational costs. Increased operation safety.
- **Automated Internal Zero Point Calibration & Cross-Interference Checks**
  Stable calibration and minimal drift for reliable long-term measurements.
- **Integrated Background Measurement**
  Precise estimation of net greenhouse gas emissions by distinguishing between background and process-related emissions.
- **Swimming Sampling Hood with Metal Cage System**
  Targeted and stable gas collection directly from the water surface, even in dynamic or harsh environments.
- **Temperature Stabilized**
  Ensures high accuracy and minimal drift under fluctuating environmental conditions.
- **Humidity-Resistant Analysers**
  Sample Gas drying impedes humidity-related sensor degradation.
- **Heated Sampling Tube (optional)**
  Preventing condensation for loss-free gas transfer between sampling hood and analyser.
- **Designed for Long-Term Field Deployment**
  Rugged, weatherproof enclosure (IP64 rating) with sun roof.
- **Use newest Airyx technology applied for patent: PCT/EP2024/087231**

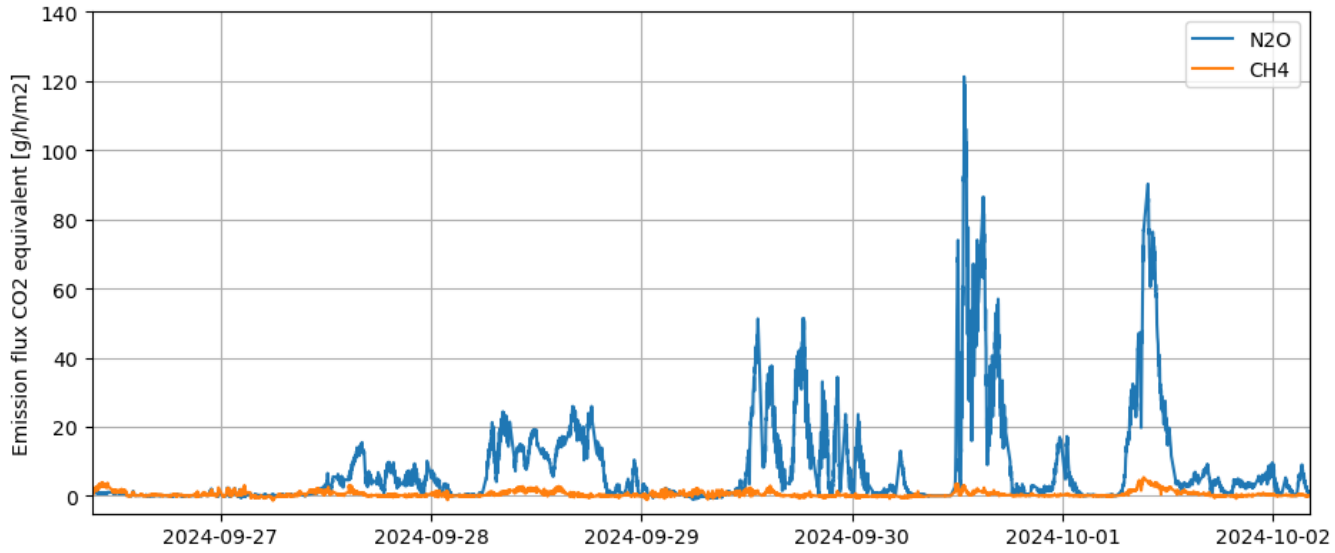
## TECHNICAL DETAILS

| | |
|---|---|
| **Measured Gases** | $N_2O$, $CO_2$, $CH_4$, $O_2$ |
| **Measurement Principle** | Non-dispersive infrared (NDIR) for $N_2O$, $CO_2$, and $CH_4$;<br>Electrochemical sensor for $O_2$ |
| **Additional Parameters** | Ambient temperature, Ambient pressure, Total sample flow |
| **Time resolution** | 1 s internal, typ. averaging 60s, averaging adjustable |
| **Enclosure** | Rugged and weatherproof design, IP64 rating |
| **Power Supply** | 24 VDC, external power supply |
| **Power consumption** | 30 W nominal, 120 W peak |
| **Operating Temperature** | -10°C to +40°C |
| **Dimensions** | Analyser: 660 x 400 x 240 mm |
| **Weight** | Analyser (incl. staffing & sun shield): ~27 kg. Sampling hood unit: ~30 kg |
| **Mounting Options** | customer specific |
| **Data interfaces** | Ethernet, optional 4-20mA, additional data storage on USB memory stick |

## MEASUREMENT RANGES AND LIMIT OF DETECTION

| Gas | Measurement Range | Limit Of Detection | Emission Rate sensitivity |
|---|---|---|---|
| **$N_2O$** | 0–1000 ppm | 0.5 ppm | 0.8 mg/m²/h |
| **$CO_2$** | 0–100 000 ppm | 50 ppm | 84 mg/m²/h |
| **$CH_4$** | 0–1000 ppm | 5 ppm | 3 mg/m²/h |
| **$O_2$** | 0–100 vol % | 0.1 vol % or 0.5 % of reading | n/a |

## EXEMPLARY DATA




*Exemplary data of 7 days of measured emission flux in units of $CO_2$ equivalent per hour per emitting surface.*

## DIMENSIONS

All dimensions in mm.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